The Official Year Book of New South Wales.

1913.

J. B. TRIVETT.

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I have the honor to forward the attached publication, which has just been issued by me, and of which I ask your acceptance.

Kindly sign and return the annexed form, on receipt of which your name will be duly noted in respect of future issues.

I am,

Sir,

Your obedient Servant,

JOHN B. TRIVETT,

Government Statistician.

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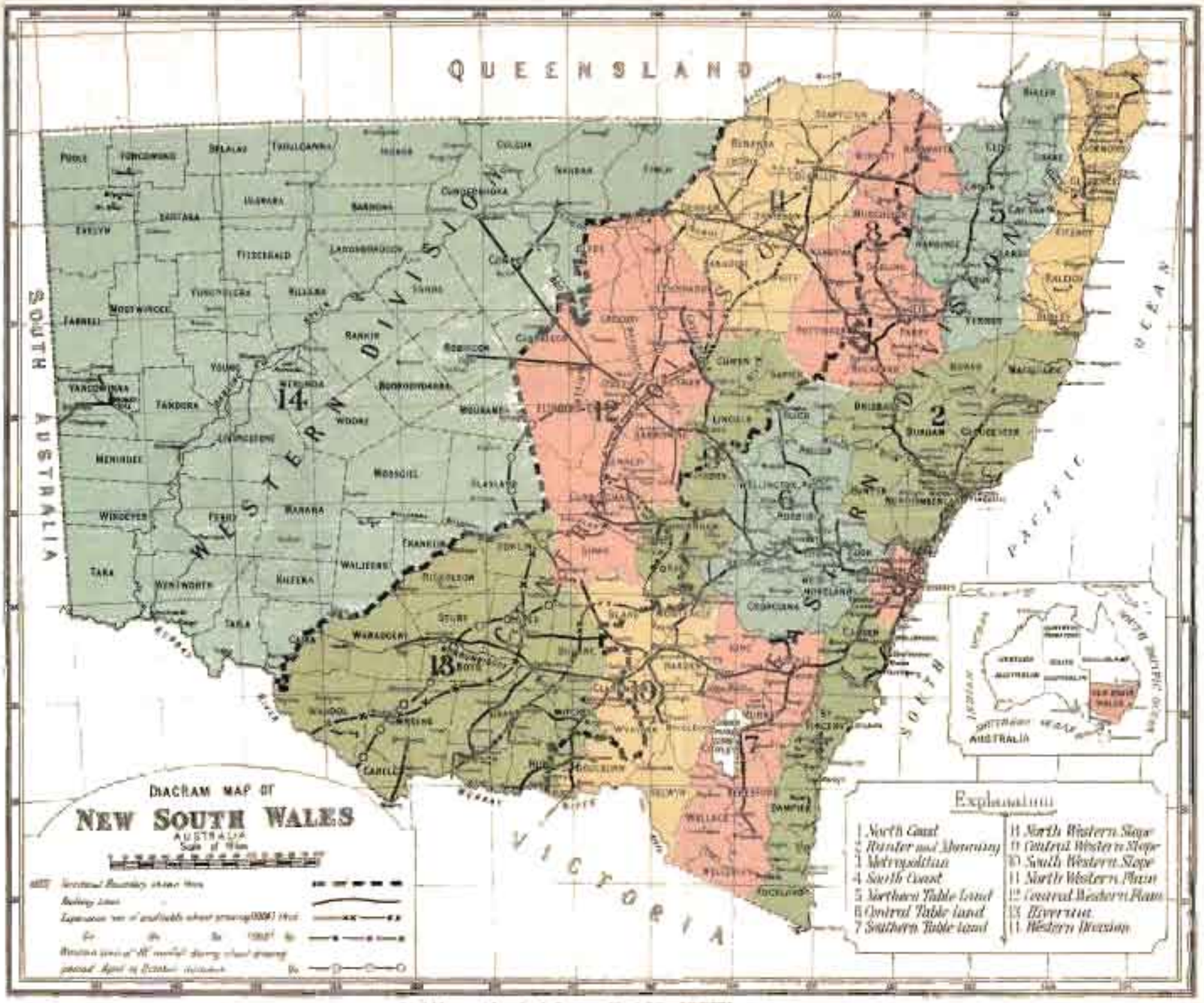

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THE

OFFICIAL YEAR BOOK

OF

NEW SOUTH WALES.

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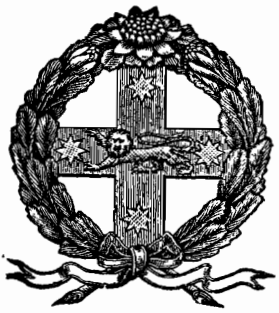

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GOVERNMENT STATISTICIAN.

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CONTENTS.

MAPS AND ILLUSTRATIONS.

ERRATA.

Page 63.—Legislative Council. *Delete* words "The Council must consist of at least twenty-one members."

Page 68.—*Insert* figures "1,263" above "Total 9,346, Year 1913."

Page 208.—Eighth line. *For* "115,347,000 tons" *read* "115,347 millions of tons."

Page 230.—Last line. *For* words "Social Condit *read* "Employment and Industrial Arbitration."

PREFACE.

THE contents of this volume 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 of New South Wales on all matters of public interest.

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.

Three maps are now published with the volume to indicate the area of the State suitable for profitable cultivation of wheat, to show the localities where the mineral resources of the State abound, and to illustrate the development of Railways; some illustrative plates are also added.

JOHN B. TRIVETT,
Government Statistician.

Bureau of Statistics,
Sydney, 1st July, 1914.

CHRONOLOGICAL TABLE

OF

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

1770 Captain Cook landed at Botany Bay, 28th April, 1770.

1774 Discovery of Norfolk Island by Captain Cook.

1788 "First Fleet," under the command of Captain A. Phillip, anchored in Botany Bay, 18th-20th January; formal possession taken of Sydney Cove, Port Jackson, 26th January; 1,035 persons debarked—Divine Service performed by Rev. Richard Johnson, Chaplain of the Colony, 27th January—Governor Arthur Phillip formally proclaimed the Colony, 7th February—Norfolk Island established as a dependency—French Navigator La Pérouse visited Botany Bay—Earthquake shocks—Lord Howe Island discovered by Lieutenant Ball—First settlement at Rose Hill (afterwards Parramatta)—Observatory established at Dawes' Point—First Criminal Court—First cultivation of Wheat and Barley—Settlers asked for by Governor Phillip—Pittwater, Brisbane Water, Hawkesbury River discovered.

1789 Hawkesbury River explored—First harvest (Wheat and Barley) reaped at Parramatta—Hurricane at Norfolk Island—Disease (small-pox) among aboriginals—Nepean River discovered—First colonial-built boat, "Rose Hill Packet," launched.

1790 Second Fleet arrived with New South Wales Corps, Lieutenant John Macarthur (Founder of sheep-breeding in Australia)—"Sirius" lost at Norfolk Island—First brick store erected—Scarcity of provisions—Signal Station established at South Head, Port Jackson—Population of Colony, 1,713; of Norfolk Island, 524.

1791 Third Fleet arrived—Lieutenant-Governor King brought Territorial Seal and Royal Authority to grant pardons—First Store at Rose Hill, now Parramatta—Settlements at Prospect Hill and The Ponds—Corps of Marines relieved by New South Wales Corps—Whaling and sealing first colonial industries—First grants of land to settlers—First Exploration Map of Australia published.

1792 First foreign trading vessel "Philadelphia" arrived—Population of Colony, 3,077.—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 down—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's Straits and Van Diemen's Land published—Population of Colony, 5,217.

1801 First issue of copper coin—Hunter River coal-mines worked—First colonial manufacture of blankets and linen—First rough census muster—"Loyal Association," volunteer corps formed.

1802 Port Phillip discovered by Lieutenant Murray—First book (General Standing Orders) printed in Sydney.

1803 First sample of Australian wool taken to England by Captain Macarthur—Caley attempted to cross Blue Mountains—Battery at George's Head completed—First Roman Catholic services, Rev. W. Dixon, celebrant—First newspaper (*Sydney Gazette and New South Wales Advertiser*) published in Sydney—First settlement established at Risdon, in Van Diemen's Land, by Lieutenant Bowen—New South Wales Corps reduced to peace footing—Yarra River, Melbourne, discovered—Attempted colonisation of Port Phillip by Captain 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 under Isaac Nichols—Governor Macquarie arrived.

1810 First horse-races, Hyde Park, Sydney—Sydney streets re-named and planned—Toll-gates erected—Police Fund established—Windsor (formerly Green Hills) and Liverpool named—New South Wales Corps returned to England—Market regulations issued.

1811 Public Pounds established—Lieutenant-Colonel Johnston court-martialled and cashiered—Sydney Hospital foundation laid—Tank Stream bridge enlarged—Sydney Common land designated—Burial grounds consecrated—Illicit distillation prevalent—Governor Macquarie's tour of Settlements, Hawkesbury River, Tasmania, and New South Wales Coastal Harbours.

1812 Creation of Governor's Court and Supreme Court—Sunday closing of shops—First crop of hops gathered—Select Committee of House of Commons appointed to inquire into condition of New South Wales—Great scarcity of coin; private money-orders or promissory-notes allowed to be issued—Population of Colony, 10,523.

1813 Blaxland, Lawson, and Wentworth crossed Blue Mountains—Camp at Mount York—Deputy-Surveyor Evans discovered Bathurst Plains and Macquarie River—Foundation-stone laid, Sydney 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—Naval stores erected at Circular Quay—Name "Australia," substituted for "New Holland," on recommendation of Flinders—New Zealand proclaimed a dependency of New South Wales.

1815 Lapstone Hill and Mount Victoria Road to Bathurst completed—Bathurst founded by Governor Macquarie—First Wesleyan Minister arrived—First steam engine erected in Sydney—First sitting of Supreme Court—Evan's explored Lachlan River—Grounds allotted to sixteen aboriginal families at George's Head—First import of wheat from Tasmania.

1816 Conferences instituted with aboriginals—Allan Cunningham and Judge-Advocate Wylde arrived—Sydney Hospital opened.

1817 Surveyor-General Oxley's first journey inland—Meehan and Hume discovered Lakes George and Bathurst, and the Goulburn Plains—Bank of New South Wales established—Captain King's coastal explorations—Hyde Park Barracks built—New Territorial Seal—Macarthur returned to New South Wales after eight years' banishment.

1818 Oxley's second journey to Macquarie River—Discovered Peel, Hastings, and Manning Rivers, and Liverpool Plains—Free immigration stopped—Great Western Road completed to Emu Ford—Benevolent Society established—Rose Hill packet-boat service instituted—Port Essington discovered by Captain King.

1819 Commissioner Bigge's inquiry into laws and administration of Colony—St. James' Church, Sydney, commenced—First Australian Savings Bank opened at Sydney—County of Westmoreland designated—The Governor given power to impose Customs duties on spirits, tobacco, &c.

1820 Murrumbidgee and Clyde Rivers discovered—Russian exploration ships arrived—Burial ground (Sydney Town Hall) closed—Sir Joseph Banks died—Campbelltown surveyed—Hunter River floods—Government row-guard boats established—Influenza epidemic—W. C. Wentworth published in England an account of Australia.

1821 Governor Sir Thomas Brisbane arrived—Ten ships despatched with Australian produce for England—Foundation stone of St. Mary's (R.C.) Cathedral, Sydney—Philosophical (now Royal) Society founded—Throsby tour of discovery inland—Settlement formed at Port Macquarie—First Circuit Court at Hobart.

1822 (Royal) Agricultural Society of New South Wales established—First Colonial Attorney admitted—Bees introduced—St. James Church, Sydney, opened—Sale of Australian tobacco—Road from Richmond to Wallis Plains (Newcastle) opened—Settlement formed at Wellington Valley—Parramatta Observatory erected.

1823 First Australian Constitution Legislature—A Council of five to seven persons; first councillors (five) appointed under warrant of 1st December—Cunningham's explorations—Dr. John Dunmore Lang arrived—Oxley discovered Tweed and Brisbane Rivers—Free settlers encouraged—Squatting commenced—"Particles of gold" found at Fish River, near Bathurst, by Assistant-Surveyor McBrien—Monaro Plains discovered by Captain Currie, R.N., and Brigade Major Ovens.

1824 New South Wales a Crown Colony—Governor's censorship annulled and freedom of Press proclaimed—First Criminal Sessions with trial by jury—First Land regulations—Hume and Hovell overland expedition to the South—Charter of Justice proclaimed—First Executive Council meeting 25th August—Currency Act; First Act of Parliament in Australia—Sugar-cane grown on Hastings River; first manufacture of sugar—Australian Agricultural Company formed—Moreton Bay founded—Supreme Court of Criminal Jurisdiction established—Settlement at Melville Island—Bills of exchange and promissory-notes payable in dollars legalised—Court of Requests commenced—First Court of Quarter Sessions.

1825 Governor Darling arrived—Sydney 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 in N.S.W."

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 abolished—Influenza prevalent—Commercial panic caused by extensive operations of Australian Agricultural Company—" Warspite," first line of battleship to enter Port Jackson, arrived—Rumker gazetted first Government Astronomer.

1827 Colony self-supporting—Land and stock speculations—*Sydney Gazette*, the first daily newspaper—Water supply scheme (Botany Swamps) initiated—Hume discovered new road 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 officership superseded thereby—Office of Lieutenant-Governor abolished.

1828 Second Constitution; Legislative Council enlarged to fifteen members—First Census, population 36,598—Letters of Denization—Western Plains settlers return—Clarence and Richmond Rivers discovered by Captain Rous—" Australian " newspapers under the libel law of 1827—Whooping-cough epidemic—Stirling's expedition to Western Australia—General Post-office communication established, and postage rates fixed (minimum 3d.)—Cotton first grown in Sydney Botanical Gardens—Gas first used in Sydney.

1829 Sturt's expeditions and discovery of Darling and Murray Rivers—First Land Grant to the Church and School Corporation—First Act of Council, establishing trial by jury in civil cases—Settlement established in Western Australia—Gunpowder first made in Australia—Archdeacon Broughton arrived in Sydney—First Circuit Court—" Holey Dollar " ceased as currency.

1830 Bushrangers Act passed in one day—Sturt's overland journey southward—Scarcity of labour; immigration proposed—Dr. Lang's Scotch mechanics introduced—Licensing Act—Road to Hunter River formed—Beef shipped to England, and horses to India—Water Police established in Sydney.

1831 Governor Bourke arrived—Lord Ripon's Land Regulations for Auction Sales—Land Grants abolished—Mitchell's explorations north of Liverpool Plains—First immigrant ship arrived—Government Domain opened—Australian Steam Conveyance Co. formed—Lang's Australian College founded—First steamer, " Sophia Jane," arrived at Sydney—First contract for conveyance of mails—First colonial-built steamer launched—*Sydney Morning Herald* published—Small-pox amongst aborigines at Port Macquarie—Busby imported grape-vine plants from France and Germany.

1832 First appropriation of Public Funds for Immigration—Church and School Corporation Charter revoked—King's School, Parramatta, opened—*Government Gazette* first published—Sydney Theatre opened—Savings Bank of New South Wales instituted—Legal proceedings first reported in Press.

1833 Sydney Mechanics' School of Arts established—Appellate jurisdiction of Privy Council extended to Colony—Census, population 60,794—Public meetings: petition for representative assembly and protest against appropriation of revenue except for local purposes—Australian Steam Navigation Company formed—First Jewish Synagogue established (at Bridge-street, Sydney).

1834 Commercial Banking Company established—First Friendly Society formed—Trouble at Norfolk Island—Settlement at Twofold Bay.

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 "representation" in Parliament—Cunningham killed by aborigines—Road to Illawarra commenced.

1836 Mitchell explored in the South (Australia Felix)—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—South Australia proclaimed a separate Colony—St. Mary's Cathedral, Sydney, dedicated.

1837 Select Committee on Transportation appointed in London—Heavy snowfall near Sydney—Foundation stone of St. Andrew's Cathedral, Sydney, re-laid—Australian Gaslight Company founded—Water supply, tunnel from Botany Swamps, completed—Prepayment of postage by stamped covers—Fortnightly mail, Sydney-Melbourne.

1838 Drought; crops failed—Assignment of Convicts system ceased—Speculation mania—Governor Gipps arrived—Botanic Gardens opened to the public—Reporters allowed in Legislative Council Chambers—Sale of Port Phillip land at Sydney—Australian Club founded—Recruiting for the army commenced.

1839 Squatting Act passed—Count Strzelecki found gold near Hartley—Mr. (Sir) Alfred Stephen, Judge of Supreme Court—Military juries ceased—Church Act established religious equality.

1840 Monetary crisis—Strzelecki's expedition to Western Port—Mt. Kosciusko named—Order-in-Council abolishing transportation of convicts—Land regulations—Revenues appropriated to public works and immigration—Wine industry established—Benjamin Boyd, founder of Boyd Town, Twofold Bay, arrived in Sydney—Northern boundary of Victoria determined; separation from New South Wales urged.

1841 Rev. W. B. Clarke found grains of alluvial gold near Bathurst—First Public (Immigration) Loan—Immigration Committee appointed—New Zealand proclaimed a separate Colony—Sydney lit with gas—Site purchased for first permanent Synagogue—Census, population 116,731—Darlinghurst Gaol opened—First outbreak of scarlatina.

1842 Sydney Municipal Corporation established—Insolvency Law passed—Bank crisis—Crown Land Sales Act—Richmond River discovered—Tobacco first manufactured—Moreton Bay settlement proclaimed—First public statue in Australia (Governor Bourke) unveiled at Sydney.

1843 First Representative Constitution Act; twelve Crown nominees and twenty-four elected members of Legislative Council—Incorporation of Suburban and City Towns—Bank of Australia Lottery—First General Election—Representative Assembly meets—First "boiling down" of sheep—First manufacture of tweed—Financial crisis—Moreton Bay granted Legislative representation.

1844 Exports exceeded imports—First District Court held—Pastoral Association formed—Norfolk Island annexed to Van Diemen's Land (Tasmania)—Leichhardt explored from Moreton Bay to Port Essington—Synagogue opened in Sydney.

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 Chinese immigration—Kennedy's last exploring expedition—Railway Commissioner appointed—National and Denominational School Boards—Carcoar copper-mines discovered—Leichhardt set out on last expedition—Attemptod revival of transportation; Order-in-Council of 1840 revoked.

1849 Exodus of population to Californian gold-fields—Australian Mutual Provident Society formed—Uniform twopenny postage instituted—Contract for conveyance of English mails—Anti-transportation meetings—Last convict ships "Hashemy" and "Randolph" arrived.

1850 First sod of first Australian railway turned 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.

1852 Gundagai floods (77 lives lost)—Gold revenue allocated to Colonial Legislatures —First P. & O. mail steamer ("Chusan") arrived from England—Inauguration and formal opening of Sydney University—Framing of Constitution—First steamer ascended Murray River to Darling Junction.

1853 Australian Joint Stock Bank incorporated—Newcastle-Maitland Railway Company formed—First steamer on the Murray—Sydney City Corporation dissolved—Australian Museum (founded 1836) incorporated—Defence works of Port Jackson commenced—First sewerage works in Sydney—Constitution Bill passed—Loan account commenced—Government House establishment removed from Parramatta to Sydney.

1854 Russian war scare—Volunteer Force enrolled—Fitzroy Dock commenced—University affiliated colleges established.

1855 Railway, Sydney to Parramatta, opened—Governor Denison arrived—Goldfields 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—First registration by Government officers of Births, Deaths, and Marriages—Sydney Observatory established—Pitcairn Islanders placed on Norfolk Island—Norfolk Island transferred to jurisdiction of Governor of New South Wales—Iron pillar letter receivers erected in Sydney—Census, population 252,640.

1857 Floods—Wrecks of "Dunbar" (119 lives lost) and "Catherine Adamson" (21 lives lost) at Sydney Heads—Select Committee on Federation—First gold register issued—Sydney Exchange opened—P. & O. and Royal Mail Company's services inaugurated—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—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 movement commenced—Troops sent from New South Wales to New Zealand (Maori war).

1861 Governor Sir John Young arrived—Lambing Flat gold rush—Anti-Chinese riots at Lambing Flat and Burrangong gold-fields—Sir John Robertson's Land Act; free selection before survey—Constitutional crisis—Restriction of Chinese immigration—Emigration Commissioners, Parkes and Dalley, appointed to visit the United Kingdom—First Tramway (horse-drawn), Pitt-street, Sydney—Census, population 350,860—Sydney and Brisbane connected by telegraph.

1862 Drought—Lachlan (Eugowra) gold escort robbed of £14,000—State aid to religion abolished—Real Property (Torrens) Act—Railway opened to South Creek—Free selection of land first came into operation.

1863 Outlaw Gilbert's robbery, Bathurst and Canowindra "held-up"—Agent-General appointed—Northern Territory separated and annexed to South Australia—Money Order Office established—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 of (Sir) Henry Parkes; Council of Education replaced National and Denominational School Boards—General Post Office, Sydney, 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.

1869 Eskbank Iron Company established—Old Australian Subscription Library converted into Free Public Library—Foundation of Captain Cook's monument laid by Duke of Edinburgh—Belmore Markets opened—Tender for rolling-stock (£60,000) of Australian manufacture accepted by Government—Railway to Goulburn opened.

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.

1872 Governor Sir Hercules Robinson arrived—International Exhibition at Sydney—Death of William Charles Wentworth—Government (Post Office) Savings Banks established—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 mail service inaugurated—Miners' strike, Newcastle—Matrimonial Causes Act—Newspaper Postage Repeal Act and Friendly Societies Act.

1874 Triennial Parliaments Act—Intercolonial Conference—General Post Office opened—Volunteer Land Orders abolished—Department of Mines created.

1875 New Land Act, "Dummying" restricted—Postcards introduced—Sydney Town Hall opened.

1876 Telegraphic cable, Sydney-Wellington (N.Z.), completed—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).

1878 Seamen's strike—Forestry and timber regulations—Technical College instituted in connection with Sydney Mechanics' School of Arts—Free Public Library and Museum opened on Sundays—Formation of Sydney Yacht Squadron—Rail to Wagga—Whooping-cough epidemic—Prince Alfred Hospital opened—Pioneer vessel (s s. "Garonne") of Orient S.N. Co. arrived from London—Jewish Synagogue, Elizabeth-street, Sydney, consecrated.

1879 Governor 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.

1882 Garden Palace destroyed by fire—Forest conservation—Clyde Engineering Works established—Licensing Act came into operation—Metropolitan Cattle Saleyards opened—Salvation Army established.

1883 Silver discovered at Broken Hill—Broken Hill Proprietary Syndicate formed—New South Wales and Victorian railway systems connected—Foundation-stone laid, new Town Hall, Sydney—State system of Technical Education instituted—Destruction of rabbits compulsory—Diamonds found at Bingara—Miners' strike, Newcastle—Intercolonial Federation Conference.

1884 Land legislation restricting sales by auction—Public Watering Places Act—Smelting furnaces, Sunny Corner and Silverton—Land Act giving fixity of tenure to pastoral lessees—Geographical Society of Australia inaugurated—Federation Bill rejected—Australian Naval Station elevated from Commodore to Rear-Admiral's Command.

1885 N.S.W. Military Contingent sent to Soudan—Broken Hill Silver Mines opened—Governor Carrington arrived—Territorial Division of the Colony—Local Land Boards—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.

1887 Bulli mining disaster (83 lives lost)—Metropolitan Board of Water Supply and Sewerage established—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)—Colliers' 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.

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.

1890 Payment of Members of Parliament—Strike at Broken Hill—Maritime and shearers' strikes—Bourke (Darling River) floods—Opening of Sutherland Graving Dock.

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 join 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 Taxes imposed—Freetrade Tariff instituted—Federal Convention at Hobart—Standard Time Act—Crown Lands Act.

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.

1897 Municipalities Act—Artesian Wells Act—Pharmacy Act—Vegetation Diseases Act.

1897-8 Federal Convention Sessions, Adelaide, Sydney, and Melbourne.

1898 First surplus of wheat for export—Proposed Federation Constitution Bill rejected by New South Wales—Sydney and Newcastle connected by telephone.

1899 Earl Beauchamp succeeds Governor Hampden—Advances to settlers instituted—Conciliation and arbitration in industrial disputes—Australasian Federation Enabling Act Referenda; acceptance by New South Wales—Early closing of shops—Boer War; first Contingent sent to South Africa from New South Wales—Electrification of City Tramways commenced—Incorporation of Public Library—Friendly Societies Act.

1900 Governor Beauchamp's departure—Old-age Pensions instituted—Miners' Accident Relief Fund established—Federal Elections—Metropolitan Traffic Act—Inebriates Act—Naval Contingent despatched to China—Commonwealth of Australia Constitution Act received Royal assent—First Federal Ministry formed.

1901 Federation of Australian Colonies—Proclamation of Commonwealth of Australia—Opening of first Federal Parliament—Visit of T.R.H. the Duke and Duchess of Cornwall and York—Industrial Arbitration Act—Sydney Harbour Trust formed—Naval Contingent returned from China—Federal High Court inaugurated—Census, population 1,359,133—Closer Settlement Act—Western Lands Act—Introduction of Pacific Islanders prohibited—Postal, Customs, and Defence Departments transferred to Commonwealth—Interstate Freetrade—Dentists Act—Woolwich Graving (Mort's) Dock completed.

1902 Sir H. H. Rawson as Governor—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.

1903 Referendum favouring reduction of members of Legislative Assembly from 125 to 90—Land Legislation—High Court of Australia constituted—Commercial Causes 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.

1905 Flood on Tumut River—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—Free Public School Education—North Coast Railway authorised—Local Government—Sydney Central Railway Station opened—Liquor Act, with drastic provisions—Federal Elections—Dr. Danysz's experiments in rabbit destruction.

1907 Invalidity and Accident Pensions—Telephone connected, Sydney-Melbourne—Opening of blast furnace for manufacture of iron and steel at Lithgow—Consolidation of Small Schools commenced—Cataract Dam completed—Medical inspection of School Children initiated.

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 School — Manufactures Encouragement Act (Federal)—Crown Lands Amendment Act (Conversions)—Commonwealth Meteorological Bureau established — Departure of "Nimrod" Antarctic Expedition (Lieutenant Shackleton, leader).

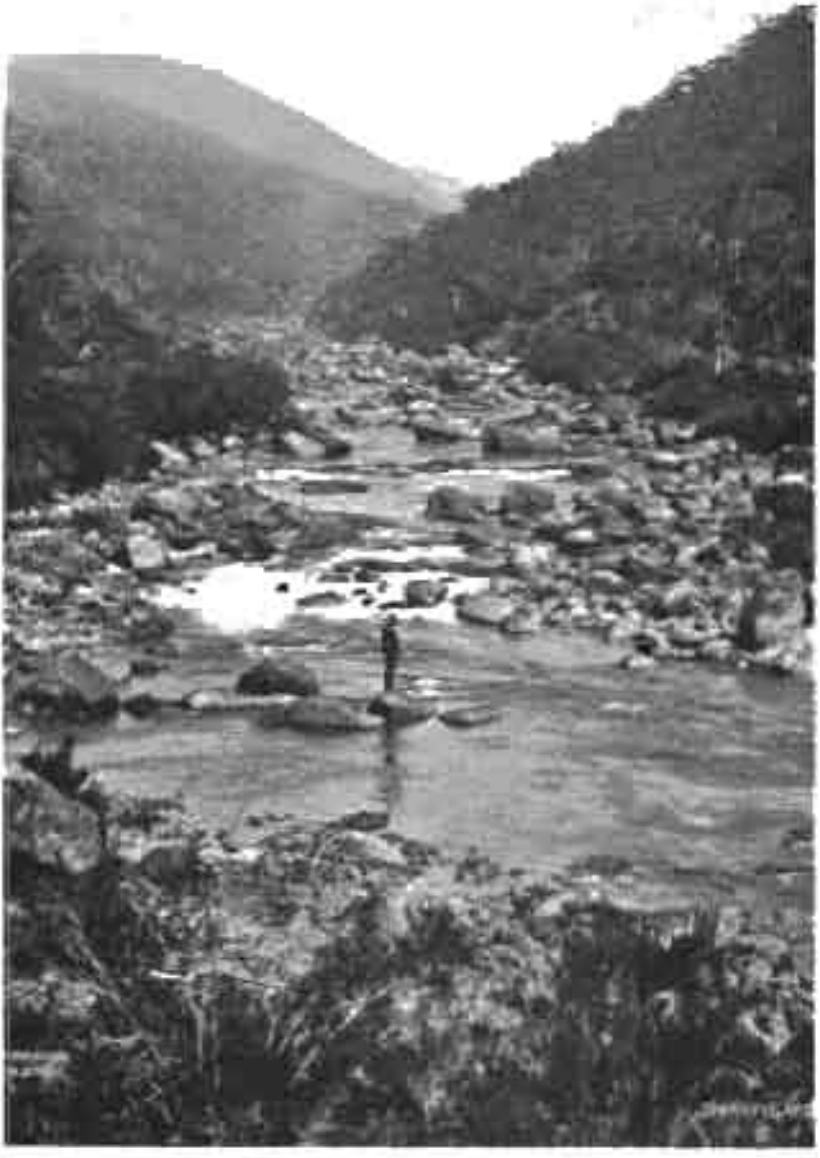
1909 Lord Chelmsford, Governor—Fisher Library (Sydney University) opened—Empire Commerce Congress at Sydney—Old-age Pensions Administration taken over by Commonwealth—Botany Wool-combing Works established—Premiers' Conference on States' finance agreement with Commonwealth Government—Miners' strikes, 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.

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—Toll System applied to Telephones—Australian Penny Postage

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 Act—J. J. Hammond on his bi-plane with Frank Coles, mechanician, flew over Sydney and harbour, circling the Post Office clock, the flight lasting forty minutes—Dreadnought Farm Training Scheme initiated—First Wireless Station of Commonwealth Government erected at Pennant Hills, near Sydney—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—Shortage of Labour Commission—Electorates Distribution Commission—Death of Cardinal Moran—State Brickworks, Quarry, and Timber and Joinery Works established—Australasian Medical Congress at Sydney—First section of North Coast Railway opened—Census, on 2nd April, 1911; population 1,646,734—Evening Continuation Schools opened—Mawson Antarctic Expedition (N.S.W. Subsidy £7,000)—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—International Lawn Tennis; Davis Cup, Sydney.

1912 Interstate Conference of Premiers and Ministers, Melbourne—Return of Amundsen's Antarctic Exploration Expedition, reporting having reached the South Pole—Deaths of Captain Scott and party of explorers on return after reaching the South Pole—Bursary Endowment, Secondary Education — Second visit of Japanese Training vessels to Port Jackson — Resumption of Oceanic Steamship Co.'s Sydney-San Francisco Mail Service—H.M.A.S. Destroyer "Warrego" commissioned—Federal Capital Designs selected—First International Aviation Contest, Sydney—H.M.A.T. 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; Savings Bank Department opened in Sydney—Dacey Garden Suburb planned, and buildings erected by N.S.W. Government—Anti-tuberculosis Dispensary established—New Cable, Sydney-Auckland laid—Meat Industry and Abattoirs Board established—Commonwealth Maternity allowances—Height of buildings in Sydney district limited to 150 feet—Dedication of Ashton Park, Sydney, as new Zoological Gardens.

1913 Imperial Flagship, H.M.S. Drake, departed for England, H.M.S. Cambrian made Flagship—Australian Postage Stamp issue—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 Depôt and Labour Exchange, Glebe, opened—Gas Companies' employees strike at Sydney—Sydney Harbour Ferry employees strike—Centenary celebrations of crossing of Blue Mountains, discovery of Bathurst Plains, and Foundation of Benevolent Society of New South Wales—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—Tweed and Hunter Rivers in flood—Water Conservation and Irrigation Trust established—Federal and State General elections—Nepean Junction-Lapstone Hill Railway deviation opened—First elective Senate, University of Sydney—Chelmsford Institute for Seamen, Newcastle, founded—Sir Gerald Strickland succeeded Governor Chelmsford—Cockatoo Island Dock transferred to Commonwealth Government—Keels laid for three warships, Cruiser "Brisbane," and Destroyers "Derwent" and "Torrens"—General Medical Inspection of Children in State Schools—Royal Commission on Industrial Arbitration—Final official inspection of Garden Island by Naval Commander-in-Chief—Royal Marine detachment disbanded—Garden and Spectacle Islands and King Edward Victualling Yards transferred from British Admiralty control to Commonwealth administration—70,000 acres land 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—S.S. "Ceramic," 18,500 tons, arrived at Sydney—Bulk handling of wheat investigation—Foundation Stone of Commonwealth Offices in London laid by H.M. King George V—Arrival at Sydney (4th October, 1913) of Australian Commonwealth Fleet of war vessels; H.M.A.S. "Australia," Flagship; H.M.A.S. "Sydney," H.M.A.S. "Melbourne," H.M.A.S. "Encounter," H.M.A.S. "Parramatta." H.M.A.S. "Warrego," H.M.A.S. "Yarra,"; also in harbour, H.M.A.S. "Pioneer," H.M.A.S. "Penguin," H.M.A. Training S. "Tingira"—Presentation by citizens of Sydney to H.M.A.S. "Sydney" of shield and bell—Departure of Admiral King Hall—Cost of Living Inquiry—Report Royal Commission on Uniform Standards for Food and Drugs—Appointment of Members of Interstate Commission—Design accepted for North Sydney Bridge—Visit of Panama Exposition Commissioners—Celebration of 125th anniversary of foundation of Parramatta—State Parliament General Elections.



Jenolan River at Jenolan, N.S.W.

GEOGRAPHY AND CLIMATE.

GEOGRAPHY.

Area of State of New South Wales.

The area comprised within the limits of New South Wales, exclusive of the area of Lord Howe Island, is estimated at 310,367 square miles, or 198,634,880 acres, being a little over two and a half times that of Great Britain and Ireland, and representing rather more than one-tenth of the total area of the Commonwealth of Australia. Excluding the surface covered by rivers and lakes, the area is 195,669,000 acres, or about 305,733 square miles. 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 a further area of land at Jervis Bay has been granted to, and an additional area acquired by, the Federal Government for naval purposes. The dimensions of these areas have not yet been determined.

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

Lord Howe Island, the dependency of New South Wales, is situated some 300 miles east of Port Macquarie, and 436 miles from Sydney, in latitude 31° 33′ 4″ south; longitude 159° 4′ 26″ east. The island 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.

Boundaries.

The territory of the State 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. Bordered on the north, west, and south respectively by the States of Queensland, South Australia, and Victoria, New South Wales, eastward, faces the South Pacific Ocean, with a total length of 700 miles of coast line, representing 1 mile of coast to 443 square miles of hinterland, as against an average of 1 in 261 for the continent of Australia. New South Wales has, of all the Australian States, excepting the Northern Territory, the greatest proportion of territory to coast line.

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

till finally, by 1863, the various boundaries were definitely and permanently fixed, leaving to New South Wales only the mainland area of 310,367 square miles, on the middle east coast of the Continent of Australia, in addition to the dependency of Lord Howe Island.

The Coast Line.

From north to south, the more important indentations, headlands and coastal towns of New South Wales are shown in order in the following table. On the most prominent headlands lighthouses have been erected. Details concerning lights and lighthouses are given in part "Shipping" of this Year Book.

Indentations.	Headlands.	Coastal Towns.
	Point Danger.	
Tweed River	Tweed Heads.	
	Fingal Head (Lighthouse).	
		Murwillumbah.
	Sutherland Point.	
	Norrie's Head.	
	Hastings Point.	
Byron Bay		Byron Bay.
	Cape Byron (Lighthouse).	
	Broken Head.	
	Lennox Head.	
	Sand Point.	
	Richmond Heads, North Head.	
Richmond River		Ballina.
	South Head (Lighthouse).	
	Evan's Head.	
	Wooded Bluff.	
	Clarence Heads, North Head.	
Shoal Bay		Iluka.
(Clarence R.)	South Head (Lighthouse).	
		Yamba.
	Angourie Point.	
	Buchanan's Head.	
	Cakora Point.	
	Sandon Bluffs.	
	Tree Point.	
	Bare Point.	
		Woolgoolga.
	Green Bluff.	
	Bare Bluff.	
	Rocky Bluff.	
	White Bluff.	
	Flat Rock.	
Charlesworth Bay		Coff's Harbour, Bellingen.
Coff's Harbour	Wenonah Head.	
	North Head.	
		Nambucca, Bowraville, Macksville.
	Scott's Head.	
	Grassy Head.	
Trial Bay		Arakoon.
(Macleay R.)	Monument Point (Lighthouse).	
	Smoky Cape (Lighthouse).	
	Korogoro Point.	Kempsey.
	Crescent Head.	
	Point Plomer.	
Port Macquarie		Port Macquarie.
(Hastings R.)	Tacking Point (Lighthouse).	
	Grant's Head.	
Camden Haven		Camden Haven.
	Diamond or Indian Head.	

Indentations.	Headlands.	Coastal Towns.
Crowdy Bay		
	Crowdy Head (Lighthouse).	
Harrington Inlet		Harrington.
(Manning R.)	Wallaby Point.	
Farquhar Inlet	Halliday's Point.	
Wallis Lake		Tuncurry, Forster.
(Forster Harbour).	Cape Hawke (Lighthouse).	
	Charlotte Head.	
	Boomerang Point.	
Myall Lakes		
	Sugarloaf or Seal Rocks Point—	
	Treachery Head. (Lighthouse).	
	Dark Point.	
	Yacaaba Head.	
Port Stephen's		Teramby.
(Karuah R.)	Toomeree Head.	
	Stephen's Point (Lighthouse).	
	Fingal Head.	
Anna Bay		
	Morna Point.	
Port Hunter		Stockton, Newcastle.
(Newcastle Harb.)	Nobby's Head (Lighthouse).	
	Little Red Head.	
	Red Head.	
Lake Macquarie	Wybung Head.	Belmont, Swansea.
Catherine Hill Bay	Bungaree Norah Head (Lighthouse)	
Cabbage Tree Harbour	Soldier's Point.	
Tuggerah Lakes	Wyrabalong.	
Tarragal Haven	Kurrawyba.	
	Bulbararing.	
	Mourawaring.	
	Bombi.	
	Box (Hawke) Head.	
Broken Bay		Gosford.
(Hawkesbury R.)	Barranjoey (Lighthouse).	
	Little Head.	
	South Head.	
	Hole in the Wall.	
	Bungan Head.	
	Bulgolo Head.	Newport.
	Turimetta Head.	Narrabeen.
	Long Reef.	
	Deewhy Head.	
Curl Curl		
	Curl Curl Head.	Manly.
	Blue Fish.	
	Port Jackson Heads—	
	North Head.	
Port Jackson		
	South Head—Inner (Lighthouse).	Sydney.
	Outer (Lighthouse).	
Bondi Bay	Ben Buckler.	
Coogee Bay		
Maroubra Bay		
Long Bay		
Little Bay		
	Botany Heads—Cape Banks.	La Perouse.
Botany Bay	Cape Solander.	Kurnell.
Port Hacking	Big Jibbon Point.	
Marley Beach	Bulgo.	Cronulla.
Wattamolla	Coal Cliff.	Clifton.
	Long Point.	Thirroul.
	Bulli.	Bulli.
	Bellambi Point.	Bellambi.
	Towradgi Point.	
Wollongong Cove		Wollongong.

Indentations.	Headlands.	Coastal Towns.
Port Kembla	Red Point.	Dapto, Albion Park.
	Barrack Point.	Shell Harbour.
Lake Illawarra	Bass Point.	
Kiama Harbour		Kiama.
Geringong Harbour	Red Cliff.	Geringong.
Crookhaven River	Black Head.	
	Shoalhaven Heads.	Nowra.
	Greenwell Point (Lighthouse).	Berry.
	Kinghorn Head.	
Crookhaven Bight	Beecroft Head.	
	Crocodile Head.	
	Point Perpendicular (Lighthouse).	
	Governor Head—Cape St. George	
Jervis Bay	St. George Head.	Huskisson.
Wreck Bay		
Sussex Inlet		
St. George's Basin		
	Red Point.	
Ulladulla Harbour	Warden Head (Lighthouse).	Ulladulla.
Burrill Inlet	Lagoon Head.	
	Termeil Point.	Termeil.
	O'Hara Head.	
Durass Water	Point Upright.	
	Wasp Head.	
	Clyde Heads—North Head.	
	South Head.	
Bateman Bay	Burrewarra Point.	Bateman, Nelligen.
	Moruya Heads.	Broulee, Moruya.
	Toragy Point.	
Moruya River	Yowaga Point.	
	Congo Point.	
	Mullinburra Point.	
Coila Lake	Binge Binge Point.	Coila.
Tuross River	Point Marka.	Bodalla.
Lake Birroul.		
Lake Mummuga	Kianga Point.	
Wagonga River	Waramba Rocks.	Wagonga, Noorooma.
	Nugget or Bogolo Head.	
Corunna Lake	Boat Harbour Point.	Corunna.
	Cape Dromedary.	
Wallaga Lake	Murruna Point.	Tilba, Cobargo.
	Baragoot Rocks.	Bermagui.
	Baragoot Point.	
	Baragga Point.	
	Goalen Head.	
	Bunga Head.	
	Mimosa Rocks.	
	Bengurunu Point.	
Bithry Inlet		
Tanga Lagoon	Baronda Head.	
	Wajurda Point.	
Mogareka Inlet	Tathra Head.	Bega, Tathra.
Wallagoot Lake	Kangarutha Point.	
	Turingal Rock.	
	Tura Head.	Wolumla.
Pambula Inlet	Merrimbula Point.	
Merrimbula Lake	Toallo (Haycock) Point.	Merrimbula, Pambula.
	Quoraburagun.	
	Worango or North Head.	
	Lookout Point (Lighthouse).	
Twofold Bay	Red Point.	Eden, Kiah, Boydtown.
	Mowarry Point.	
Bittangabee Creek	Green Cape (Lighthouse).	
	Black Head.	
Disaster Bay	Nadgee Point.	
	Cape Howe.	

In addition to the lights indicated, there are lighthouses at South Solitary Island, Coff's Harbour Jetty, Nelson Head, Wollongong, Kiama, and Montague Island, and there are leading and harbour lights at the ports noted in the table of lighthouses shown in chapter "Shipping" of this volume.

Harbours and Anchorages.

The principal shipping places along the coast of New South Wales, which has an approximate length of 700 miles, are classified as natural, artificial or bar harbours, or as anchorages. These shipping places are shown in order from the northernmost point of New South Wales, southwards, with their distances north and south of Sydney; and for the bar harbours, the average depths at low water ordinary spring tides :—

Distance from Sydney.	Anchorages.	Harbours.			Average depths, Low Water Ordinary Spring Tides.	
		Bar.	Artificial.	Natural.	On Bar.	On Inner Crossing.
miles.		North of Sydney.			ft. in.	ft. in.
374	.....	Tweed River ...	.....	.....	6 8	5 10
345	Byron Bay	.....	.....	.....	.....	.....
331	.....	Richmond River	.....	.....	11 7	9 8
296	.....	Clarence River...	.....	.....	11 1	12 0
254	Woolgoolga	.....	.....	.....	.....	.....
240	Coff's Harbour...	.....	.....	.....	.....	.....
230	.....	Bellinger River...	.....	.....	5 0	5 1
223	.....	Nambucca River	.....	.....	5 4	5 5
216	.....	Macleay River...	.....	.....	7 8	8 4
209	Trial Bay	.....	.....	.....	.....	.....
174	.....	Hastings River (Port Macquarie)	.....	.....	7 1	5 11
159	.....	Camden Haven...	.....	.....	5 1	6 1
147	Crowdy Bay.....	.....	.....	.....	.....	.....
144	.....	Manning River...	.....	.....	8 0	7 0
123	.....	Port Forster ...	.....	.....	4 0	6 1
109	Sugarloaf Bay (Seal Rocks).	.....	.....	.....	.....	.....
83	Fly Road ...	.....	.....	Port Stephens ...	.....	.....
62	.....	Port Hunter.....	.....	.....	23 6	.....
49	.....	Lake Macquarie.	.....	.....	4 6	4 6
19	.....	.....	.....	Broken Bay	.....	.....
—	.....	.....	.....	Port Jackson ...	.....	.....
		South of Sydney.				
12	Botany Bay.....	.....	.....	.....	.....	.....
44	.....	.....	Wollongong	.....	.....	.....
48	Port Kembla ...	.....	.....	.....	.....	.....
53	.....	.....	Shellharbour ...	.....	.....	.....
59	.....	.....	Kiama	.....	.....	.....
74	.....	Crookhaven	.....	.....	12 1	4 8
82	.....	.....	.....	Jervis Bay	.....	.....
108	.....	.....	Ulladulla	.....	.....	.....
134	.....	Bateman Bay ...	.....	.....	5 7	.....
141	.....	Moruya River ...	.....	.....	9 1	5 4
	.....	Wagonga Inlet...	.....	.....	6 8	7 0
163	Bermagui Bay ...	.....	.....	.....	.....	.....
186	Tathra Bay	.....	.....	.....	.....	.....
197	.....	Merimbula.	.....	.....	.....	.....
208	Twofold Bay.....	.....	.....	.....	.....	.....

The anchorages are more or less safe during southerly or south-easterly weather for vessels of moderate draught, say 10–12 feet, and at most of them the natural facilities have been improved considerably, Ocean jetties for general use have been erected at six anchorages, three to the north and three to the south of Sydney; these jetties have at their outer ends depths of water at low tide ranging from 16 to 22 feet, viz. :—

North of Sydney.	ft.	South of Sydney.	ft.
Byron Bay	17	Bermagui Bay	16
Woolgoolga	16	Tathra Bay	22
Coff's Harbour	19	Twofold Bay	18

Practically all the shipping traffic at these jetties is to and from Sydney. At Port Kembla the natural anchorage is being converted into a closed

harbour, with an area of 334 acres; an eastern breakwater (length 2,750 feet) and a northern will give a still-water harbour with 205 acres of water of a depth of 24 feet, or 165 acres at 30 feet and over.

At each of the seventeen bar harbours, with the exception of Wagonga Inlet and Merimbula, northern and southern breakwaters and training walls have been constructed. Excluding Lake Macquarie, some 60 miles of breakwater and training walls are planned for the remaining fourteen river entrances, of which length two-thirds are completed. Bateman Bay is the estuary of the Clyde River.

The four artificial harbours, which are all to the south of Sydney, are of comparatively small area and depth, and are available for entry in fair weather. At Wollongong and Kiama the harbours have been formed by excavations and the building of retaining walls, the shipping basins having average depths of 12 feet and 15 feet respectively. At Shellharbour, two breakwaters protect a small harbour, and at Ulladulla, a masonry pier provides shelter for vessels drawing up to 8 feet of water.

The four natural harbours provide shelter and anchorage for vessels of 30-35 feet draught, but with the single exception of Port Jackson they are comparatively little used, and their natural facilities remain practically unimproved.

Port Jackson.

The entrance to Port Jackson is a mile and three-quarters in breadth, between Outer North and South Heads; the navigable waterway at the entrance is three-quarters of a mile wide, with a depth in mid-channel of 102 feet, the minimum depth being 80 feet.

Macquarie Light is on the outer South Head, and Hornby Light on the inner South Head. The former is a revolving light, erected on a cliff about 300 feet above sea level, and visible at a distance of 26 miles; the Hornby Light (fixed) is visible at 15 miles. Numerous leading lights and buoys have been established to facilitate navigation of the channels, of which there are two—eastern and western—formed by a shoal, the "Sow and Pigs," situated in the fairway about midway between Inner South Head and George's Head. Each channel is about half-a-mile long, with a minimum width of 700 feet. The depth of the eastern channel, used by deep-sea vessels, is 40 feet at low water, and the channel is well protected by South Head. The western channel is being dredged, so that an inward and an outward channel may be available for all vessels, with minimum depths of 40 feet at low water. As the bottom of both eastern and western channels is sand, no difficulty will be experienced in providing still deeper water when required.

After passing through the channels, vessels can navigate in 40 to 50 feet of water for a distance of 4 miles to the main wharfage area. The total water-surface of Port Jackson is 14,284 acres, of which some 3,000 acres have a water-depth of 35 feet and over, ranging up to 160 feet. Exclusive of fairways and bays, 1,000 acres are available and suitable for anchoring vessels of the deepest draught. The length of foreshores is 188 miles. The rise and fall of the tide is from 3 to 6 feet.

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

Quay, was made a fortification, but is now used as a lighthouse and for the firing of salute and time guns. Glebe, Darling, and Gore were at one time islands, but are now connected to the mainland.

At Sydney, as the terminal port, shipping companies carry out provisioning, coaling, docking, and repair work.

Port Stephens.

Port Stephens is the estuary of the Karuah River; it is a natural harbour, 83 miles north of Sydney, as yet practically unimproved, and has a depth of the entrance of 30 feet. The width between the headlands is three-quarters, the navigable width being a quarter of a mile. Salamander Bay, 5 miles from the entrance, offers sheltered deep water sufficient for harbour purposes, and shipping facilities could be provided at low cost. Port Stephens offers an economical and easily-equipped port; its position admits of connections with the trunk railways, the total cost being estimated at £3,194,000, of which £330,000 is for shipping facilities at Salamander Bay, with the dredging and lighting of the port, and the balance for railway connections for decentralisation purposes, with the northern and western parts of the State.

Broken Bay.

Broken Bay is the mouth of the Hawkesbury River; it has three large branches—Brisbane Water on the north, forming a series of bays, of which the Broadwater enters the township of Gosford, is the tourist centre; Hawkesbury mouth is the central, and Pittwater the southern arm of Broken Bay; Lion Island (Mount Eliot) lies within the entrance to the bay.

Jervis Bay.

Jervis Bay, 82 miles south of Sydney, was selected by the Decentralisation Commission as suitable for an oversea port, as possessing natural advantages, and in comparison with other southern ports the best facilities for railway connection with the interior. An area of land on the south side of the bay has been ceded to the Commonwealth Government for use as a Federal port, and alternative schemes have been submitted for the construction of a harbour at Montagu Road on the north side. The entrance to Jervis Bay is 2 miles in width, and has a depth ranging from 90 to 120 feet. The area of the bay at the 24-feet contour is 38 square miles. At Darling Road, on the south side, an area of 789 acres can be obtained at the 30-feet contour, while at Montagu Road, at the same level, the area available would be 565 acres. The Commonwealth Government has sovereign rights over Bowen Island, which lies within the bay.

Port Hunter.

Newcastle Harbour (Port Hunter), at the mouth of the Hunter River, has an entrance 1,200 feet wide. Nobbys, once an island, is connected with the mainland by a breakwater half a mile in length, marks the entrance to the harbour, and carries a fixed white light, visible 18 miles. Red and green lights are placed on the breakwaters. Northern and southern breakwaters, and a curve guide-wall on the southern side have been constructed; the northern breakwater, originally carried to 2,980 feet in 1907, was in 1911 extended to 3,406 feet with a view of reducing the quantity of sand which tends to form a spit at the entrance, necessitating continuous dredging. The depth of the channel at low tide is 23½ feet. Newcastle is primarily a coal-shipping port; its importance is evidenced by the figures given as to coal exports in chapter "Mining Industry," of this Year Book. Wharves have been constructed with modern shipping appliances for large oversea vessels.

In connection with proposals for the extension of wharfage accommodation in Port Hunter, the Parliamentary Standing Committee on Public Works, in 1909, made exhaustive inquiries and investigations, as the result of which the construction of wharfage on the western side of the Basin was urged.

Islands.

The Islands along the coast of New South Wales from north to south are shown in the following list :—

Islands.	Locality.	Latitude South.	Longitude East.	Area.
		° ′	° ′	acres.
Cook	Fingal Head	28 11	153 36	10
Juan and Julia	Cape Byron	28 36	153 39	1½
Solitary—				
North Rock	Wolli Wooli River	29 55	153 24	52
North-west Solitary ...	Redbank	30 0	153 17	15
South-west Solitary ...	Bare Bluff	30 9	153 14	16
South Solitary	Coff's Harbour	30 11	153 17	38
Split Solitary	,, ...	30 13	153 11	6
Coff's—				
North (Mutton Bird) ...	,, ...	30 17	153 10	31
South	,, ...	30 18	153 9	31
Green Island	Smoky Cape	.....	.....	...
Fish Rock	,, ...	.....	.....	...
Black Rock	,, ...	.....	.....	...
Mermaid Reef	Crowdy Bay	.....	.....	...
Seal Rocks	Sugarloaf Point	32 26	152 33	...
Broughton 1	Port Stephens	32 37	152 20	1,145
,, 2	,, ...	.....	.....	60
Cabbage Tree	Yacaaba Head	32 41	152 15	68
Little	,, ...	32 42	152 15	3
Boondelbah	Port Stephens	32 42	152 15	34
Point Stephens	,, ...	32 45	152 13	270
Moon	Lake Macquarie	33 5	151 41	6
Flat	Catherine Hill Bay	33 10	151 39	10
Bird	Norah Head	33 13	151 37	30
Five Islands—				
Tom Thumb 1	Tom Thumb Lagoon	34 27	150 57	6¼
,, 2	,, ,, ...	34 28	150 58	6½
Big	Red Point	34 29	150 57	45¾
Small 1	,, ...	34 29	150 56	1¼
,, 2	,, ...	34 29	150 57	5¾
Windang	Lake Illawarra...	34 32	150 54	5
Bowen	Jervis Bay	35 7	150 47	132
Green	Cunjurong Lake	35 16	150 32	22
Crampton	Toubouree Lake	35 26	150 26	10
Stokes	Termeil Point	35 27	150 25	6
Brush	Murramarang Point	35 32	150 26	184
Belowla...	O'Hara Head	35 33	150 24	20
O'Hara	,, ...	35 35	150 23	15
Dawson 1	,, ...	35 35	150 22	3
,, 2	,, ...	35 35	150 22	1
Grasshopper	Point Upright	35 38	150 21	3
Wasp	,, ...	35 40	150 20	2
Flat Rock	Bateman's Bay	35 41	150 19	1½
Tollgate 1	,, ...	35 45	150 16	12
,, 2	,, ...	35 45	150 16	7
Broulee	Moruya	35 51	150 12	85
Montague	Mount Dromedary	36 15	150 14	285
Bullara	Eden	37 0	149 57	25

The majority of these islands, as is evident from their areas, are too small to be of much value. For the most part they are of granitic, schistic, basaltic, porphyritic, or doleritic formation. They have meagre vegetation, and practically no timber.

South Solitary Island carries one of the most powerful lights along the coast.

The Five Islands Group shelter Port Kembla from southerly gales.

Broughton Island, with a maximum height of 286 feet, is of sandstone formation, and is covered with low scrub and grass. It is a centre for lobster and other fishing, and offers a good landing. Point Stephens and Montague Islands also carry lighthouses. At Montague Island, also, there is a Government wharf, and the granite on the island supplied material for the lighthouse structure, as well as for buildings in Sydney, notably the granite columns of the General Post Office.

Lord Howe Island, the dependency of New South Wales, as before stated, is situated some 300 miles east of Port Macquarie. It was discovered in 1788 by Lieutenant Ball. The island, which is a tourist resort, is 7 miles in length, by a width ranging from half-a-mile to $1\frac{3}{4}$ miles, having an area of 5 square miles approximately, or 3,220 acres, of which only some 300 acres are suitable for cultivation. The highest point is Mt. Gower, 2,840 feet. The soil is rich, the island being of volcanic origin, and vegetation is luxuriant; the flora are varied, but palms and banyans are characteristic; the climate is mild and equable, and the rainfall abundant. In December, 1912, the population numbered 107. No land has been alienated, the residents living rent free on sufferance. Sole export of the island is the seed of the Kentia Palm

Norfolk Island is a Crown Colony, under the administration of the Governor of New South Wales. The island, which was discovered by Captain James Cook in 1774, lies along latitude 29° 3′ 45″ S., longitude 167° 58′ 6″ E., 930 miles from Sydney; it is about 5 miles long by 3 miles wide, the area being 8,528 acres, the circumference 20 miles. The climate is equable and the rainfall averages about 43 inches per annum. The census population (1911) was 985 persons. Education is free and compulsory.

The islands in Port Jackson, nine in number, are referred to in the description of the Port.

Lion Island (Mount Eliot) lies within the entrance to Broken Bay, equidistant from the northern and southern headlands; and Bowen Island lies in the entrance to Jervis Bay.

Woodford, Chatsworth, Harwood, and Palmer Islands are in the estuary of the Clarence River, and Mitchell, Oxley, Jones, and Dumaresq Islands constitute a delta formation at the mouth of the Manning River.

Ash, Dempsey, Mosquito, Spectacle, and Bullock Islands divide the Hunter River into two channels, a few miles above the river mouth.

The Surface.

The surface of New South Wales consists of three distinct natural divisions which with their areas are as follow :—

	Acres.
Coast	22,355,401
Tablelands and western slopes	50,083,127
Plains, including Western Land Division	126,196,352
Total	198,634,880

The Coastal strip is undulating and well watered; it ranges from 30 to 150 miles in width, the Hunter-Goulburn Valley being the widest portion, and is backed by the Great Dividing Range. The soil is for the most part fertile, rivers are numerous, and, on account of the proximity of the mountain ranges to the coast, short and rapid, with an average fall of some 70 feet per mile.

The tablelands, properly so called, cover 25,831,246 acres. The northern tableland commences in Queensland, has an average height of 2,500 feet, and terminates on the northern side of the Peel River Valley. The southern tableland extends from the Victorian border, and slopes gradually to the Cudgegong 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. The eastern front of the tablelands is rugged, but the western slopes which contain 24,251,881 acres, are long and merge gradually into the plains, forming a transition stage between the agricultural districts of the tablelands and the pastoral settlements of the Plains.

The plains extend over the interior of New South Wales from the base of the tablelands to the western boundary of the State; they are for the most part untimbered, and practically the only breaks in their contour are the Grey and Barrier Ranges, which are respectively gold and silver mining centres. The plains, so called, cover 45,827,854 acres, and the western division 80,368,498 acres.

River Systems.

The Great Dividing Range constitutes the main watershed for the rainfall of New South Wales, marking the country off into a steep eastern slope and a more gentle western slope. In the absence of mountain ranges above the snow-line, the rivers are dependent wholly on rainfall for supplies, the only exception being the Murray and its tributaries, the volume of which is increased in spring and early summer by the melting of snow on the higher slopes of Kosciusko Plateau. Consequently the volume of the rivers varies with the season, being greatest on the eastern slope in winter.

Coastal Rivers.

The coastal rivers are distinguished by considerable falls, limited navigable distances, and frequently bar-bound entrances; they have more uniform volume than the western rivers.

The following statement shows the rivers, their lengths, and chief tributaries, of which those on the left bank of the river are marked L; tributaries not so marked are on the right bank:—

River.	Approximate Length.	Chief Tributaries.	Approximate Length.
	miles.		miles.
Tweed	40		
Brunswick ...	35		
Richmond	160		
Clarence	190	Orara	80
		Nymboida	110
		Mann (L)	90
		Timbara	95
Bellinger	60		
Nambucca ...	..		
Macleay	160	Apsley	90
		Chandler (L)	55

River.	Approximate Length.	Chief Tributaries.	Approximate Length.
	miles.		
Hastings	110	Maria (L)	30
		Ellenborough	30
Manning	150	Dingo Creek (L) ...	40
		Barrington (L) ...	75
		Nowendoc (L) ...	65
		Barnard (L)	90
Wollomba	45		
Myall	30		
Karuah	50		
Hunter	340	Williams (L)	100
		Paterson (L)	100
		Goulburn	140
		Wybong Creek (L) ...	50
		Krui River (L) ...	50
		Dart Brook	40
		Isis	70
Hawkesbury ...	335	Colo (L)	60
		Capertee	60
		Nepean	45
		Nattai	35
		Cox's	80
Georges	50		
Shoalhaven ...	220	Mongarlowe	40
Crookhaven ...	...		
Clyde	80		
Tuross	70		
Bega (Bemboka) ...	55	Brogo (L)	35
Towamba	50		
Wallagaraugh ...	30		

The Tweed River drains the north-east corner of the State; the north and middle arms rise in the Macpherson Range; the south arm rises near Mount Burrell in a low range, which is the watershed between the Richmond and the Tweed Rivers.

The Richmond River has three arms—main, north, and south. The main arm rises in Mount Lindsay in the Macpherson Range; it is navigable to Lismore, 65 miles from the sea. The Clarence River also rises in the Macpherson Range. The area of its basin is approximately 8,000 square miles. The head of navigation is Copmanhurst, 67 miles from Shoal Bay; and ocean-going steamers, drawing up to 11 feet of water, can proceed as far as Grafton, 45 miles from the Bay.

The Bellinger and Nambucca have their sources in the North Coast Range. The latter river is navigable for vessels of light draught to Bowraville, 30 miles from the sea.

The drainage area of the Macleay River is 460 square miles, and the head of navigation is Green Hills, 30 miles from the sea.

The Hastings River rises in the Hastings Range, and the Manning River in the Mount Royal Range. The latter river has two outlets, Harrington and Farquhar Inlets, but Harrington Inlet is the safer and less obstructed; the river is navigable for vessels of 7 feet draught to Wingham, 30 miles from the sea; the basin covers 3,000 square miles.

The River Hunter is the largest of the coastal rivers of the State, and drains some 11,000 square miles of territory; this river, and the River Hawkesbury, attain their considerable lengths by exceedingly winding courses. The Hunter River rises in the Mount Royal Range, close to the source of the Manning River. It is navigable for ocean steamers to Morpeth,

35 miles, and for smaller craft for 20 miles up both the Williams and the Paterson. The water supply for the Hunter District is drawn from the Hunter River.

The Hawkesbury River has its source as the Wollondilly River in the Cullarin Range at Mount McAlister, and its drainage area is 8,000 square miles. The estuary forms a fine harbour in Brisbane Water and Pittwater, and the river is navigable for some 70 miles from the sea to Sackville Reach. The water supply of the Metropolis and County Cumberland is drawn from the Upper Nepean, a tributary of the Hawkesbury River.

George's River rises in the Illawarra Range, and is navigable for small craft to Liverpool.

The Shoalhaven River rises in a spur of the Gourock Range. It is connected with the Crookhaven River by a canal which is being widened by continuous erosion, navigation being restricted by sand-bars to small steamers, which trade to Greenwell Point. The Clyde River rises in Pigeon House Mountain and discharges in Bateman Bay.

Inland Rivers.

New South Wales has within its boundaries considerable lengths of the rivers of the Central Australian Plain. The River Murray has a total length of 2,310 miles, of which 1,200 miles form the boundary between New South Wales and Victoria.

In 1855, by an Imperial Statute, it was enacted that the whole water-course of the Murray, from its source to the eastern boundary of South Australia, shall be within the territory of New South Wales. The tributaries are as follow :—

	Miles.
Darling Anabranch	320
Darling River	1,760
Talyawalka Anabranch (L)	260
Warrego River (N.S.W. portion).	130
Irrara Creek	60
Culgoa River (N.S.W. portion)	130
Birrie River (L) ...	110
Bogan River (L)	370
Duck Creek	70
Gunningbar Creek ...	70
Bulbodney Creek (L) ...	60
Bokhara River	160
Marra Creek (L)	180
Crooked Creek (L) ...	100
Macquarie River (L) ...	590
Castlereagh River ...	340
Nedgera Creek (L)	80
Mowlma Creek (L)	50
Marthaguy Creek	200
Merri Merri Creek.	90
The Big Warrambool River	100

Darling River—*contd.*—	Miles.
Namoi River (L)	430
Pian Creek	120
Baradine Creek (L) ...	110
Dubbo Creek (L)	50
Peel River (L)	50
Thalaba Creek (L)	90
Gwydir (Meei) River (L) ...	350
Mooni Creek...	110
Boomi River (L)	110
Gil Gil Creek (L)	130
Whalan Creek (L)	110
Croppa Creek (L) ...	70
Macintyre River (L) ...	180
Severn River...	120
Kyalite or Edward River (L) ...	280
Wakool River	240
Yarrien Creek	100
Niemur River	90
Merran Creek (L) ...	60
Moulamein (Billabong Creek)	400
Yanko Creek	190
Tuppal Creek	60
Swampy Plain River	40

The Murray-Darling basin covers 414,253 square miles, of which 230,000 square miles are in New South Wales, and 105,000 in Queensland, the balance being in Victoria.

The River Darling joins the River Murray near the township of Wentworth, 150 miles from the South Australian border. The part of the Warrego within New South Wales joins with the Darling, 950 miles from Murray Junction, the Culgoa joins at 1,070 miles, the Bogan at 1,075 miles, the Macquarie at 1,260 miles, the Namoi at 1,360 miles, and the Gwydir at 1,460 miles.

The Darling is navigable during freshets to Walgett, 1,910 miles from the sea. To make the river more serviceable commercially, proposals have been made for providing locks and weirs. At Bourke Hill a lock has been placed as a test, and on the Macquarie several weirs have been placed.

The Narran and Paroo Rivers, which flow southwards from Queensland, and join the River Darling, have respectively 100 and 103 miles of their lengths within New South Wales.

The Murrumbidgee River joins the River Murray 430 miles from the South Australian border, and has an approximate length of 1,050 miles. Following are its tributaries :—

	Miles.		Miles.
Lachlan River	850	Bullenbung Creek (L)	40
Marrowie Creek	100	Houlaghans Creek	50
Willandra Billabong Creek...	250	Yaven Yaven Creek (L) ...	40
Euglo Creek (L)	120	Billabong Creek	35
Goobang Creek	140	Adelong Creek (L.)	35
Mandagery Creek	80	Tumut River (L.)	90
Boorowa River (L) ...	80	Goodradigbee River (L)... ...	60
Abercrombie River	110	Molonglo River	90
Crookwell River	35	Umaralla River	90
Old Man Creek (L)	40		

The Snowy River, the upper portion of which is known as the Eucumbene River, has a length of 170 out of a total length of 265 miles within New South Wales, with tributaries as follows :—

	Miles.		Miles
Numbla Creek	30	Bobundara Creek (L)	35
Delegate River (L)	60	Wullwye Creek	30
McLaughlin River (L)	60		

Floods.

The fall of the eastern coastal rivers being considerable, they are liable to floods in periods of heavy and sudden rainfall in the low-lying parts of their basins. Such floods, while causing destruction of property and even of life, cover the low-lying lands with a fertile silt, and help to clear the river entrances of sand-bars and shoals. In 1893 a disastrous flood occurred in the Hunter Valley. In 1913 the Hunter and the Tweed Rivers both were in flood, but the resultant destruction was not serious.

The western rivers derive most of their volume from monsoonal rains, the Dividing Range generally forming a barrier to the easterly winds. The fall of the western rivers being slight, the plain country admits of flood waters extending widely though not deeply.

The question of the conservation and utilisation of stream-flow is of considerable importance in the development of New South Wales, and is treated in detail subsequently in connection with the rural industries.

Lakes.

In the three geographical divisions of New South Wales, the lakes are quite distinctive.

On the coast the lakes or lagoons are generally due to the formation of bars and banks of river silt and the joint action of tides and prevailing winds.

On the highlands in the South are the Kosciusko lakes, due to the formation of barriers of moraine material.

In the Central and Western areas are some lakes, formed by the filling of local depressions, and other shallow lakes, along the courses of rivers, particularly the Murray and the Darling, formed by the building up of flood barriers on the plains.

Only three lakes of any consequence are traced to distinct geological causes, viz.: Lakes George and Bathurst and Guyra (Mother of Ducks) Lagoon.

The following list shows the lakes and lagoons of the coastal district, lakes on the highlands, and the lakes and depressions of the central and western areas.

Lake.	Locality.	Area.	Lake.	Locality.	Area.
		COASTAL.			
		Acres.			Acres.
Baragoot	Bermagui	100	Myall	Port Stephens ..	15,300
Birroul	Nooroonna	500	Nangudga	Nooroonna	200
Black	Bibbenluke	140	Nargal	,, ...	45
Bondi	Tathra	67	Narrabeen	Manly	600
Booloombayt ..	Broadwater	3,500	Pambula	Eden	700
Brisbane Water ..	Broken Bay	7,000	Queens	Camden Haven ..	2,560
Bulbararing ..	Gosford	200	Smith	Port Stephens ..	2,500
Burril	Ulladulla	1,120	St. George's Basin ..	Huskisson	9,200
Cathie	Port Macquarie ..	635	Tarragal	Gosford	80
Cobaki Broadwater	Chinderah	450	Termeil	Termeil	120
Cockrone	Gosford	120	Terranora Broad-water.	Chinderah	1,100
Cohens	Tathra	96			
Coila	Moruya	1,850	The Back	Merrimbula ..	100
Conjola	Ulladulla	1,600	,, Broadwater ..	Port Stephens ..	5,500
Coralo	Eden	180	,, ,, ..	Clarence River ..	4,700
Corunna	Nooroonna	480	,, Little	Nooroonna	30
Cudgen	Murwillumbah ..	320	Tilba Tilba	,, ...	300
Cudmirrah	Huskisson	960	Tom Thumb Lagoon	Wollongong	450
Cuttagee	Bermagui	298	Toubouree	Ulladulla	350
Deewhy ..	Manly	80	Tuggerah	Wyong	18,500
Durass Water ..	Bateman	1,200	Tuross	Moruya Heads ..	1,400
Hiawatha	Grafton	860	Wagonga	Nooroonna	30
Illawarra	Wollongong ..	8,500	Wallaga	Bermagui	1,800
Innes (Burrawan) ..	Port Macquarie. ..	6,150	Wallagoot	Tathra	950
Macquarie	Newcastle	29,000	Wallis	Cape Hawke ..	19,000
Merrimbula	Pambula	1,350	Wamberal	Gosford	140
Minnie Water ..	Grafton	128	Wapengo	Tathra	870
Miroo	Termeil	400	Watson Taylor ..	Camden Haven ..	3,000
Murrmuga	Nooroonna	460	Wollumboola ..	Jervis Bay	1,500
Munmorah	Tuggerah	2,060	Wooloweyah	Yamba	6,400
		HIGHLAND.			
Albina	Mount Kosciusko ..	36	Hedley Tarn ..	Mount Kosciusko ..	10
Bathurst	Tarago	3,640	Llangothlin	Ben Lomond	980
Blue	Mount Kosciusko ..	60	Little Llangothlin ..	,, ,, ...	285
Club	,, ,, ..	10	May	Mount Kosciusko ..	15
Coolamatong ..	Berridale	84	Salt	Berridale	35
Eucumbene	Adaminaby	32	Spring Creek ..	,, ...	12
George	Bungendore	38,500	The Long	Adaminaby	45
		OTHER.			
Albert	Wagga	240	Boolaboolka ..	Menindie	7,680
Altiboulka	Yantara	1,000	Boundary	Dalgety	3
Amphitheatre ..	Menindie	1,920	Brennan	Menindie .. .	960
Arable	Cooma	45	Briekkiln	,, ...	320
Avon	Nimitybelle	360	Bromleys	,, ...	1,920
Baleka .. .	Menindie	640	Buckley	Dalgety	145
Bally Castle .. .. (Taylors)	Goombalie	1,000	Bullanaming ..	Bredbo	28
			Bullenbalong ..	Berridale	50
Bancanya .. .	Mootwingee	10,240	Bullogal	Booligal	640
Barnato	Cobar	320	Bungarry	Oxley	160
Beards (Black) ..	Nimitybelle	500	Bunumburt	,, ...	100
Big Sand Hill ..	Balranald	320	Burkaneko	Fords Bridge ..	160
Brijji	Menindie	1,600	Burns (3 Lakes) ..	Nimitybelle	80
Boocathan	Oxley	960	Burra Burra	Taralga	390

Lake.	Locality.	Area.	Lake.	Locality.	Area.
		OTHER—*continued.*			
		Acres.			Acres.
Cargelligo	Cargelligo	2,560	Narran	Brewarrina	35,000
Carrolls	Berridale	20	Neana	Pooncaira	7,560
Cawndilla	Menindie	22,040	Noeyanga	Euston	1,560
Chesney	Goombalie	160	Nettlegoe	Menindie	7,040
Cobham	Milparinka	1,280	New	,, ...	160
Conayjong	Oxley	200	Nialia	Pooncaira	7,680
Coomaroop	Tooleybuc	800	Nichebulka	Ford's Bridge ..	300
Coombah	Pooncaira	2,560	Nitchie	Pooncaira	1,280
Coonbilly	Ford's Bridge ..	500	North	Menindie	8,200
Cooper's	Nimitybelle	70	Nucha	Toorawangee ..	1,280
Cootralantra ..	,, ...	350	Oil Tree Lagoon ..	Howlong	1,460
Corega	Wilcannia	640	Pamamaroo	Menindie	16,640
Coval	Marsden	15,000	Paradise	,, ...	480
Cullamulcha ..	Wanaaring	1,200	Patterson	Milparinka	1,920
Cullivel	Urana	3,240	Pinpira	Koomenberry ..	160
Dead Horse ..	Menindie	100	Poomah	Tooleybuc	450
Denman	Ford's Bridge ..	1,000	Poon Boon	,, ...	1,000
Dennys	Menindie	2,560	Papilta	Pooncaira	22,400
Dick	Wilcannia	3,200	Pojelo	,, ...	15,360
Dry	Goombalie	600	Pysant	Menindie	320
,, ...	Pooncaira	80	Racecourse	Uralla	46
,, ...	Menindie	1,920	Ratcatchers ..	Menindie	6,400
,, ...	Booligal	640	Redbank	,, ...	320
Dudal Comer ..	Henty	2,100	Roping Pole	Uranquinty	480
Dukes	Nimitybelle ..	50	Round Swamp ..	Narrabri	90
Dundonnallee ..	Balranald	1,280	Ryans	Oxley	160
Eckerboon	Wilcannia	160	Salisbury	Uralla	150
Emu	Menindie	3,200	Sayers	Menindie	2,560
Eucalyptus	,, ...	4,920	Shadbolts	,, ...	40
Eukobilli	,, ...	320	Speculation	,, ...	640
Fort Grey Basin ..	Tibooburra	1,000	Tala	Balranald	1,400
Gilman	Kingston	266	Talpile	Tooleybuc	780
Golgol	Golgol	640	Tandon	Menindie	28,400
Goran	Gunnedah	10,000	Tandure	,, ...	5,120
Green	Bibbenluke	30	Tarrawong	Booligal	520
Guises	Dalgety	3	Teryaweynya ..	Menindie	6,120
Gum Lake	Menindie	1,600	The Boundary ..	Nimitybelle ..	60
Gungia	Hillston	320	,, Dry	Oxley	320
Haystack	Menindie	60	,, Salt Lake ..	Milparinka	16,000
Hogans	,, ...	160	,, Tinkers	Cooma	7
Hugundara	Cooma	15	Thuberigal	,, ...	50
Island	,, ...	12	Tommys	Dalgety	9
,, ...	Nimitybelle	45	Toms	Booligal	40
Jillimatong	Dalgety	70	Tooim	Peak	850
Kangaroo	Menindie	1,280	Travellers	Menindie	480
Kerkeri	Moulamein	200	Twin	Pooncaira	40
Kiah	Berridale	50	Ulenia	Milparinka	2,000
Killen	Wanaaring	300	Unnamed	Nimitybelle	65
Kilmacoola	Cooma	100	Upper Sand Hill ..	Balranald	270
Kojago	Wilcannia	640	Urana	Urana	14,500
Lignum	Oxley	120	Urangong	,, ...	1,160
Little	Pooncaira	640	Victoria	Menindie	3,840
Little Amphitheatre	Menindie	160	,, ...	Wentworth	25,000
,, Mother of Ducks ..	Guyra	80	Waldaira	Balranald	640
Long	Menindie	1,120	Waljeers	Booligal	1,280
,, ...	,, ...	320	Washpool	Nimitybelle	15
Lyle	Moulamein	150	Watchie	Wanaaring	320
Maffra	Dalgety	70	Waterloo	Menindie	2,880
Malta	Menindie	640	White Water ..	,, ...	160
Manies	Cargelligo	1,000	Willeroo	Goombalie	500
Marias	,, ...	600	Windamingle ..	Pooncaira	1,920
Menindie	Menindie	38,400	Windaunka	Koonenberry ..	640
Mere	Goombalie	200	Wollare	Tooleybuc	380
Merrimageel ..	Booligal	300	Wooromur	,, ...	750
Milkengay	Pooncaira	6 400	Wongallara	Wilcannia	11,520
Mindona	,, ...	15,360	Woytchugga	,, ...	1,280
Mooratchie	Wilcannia	520	Yandaroo	Goombalie	240
Moseys	Menindie	640	Yanga	Balranald	3,000
Mother of Ducks ..	Guyra	1,140	Yantara	Milparinka	6 000
Muddah	Cooma	50	Yantua	Pooncaira	2,880
Muetta	,, ...	20	Yarrie	Woe Waa	100
Mullawooka Basin ..	Wanaaring	1,000	Yeltow	Pooncaira	6,400
Mungundi	Wanaaring	100	York	Adaminaby	36

Some of the coastal lagoons are of importance in connection with coastal trade :—

Terranora Broadwater forms part of the western estuary of the Tweed River, and has a depth of 5 to 6 feet in places. Channels, 50 feet wide, with 6 feet of water at low tide, have been cut, and allow of navigation by craft of 50 to 60 tons, chiefly engaged in carrying sugar cane.

Lake Innes (*Burrawan*) has two outlets to the Pacific Ocean, one leading into Cathie Lake, and the other joining the Hastings River near Port Macquarie.

Queens and Watson Taylor's Lakes are tidal, and connected with Camden Haven. Vessels drawing 3 to 4 feet are engaged in punting timber.

Wallis Lake receives the waters of Wollomba River. Vessels of fairly large tonnage enter the Lake, and the bar harbour of Port Forster lies near the entrance.

Myall Lake and The Broadwater drain into Port Stephens. They form a tourist and fishing resort.

Lake Macquarie is 20 miles long by 3 to 6 miles broad, and has a coast line of some 200 miles. It constitutes a bar harbour with a considerable coastal trade, and several townships, as Boolaroo, Toronto, Belmont, and Teralba are situated on the shores of the Lake.

Lake Illawarra is shallow. It is a fishing ground, whence supplies are drawn for Sydney markets.

St. George's Basin is a fishing and tourist resort.

The Lake George Basin in the Cullarin Range is the solitary example of a purely inland drainage area. The Lake is 2,200 feet above sea level; is 16 miles long by 6 miles at its widest part. It is fed on the east by Murray's, Taylor's, Deep, and Turallo Creeks. Being frequently dry, the bed of the lake is under grazing leases, and the southern portions have been in cultivation from time to time. Lake Bathurst is 2,000 feet above sea level.

In addition to the lakes named above, there are, particularly in the western part of New South Wales, depressions of greater or less area which carry no water. Some of these depressions are reached only by high flood waters, or are shallow or filled by overflow. In other places, especially where the intake is under control of a private person, or trust, as is the case with the Anabranch and Terawynia Creek systems, the supply of water to the lake is regulated deliberately or even cut off altogether, as the area has more value when dry than when under water.

The following list of these depressions shows the locality in which they are situated :—

Depression.	Locality.	Depression.	Locality.
Agnes	Moulamein.	Gunbar	Gunbar.
Bingery	Pooncaira.	Gunyulka	Wilcannia.
Bintullia	Menindie.	Harvey's	Balranald.
Blue	Pooncaira.	Loriwa	,,
Buolpara	Louth.	Little Sand Hill ...	,,
Bullea	Milparinka.	Loorica	,,
Bunda	Wilcannia.	Macommon	,,
Collins	Menindie.	Merwin...	,,
Condoulpe	Balranald.	Mickwilly	Wilcannia.
Coorpooka	White Cliffs.	Moon Moon	Booligal.
Cullewie	Wilcannia.	Moornanyah	Ivanhoe.
Deadman	Menindie.	Muckee	Balranald.
Dry	Ivanhoe.	Naroolpilley	Wilcannia.
Dry	Moulamein.	Nine Mile	,,
Ganaway	Oxley.	Oleopoloko	White Cliffs.
Greer	Tooleybuc.	Oxley	Bourke.
Genoe	,,	Oulilla	Wilcannia.
Goonimur	,,	Paika	Balranald.
Green	Milparinka.	Patagorah	Pooncaira.

Depression.	Locality.	Depression.	Locality.
Peri (Peery)	White Cliffs.	Teare	Moulamein.
Pine	Pooncaira.	Tilpilly	Wilcannia.
Pitarpunga	Balranald.	Tongo	Wanaaring.
Pillio-illaluka	Wilcannia.	Tyson	Oxley.
Poopelloe	,,	Wallace	Menindie.
Rodman's	,,	Wannah	Tooleybuc.
Silistria	Broken Hill.	Warracoocarie	Wilcannia.
Tacubah	Wilcannia.	Warrawenia	Pooncaira.
Taila	Euston.	Yentabangee	White Cliffs.
Talbetts	Balranald.		

Mineral Springs.

Mittagong.

Mineral springs are to be found in many parts of the State, that at Mittagong on the southern railway line being best known, as the public are afforded opportunity for drinking the waters.

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

Ballimore.

The Ballimore spring is about 20 miles north-east of Dubbo. Of the total fixed matter amounting to 225 grains per gallon, bicarbonate of soda represents 183 grains, potassium nearly 13 grains, calcium over 11 grains, magnesium over 9 grains, and chloride of sodium nearly 7 grains. Bicarbonate of lithium, strontium, and iron are present with traces of silica and alumina.

Rock Flat.

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

Bungonia.

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

Jarvisville.

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

Mountains.

For a short distance the Great Dividing Range, under the name of the Macpherson Range, forms the boundary between New South Wales and Queensland; from Tenterfield the range trends south-west, under the name of New England Range, to Murrurundi; thence, as the Liverpool Range, which is the boundary between the Liverpool Plains and the Hunter-Goulburn Valley, the trend is westerly to the locality of Cassilis. Thence to Goulburn, the Main or Blue Mountain Range connects the Northern and Southern Tablelands. From the locality of Goulburn to the Victorian border the Great Dividing Range is continued in the Cullarin, the Gourock, the Monaro, and the Muniong (Munyang) Ranges. The Hawkesbury and the Lachlan Rivers take their rise in the Cullarin Range.

The chief peaks of the Dividing Range are Ben Lomond (5,000 feet), Oxley's Peak (4,500 feet), Mount Bindo (4,460 feet), Mount McAlister (3,390 feet), Tallerang Peak (3,134 feet), Kybeyan (3,938 feet), Mount Townsend (7,238 feet), Mount Kosciusko (7,305 feet), The Pilot (6,002 feet).

On the eastern and western sides of the Dividing Range are numerous spurs. Eastward is the Macpherson Range, the highest peak of which is Mount Lindsay, 4,064 feet. The Richmond Range, turning southwards from Mount Lindsay, forms the watershed between the Richmond and Clarence Rivers. The Macleay Ranges lie west and south of the Clarence River; the highest points are Chandler's Peak (5,130 feet), The Look-out (4,090 feet), Mount Hyland (4,760 feet). A spur of the Liverpool Range, between Murrurundi and Scone, contains the Black Mountain (3,297 feet), and Mount Wingen (1,000 feet), which is the solitary example in Australia of a burning mountain, not of volcanic origin, but due to the gradual but continuous burning of the Greta thick coal seam some distance underground. It is estimated that the mountain has been burning for some 800 years.

The Hastings Range forms the watershed between the Macleay and the Hastings Rivers on the north, and between the Manning and the Hastings Rivers on the south. Between the Manning and the Hunter Rivers the watershed is formed by the Mount Royal Ranges, of which Mount Royal, 3,864 feet, is the highest point. The Hunter Range, south of the Hunter River, has Mount Coricudgy (3,000 feet), Mount Warrawolong (2,090 feet).

In the Blue Mountains (Main Range), north of the Grose River, are Mount Wilson, Mount Tootie, Mount Tomah (3,276 feet), and Mount King George. East of Rydal are Mount Clarence (4,000 feet), and Mount Victoria (3,525 feet). Mount Binda (4,460 feet) is between Rydal and the Jenolan Caves. Tayan Pic (4,000 feet) is south-west of Mount Coricudgy. Southwards towards the Mittagong Range are several prominent peaks, and the Burragorang Mountains. The Mittagong Range connects the Great Dividing Range with the Illawarra Range, which extends from Clifton to the Shoalhaven River, and includes such well-known points as Mount Keira, Mount Cordeaux, Mount Kembla (1,752 feet), the Cambewarra Mountains, and Mount Meryla (2,167feet).

Further south are several coastal ranges, *i.e.*, the Currockbilly Range, between the Shoalhaven River and Moruya, having The Pigeon House (2,358 feet), Mounts Kingimar, Currockbilly (3,709 feet), and Budawang (3,727 feet). Sherwin's Range and the Ram's Head Range are in the localities of Nimitybelle and Kosciusko.

On the western side of the Main Range are several offshoots; the Nandewar Range trends north-westerly from the locality of Kentucky. In

the Currabubula Range, further south, Mount Turi is 3,000 feet high. The Warrumbungle Range trends north-west from Beacon Hill. The Macquarie Range has Mount Macquarie (3,943 feet), and ends in the Canobolas (4,576 feet). The Mundoonan Range branches off near Lake George. The Munions Range has three spurs, the Murrumbidgee, the Tumut, and Murray Ranges. In the latter is Mount Dargal (5,661 feet).

In the north-western plains is a range continued from Western Queensland, and in the south-west the Grey Range, which stretches south into the Barrier Range as far as Broken Hill.

East of the Great Dividing Range are various isolated mountain peaks: Mount Warning (3,840 feet), near the head of Tweed River; Yarrahappini, near Trial Bay; Mount Sea View (3,100 feet), south of the Hastings Range; Coolangatta (1,000 feet), near Shoalhaven River; Dromedary (2,706 feet), near Tuross River; and Imlay (2,910 feet), near Twofold Bay.

Limestone Caves.

The Jenolan, Yarrangobilly, and Wombeyan Caves are of surpassing beauty, and attract many tourists. Improvements are continually being made by the Government of New South Wales to give easy access to the various caverns at these popular resorts.

The Jenolan Caves are distant about 35 miles from Mount Victoria, on the Western Railway Line.

Yarrangobilly Caves are situate in the southern portion of the State, being 65 miles from Cooma or 47 miles from Tumut.

The Wombeyan Caves are distant 42 miles from Bowral, on the Southern Railway Line.

Abercrombie Caves have perhaps the finest natural arch in Australia.

Wellington Caves are under the control of the Macquarie Shire Council.

All the caves are within land reserved for recreation purposes by the State.

Trigonometrical Survey.

Trigonometrical Stations.

In order to give an idea of the elevation of the mountain peaks of the State, the following list of stations established in connection with the Trigonometrical Survey is included. Trigonometrical stations are erected almost invariably on the highest peaks in the locality, and the list contains stations having an altitude of 3,000 feet and over, the height, the latitude and longitude of each being given.

Two base lines have been measured, one situated near Lake George, and the other near Richmond. They are 5½ 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.

Up to the present a little more than one quarter of the State, namely, that portion contained in the south-east, has been triangulated, so that particulars cannot be given of the remaining part of the State. However, exclusive of the north part of the Dividing Range, the peaks are, except in isolated cases, less than 1,000 feet in height.

In most cases Trigonometrical stations bear the same name as the range or peak on which they are situated. Where that is not the case they have been called after stations or persons of the locality, consequently the names will not be found on the map, but their positions will be determined without difficulty from the latitude and longitude.

In New South Wales there are 1,522 trigonometrical stations of heights ranging from less than 100 feet up to 7,305 (Mount Kosciusko); the number of stations of less height than 3,000 feet is 1,371; for the purposes of this Year-Book it is considered that these stations are relatively of unimportant altitude. Altitude is measured in feet above high water spring tide at Fort Denison (Port Jackson) :—

Trigonometrical Station.	Height.	Latitude South.			Longitude East.		
	ft.	°	′	″	°	′	″
Amungula	3,000	35	17	22	149	19	24
Hart	3,002	35	42	32	149	34	7
Poppet	3,004	35	16	27	149	18	0
Cohen	3,006	35	17	46	149	20	32
Strathaird	3,012	34	29	8	149	52	33
Martin (Co. King)	3,019	34	38	15	149	21	5
Maragle	3,024	35	53	1	148	5	54
Hopkins	3,027	33	35	17	149	4	21
Turalla	3,032	35	15	44	149	23	31
Bald (Co. Bathurst)	3,034	33	39	57	149	8	17
Kendall	3,050	35	29	51	148	0	40
Cowper (Co. Argyle)	3,051	34	32	41	149	51	58
Wayo	3,052	34	37	18	149	38	32
Somers	3,061	33	44	14	149	8	45
Tipperary	3,064	35	50	35	147	36	40
Mogila	3,066	36	42	9	149	30	38
Howard (Co. Bathurst)	3,069	33	49	14	149	3	20
Woolowolar	3,072	35	7	30	149	37	43
Billapalula	3,075	35	13	33	148	22	56
Coolumbooka	3,075	36	52	42	149	22	39
Elrington	3,077	35	33	37	149	36	39
Napier	3,083	36	49	7	148	53	47
Carangal	3,087	34	56	12	149	21	52
Peach	3,088	34	32	57	149	39	50
Wangat	3,090	32	10	50	151	41	55
Bunnhybee	3,106	35	40	20	149	37	15
Guinecor	3,106	34	20	25	149	55	58
Fitton	3,107	34	36	25	149	27	24
Courabyra	3,116	35	39	51	148	0	2
Pegar	3,119	34	32	12	149	32	30
Balcombe	3,120	35	22	39	149	23	4
Bettowynd	3,122	35	44	42	149	44	53
Harris (Co. Murray)	3,124	35	20	53	149	36	6
Wandellow	3,128	36	18	20	149	47	7
Hayden	3,130	37	3	34	149	1	46
Nunnery	3,131	34	22	23	149	53	41
Bemboka	3,140	36	35	51	149	38	14
Terramungula	3,141	34	59	33	149	26	40
Twynam	3,143	35	13	20	149	33	0
Bombala	3,144	36	55	58	149	16	51
Calvert	3,153	33	30	25	149	4	55
Bredbendoura	3,160	36	50	20	149	31	4
Barren Jack	3,162	34	58	1	148	36	30
Copperhannia	3,165	33	51	58	149	14	28
Batlow	3,168	35	29	28	148	8	31
Coornartha	3,170	36	11	3	149	14	40
Manar	3,198	35	20	24	149	38	51
Arkell	3,238	33	47	40	149	18	25
Rix	3,238	36	45	59	148	59	48
Indi	3,263	36	16	45	148	4	24
Rutledge	3,264	35	29	19	149	23	32
Bendethera	3,265	35	56	58	149	47	41
Wells (Co. Georgiana)	3,268	34	7	31	149	13	14
Cadia	3,270	33	46	35	149	1	32

Trigonometrical Station.	Height.	Latitude South.			Longitude East.		
	ft.	°	′	″	°	′	″
Cathcart	3,274	36	51	16	149	28	42
Tomah	3,276	33	32	45	150	25	31
Jingellec	3,279	35	56	6	147	36	5
Wollondibby	3,286	36	56	45	148	46	1
Bobundara	3,290	36	28	5	149	0	49
Tombong	3,296	36	53	48	148	51	34
Blacktop	3,297	31	57	7	150	55	53
Highest Point	3,314	34	32	15	149	26	19
Googong	3,320	35	28	38	149	14	8
Gidleigh	3,324	35	19	23	149	31	0
Wangellic	3,324	36	42	20	149	7	52
Allianoyonyiga	3,327	35	2	23	149	33	55
Undow	3,331	36	43	0	149	17	20
Clifford	3,347	36	4	43	149	13	35
Quidong	3,354	36	57	6	148	59	1
Jillicambra	3,361	36	9	43	149	36	15
Arable	3,365	36	21	7	149	0	30
Snubba	3,377	35	33	28	148	12	2
Williga	3,380	34	28	36	149	40	27
Coolamatong	3,388	36	25	40	148	49	30
Wattman	3,388	34	29	15	149	25	9
Dangelong	3,390	36	20	33	149	13	58
Macalister	3,390	34	27	4	149	45	16
Rocks	3,395	33	26	31	149	24	26
Jimenbuen	3,398	36	43	36	148	48	23
Bungarby	3,410	36	39	28	149	4	20
Narrangullen	3,411	35	4	6	148	44	46
Berlang	3,414	35	39	18	149	40	45
Teapot	3,414	36	34	58	149	6	37
Khancoban	3,422	36	15	18	148	10	55
Moody	3,426	35	49	56	148	11	38
Snowball	3,426	35	55	55	149	36	54
Dena	3,434	35	52	59	149	41	17
Colong	3,436	34	7	33	150	8	40
Boundary (Co. Dampier)	3,438	35	50	24	149	34	27
Milo	3,440	35	38	38	149	53	8
Blyton	3,452	36	30	37	149	7	17
Substitute	3,458	37	10	33	149	8	11
Wyanbene	3,466	35	48	18	149	41	0
Ryan (Co. Georgiana)	3,467	33	51	1	149	27	12
Bogandyera	3,470	35	54	0	147	57	3
Ahern	3,474	35	48	14	149	35	16
Shaw	3,485	36	35	50	148	53	31
Fulton	3,496	33	46	42	149	29	39
Wullwye	3,496	36	28	44	148	54	56
Fairfield (Co. Murray)	3,506	35	45	2	149	37	12
Alexander (Co. Wellesley)	3,525	36	50	48	148	41	38
Cooma	3,529	36	15	12	149	4	50
Yarrow	3,535	35	25	57	149	19	53
Macahally	3,557	36	6	45	149	20	1
Kerlewis	3,559	36	41	10	148	53	39
Blackheath	3,560	33	38	39	150	17	9
Micaligo	3,564	35	40	13	149	10	50
Berridale	3,565	36	19	11	148	50	40
Bogong	3,580	35	29	42	148	18	29
Coolangubra (New)	3,581	36	58	25	149	24	20
Rob Roy	3,585	35	29	50	149	7	48
White Rock	3,586	37	5	9	149	23	26
Coolangubra (Old)	3,615	36	59	13	149	23	45
Buckland	3,619	36	50	44	148	50	9
Tumbarumba	3,646	35	47	4	148	2	59
Molonglo	3,670	35	28	35	149	19	30

Trigonometrical Station.	Height.	Latitude South.			Longitude East.		
	ft.	°	′	″	°	′	″
Blackburn	3,673	36	37	29	148	42	29
Weejasper	3,674	35	9	47	148	38	14
Shivering	3,678	34	7	39	150	2	8
Lowes	3,708	33	35	31	149	48	46
Currockbilly	3,709	35	24	34	150	2	15
Jettiba	3,709	36	37	6	149	13	44
Colinton	3,714	35	52	11	149	11	44
Budawang	3,727	35	28	55	149	59	50
North Black Range	3,729	35	21	19	149	32	36
Wog Wog	3,732	37	5	46	149	25	56
Coolringdon	3,741	36	15	28	148	57	42
Thoko	3,768	36	39	12	149	19	57
Werri Berri	3,793	36	31	2	149	31	54
Bull	3,798	36	39	18	149	25	3
Murrumbucka	3,835	36	1	54	149	3	37
Hartwood	3,840	35	8	7	148	45	12
Nimmitabel	3,840	36	32	0	149	15	48
Stannard	3,841	36	2	37	149	22	17
Black Jack	3,844	36	47	14	148	37	54
Bald (Co. Cook)	3,848	33	26	52	150	14	27
Crookshanks	3,851	36	9	39	148	57	40
Brother	3,859	36	21	46	149	6	32
Royal	3,864	32	10	33	151	19	41
Numbla	3,875	36	37	6	148	45	19
Gourock	3,900	35	29	41	149	38	39
Backalum	3,904	36	4	0	148	55	59
Campbell (Co. Murray)	3,906	35	30	22	149	11	50
Dowling	3,929	35	56	44	149	16	58
Pinbeyan	3,938	35	44	52	148	22	28
Kybeyan	3,938	36	16	17	149	24	43
Macquarie	3,943	33	38	53	149	10	57
Beloka	3,961	36	29	50	148	42	14
Emerald	3,965	36	31	18	149	20	42
Cromwell	3,994	35	18	0	148	39	40
Tumorrama	3,997	35	14	29	148	30	7
Hudson's Peak	4,035	36	26	36	149	10	0
Jinderboine	4,043	36	24	13	148	39	59
Throsby	4,043	36	24	49	149	20	28
Umaralla	4,046	36	11	56	149	24	14
Bolero	4,047	36	0	9	148	51	10
Byadbo	4,054	36	51	7	148	32	29
Kybra	4,054	36	24	35	149	30	38
Dampier	4,059	35	59	29	149	40	28
Glenbog	4,068	36	35	58	149	23	5
Nimbo	4,083	35	22	22	148	29	33
Abington	4,130	36	30	27	148	34	28
Cobbin	4,133	36	26	25	148	35	16
Palerang	4,134	35	25	54	149	36	2
South Black Range	4,141	35	25	34	149	32	6
Whinstone	4,151	35	55	43	149	25	5
Ovens	4,164	33	24	47	149	46	41
Good Good	4,184	36	3	21	149	28	5
Bullenbalong	4,195	36	19	23	148	43	18
Stony	4,199	33	25	27	149	49	2
Buckenderra	4,200	36	8	49	148	48	42
Hyde	4,216	35	38	53	148	8	28
Lambie	4,219	33	28	24	149	59	25
Delegete	4,283	37	6	52	148	53	56
Jibeen	4,320	35	28	28	148	27	45
Wambrook	4,347	36	11	35	148	53	2
Wangrah	4,348	35	53	19	149	20	8
Major	4,366	35	29	10	149	36	22

Trigonometrical Station.	Height.	Latitude South.			Longitude East.		
	ft.	°	′	″	°	′	″
Boraig	4,368	35	40	33	148	23	36
Wadbilliga	4,383	36	20	14	149	36	13
Lowden	4,414	35	30	13	149	35	0
Bindo	4,460	33	40	45	150	0	40
Cowangerong	4,466	35	39	48	149	30	50
Big Badja	4,466	36	0	26	149	34	2
Nurenmerenmong	4,475	35	50	29	148	17	53
Queengallery	4,498	36	4	49	148	48	48
Biggam	4,522	36	12	47	148	42	35
Tennent	4,534	35	33	7	149	2	46
Talbingo	4,538	35	36	55	148	20	0
Baloo	4,551	35	25	26	148	21	41
Cockerow	4,555	32	7	20	151	18	14
Holland	4,563	35	46	32	149	19	44
Canoblas	4,576	33	20	46	148	59	1
Wallgrove	4,578	35	59	8	148	41	32
Bramina	4,584	35	23	58	148	41	23
Anembo	4 612	35	52	34	149	29	27
Ingebirah	4,656	36	38	46	148	27	28
Tumanmang	4,656	35	47	2	149	31	31
Coree	4,657	35	13	34	148	48	42
Granite	4,715	35	43	39	148	13	9
Tingi Ringi	4,747	36	59	59	148	40	42
Garnet	4,754	35	25	0	148	36	14
Boboyan	4,781	35	48	3	148	59	23
Slap-up	4,812	35	57	0	149	30	44
Cobrabald	4,816	36	6	21	148	40	33
Tumanang...	4,835	35	45	2	149	28	19
Crackenback	4,858	36	25	18	148	32	22
Flinders	4,867	35	57	39	149	2	2
Nimmo	4,873	36	12	4	148	35	20
McKeahnie	4,904	35	33	26	148	52	28
Youngal	4,964	36	23	49	148	7	12
Gooandra	4,986	35	47	40	148	30	25
Tidbinbilla	5,115	35	26	19	148	52	55
Thredbo	5,184	36	32	13	148	26	26
Booth	5,191	35	43	51	149	2	32
Brest	5,203	35	54	14	148	53	52
Clear	5,255	35	52	41	149	3	57
Manjar	5,255	35	58	18	148	19	34
Orroral	5,266	35	38	49	148	56	0
Selwyn	5,283	35	54	17	148	27	52
Peppercorn	5,300	35	33	32	148	35	9
Nattung	5,306	35	42	39	148	36	25
Tinderry	5,307	35	41	58	149	16	22
Addicumbene	5,315	36	2	12	148	33	36
Gang Gang	5,321	35	52	34	148	44	17
Yarrangobilly	5,336	35	41	2	148	31	17
Lampe	5,338	35	31	21	148	25	36
Munyang	5,382	36	17	34	148	33	46
Franklin	5,391	35	29	14	148	46	39
Jackson	5,404	35	34	48	148	42	8
Toolong	5,479	36	11	47	148	15	21
Nungar	5,608	35	50	10	148	39	5
McLean	5,622	36	11	52	148	29	35
Jounama	5,628	35	33	55	148	28	0
Yaouk	5,655	35	51	37	148	51	52
Dargal	5,661	36	6	20	148	13	26
Gudgenby	5,702	35	46	26	148	54	42
Kiandra	5,723	35	52	37	148	34	2
Vale	5,733	36	2	48	148	27	42
Lett	5,755	36	2	50	148	21	47

Trigonometrical Station.	Height.	Latitude South.			Longitude East.		
	ft.	°	′	″	°	′	″
Adaminaby	5,776	36	6	27	148	33	13
Cabramurra	5,850	35	58	34	148	30	32
Pilot	6,002	36	45	22	148	12	26
Greymare	6,129	36	15	29	148	17	26
Morgan	6,144	35	44	19	148	47	0
Bimberi	6,264	35	39	41	148	47	31
Duncan	6,306	36	25	46	148	24	17
Jagungal	6,755	36	9	0	148	23	21
Gungartan...	6,776	36	17	12	148	24	10
Townsend	7,238	36	25	30	148	15	36
Kosciusko	7,305	36	27	28	148	15	53

Magnetic Survey.

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

Cities and Towns.

Under the Local Government Act, 1906, the qualifications of a town to be proclaimed a city are that it should be an independent centre of population, not a suburb, and should have had during the five years preceding the proclamation an average population of at least 20,000 persons, and an average gross municipal revenue of at least £20,000.

Sydney is the capital city of the State of New South Wales, and the seat of Government. Since 1853 the residence of the Governor of the State has been maintained adjacent to the city itself, which is situated on the southern shores of Port Jackson. The suburban area extends over a radius of some 15 miles north, south, and west.

The City proper covers some 5 square miles (3,168 acres, 27 perches), the Metropolitan area (Sydney and Suburbs) covers some 95,259 acres, and had a population in December, 1912, of 694,800. The features of Sydney as a trade port are described previously in connection with Harbours and Anchorages. The wharfage facilities are detailed in chapter "Shipping." The important railway lines of the State converge on Sydney. Manufacturing establishments are assembled in the city itself, and over the nearer suburbs, as Alexandria, Botany, Redfern, and Balmain. Public buildings, of importance architecturally are, the Town Hall, Post Office, Cathedrals, Hospitals, the University, Technical College, and Municipal Markets. Parks, pleasure resorts, and recreation areas are extensive, and are detailed in a subsequent chapter. The Government of the Metropolitan area is vested in numerous municipal councils, and the question of a central government in a Greater Sydney is receiving considerable attention.

The districts surrounding the Metropolitan area are devoted mainly to the production of fruit, vegetables, poultry, butter, &c., for the city market, and include numerous thriving townships. Parramatta, 15 miles west of Sydney, is the centre of a flourishing fruit growing district; other industries are the

manufacture of tweed, soap and candles, tiles and pipes. The Old Government House, used from 1788-1853, situated in Parramatta Park, is of historic interest. Granville, at the junction of the main Southern and Western Railway lines, 13 miles from Sydney, is a manufacturing centre, large establishments being engaged in the manufacture of machinery, agricultural implements, railway carriages, pipes, tiles, bricks, and in tanning.

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

To the north is Gosford, on Brisbane Water, an arm of Broken Bay, the centre of a timber and fruit producing district. Many popular holiday and fishing resorts are situated between Gosford and Sydney.

Newcastle, the port of the largest coal-fields of Australia, is situated at the mouth of the Hunter River, at a distance of 102 miles by rail and 62 by sea from Sydney. Newcastle city extends over some 1,060 acres; its suburbs cover 17,919 acres, and include busy mining townships, viz., Stockton, Hamilton, Lambton, Wallsend, Merewether, Plattsburg, Wickham, and Waratah. The total population of Newcastle and suburbs in December, 1912, was 56,750. Many large factories have been established, such as biscuit, boot, and carriage factories, shipbuilding and fellmongery yards, smelting and engineering works; extensive steel works are projected. In addition to coal, the products of the Hunter River Valley—wool, frozen meat, tallow and farm produce—are shipped at Newcastle.

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

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

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

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

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

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

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

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

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

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

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

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

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

On the central tableland the important towns are Bathurst on the Macquarie River, one of the oldest and largest of the inland towns; it was founded by Governor Macquarie in 1815. Bathurst, with Orange to the west, are important trading centres, and contain several large manufacturing establishments. Cowra is on the Lachlan River, in a wheat, fruit, and dairying district. Mudgee and Gulgong are situated in a district noted for stud sheep, wheat, and fruits. Blayney is an important railway junction, where a connecting line from the Main Southern Railway joins the Main Western. Lithgow, on the western side of the Blue Mountains, is the centre of the western coal-field, and contains extensive ironworks, the Commonwealth small arms factory, also pottery and pipeworks. Kerosene shale works have been erected at Newnes, in the Wolgan Valley, and large cement works are in operation at Portland. Within easy distance of the metropolis are the numerous tourist and health resorts of the Blue Mountains, the largest are Katoomba, Leura, and Blackheath, and about 40 miles distant are the far famed Jenolan Caves.

On the Southern Tableland, Goulburn, on the Wollondilly River, is the most important town; the cultivation of cereals and fruit and dairy farming are the principal industries, while several factories are in operation. The Wombeyan Caves, 40 miles distant, attract a number of tourists. Moss Vale, Bowral, and Mittagong on the railway between Sydney and Goulburn, in good dairying and fruit-growing districts, are also tourist resorts. Syenite for building purposes is obtained near Bowral. Yass, on the Yass River, is an important township; the mammoth Burrinjuck storage reservoir, on the Murrumbidgee River, is about 30 miles distant. To the south-east are Queanbeyan, about 8 miles from Canberra, the Federal Capital site, and Braidwood, on a tributary of the Shoalhaven River, where agriculture, sheep-farming, and gold-mining are important industries. Cooma and Bombala are trading centres in the rich Monaro district.

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

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

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

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

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

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

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

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

CLIMATE.

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

Weather Forecasts.

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

A general surging movement occasionally takes place in the atmosphere, sometimes towards, and sometimes from, the equator. The movement causes sudden changes in the weather—heat when the surge is to the south, and very cold weather when it moves towards the equator. Probably, these sudden displacements of the air systems are due to thermal action, resulting in expansion or contraction in the atmospheric belts to the north and south of Australia.

New South Wales is peculiarly free from cyclonic disturbances, although occasionally a cyclone may reach the State from the north-east tropics or the Antarctic low pressure belt which lies to the south of Australia, or may result from monsoonal disturbances. Flag signals to indicate weather forecasts are displayed from the Customs House, Sydney, one class indicating storm warnings and a second, general forecasts as to fair weather, rain, cold, or heat waves. Storm signals are hoisted on the flagstaff at the General Post Office to denote the approach of southerly squalls from Wollongong, Jervis Bay, and Eden reporting stations.

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

The Seasons.

The seasons, depending on the annual march of temperature, occur in New South Wales, from a meteorological point of view, as follows:—Summer months, December, January, and February; autumn months, March, April, and May; winter months, June, July, and August; spring months, September, October, and November.

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

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

Rainfall and Temperature.

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

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

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

Generally speaking, 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, January claims the highest monthly average. On the North-western Plains and over the country to the north of the Darling and east of the Paroo, February is the wettest month, March enjoying the heaviest average in the far north-west quarter and over the central Darling country between Tilpa and Pooncarie.

Over the coastal districts every month, except November, is represented in some part or another as the wettest.

Information as to the amount of rainfall necessary for the production of wheat during the growing months of April to October, and the districts included in the wheat area of the State, may be found in the chapter of this Year Book which deals with Agriculture.

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

The following table shows the variation in rainfall in the inland portions of New South Wales during the period 1903–12. It bears out the statement that a universal shortage of rain is not probable—while such a misfortune has seldom devastated a whole climatic region. For instance, in 1903 and 1904 the Western Plains suffered from low rainfall, but the North-west Slope had more than the average. In 1905–6 the conditions were exactly reversed,

and better conditions reigned in the west. The Riverina and Southern Highlands are also able to exchange benefits. In 1903 and 1905 the latter were in the better position, but in 1910, when they were dry, the Riverina rainfall was above the average. Transfer of stock is obviously able to meet the case when such conditions obtain in contiguous areas :—

WET AND DRY REGIONS IN NEW SOUTH WALES.

	Above the Average.	Below the Average.
1903 ...	Trans-Darling	Western Plains.
	New England	Riverina.
	Northern Rivers.	
	Blue Mountains.	
1904 ...	North-west Slope	Trans-Darling.
	Hunter Valley	Northern Rivers.
	Illawarra	Southern Tableland.
		Western Plains.
1905 ...	Western Plains	North-west Slope.
	Kosciusko Area	Trans-Darling.
		Other Highlands and Coast.
1906 ...	Trans-Darling	Other Highlands and Coast.
	Western Plains.	
	Riverina, etc.	
	Kosciusko.	
1907 ...	North-west Plains	Trans-Darling.
	North-west Slope	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	Western Plains.
	West Riverina	North Coast.
	North-west Slope	Hunter and Macquarie.
	Blue Mountains.	
1911 ...	Western Plains	North-west Slope.
	Whole State, except N.E.	North Coast.
1912 ...	Riverina	Western Districts.
		North and South Coastal Areas.
		Central and Southern Tablelands.

The annual rainfall over a great part of the division, which lies in the zone of perpetual high pressure, does not exceed 10 inches. It increases from 8 inches on the extreme western boundary of New South Wales 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°.

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.

Climatic Divisions.

The territory of New South Wales covers four quite distinctive climatic zones, viz.—The Coast, the Tablelands, the Western Slopes of the Dividing Range, and the Western Plains, including the extreme Western Division. The Great Dividing Range, which includes the Tablelands, traverses the State, practically parallel with the Coast, but at a distance ranging from 30 to 150 miles, and is, in fact a dividing line between the Coastal and Inland regions.

Coast.

In the whole Coastal division, which covers 22,355,401 acres between the Pacific Ocean and the Great Dividing Range, the rainfall average is comparatively high; and, moreover, numerous rivers and streams flow from the eastern watershed of the mountains to the sea. Sydney is situated on the shores of Port Jackson, halfway 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, corresponding with that of Barcelona in Spain, in latitude 41° 22′ N., and Toulon in France, in latitude 43° 7′ N. The range is only 17°, calculated over a period of fifty-three years, the mean summer temperature being about 71°, and the mean winter temperature 54°. At Naples, which has about the same mean temperature as Sydney, the range is 27°, between the means 74° and 47°.

The following table shows the average meteorological conditions of Sydney based on the experience of the fifty-four years ended 1912:—

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	29·901	71·6	78·3	64·9	3·624	15·257	0·419	14·2
February	29·945	71·1	77·2	64·8	4·737	18·556	0·344	14·3
March	30·037	69·2	75·4	63·0	5·140	18·700	0·419	15·4
April	30·095	64·6	70·9	58·1	5·248	24·490	0·060	13·2
May	30·093	58·5	65·0	52·1	4·917	20·868	0·214	15·4
June	30·080	54·3	60·4	48·2	5·134	16·296	0·190	12·9
July	30·092	52·3	58·9	45·7	4·790	13·208	0·119	12·5
August	30·093	54·9	62·2	47·5	3·263	14·886	0·040	11·6
September	30·012	58·9	66·3	51·3	2·845	14·045	0·083	12·2
October	29·966	63·5	71·0	55·8	2·785	10·810	0·209	12·6
November	29·953	67·0	74·3	59·6	2·910	9·880	0·193	12·5
December	29·881	70·0	77·3	62·8	2·593	8·469	0·453	12·8
The whole year ...	30·013	63·0	69·8	56·2	47·986	82·763	23·014	159·6

The North Coast districts, which include part of the extreme easterly section of Australia, and the most easterly cape (Byron), are favoured with a warm, moist climate, the rainfall averaging from 40 to 70 inches annually.

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

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

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

Station.	Least Distance from East Coast.	Altitude.	Temperature (in Shade).						Rainfall—Mean Annual.
			Mean Annual.	Mean Summer.	Mean Winter.	Mean Daily Range.	Highest.	Lowest.	
	miles.	feet.	°	°	°	°	°	°	inches.
Casino	28	82	67·1	74·2	56·3	25·6	116·4	21·0	43·44
Lismore	13	52	67·8	78·2	59·4	22·2	116·2	23·0	52·00
Clarence Heads ...	0	122	67·9	74·8	59·5	15·1	108·0	36·4	55·23
Grafton	22	40	67·2	77·1	57·6	27·0	118·0	20·9	39·08
Port Macquarie ...	0	49	63·8	71·6	54·9	17·6	105·4	24·8	61·07
Singleton	40	135	64·2	76·1	52·1	20·3	113·9	22·0	29·31
Morpeth...	15	20	63·8	73·9	54·3	18·1	108·7	26·0	38·83
West Maitland... ...	18	40	64·3	75·0	52·8	20·5	115·0	24·0	33·84
Port Stephens	0	30	64·1	72·6	53·1	20·8	111·2	30·2	53·32
Newcastle	1	34	64·7	72·5	55·5	15·4	110·5	31·0	47·14
Pitt Town	26	40	64·0	76·1	52·6	20·0	113·0	27·2	31·10
Emu	36	87	62·7	73·2	50·4	16·2	107·6	26·8	29·88
Sydney	·5	146	63·0	70·9	53·8	13·6	108·5	35·9	47·99
Wollongong	0	54	63·0	70·1	54·8	17·1	113·4	31·9	42·43
Nowra	6	30	62·8	70·6	54·3	21·0	110·3	29·6	36·93
Point Perpendicular ...	0	284	61·5	68·3	53·7	13·0	105·2	25·5	55·10
Moruya Heads... ...	0	50	60·9	68·0	52·8	19·2	114·8	26·3	35·35
Bodalla	7	40	59·9	69·1	50·5	27·7	114·1	18·6	36·21
Bega	0	50	59·7	69·6	48·9	24·9	115·6	16·6	31·48
Eden	0	107	60·0	67·7	51·8	14·2	106·0	29·3	34·21

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.

The Tablelands cover 25,831,246 acres. 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 Muniong 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	59·4	70·1	47·2	25·6	107·1	12·0	33·11
Inverell	124	1,980	60·0	73·1	45·9	25·0	110·6	13·4	30·57
Glen Innes	90	3,518	57·9	68·2	44·4	24·7	107·3	14·4	31·73
Bundarra	113	2,000	60·8	72·3	48·8	25·2	101·0	17·5	30·07
Armidale	81	3,333	56·2	67·4	44·0	24·5	105·2	11·2	31·33
Walcha	83	3,386	54·5	66·3	47·4	23·4	104·1	10·0	30·73
Murrurundi	94	1,545	60·9	73·7	49·7	19·8	107·3	19·0	31·79
Cassilis	120	1,500	60·8	73·6	45·3	21·7	111·7	15·8	23·78
Scone	78	680	62·7	74·8	49·8	23·4	114·4	22·2	23·74
Muswellbrook	68	475	63·8	75·2	49·4	25·4	117·6	19·0	23·69
Mudgee	121	1,635	62·1	73·8	49·0	29·3	114·9	18·0	25·70
Bathurst	96	2,200	57·1	69·8	44·1	28·0	112·9	13·0	23·69
Kurrajong Heights ...	35	1,870	53·3	61·7	43·9	13·3	99·5	25·5	49·73
Mount Victoria ...	61	3,490	54·4	65·2	42·6	19·6	106·0	11·9	36·85
Katoomba	53	3,349	53·0	61·9	42·5	15·3	100·0	25·9	56·06
Carcoar	111	2,380	56·1	70·4	43·0	19·4	104·9	15·4	29·31
Springwood	42	1,216	61·1	70·8	47·2	17·4	104·8	32·5	40·59
Cowra	126	987	63·1	78·8	48·5	23·5	116·1	21·0	24·08
Picton	22	549	60·0	71·7	49·2	24·3	112·0	19·7	29·77
Crookwell	81	2,000	52·0	64·7	39·4	23·7	100·8	12·1	31·90
Moss Vale	31	2,205	55·7	66·1	44·1	17·7	106·0	18·9	38·24
Goulburn	54	2,129	56·4	67·9	44·0	24·6	111·0	13·0	25·26
Yass	92	1,657	58·5	71·8	44·1	20·7	108·5	21·5	23·82
Queanbeyan	60	1,899	56·5	67·4	42·0	22·2	109·4	15·8	22·39
Kiandra	88	4,640	44·0	55·6	32·0	20·5	91·0	4 below zero	64·56
Cooma	52	2,637	54·3	60·2	41·6	29·1	112·0	8·5	18·98
Bombala	37	3,000	53·9	62·4	42·8	26·6	104·1	15·5	22·56

The country west of the Dividing Range includes the Western Slopes, covering 24,251,881 acres, the Western Plains, and Riverina with 45,827,854 acres, and the extreme Western Division with 80,368,498 acres. 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, an average rainfall of 25 inches ensuring good yields. The mean annual temperature ranges from 69° in the north to 60° in the south ; in the summer from 81° to 74°, and in the winter from 53° to 47°.

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

On the Western Plains, and in the extreme Western Division, the average rainfall is low. From the western watershed of the Great Dividing Range the rivers Murray and Darling flow towards the Southern Ocean, and in the extreme west of the State are the Barrier and Grey Ranges, the highest elevation being 2,000 feet.

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.

Western Slopes.

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	68·6	81·1	54·5	26·5	117·3	18·0	23·39
Warialda	162	1,106	63·4	77·8	49·3	29·4	117·7	16·0	28·30
Bingara	153	1,200	63·9	75·1	52·7	28·4	116·6	15·5	31·05
Narrabri	193	697	66·8	81·0	51·8	28·9	119·9	18·4	26·07
Gunnedah	156	874	66·1	79·6	51·2	28·0	120·6	16·7	24·58
Coonabarabran	185	1,710	59·8	72·7	46·3	32·6	111·9	11·4	29·31
Quirindi...	115	1,278	63·9	76·5	48·5	27·1	113·6	17·0	27·79
Dubbo	177	863	63·3	77·2	49·2	27·9	115·4	16·9	22·33
Forbes	176	789	62·8	76·8	48·6	24·5	118·4	24·0	19·85
Young	149	1,416	61·2	74·1	48·3	28·2	113·9	20·3	25·27
Maredens	187	700	64·8	76·8	49·2	25·0	119·7	19·0	19·78
Murrumburrah... ...	126	1,268	61·1	72·7	46·9	27·1	114·9	20·0	23·99
Wagga Wagga	158	615	61·9	76·0	47·3	28·1	119·0	18·4	21·50
Urana	213	400	62·3	76·2	48·1	22·6	117·0	18·4	16·94
Albury	175	531	60·6	74·2	47·6	27·5	117·3	19·9	27·78

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

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

Western Plains.

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	16·30
Walgett...	286	522	67·9	82·0	52·8	25·0	122·2	23·2	18·70
Bourke	383	350	69·2	83·6	54·1	27·8	127·0	25·0	14·86
Wilcannia	473	246	66·4	80·2	52 1	26·7	120·8	21·8	10·35
Cobar	345	803	67·0	80·8	52·7	24·2	118·7	25·0	14·52
Broken Hill	555	1,000	64·6	77·6	51·0	23·8	115·9	28·5	9·89
Mount Hope	296	600	65·3	80·9	50·3	24·8	123·6	24·6	15·41
Condobolin	227	709	62·7	76·8	50·8	25·6	122·2	20·5	17·61
Wentworth	478	144	64·0	76·7	51·1	26·7	119·0	21·0	12·10
Hay	309	291	63·2	76·1	50·6	27·8	117·3	22·9	14·35
Euston	422	188	64·2	77·0	51·0	33·2	124·8	17·1	12·33
Deniliquin	287	268	61 2	74·0	48·5	30·2	121·1	18·0	16·33

Winds.

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

In winter, the prevailing direction is westerly. Off the southern areas of the State the winds are almost due west, but proceeding northwards a southerly tendency is assumed, while on reaching latitudes north of Sydney the direction is almost due south. When they reach the north-eastern parts of the State, these winds are deflected in a westerly direction and become

merged in the south-east trade winds north of latitude 30°. During the cold months of the year, Australia lies directly in the great high-pressure stream referred to previously, and the high pressure when passing over the continent tends to break up into individual anticyclonic circulations moving contra-clockwise in the southern hemisphere.

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

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

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

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

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

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

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

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

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

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

Tides and Winds.

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

At Port Hunter, the average rise and fall of ordinary tides is 3 feet $4\frac{7}{12}$ inches, and of spring tides 5 feet $5\frac{1}{9}$ 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. For winds having velocity of 30 miles and over per hour—30 miles per hour is the minimum velocity effecting any appreciable retardation or reversal of current—the wind hours have been compiled from the records of the Meteorological Bureau for the five years ended 1912:—

Year.	N-E.		E-S.		S-W.		W-N.		Total Wind Hours.			
									From Northern Half of Compass.		From Southern Half of Compass.	
	Jan.–June.	July–Dec.	Jan.–June.	July–Dec.	Jan.–June.	July–Dec.	Jan.–June.	July–Dec.	Jan.–June.	July–Dec.	Jan.–June.	July–Dec.
1908	Nil	93	102	267	115	929	115	705	115	798	217	1,196
1909	Nil	90	87	494	253	1,298	658	609	658	699	340	1,792
1910	116	30	93	416	117	555	70	598	186	628	210	971
1911	171	...	292	...	477	480	371	538	542	538	769	480
1912	Nil	Nil	48	260	100	495	103	636	103	636	148	755

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

Observatory Records.

Sydney Observatory, lat. 33° 51′ 41·1″ south, long. 151° 12′ 23·1″ east, established in the year 1856, is an institution of a scientific and educational character maintained by the State. The immense growth of Sydney, radiating in every direction, has caused such adverse atmospheric conditions, that the site, which at one time was considered good, is now altogether unfavourable for satisfactory work, and the Government is contemplating its removal to a new site some little distance from the city.

Daily time-ball services are maintained at Sydney and Newcastle, and the Post and Telegraph Department, and several watch-making establishments, are regularly advised as to the correct time.

During 1912 115 earth tremors were recorded on a Milne seismograph; the observations taken comprised 665 zone stars, 385 clock stars, 108 azimuth stars, and 390 determinations of collimation and azimuth; and at the Red Hill Observatory magnetic work has been continued, the mean variation for the year being 9° 19′ 33″ east (from sixty observations). The resultant mean variation at Sydney is 9° 23′ 33″.

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

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

Meteorological Bureau.

Meteorological observations are directed by a special Meteorological Bureau situated at the Sydney Observatory, under the administration of the Commonwealth Government. Two bulletins and one weather chart are published daily by the Bureau. They contain full reports from 234 stations. During the year many bulletins, weather charts, and rain maps of New South Wales are issued. The rain-maps show daily, monthly, annual and storm distribution of rainfalls, together with departures from average. An isobaric chart, depicting also by symbols at a number of stations, the direction of wind, rain-areas, thunderstorms, and conditions of sea, together with a concise note on the resulting weather since the previous day, has been regularly prepared in the Bureau for publication in the Sydney newspapers.

Scientific Expeditions.

On 9th May, 1910, a total eclipse of the sun was observed at Bruni Island, Tasmania, by a party of Australian scientists, including representatives from New South Wales.

The weather was not propitious, and clouds and rain on the day of the eclipse interfered with the chief object of the expedition.

With the intention of witnessing, on 29th April, 1911, another total eclipse of the sun, and to take observations of the corona, an expedition, representative of Australian States, visited the Island of Vavau, of the Tongan Group, Friendly Islands, in the Pacific Ocean.

Valuable photographs of the corona were obtained, many of the negatives showing much detail, but during the short period of 217 seconds of obscuration the sky became cloudy, and the view of the eclipse was disappointing.

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

With the expedition led by Lieutenant Shackleton, who sailed in the "Nimrod" in 1908, were included representatives from New South Wales.

A party from this expedition found the South Magnetic Pole, and on 9th January, 1909, came within 97 geographical miles or 112 statute miles of the South Pole. Having acquired much valuable information, the expedition returned to Sydney early in the year 1909, fortunately without loss of life.

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, which sad information was received in New South Wales early in the year 1913 upon the return of the "Terra Nova."

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. It is believed that results of high scientific interest, and of economic value to Australia, will result from this expedition. Whilst proceeding to Antarctica, the "Aurora" called at Macquarie Island, upon which a wireless telegraph station was erected.

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.

While these expeditions were all engaged in their exploratory work, a Norwegian Expedition, under Captain Raoul Amundsen, returned to Australia early in 1912, and reported having reached the South Pole.

Daylight Saving.

The possibility of modifying and altering working hours, so as to enable workers generally to enjoy a greater measure of leisure time during daylight, has attracted considerable public interest in the past three years; and during 1911, a Bill was before the Legislative Assembly of New South Wales to secure this object, and a Select Committee of the Assembly was appointed to inquire into the question.

At the Interstate Conference of Premiers and Ministers, held in Melbourne, in January, 1912, the question of daylight-saving was recommended for the further investigation and consideration of each State Government, the information held by any Government that had already enquired into the matter to be made available to the Governments of the other States.

CONSTITUTION, GOVERNMENT, AND DEFENCE.

DEVELOPMENT OF REPRESENTATIVE GOVERNMENT.

Early Constitutions of New South Wales.

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

In 1823 an Act was passed in the Imperial Parliament, providing "for the better administration of justice in New South Wales and Van Diemen's Land" by the creation in New South Wales of a Legislative Council, with a minimum of five and a maximum of seven members, to be nominated by the Governor. This Council was to act as an advisory body to the Governor, and to have power and authority to assist him in making laws and ordinances. Five members were appointed under His Majesty's warrant of 1st December, 1823, viz.:—

Wm. Stewart, Lieutenant-Governor.
Francis Forbes, Chief Justice.
Fred. Goulburn, Colonial Secretary.
Jas. Bowman, Principal Surgeon.
John Oxley, Surveyor-General.

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

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

Representative Government.

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

Eight years' experience of partly representative government evidenced the necessity for extension of popular representation. In 1851 the Australian Colonies Government Act of the Imperial Parliament gave authority to the existing Legislative Council to prepare a democratic Constitution for the colonies. At the same time, provision was made for the establishment of Port Phillip District as a separate colony. In 1853 a select committee of the Council, which then numbered fifty-four, namely, thirty-six elective and eighteen

nominee members, adopted a draft Constitution for a Legislature of two Houses, which, with minor amendments, was accepted by the Imperial Parliament in 1855. The New South Wales Constitution Act, 1855, imposed a fully responsible system of government, entire control of Crown lands devolving upon the New South Wales Parliament, which also was empowered, subject to the provisions of the Act, to devise laws amending its Constitution.

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

Inauguration of the Commonwealth.

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

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

Functions.

Under the Commonwealth of Australia Constitution Act, the Parliament of the Commonwealth is empowered to make laws on matters affecting the peace, order, and good government of the Commonwealth, particularly with respect

to the following:—Trade and commerce with other countries and among States, taxation, bounties on production, borrowing money on public credit, postal, telegraphic and telephonic services, defence, lighthouses, astronomical and meteorological observations, quarantine, fisheries, census and statistics, currency, banking, insurance, weights and measures, bills of exchange, and promissory notes, bankruptcy, copyright, patents and trade marks, naturalisation and aliens, foreign corporations and trading, or financial corporations formed within the Commonwealth, marriage, divorce, invalid and old-age pensions, migration, external affairs, railway control in relation to defence and railway acquisition or construction, subject to the consent of the State, conciliation and arbitration in regard to disputes extending beyond the limits of one State.

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

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

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

Executive Government.

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

The Commonwealth.

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

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

THE STATE.

The Governor and the Executive Council.

The Governor is the representative of the British Sovereign; he is appointed by the King, and his functions and powers are defined by his Commission and the Royal Instructions accompanying it. He assents to Bills as passed by Parliament, or he may withhold his assent pending reference of a Bill to the Imperial Government, bills of certain classes being reserved for Royal Assent. In his Executive capacity, the Governor summons, and acts under advice of the Executive Council, the members of which, ten in number, 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 Lieutenant-Colonel J. Foveaux, N.S.W. Corps... Colonel W. Paterson, N.S.W. Corps	26 Jan., 1808	28 Dec., 1809
Major-General L. Macquarie	1 Jan., 1810	30 Nov., 1821
Major-General Sir T. Brisbane, K.C.B.	1 Dec., 1821	30 Nov., 1825
Lieutenant-General Ralph Darling	19 Dec., 1825	21 Oct., 1831
Major-General Sir Richard Bourke, K.C.B.	3 Dec., 1831	5 Dec., 1837
Sir George Gipps, 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

	From	To
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	10 Mar., 1913
Sir Gerald Strickland, G.C.M.G., Count della Catena	14 Mar., 1913	Still in office.

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

PARLIAMENTS.

THE COMMONWEALTH.

The Senate.

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

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

House of Representatives.

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

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

Qualifications and Allowances.

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

Franchise.

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

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

ELECTIONS.

Senate.

The following table shows the votes polled at the Senate Elections in the State of New South Wales:—

Election.	Electors Enrolled.		Electors to whom Ballot Papers were issued.		Informal Ballot Papers.	Percentage of Electors to whom Ballot Papers were issued to Electors Enrolled.		
Year.	Males.	Females.	Males.	Females.		Males.	Females.	Total.
1901	329,093	...	220,573	...	38,674	67·02	...	67·02
1903	360,285	326,764	189,877	134,487	15,796	52·70	41·16	47·21
1906	392,077	345,522	229,654	151,682	28,016	58·57	43·90	51 70
1910	444,269	390,393	301,167	241,635	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

House of Representatives.

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

Election.	Electors Enrolled (Contested Divisions only).		Electors to whom Ballot Papers were issued.		Informal Ballot Papers.	Percentage of Electors to whom Ballot Papers were issued to Electors Enrolled.		
Year.	Males.	Females.	Males.	Females.		Males.	Females.	Total.
1901	315,962	...	215,105	...	4,070	68·08	...	68·08
1903	303,254	274,763	164,133	118,381	7,834	54·12	43·08	48·88
1906	363,723	314,777	216,150	141,227	11,705	59·43	44·87	52·67
1910	431,702	379,927	294,049	207,868	8,602	63·11	54·71	61·84
1913	554,028	482,159	405,152	312,703	22,262	73·13	64·85	69·28

Although there was an increase in the percentage of voters at the last election, a very large proportion of the people enrolled—a little over one-quarter of the men and one-third of the women—failed to exercise their franchise.

REFERENDA.

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

State of New South Wales.

Date.	Referendum.	Votes recorded.			
		For.	Against.	Result.	Majority.
1898	Federation	71,595	66,228	*	5,367
1899	Federation	107,420	82,741	Accepted	24,679
1906	Constitution Alteration (Senate Elections).	286,888	55,261	Accepted	231,627
1910	Financial Agreement... ...	227,650	253,107	Rejected	25,457
1910	State Debts	159,275	318,412	Rejected	159,137
1911	Legislative Powers	135,968	240,605	Rejected	104,637
1911	Monopolies	138,237	238,177	Rejected	99,940
1913	Trade and Commerce ...	317,848	359,418	Rejected	41,570
1913	Corporations	317,668	361,255	Rejected	43,587
1913	Industrial Matters.	318,622	361,044	Rejected	42,422
1913	Railway Disputes	316,928	361,743	Rejected	44,815
1913	Trusts	319,150	358,155	Rejected	39,005
1913	Nationalisation of Monopolies.	301,192	341,724	Rejected	40,532

* Rejected, because 80,000 affirmative votes were not obtained.

Commonwealth of Australia.

Date.	Referendum.	Votes recorded.			
		For.	Against.	Result.	Majority.
1898	Federation	219,712	108,363	Accepted	111,349
*1899	Federation	422,788	161,077	Accepted	261,711
1906	Constitution Alteration (Senate Elections).	774,011	162,470	Accepted	611,541
1910	Financial Agreement... ...	645,514	670,838	Rejected	25,324
1910	State Debts	715,053	586,271	Accepted	128,782
1911	Legislative Powers	483,356	742,704	Rejected	259,348
1911	Monopolies	488,668	736,392	Rejected	247,724
1913	Trade and Commerce... ...	958,419	982,615	Rejected	24,196
1913	Corporations	960,711	986,824	Rejected	26,113
1913	Industrial Matters	961,601	987,611	Rejected	26,010
1913	Railway Disputes	956,358	990,046	Rejected	33,688
1913	Trusts	967,331	975,943	Rejected	8,612
1913	Nationalisation of Monopolies	917,165	941,947	Rejected	24,782

* Includes Western Australian Referendum, 1900.

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

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

Two proposals for altering the Constitution, referred in 1910, relate to financial arrangements between the States and the Commonwealth; the one, to give effect to an agreement regarding the amount of revenue which should be returned to the States, was rejected, and the other, to enable the Commonwealth to take over all the debts of the States, was passed by a majority in the Commonwealth as a whole, and in all the States except New South Wales. Previous to this alteration the Commonwealth was empowered to take over only such debts as had been incurred prior to federation.

Trade and Industrial Matters.

The referenda of 1911 resulted in the rejection of the proposals, which were for the purpose of extending the legislative powers of the Federal Government regarding trade and industrial matters, and to empower the Commonwealth to take control of industries subject to monopolies.

The clauses of the Constitution affected and the proposed alterations were as follows:—

"Section 51. The Parliament shall, subject to this Constitution, have power to make laws for the peace, order, and good government of the Commonwealth with respect to—

(*i*) Trade and commerce with other countries, and among the States."

Under this section, the powers of the Commonwealth Parliament are limited by the exclusion of the trade and commerce which does not extend beyond the boundaries of any one State. It was proposed to remove this limitation by omitting the words, "With other countries and among the States."

With regard to corporations, it was proposed to omit paragraph xx of section 51: "(xx) Foreign corporations, and trading or financial corporations formed within the limits of the Commonwealth," and to substitute the following:—

"Corporations, including—

"(*a*) The creation, dissolution, regulation, and control of corporations;

"(*b*) Corporations formed under the law of a State (except any corporation formed solely for religious, charitable, scientific, or artistic purposes, and not for the acquisition of gain by the corporation, or its members), including their dissolution, regulation, and control; and

"(*c*) Foreign corporations, including their regulation and control."

The proposed extension in regard to industrial matters was to be effected by the omission of paragraph xxxv of section 51: "(xxxv) Conciliation and arbitration for the prevention and settlement of industrial disputes extending beyond the limits of any one State," and the insertion of the words:—

"Labour and employment, including—

"(*a*) The wages and conditions of labour and employment in any trade, industry, or calling; and

"(*b*) The prevention and settlement of industrial disputes, including disputes in relation to employment on or about railways the property of any State."

The proposal also included the addition to this section of the following paragraph:—

"Combinations and monopolies in relation to the production, manufacture, or supply of goods or services."

These alterations to section 51 were embodied in the proposed law Constitution Alteration (Legislative Powers), 1910, and submitted to the electors on 26th April, 1911. The following statement shows the result of the referendum:—

State.	Votes recorded.					Majority against Proposed Alteration.	Percentage of total Electors to whom Ballot Papers were issued.
	For.	Against.	Informal.	Ballot Papers issued, but unaccounted for.	Total.		
New South Wales..	135,968	240,605	7,396	219	384,188	104,637	44·25
Victoria	170,288	270,390	7,554	334	448,566	100,102	62·01
Queensland ...	69,552	89,420	3,062	161	162,135	19,868	55·34
South Australia ...	50,358	81,904	1,374	166	133,802	31,546	61·94
Western Australia.	33,043	27,185	870	384	61,482	*5,858	44·33
Tasmania	24,147	33,200	673	33	58,053	9,053	56·73
Commonwealth..	483,356	742,704	20,869	1,297	1,248,226	259,348	53·31

* Majority in favour of alteration.

Except in the case of Western Australia, this proposal was rejected in each State, and consequently in the Commonwealth as a whole.

The second proposal to alter the Constitution was the addition of the following section :—

"51A. When each House of the Parliament, in the same session, has by resolution declared that the industry or business of producing, manufacturing, or supplying any specified goods, or of supplying any specified services, is the subject of a monopoly, the Parliament shall have power to make laws for carrying on the industry or business by or under the control of the Commonwealth, and acquiring for that purpose on just terms any property used in connection with the industry or business.

This proposal also was rejected by the electors of each State, except Western Australia, at the referendum on 26th April, 1911. The voting was as follows :—

State.	Votes recorded.					Majority against.	Percentage of total Electors to whom Ballot Papers were issued.
	For.	Against.	Informal.	Ballot Papers issued, but unaccounted for.	Total.		
New South Wales..	138,237	238,177	7,618	156	384,188	99,940	44·25
Victoria	171,453	268,743	8,041	329	448,566	97,290	62·01
Queensland ...	70,259	88,472	3,200	204	162,135	18,213	55·34
South Australia ...	70,835	81,479	1,344	144	133,802	30,644	61 94
Western Australia.	33,592	26,561	398	431	61,482	*7,031	44·33
Tasmania	24,292	32,960	753	48	58,053	8,668	56·73
Commonwealth..	488,668	736,392	21,854	1,312	1,248,226	247,724	53·31

*Majority in favour of alteration.

In connection with the question of vesting in the Commonwealth Government wider powers, legislative and industrial, a conference of State Premiers and Ministers held in January, 1912, resolved that, as a matter of expediency, a Bill should be submitted in each of the State Parliaments referring to the Parliament of the Commonwealth the following matters:—

(1.) Labour and Employment.—As regards the prevention and settlement of industrial disputes extending beyond the limits of a single State, and the extension of federal awards or orders as common rules, binding upon all persons subject to such award, order or common rule, whether wages or conditions in the particular industry have been determined by a State industrial authority, or where no such authority exists.

(2.) Combinations and Monopolies.—So as to enable the Commonwealth Parliament to control or to acquire . . . . . such business or industry (as) extends beyond the limits of any one State, and is determined by the High Court to be in restraint of trade, commerce, or to the detriment of the public; to acquire upon just terms property in such business, and to retain a monopoly of such business.

(3.) Unfair Competitions arising between States.—The Commonwealth Parliament should have authority to inquire into any complaint referred by a State Industrial Tribunal to a State Court, thence to the Commonwealth authority, which should have power to determine and regulate matters due to the conditions of industry under which the employees in competing industries may work.

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.

The State.

The Legislative Council.

Under the Constitution Act, 1902, the Governor may summon to the Legislative Council any person he thinks fit, provided such person is of the full age of 21 years, and is a natural-born or naturalised subject of His Majesty in Great Britain or in New South Wales. At least four-fifths of the members summoned to this Council must be persons not holding any office of emolument under the Crown; the members have a life tenure of office, subject to certain qualifications; but are not entitled to remuneration for their services. As a matter of privilege, members of the Council are allowed to travel free on the State railways and tramways. The Council must consist of at least twenty-one members, and in November, 1913, numbered fifty-six. The President receives an annual salary of £750, and the Chairman of Committees £470.

The Legislative Assembly.

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

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

Parliament may be dissolved at the discretion of the Governor, if the Government is defeated in the Assembly, otherwise it exists in terms of the Triennial Parliaments Act, 1874, for three years, the limit of duration previously having been 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.

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. Holders of Government pastoral licenses and persons who had a yearly salary of £100, or paid £40 per annum for board and lodging, were also entitled to vote. Electors were allowed a vote in each electorate in which they possessed the necessary qualifications. In 1859 the membership of the Assembly was increased to 72, and the franchise was given to every male adult British subject who for six months previously to the collection of the rolls had resided in the district and held property of the clear value of £100 or annual value of £10, or occupied a building valued at £10 per annum, or held Crown lease or license for pastoral purposes. Holders of miners' rights were allowed to vote in "goldfields" electorates. Officers of military or police services were disqualified, as well as persons in receipt of public charity.

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

The Parliamentary Elections Act, 1911, provides 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 are specified as from 8 a.m. to 7 p.m., the polling-day being a public holiday from 12 o'clock noon; and further, under the Liquor Amendment Act, 1905, a close day for hotels. The introduction of the absent voter principle enables electors, absent from their districts, to record a vote for the electorate for which they are enrolled, at any polling-place within the State, on making a declaration. Provision is made also for an annual Police collection and revision of rolls, the occupiers of dwelling-houses being required to prepare schedules showing the persons living in the houses.

The Parliamentary Elections (Second Ballot) Act, 1910, provides that a candidate shall not be deemed to be elected a member of the State Legislative Assembly unless he has received 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. The votes recorded at the first ballots in these districts have been excluded from the following table which shows the voting of the seven elections held in New South Wales since plural voting was abolished:—

Parliament.		Voters on Roll.	Electors to a Member.	Total Members returned.	Members unopposed.	Contested Electorates.				
Year.	Number.					Electors on Roll.	Votes recorded.	Percentage of Votes recorded.	Informal Votes.	Percentage of Informal Votes.
1894	16th	298,817	2,390	125	1	254,105	204,246	80·38	3,310	1·62
1895	17th	267,458	2,139	125	8	238,233	153,034	64·24	1,354	·88
1898	18th	324,339	2,595	125	3	294,481	178,717	60·69	1,638	·92
1901	19th	346,184	2,769	125	13	270,861	195,359	72·13	1,534	·79
1904	20th Males...	363,062	7,661	90	2	304,396	226,057	74·26	3,973	·59
	Females	326,428				262,433	174,538	66·51		
1907	21st Males...	392,845	8,288	90	5	370,715	267,301	72·10	13,543	2·87
	Females	353,055				336,680	204,650	60·78		
1910	22nd Males...	458,626	9,641	90	3	444,242	322,199	72·53	10,393	1·78
	Females	409,069				400,139	262,154	65·52		

During the life of the 22nd Parliament eight writs were issued for by-elections.

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 last election 65·5 per cent. voted, so that 34·5 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 in 1910 being 72·5 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.

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

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. On 4th August, 1911, three Electoral Districts Commissioners were appointed for the purpose of redistributing electorates in accordance with the Parliamentary Electorates and Elections Act, 1902, and its subsequent amending Acts. The Report was presented to Parliament in 1912.

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

Parliament.	Opened.	Dissolved.	Duration.			No. of Sessions.
			yrs.	mths.	dys.	
First	22 May 1856...	19 Dec. 1857...	1	6	28	2
Second...	23 March 1858...	11 April 1859...	1	0	19	2
Third	30 Aug. 1859..	10 Nov. 1860..	1	2	11	2
Fourth...	10 Jan. 1861...	10 Nov. 1864...	3	10	0	5
Fifth	24 Jan. 1865...	15 Nov. 1869...	4	9	22	6
Sixth	27 Jan. 1870...	3 Feb. 1872...	2	0	7	3
Seventh	30 April 1872...	28 Nov. 1874...	2	6	28	4
Eighth...	27 Jan. 1875...	12 Oct. 1877...	2	8	16	3
Ninth	27 Nov. 1877...	9 Nov. 1880...	2	11	12	3
Tenth	15 Dec. 1880...	23 Nov. 1882...	1	11	8	3
Eleventh	3 Jan. 1883...	7 Oct. 1885...	2	9	4	6
Twelfth	17 Nov. 1885...	26 Jan. 1887...	1	2	9	2
Thirteenth	8 March 1887...	19 Jan. 1889...	1	10	11	3
Fourteenth	27 Feb. 1889...	6 June 1891...	2	3	7	4
Fifteenth...	14 July 1891...	25 June 1894...	2	11	11	4
Sixteenth	7 Aug. 1894...	5 July 1895...	0	10	29	1
Seventeenth	13 Aug. 1895...	8 July 1898...	2	10	26	4
Eighteenth	16 Aug. 1898...	11 June 1901...	2	9	26	5
Nineteenth	23 July 1901...	16 July 1904...	2	11	24	4
Twentieth	23 Aug. 1904...	12 July 1907...	2	10	20	4
Twenty-first	2 Oct. 1907...	14 Sept. 1910...	2	11	12	5
Twenty-second ...	15 Nov. 1910..	6 Nov. 1913...	2	11	21	5

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:—

No.	Ministry.	From—	To—	Duration.	
				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, Colonial Secretary and Attorney-General...	Hon. W. A. HOLMAN.
Colonial Treasurer	Hon. J. H. CANN.
Secretary for Lands, and Minister for Agriculture	Hon. J. L. TREFLE.
Minister for Public Works	Hon. A. GRIFFITH.
Minister of Justice and Solicitor-General	Hon. D. R. HALL, M.L.C.
Minister of Public Instruction...	Hon. A. C. CARMICHAEL.
Secretary for Mines	Hon. A. EDDEN.
Minister for Labour and Industry	Hon. J. S. T. McGOWEN.
Vice-President of the Executive Council and Associate Chief Secretary.	Hon. F. FLOWERS, M.L.C.

Cost of Parliament—New South Wales.

The following statement shows the cost of Parliamentary Government in New South Wales during the five financial years 1909-13.

Head of Expenditure.	1909.	1910.	1911.	1912.	1913.
Governor—	£	£	£	£	£
Governor's salary	5,000	5,000	5,000	5,000	5,000
Official Secretary	310	335	335	375	400
Private Secretary	350	376	350	350	350
Aide-de-Camp	412	324	350	350	350
Orderlies	553	505	728	730	803
Additions, Repairs and maintenance of Residences	2,843	972	8,183	1,144	1,180
Miscellaneous	1,110	1,135	1,231	1,114	...
Total ... ... £	10,578	8,647	16,177	9,063	9,346
Executive Council—					
Salaries of Officers...	250	270	279	257	250
Other Expenses	...	...	25	25	258
Total ... ... £	250	270	304	282	508
Ministry—					
Salaries of Ministers	11,040	11,040	11,040	10,969	11,040
Other expenses	1,261	1,006	1,445	1,471	2,777
Total ... ... £	12,301	12,146	12,485	12,440	13,817
Parliament—					
The Legislative Council—					
Railway passes	5,894	6,675	5,810	5,472	5,855
Other expenses	470	125	...	...	...
	6,364	6,800	5,810	5,472	5,855
The Legislative Assembly—					
Allowances to Members	24,292	24,122	22,423	24,205	38,887
Railway passes	9,956	10,099	10,860	11,006	9,699
Other expenses (Postage Stamps, &c.)	1,199	1,622	1,583	1,651	1,816
	35,447	35,843	34,866	36,862	50,402
Miscellaneous—					
Fees and expenses of Parliamentary Standing Committee on Public Works	3,978	5,926	5,529	6,095	5,980
Salaries of Officers and Staff	20,456	20,224	18,903	21,263	21,882
Printing	6,978	7,001	7,687	7,398	10,823
Hansard (including Salaries)	4,666	4,683	5,668	5,958	7,378
Library	702	666	795	670	684
Refreshment Rooms	412	400	465	299	106
Water, power, light, and heat ...	731	673	504	766	682
Postage, stores, and stationery ...	1,665	723	887	1,174	696
Miscellaneous	1,295	680	564	694	2,005
	40,883	40,976	41,002	44,317	50,236
Total Parliament £	82,694	83,619	81,678	86,651	106,493
Electoral Office and Elections—					
Salaries	1,809	773	788	918	995
Printing of Electoral Rolls, expenses of Electoral Registrars, and contingencies	2,835	16,184	35,291	23,989	34,867
Total ... ... £	4,644	16,957	36,079	24,907	35,862
Royal Commissions and Select Committees—					
Fees, &c.	2,463	...	2,627	6,721	3,492
Miscellaneous	6,393	1,477	1,165	4,197	2,170
Total ... ... £	8,856	1,477	3,792	10,918	5,662
Grand Total ... ... £	119,323	123,116	150,515	144,261	171,688

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.

Meetings of the Committee may not be held in the country districts whilst Parliament is sitting.

The Committee has full power, under the Public Works Act, to prosecute inquiries, to summon 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. In no year are the total fees allowed to exceed £5,000.

Proposals for public works, the estimated cost of completing which exceeds £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 22nd July, 1912, shows that the total expenditure proposed by the various Governments was £53,758,449, and the expenditure recommended by the Committee was £30,423,943.

LOCAL GOVERNMENT.

Subsidiary to the Parliamentary and Administrative Government of the State, a system of Local Government is in operation in New South Wales, which directly links the people in defined localities with the centralised government. Such is the importance of this system, and so extensive are its functions that a later chapter of this Year Book is specially devoted to it in considerable detail.

The Local Government Act, 1906, with its subsequent amendments, embodies the results of fifty years experimental effort towards decentralised government. 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.

The city of Sydney is, however, outside the jurisdiction of the Local Government Act, being incorporated under a special Act in 1842.

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

Administrative Government of the State.

Functions.

In New South Wales the various Departments of the Public Service, controlled by Ministers of the Government, as previously enumerated, are charged with the administration of Acts of Parliament, the conduct of public business, and the performance of functions incidental to the good government of the State. Following is a summary of the general functions of the different Departments :—

Department of the Premier.

Departmental business connected with—

(*a*) The State Governor's Office and Establishments.

(*b*) 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*) The Foreign Consuls.
Agency-General.
Immigration and Tourist Bureau.
Departmental business connected with Norfolk Island.

Department of the Chief Secretary.

Executive Council Office.
Public Seal and Registration of Commissions thereunder.
Execution of Capital Sentences.
Appointment of Magistrates.
Business relating to Ecclesiastical Establishments.
Issue of Licenses for Public Entertainments and for Racecourses.
Medical Establishment, including the Officers appointed for the purposes of Vaccination, and the Medical Board.
Private Hospitals.
Institutions for the care and treatment of Inebriates, and of the Insane.
Metropolitan and Country Hospitals.
Charitable Institutions aided from the Consolidated Revenue.
Department of Audit.
Police Department.
The Director-General of Public Health, under whose control are—
Public Health Department.
Coast Hospital, Little Bay.
The State Hospitals and Charities.
The Bureau of Microbiology.
Board of Fire Commissioners of New South Wales.
Aborigines Protection Board.
Bureau of Statistics and Registry of Friendly Societies and Trade Unions.
Electoral Office.
State Fisheries.
Master in Lunacy's Office.
Meat Industry and Abattoirs Board.
Dental Board.
Departmental business connected with Lord Howe Island Board of Control.
Closed Cemeteries and Exhumation of Bodies for the purpose of Re-interment, &c.
All matters of business not expressly assigned and confided to any other Minister.
Correspondence with—
The Heads of the several Churches;
The Returning Officers for Electoral Districts;
And also, as occasion may arise, with other public officers and public bodies.

Department of the Treasury.

Management of the Consolidated Revenue, Public Works, Closer Settlement, Treasury Guarantee, General Loan and Railway Loan Funds, and Special Deposits Accounts.
Receipt of collections by Accounting Officers and of Taxes, Imposts, Rates, and other revenues of the Crown payable to the Consolidated Revenue Fund.
Payment of claims against the Crown.
Public Banking Arrangements.

Management and Regulation of the Public Debt.
Flotation of Loans.
Sale, inscription, and management of Stocks on the Sydney Register.
Periodical inspection of the accounts of Official Assignees and the Registrar in Bankruptcy, under the provisions of the Bankruptcy Act; of the Curator of Intestate Estates, under the Wills, Probate, and Administration Act.
Exercise, in regard to the State Railways and Tramways, of the powers conferred upon the Minister by the "Government Railways Act, 1912."
Exercise, in regard to the Sydney Harbour Trust, of the powers conferred upon the Minister by the "Sydney Harbour Trust Act, 1900."
Exercise, in regard to the Housing of Workers and others, of the powers conferred upon the Minister by the "Housing Act, 1912."
Public Printing, including the printing of Duty Stamps, and of Railway and Tramway Tickets.
Publication of the *Government Gazette*.
Supervision of the engagement and discharge of Seamen, and all matters relating thereto.
Storage and safe custody of, and issue of permits for, gunpowder and explosive substances required for mercantile purposes.
Registration of the Guarantees under the Pure Food Act, 1908.
Payment of Imperial Pensions and Allowances.
Payment of Pensions and Allowances for and on account of Crown and other Colonies.
Control of the Stores Department, which deals with the purchase and distribution of Stores, Stationery, and Furniture for the Public Service.
Issue, under various Acts of Parliament, of the following Licenses, viz. :—
Auctioneers', Publicans', Booth, Billiard, Bagatelle, Brewers', Spirit Merchants', Packet, Tobacco, Cigars and Cigarettes, Colonial Wine, Railway Refreshment Room, Oyster Vendors', Fishermen's, and Fishing Boat.

Correspondence with the Banking Institutions transacting business on behalf of the Government, in the State and elsewhere, and with all Government Departments and Officers, on the subject of collecting, expending, and accounting for the Public Revenues.

Department of 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, the Crown Prosecutors, the Clerk of the Peace.
Statute Law Consolidation.

Correspondence with the other Ministers on questions on which legal opinion may be required, and with Judges, with regard to matters coming under Ministerial control.

Department of Justice.

Business relating to—
The Equity Office, Bankruptcy Office, Sheriff's Office, Probate and Intestate Estates Office, Registrar-General's Office, 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, forfeitures, and estreats.
Control of Court-houses.

Department of Mines.

Business relating to Mining generally.
Geological and Mining Surveys and Assays.
Examination of Coal-fields.
Inspection of Collieries and Mines.
The Prospecting Vote.

Department of Lands.

Business relating to Land Matters generally.
Alignment of Streets.
Annual Leases.
Auction Sales.
Brickmaking permits.
Business relating to the office of President and Commissioners of the Land Appeal Court.
Closer Settlement Advisory Boards.
Conditional Purchases.
Conditional Leases.
Conditional Purchase Leases.
Crown Leases.
Examination of Applicants for License to Survey Crown Lands.
Exchange of Lands.
Homestead Farms and Selections.
Improvement Leases.
Improvement Purchases on Gold-fields.
Land Appeal Court.
Local Land Boards.
Maps, compilation, lithography and publication of State, county, parish, town and environs—and the sale of copies to the public.
National Park.
Occupation Licenses.
Pastoral Leases.
Preparation of Deeds of Grant.
Proclamation of Towns and Villages.
Recreation Reserves, and appointment of Trustees for same.
Quarry Licenses.
Reserves, Dedications, and Resumptions for Public Purposes.
Residential Leases.
Scrub Leases.
Settlement Leases.
Snow Leases.
Special Leases.
Special Sales, including the rescission of reservations of water frontage reclamations, unnecessary roads, &c.
Suburban Holdings.
Survey of Public Lands for purposes of Alienation, Lease (other than Mineral Lease), or Dedication for Public Purposes, Topographical Surveys for purposes of Compilation of Maps.
Subsidies for Parks and Recreation Grounds.
Trespasses on Crown Lands.

Department of Public Works.

Construction of Railways and Tramways, and works and buildings connected therewith.
Construction and maintenance of Docks and Engineering Establishments.
Construction and repair of Wharves, Basins, and Breakwaters, excepting such works as are vested in the Sydney Harbour Trust.
Erection and repair of Lighthouses and Signal Stations.
Dredging and improvement of Harbours and Rivers, excepting such works as are vested in the Sydney Harbour Trust.
Works for Artesian Boring and the storage of Water on travelling stock routes, and for Town Supply in the Pastoral Districts.
Public Watering Places, and Protection of certain reserves from trespass, other than those under the control of Municipal and Shire Councils.
Works in connection with Water Rights, as defined by Water Act, 1912.
Construction and maintenance of Water Conservation Works.
Construction of Water Supply Works and Sewerage and Drainage Works in Sydney and Suburbs, and in Country Towns.
Erection, repair, and maintenance of Public Buildings.
Erection and repair of buildings, &c., for the Commonwealth of Australia, in the State of New South Wales, when requested by the Commonwealth authorities.
Formation and maintenance of Roads not under Municipal or Shire control, and of Military Roads.
Construction and maintenance of National Bridges, and of bridges outside Municipalities in the Western Division.
Management of Public National Ferries, and of ferries outside Municipalities in the Western Division.
Resumption of Land for Public Purposes.
Detail Survey of Sydney and Suburbs.

Department of Labour and Industry.

Industrial Arbitration Office.
State Labour Bureau.
Factory Inspection.

Department of Public Instruction.

Matters relating to Education generally.
Technical Education.
State Scholarships and Bursaries.
Bursary Endowment Board.
Kindergarten Schools.
Medical Inspection of Schools and School Pupils.
Control of Lands dedicated or acquired for the purpose of Public Instruction by Act of Parliament or otherwise.
State Children Relief Board.
The University and Affiliated Colleges.
Public Library of New South Wales.
Sydney Grammar School.
Institutions aided from the Consolidated Revenue, including Literary and Scientific Institutions, Schools of Arts, &c.
Sydney Observatory.
Australian Museum.
National Art Gallery of New South Wales.
Royal Art Society.
Shelters, Industrial Schools, and Homes for Children.
Charitable Schools aided from Consolidated Revenue.

Department of Agriculture.

Administration of all matters relating to Agriculture, including the Agricultural College and Experiment and Demonstration Farms, Viticultural Stations, and Nurseries.
Forestry.
Commons.
Botanic Gardens, Sydney, and Centennial Park, and Domain.
Nursery Gardens, Campbelltown.
Management and Control of the Hay, Wentworth, and Murrumbidgee Irrigation Areas.
Irrigation Farms.
Irrigation at Artesian Bores.
Supervision of Dairies for Instructional purposes.

Commissions and Trusts.

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

Railways and Tramways Commissioners.
Metropolitan Board of Water Supply and Sewerage.
Hunter District Water Supply and Sewerage Board.
Sydney Harbour Trust.
Murrumbidgee Irrigation Trust.
Housing Board.

In each case the authority controls a specific and frequently localised service, and administers the statute law as enacted by Parliament in relation to that service.

STATUTE LAW ADMINISTRATION.

Following is the Statute Law administered in each Ministerial Department of the State :—

Department of the Chief Secretary.

Aborigines Protection, 1909.
Audit, 1902.
Banks and Bank Holidays, 1912.
Benevolent Society of New South Wales, 1902.
Birds Protection, 1901.
Bread, 1901.
Building and Co-operative Societies, 1901.
Butchers' Shops Sunday Closing, 1902.
Careless Use of Fire, 1912.
Cattle Slaughtering and Diseased Animals and Meat, 1902.
City of Sydney Improvement.
Constitution, 1902.
Dairies Supervision, 1901.
David Berry Hospital, 1906.
Dental Hospitals Union, 1904.
Dentists, 1912.
Destitute Children's Society, 1901.
Diseased Animals and Meat (Amendment), 1910.
Dog and Goat, 1898.
Fire Brigades, 1909, and Amendment, 1910.
Fisheries, 1902, and Amendment, 1910.
Friendly Societies, 1912.
Gaming and Betting, 1912.
Hawkesbury Benevolent Society, 1840, and Amendments, 1860, 1903.
Height of Buildings, Metropolitan Police District, 1912.

Homing Pigeons Protection, 1910.
Indecent Publications, 1900, and Amendment 1900.
Inebriates, 1912.
Influx of Criminals Prevention, 1903.
Juvenile Smoking Suppression, 1903.
Lunacy, 1898.
Maitland Hospital (Infectious Wards), Enabling, 1912.
Medical Practitioners, 1912.
Metropolitan Traffic, 1900.
Motor Traffic, 1909.
Native Animals Protection, 1903.
Net-fishing (Port Hacking), 1901.
Newcastle District Abattoir and Sale Yards, 1912.
New South Wales Institution for the Deaf and Dumb and the Blind Incorporation, 1905.
Noxious Trades, 1902.
Obscene and Indecent Publications, 1901.
Parliamentary Electorates and Elections, 1912.
Party Processions Prevention, 1901.
Police Offences, 1901, and Amendment, 1908.
Police Regulation, 1899.
Police Regulation (Superannuation), 1906.
Prevention of Cruelty to Animals, 1901.
Prince Alfred Hospital, 1902.
Printing, 1899.
Private Hospitals, 1908.
Public Health, 1902.
Public Health (Night-soil Removal), 1902.
Public Hospitals, 1898.
Public Hospitals (Voting) 1900.
Public Institutions Inspection, 1901.
Pure Food, 1908.
Quarantine, 1897.
Royal Alexandra Hospital for Children Incorporation, 1906.
Royal North Shore Hospital of Sydney, 1910.
Second-hand Dealers and Collectors, 1906.
Senators Elections, 1903, and Amendment, 1912.
Smoke Nuisance Abatement, 1902.
Sydney Abattoir and Nuisances Prevention, 1902.
Sydney Coal Delivery, 1901.
Sydney Corporation, 1902, and Amendments, 1902-5-6-8-11
Sydney Corporation Dwelling Houses, 1912.
Sydney Hospital, 1881.
Sydney Industrial Blind Institution Incorporation, 1901.
Sydney Stock-driving, 1906.
Theatres and Public Halls, 1908.
Vagrancy, 1902, and Amendment, 1905.
Weights and Measures, 1898.

Department of the Treasury

Banks and Bank Holidays, 1912 (Sec. 22).
Poisons, 1902.
Stamp Duties, 1898, and Amending Acts.
Land and Income Tax.
Explosives, 1905.
Pharmacy, 1897.
Navigation, 1901.

Wharfage and Tonnage Rates, 1902.
Savings Bank of New South Wales, 1902.
Government Savings Bank, 1906.
Seamen's, 1898.

Department of the Attorney-General.

Crimes, 1900, and Amendment, 1905.
Crimes (Girls' Protection), 1910, and Amendment, 1911.
Criminal Appeal, 1912.
Common Law Procedure, 1899.
District Courts, 1912.
Lotteries and Art Unions, 1901.
Poor Prisoners' Defence, 1907.
Public Service, 1902, and Amendments.
Supreme Court and Circuit Court, 1900, and Amendment, 1912.

Department of Justice.

Auctioneers' Licensing, 1898.
Bankruptcy, 1898.
Billiards and Bagatelle, 1902.
Claims against the Government and Crown Suits, 1912.
Companies, 1899, and Amendments.
Contractors Debts, 1897.
Coroners, 1912.
District Courts, 1912, in so far as it relates to the Registrars and to Officers acting under their control.
Fines and Forfeited Recognisances Recovery, 1902.
Fines and Penalties, 1901.
Habitual Criminals, 1905.
Hawkers and Pedlers, 1901.
Influx of Criminals Prevention, 1903
Interstate Debts Recovery, 1901.
Justices, 1902, and Amendments.
Jury, 1912.
Legal Process Facilitation, 1904.
Liens on Crops and Wool and Stock Mortgages, 1898.
Liquor, 1912.
Marriage, 1899.
Money Lenders and Infants Loans, 1905.
Newspapers, 1898.
Pawnbrokers, 1902.
Prisons, 1899.
Real Property, 1900.
Registration of Births, Deaths, and Marriages, 1899.
Registration of Deeds, 1897.
Registration of Firms, 1902.
Sheriff, 1900.
Small Debts Recovery, 1912.
State Carriages, 1899, and Amendment, 1903.
Wills, Probate, and Administration, 1898, and Amendments.

Department of Mines.

Coal Mines Regulation, 1912.
Miners' Accident Relief, 1900, and Amendments.
Mines Inspection 1901, and Amendments.
Mining, 1906, and Amendment.
State Coal Mines, 1912.

Department of Lands.

All Acts relating to the alienation, occupation (otherwise than for mining) and management of Crown Lands (other than lands within State Forests and Timber Reserves), and of lands held under the Church and School Lands Act, No. 20, 1897, also
Closer Settlement, 1904–6–7–9–12.
Closer Settlement Promotion, 1910.
Labour Settlements, 1902.
Necropolis, 1902.
Newcastle Pasturage Reserve, 1900.
Pastures Protection, 1902, and Amendment, 1906, as relating to the distribution of rabbit-proof wire-netting and fencing.
Prickly Pear Destruction, 1901.
Public Gates, 1901.
Public Parks, 1912.
Public Roads, 1902.
Public Trusts, 1897.
Royal Agricultural Society, 1911.
Western Lands, 1901, and Amendments, 1905–8–9.

Department of Public Works.

The Acts dealing with Metropolitan and Country Towns, Hunter District Water Supply and Sewerage; also certain Acts dealing with Main and Parish Roads, Bridges, Tolls, &c.; and all Acts authorising the carrying out of Public Works.
Local Government, 1906, and Amendment, 1908.
Local Government (Loans), 1907.
Public Works, 1912.
Public Watering Places, 1900 (part).
Scaffolding and Lifts, 1912.
Water, 1912.

Department of Labour and Industry.

Agreements Validating, 1902.
Apprentices, 1901.
Clerical Workers, 1910.
Early Closing, 1899, and Amendments, 1900–6–10.
Factories and Shops, 1912.
Gas, 1912.
Industrial Arbitration, 1912.
Minimum Wage, 1908.
Saturday Half Holiday, 1910.
Shearers' Accommodation, 1901.
Truck 1900, and Amendment, 1901.
Workmen's Compensation, 1910.

Department of Agriculture.

Balranald Irrigation, 1902.
Commons Regulation, 1898.
Fertilisers, 1904.
Forestry, 1909.
Fruit Cases, 1902.
Hay Irrigation, 1902.
Irrigation, 1912.
Murrumbidgee Irrigation, 1910.
Pastures Protection, 1902, and Amendment, 1906, except as relating to wire-netting and fencing.

Stock, 1901.
Stock Diseases (Tick), 1901.
Trustees of Show-grounds Enabling, 1903.
Vine and Vegetation Diseases and Fruit Pests, 1912.
Water, 1912.
Wentworth Irrigation, 1890.
Wine Adulteration, 1902.

Department of Public Instruction.

Anatomy, 1901.
Australian Museum, 1902.
Bursary Endowment, 1912.
Children's Protection, 1902.
Free Education, 1906.
Infant Protection, 1904.
Library and Art Gallery, 1899.
Neglected Children and Juvenile Offenders, 1905.
Public Instruction, 1880.
Sydney Grammar School, 1854.
State Children Relief, 1901.
Trustees of Schools of Arts Enabling, 1902.
Trades Hall and Literary Institute, 1893.
University and University Colleges, 1900, and Amendment, 1902.

Royal Commissions of Inquiry.

Reports Presented.

The important Royal Commissions which have been reported to the Parliament of New South Wales between the year 1856 and 31st October, 1913, are as follow :—

Accidents :—Bulli Colliery, 1887.
Broken Hill South Mine, 1901.
Central Mine, Broken Hill, 1903.
Ferndale Colliery, 1885–6.
Lithgow Valley Colliery 1885–6.
Great Southern Railway, 1858.
Mount Kembla Colliery, 1903.

Administration :—Fire Brigades Acts and Board, 1911.
Industrial Arbitration Act, 1913.
Lands Department, 1906, 1907.
Mental Hospital and Reception House, 1913.
Parliamentary Reporting Staff—Suspension of Principal Shorthand Writer, 1912.
Police—Disorderly Houses, Newcastle, 1911.
Railways, 1885–6.
Stock Diseases (Tick) Act (1901), 1911.
Weights and Measures Office, 1906.
Works Department, 1911.

Alleged Tramway Frauds, 1888–9.
Baldwin Locomotive Engines, 1892–3.
Bayview House Asylum for Insane, Cook's River, 1894–5.
Capital Punishment, 1867–8.
Casual Labour Board, 1889.
Case of Regina *v.* George Dean, 1895.
Case of William Creswell, 1900.
Cattle Tick, 1912.

Charges :—Staff of Mudgee Hospital, 1897.
Messrs. Sleath and Ferguson, M.P., 1898.
Mr. Eddy, Chief Commissioner for Railways, 1892–3.
Mr. W. M. Fehon, 1889.
Police and Prison Officials at Bathurst, 1911.
Alleged Illtreatment of Prisoners at Darlinghurst Gaol, 1911.
Dismissal of Public School Teacher at Kyamba, 1911.
Minister for Public Works Practices, 1912.

Charities :—Working and Management of Public Charities, 1873–4.
Institution Deaf and Dumb and Blind, Strathfield, 1898.
Benevolent Society, 1898.
Hospitals, 1899.

Chinese Gambling and Charges of Bribery against Members of the Police Force, 1891–2.

City Railway Extension, 1891–2, 1897.

Claims of Members of New South Wales Contingents in South Africa, 1906, 1907.

Coal-Mines Regulation Bill, 1895.
Thick Seam Working, Maitland-Cessnock, 1911.

Communication between Sydney and North Sydney, 1891–2, 1909.

Conduct of Hon. J. H. Young during Election for the Hastings and the Macleay, 1898.

Conservation of Water, 1885–6, 1887.

Conservation and Distribution of Water in the Murray River Basin, 1902.

Construction of Public Halls and other Places of Public Amusement and Concourse, 1887.

Contagious Diseases among Rabbits, 1889.

Contracts of Messrs. Carter, Gummow, & Co., 1897.

Crown Tenants of the Western Division, 1901.

Dangers to Vessels carrying Coal, 1900.

Decentralisation in Railway Transit, 1910–11.

Decline of Birth-rate and Mortality of Infants in New South Wales, 1904.

Defence New South Wales, 1876–7, 1881.
Works, Bare Island, 1891–2.

Drain Pipes used by Metropolitan Board of Water Supply and Sewerage, 1913.

Earth Subsidences at Newcastle, 1908.

Education—Primary and Secondary, 1904.

Electoral-Districts Redistribution, 1911.
Supersession of Returning Officer, Newtown, 1911.

Fisheries, 1879–80, 1889, 1894–5.

Floods in the Hunter River District, 1870–1.

Food-Supply, &c., of Sydney, 1911.
Standardisation of Australian Manufactured Food Products, 1913.

Food Supplies and Prices :—
(*a*) Interim Report—Fish, 1912.
(*b*) do Milk, 1913.

Forestry, 1908.

Friendly Societies, 1883.

Formation, Constitution, and Working of the Machine Shearers' and Shed Employees' Union, Industrial Union of Employees, 1905.

Harbour of Port Jackson, 1866.

Improvement of the City of Sydney and Suburbs, 1909.

Intoxicating Drink, 1887–8.
Iron Industry of New South Wales, 1911.
Keeping Disorderly Houses at Newcastle, 1911.
Kentia Palm Seed Trade and Lord Howe Island, 1911.
Do Industry, 1912.
Law :—Consolidation of Statutes, 1896, 1902–1912.
Crown Lands Statutes, 1912.
Reform, 1870–1.
Lighthouses in the Australian Colonies, 1856–7.
Locomotives :—Supply and Manufacture at Eveleigh, 1912.
Management :—Berrima Gaol, 1878–9.
Metropolitan Water Supply and Sewerage Board, 1897.
Hunter River District Water Supply and Sewerage Board, 1897.
Quarantine Station, North Head, and the Hulk "Faraway", 1882.
Working of the Customs Department, 1867–8.
McMyler Hoist at Newcastle, 1909.
Method of Testing Marine Steam Boilers, 1868–9.
Milburn Creek Copper Mining Company, 1881.
Municipal Affairs, Wyalong, 1902.
Noxious and Offensive Trades, 1883.
Opal Mining Industry at White Cliffs, 1901.
Oyster Culture, 1876–7.
Prospect Dam, 1889.
Public Services :—Administration, 1894–5.
Deeds Branch, Registrar-General's Department, 1894.
Government Docks and Workshops, Cockatoo Island, 1903.
Public Works Department, 1911.
General Post Office, Money Order Office, and Electric Telegraph Department, 1890.
Land and Survey Departments, 1878–9.
Railway —Bridges, 1906.
Congestion of Goods Traffic in Country Centres, 1912.
Do do Darling Harbour and Darling Island, 1912.
Saturday Half-Holiday, 1909.
Schemes for Extermination of Rabbits, 1889, 1890.
Shortage of Labour in New South Wales, 1911.
State of Crime in Braidwood District, 1867–8.
Stock Diseases (Tick) Act, 1901.
Strikes—Conflicts between Capital and Labour, 1891–2.
Sydney Water Supply 1868–9, 1902, 1903.
Sydney Water Supply—Cataract Dam, 1905.
Totalisator, 1912.
Treatment of neglected and delinquent children in Great Britain, Europe and America, 1913.
Treatment of Inmates of the Government Asylums at Rookwood and Newington, 1903.
Tuberculosis and other Diseases in Stock, 1899.
Working of the Gold-fields Act, and the Water Supply on Gold-fields 1871–2.
Working of Compulsory Conciliation and Arbitration Laws, 1901.
Working of Moore-street Improvement Acts, 1901.
Working of Quarries in the Albert Mining District, 1897.
Working of the Real Property Acts, 1879–80.

Royal Commissions Appointed, 1912–13.

The following Royal Commissions were appointed from 1st January, 1912, to 31st October, 1913:—

Inquiry as to treatment of neglected and delinquent children in Great Britain, Europe, and America.

Suspension of Principal Shorthand Writer, Parliamentary Reporting Staff.

Consolidation of Statute Law in New South Wales.

Congestion of Goods Traffic in Country Centres, and Delays in Transit of Inward and Outward Produce.

Standardisation of Australian Manufactured Food Products.

Adequacy of Supply of Locomotives for traffic purposes, and Manufacture of Locomotives at Eveleigh Works.

Investigation Regarding Cattle Tick.

Kentia Palm Seed Industry.

Inquiry as to alleged Corrupt Practices by the Minister for Public Works.

Dismissal of J. Russell from Mount Kembla Coal Mine.

Inquiry regarding drainage Pipes used by the Metropolitan Board of Water Supply and Sewerage.

Inquiry regarding the Administration of the Mental Hospital and the Reception House for Insane, at Darlinghurst.

Inquiry regarding the Administration of the Industrial Arbitration Act, 1912.

Constitution of a Greater Sydney.

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; although the Military and Naval Forces Regulation Act 1871, provided for the raising and maintenance of a standing force; but the permanent soldiery were limited to a small force, as the establishment of forts and defence works. A militia or partially paid system was introduced subsequently, and the military training of volunteer cadets was a feature of the education system of the State. The Governor was Captain-General, and at 31st December, 1900, till which date each colony maintained its separate military establishment, the strength of the force of New South Wales was greatest with 505 officers, and 8,833 men in the ranks—practically the whole establishment, as in the other Colonies, consisting of militia or partially paid and of volunteer forces.

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

The Commonwealth of Australia Constitution Act, 1900, empowered the Commonwealth Parliament to legislate for the naval and military defence of the Commonwealth, and of the several States, and for the control of the forces

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

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

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

The Commonwealth is organised for Defence purposes into six military districts, corresponding more or less closely with the political divisions into States.

The second military district represents the State of New South Wales, excepting the North Coast district, added to Queensland, ; the Barrier district, added to South Australia; and the Riverina, added to Victoria.

Universal Training.

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

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

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

Training for defence is prescribed, as shown below for all male inhabitants of Australia who are British subjects between 12 and 26 years, viz., :—

(*a*) From 12 to 14 years of age as Junior Cadets.
(*b*) „ 14 „ 18 „ Senior Cadets.
(*c*) „ 18 „ 26 „ Citizen Forces.

The obligation of training lies, after 1st January, 1911, on every male person who reaches the age of 18 years. Male persons who have resided in Australia for six months shall register themselves, or be registered, during the months of January and February in the year in which they reach the age of 14 years. The Governor-General may grant temporary exemption to persons residing outside the training areas into which the State is divided, or at a great distance from places appointed for training. The prescribed training shall be, for each year ending 30th June, of the following duration :—

(*a*) As Junior Cadets—90 hours.
(*b*) As Senior Cadets—Four whole-day drills, twelve half-day drills, and twenty-four night drills.
(*c*) As in Citizen Forces.—Sixteen whole-day drills, or their equivalent, of which not less than eight shall be in camps of continuous training.

The training of the Junior Cadets is in the hands of specially instructed school teachers.

Senior Cadets.

Although the boundaries of the Commonwealth military districts are not identical with those of each State, a comparison of the number of boys within the various military districts of the Commonwealth is of interest; the following return shows the total registrations of Senior Cadets from 1st January to 31st December, 1912, when there were 88,797 boys in military training throughout Australia :—

	Military District.	Total Registrations.	Exemptions granted.*	Total Medically examined.	Number Liable for Training.	Percentage Medically examined who are fit.	Number actually in Training.
New South Wales	2nd.	52,075	17,746	36,658	34,040	92·9	32,519
Victoria	3rd.	45,164	16,123	31,259	28,645	91·6	28,143
Queensland ...	1st.	24,001	11,549	13,689	12,321	90·0	12,012
South Australia ...	4th.	14,317	4,982	10,059	9,179	91·2	8,981
Western Australia	5th.	7,121	2,724	4,735	4,286	90·4	4,240
Tasmania	6th.	6,051	2,828	3,396	3,113	91·7	2,902
Commonwealth ...	.....	148,729	55,952	99,796	91,584	91·8	88,797

* Chiefly on account of great distances from centres of population.

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.

The Naval Cadets under the universal training system in New South Wales on 30th June, 1913, numbered 846, of which 658 were being trained in Sydney and 188 at Newcastle. The total of naval trainees for the Commonwealth on 1st February, 1913, was 3,847.

Junior Cadets.

Particulars regarding the Medical Examinations to 31st December, 1912, of Junior Cadets are given in the subjoined table. Boys receive physical drill in the schools until the age of 14 years, after which they must enrol as Senior Cadets :—

	Military District.	Total number medically examined.	Number Medically fit.	Percentage Medically examined who are fit.	Number unfit and temporarily unfit.	Percentage medically examined who are unfit and temporarily unfit.
New South Wales	2nd.	15,739	15,297	97·2	442	2·8
Victoria	3rd.	14,288	14,136	98·9	152	1·1
Queensland ...	1st.	5,483	5,314	97·0	169	3·0
South Australia ...	4th.	3,208	3,091	96·4	117	3·6
Western Australia	5th.	2,356	2,263	96·0	93	4·0
Tasmania	6th.	1,216	1,192	98·0	24	2·0
Commonwealth...	... ...	42,290	41,293	97·6	997	2·4

The Senior and Junior Cadets of New South Wales enrolled previously to the period of the universal training system were disbanded, and those of service age absorbed in the new organisation irrespective of their enrolment in a cadet regiment or otherwise.

The success of the universal training system and the enthusiasm of the boys, in conjunction with the splendid organization of the administrative and instructional staff, was clearly evidenced at the first review of cadets in Australia since the inauguration of universal training, when the Governor-General, at the Centennial Park, Sydney, on 30th March, 1912, reviewed 17,946 senior military cadets and 696 senior naval cadets.

Auxiliary Organisations.

Boys' Scouts, Boys' Brigades, and similar organisations exist which are neither 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.

With reference to the Boy Scout movement, it is of interest to note that during the year 1912 the founder, Lieutenant-General Sir R. S. S. Baden-Powell, visited New South Wales.

Land Defence.

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

Military Force.

In New South Wales.

Although universal military training came into operation so recently as 1st January, 1911, the defence forces of this State had already attained a high standard of efficiency. The subjoined table contains information regarding the military force in New South Wales on 31st December of each year since 1910 :—

Classification.	1910.	1911.	1912.	Classification.	1910.	1911.	1912.
Permanent—				Volunteer—			
Headquarters Staff ...	15	17	22	Automobile Corps ...	14	16	10
Artillery	345	349	355	Army Nursing Service	26	26	26
Engineers	52	52	71				
Army Service Corps ..	14	15	41	Total Volunteer ...	40	42	36
Army Medical Corps	11	11	11				
Ordnance Department	43	42	57	Total Permanent,			
Instructional Staff ...	232	161	157	Militia, and			
Other	28	28	31	Volunteer ..	8,447	8,557	12,517
Total Permanent...	740	675	745				
Militia—				Area Officers	...	75	72
Staff	1	2	2	Area Medical Officers...	...	46	20
Light Horse	2,000	1,906	1,753	Engineer and Railway			
Artillery	800	957	1,049	Staff Corps	...	...	10
Engineers	399	427	507	Chaplains	35	41	45
Infantry	3,888	3,966	7,743	Cadets, Senior (Uni-			
University Scouts ...	83	99	134	versal Training) ..	11,061	33,536	32,519
Intelligence Corps ...	12	12	15	Rifle Clubs	14,900	13,902	12,894
Signallers	74	68	...	Unattached List of			
Army Service Corps...	148	151	181	Officers	64	67	72
Army Medical Corps	257	246	345	Reserve of Officers ...	156	188	246
Army Veterinary Corps ..	5	6	7	Medical Corps Reserve	46	53	...
Total Militia ...	7,667	7,840	11,736	Grand Total ...	34,709	56,465	58,395

Figures for each State and the total for Australia are given in the following return for the year ended 30th June, 1912 :—

	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.	Total.
Permanently employed ...	737	615	293	134	181	110	2,235*
Citizen Soldiers	7,316	6,154	3,027	1,693	1,245	1,687	21,127†
Volunteers	37	34	9	20	10	11	121
Area Officers	73	63	28	22	15	12	213
Rifle Clubs	12,580	17,026	9,437	5,421	4,510	1,647	50,621
Senior Cadets	34,327	29,424	12,025	9,191	3,997	3,313	92,277
Unattached List of Officers ...	70	103	36	33	24	22	288
Reserve of Officers	257	316	220	93	65	51	1,002
Chaplains	44	49	29	10	22	10	164
Total	55,441	53,814	25,104	16,617	10,069	6,863	168,048‡

* Includes 135 attached to the Central Administration.
† " 5 " " "
‡ " 140 " " "

The Defence Department is advancing plans for the formation of an Aviation School in Australia.

Royal Military College.

The Royal Military College of Australia was opened at Duntroon, near Queanbeyan, New South Wales, on 27th June, 1911, with 41 boys in residence, of whom 10 were from New Zealand. There are now 112 cadets in residence, including 17 from New Zealand. The College course extends over four years, the first two years being devoted primarily to civil subjects, the latter to military subjects; physical training, drills, musketry, signalling, and military exercises will be continuous during the whole four years, after which the young officers will serve in England or India for one year, when they will return to Australia. At the expiration of five years from the establishment of the Military College, only men who are graduates of the College will be appointed as officers of the permanent forces.

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

Naval Defence.

The Imperial Navy.

As an Imperial Naval base, New South Wales has from its early days enjoyed a large measure of naval protection, and prior to the Federation of the Australian Colonies, had 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 1890 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 some protection to trade afloat. In renewal of this agreement, the Commonwealth Government, after Federation, became with New Zealand a party to the Naval Agreement Act, 1903, under which agreement and a subsequent arrangement the Imperial Government provided for the Australian Station for ten years a fleet, latterly consisting of one first-class armoured cruiser, three second-class, and four third-class cruisers, and one sloop, with a Royal Naval Reserve of twenty-five officers, and 700 seamen and stokers. 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. The agreement terminated on the arrival of H.M.A.S. "Australia" in October, 1913, when the Australian Naval Station was finally transferred to the Commonwealth.

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. Eight nominations for naval cadetships were available annually to the Commonwealth of Australia, and two to the Dominion of New Zealand.

The Imperial war vessels on the Australian station in the year 1912 were as follows:—

Name.	Date of Launch.	Load displacement	Draught.	Length.	Beam.	Indicated horse-power.	Measured mile speed.	Armament.	Sea-going Complement.
Armoured Cruiser—		tons.	ft. in.	ft. in.	ft. in.		knots.		
Drake	1901	14,100	26 0	529 6	71 0	30,000	23·0	2 9·2-in. B., 16 6-in. Q., 14 12-pr. Q., 3 3-pr. Q., 9 Mach.; 2 torpedo tubes submerged.	900
Unarmoured— Cruisers, 2 Cl.—									
Cambrian ..	1893	4,360	21 1	336 0	49 6	7,000	19·5	2 6-in., 8 4·7 Q.F., 8 6-pr., 1 3-pr., 4 M., 3 T., 1 12-pr. (8 cwt.) Field Gun.	319
Encounter ..	1902	5,880	19 8	326 0	56 0	12,500	20·8	11 6-in., 8 12-pr., 1 3-pr., 2 M., 2 S.T., 1 12-pr. (8 cwt.) Field Gun.	455
Challenger ..	1902	5,880	19 8	326 0	56 0	12,500	20·8	11 6-in., 8 12-pr., 1 3-pr., 2 M., 2 S.T., 1 12-pr. (8 cwt.) Field Gun.	455
Cruisers, 3 Cl.—									
Psyche	1898	2,135	15 10	313 0	36 6	5,000	20·2	8 4-in., 8 3-pr., Q., 3 M., 2 T.	231
Pioneer ..	1899	2,200	15 10	318 10	36 9	5,000	20·0	8 4-in., 8 3-pr., Q., 3 M., 2 T.	231
Pyramus ..	1897	2,135	15 8	313 0	36 6	5,000	20·2	8 4-in., 8 3-pr., Q., 3 M., 2 T.	231
Pegasus ..	1897	2,135	15 8	313 0	36 6	5,000	20·2	8 4-in., 8 3-pr., Q., 3 M., 2 T.	231
Prometheus .	1898	2,135	15 8	313 0	36 6	5,000	20·2	8 4-in., 8 3-pr., Q., 3 M., 2 T.	231
Screw Sloop—									
Torch	1894	960	11 6	180 0	32 6	1,100	13·0	4 4-in., 4 3-pr., 2 M. ..	105
Surveying Vessels—									
Fantome ..	1901	1,070	10 11	210 0	33 0	1,400	13·3	2 3-pr., Q., 2 M.	135
Sealark	..	900	16 0	179 10	29 0	500	11·0	1 3-pr., 2 45-in. Nordenfeldt	95

The "Encounter" was lent to the Commonwealth Government from 1st July, 1912. The "Pioneer" was presented to the Commonwealth on 1st March, 1913. The "Psyche" was used as a drill ship for Australia, and the "Pyramus" as a drill ship for New Zealand. The "Challenger" returned to England in July, 1912, and the "Drake" in January, 1913. The "Pegasus" and "Prometheus" were temporarily detached to China in November, 1911, continuing as portion of the Australian squadron till June, 1912, when they were permanently withdrawn from the squadron. Sydney, which is the headquarters of the fleet, ranks as a first-class naval station.

The Australian Navy.

Till 1905 a naval officer commanding administered the naval forces. With the creation in that year of the Council of Defence, the Naval Board, constituted in conjunction with the Council, took over the administration of the Commonwealth Naval Forces.

In 1908 the Commonwealth Government decided upon a policy of responsibility in local naval defence, to the extent of providing destroyers, submarines, and depôt ships, and maintaining them fully equipped and

efficient. Following out this policy a commencement was made with three torpedo-boat destroyers; the "Parramatta" and the "Yarra," built in Great Britain, 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.

In 1909, as a result of the Imperial Defence Conference, the Imperial Government decided to form a Pacific Division of the British navy, and Canada and Australia agreed to provide separate units. Accordingly the Commonwealth Government undertook to provide, and arranged for the construction of, a fleet unit, consisting of one armoured cruiser, three second-class protected cruisers, three additional destroyers, and two submarines.

Full 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 ..	18,800	26 6	555	80 0	43,000	25	8 12-in. B.L., 16 4-in. Q.F., 4 Max., 5 Torpedo tubes.
Light Cruisers—							
Sydney	5,400	15 9	430	49 6	25,000	25·5	8 6-in. Q.F., 4 3-pr. Q.F., 4 Max., 2 21-in. Torpedo tubes.
Melbourne ..	5,400	15 9	430	49 6	25,000	25·5	8 6in. Q F., 4 3-pr. Q.F., 4 Max., 2 21-in. Torpedo tubes.
Brisbane* ..	5,400	15 9	430	49 6	25,000	25·5	8 6-in. Q.F., 4 3-pr. Q.F., 4 Max., 2 21-in Torpedo tubes.
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	28	1 4-in. B.L., 3 12-pr. Q.F., 3 18-in. Torpedo tubes.
Yarra	700	8 6	245	24 3	9,500	27	1 4-in. B.L., 3 12-pr. Q.F., 3 18-in. Torpedo tubes.
Warrego ..	700	8 6	245	24 3	9,500	27	1 4-in. B.L., 3 12-pr. Q. F., 3 18-in. Torpedo tubes.
Derwent* ..	700	8 6	245	24 3	9,500	27	1 4-in. B.L., 3 12-pr. Q.F., 3 18-in. Torpedo tubes.
Torrens* ..	700	8 6	245	24 3	9,500	27	1 4-in. B.L., 3 12-pr. Q.F., 3 18-in. Torpedo tubes.
Swan*	700	8	245	24 3	9,500	27	1 4-in. B.L., 3 12-pr. Q.F., 3 18-in. Torpedo tubes.
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	450	10·5	1 4-in. B.L, 2 12-pr. Q.F.
Torpedo Boats—							
Countess of Hopetoun	75	..	..	..	1,186	21	3 Torpedo tubes
Childers.. ..	47	..	..	..	700	19	2 Torpedo tubes
Submarines—							
A.E. 1	800	..	176	23 3	..	15	....
A.E. 2	800	..	176	23 0	..	15	.....
Training Ship—							
Tingira†.. ..	1,800	..	..	..	..	..	.....

* In course of construction. † Moored at Rose Bay, Port Jackson.

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.

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

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

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

Naval Reserves.

The Naval Reserve Forces include a special section for cadets who were already in the Naval Forces, but the Reserves otherwise consist of Senior Naval Cadets, under the Universal Training System, transferred to the adult section. Of the trainees under the universal training system, the navy has the first choice. At the end of 1912, the Australian-born of the Imperial Naval Reserve were taken into the Commonwealth forces.

Naval Training.

In July, 1911, the selection of Senior Cadets for Naval Service was undertaken by District Naval Officers from among the cadets from maritime districts in the neighbourhood of the District and Sub-District Headquarters. In connection with the training of Naval Cadets the Commonwealth Government purchased in December, 1911, from the Government of New South Wales the nautical training ship "Sobraon," which in June, 1912, went into commission at moorings at Rose Bay, Port Jackson, with change of name ("Tingira"). Accommodation is provided for 100 boys, to be selected from the several States of the Commonwealth. On completion of training these boys will be drafted into the Permanent Naval Forces. Under the universal training system, the naval trainees in New South Wales, on 30th June, 1913, numbered 658 senior cadets at Sydney, and 188 at Newcastle.

The Naval College.

As a site for the Naval Midshipmen's College, the Government of New South Wales have ceded to the Government of the Commonwealth an area of land and water at Jervis Bay; but pending the completion of the projected College, a temporary college was established at Geelong, Victoria.

The Naval Force in New South Wales at the end of each year since 1910, was as under:—

Classification.	1910.	1911.	1912.
Permanent Force	5	20	16
Naval Cadets	200	909	911
Naval Reserve (M)	311	289	280
Naval Reserve (O)—Adult	.....	.....	192
Total...	516	1,218	1,399

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Small Arms Factory in New South Wales.

With the object of providing the outfit of all rifles and bayonets required for defence purposes in the Commonwealth, the Federal Government established a small-arms factory at Lithgow, New South Wales, which was formally opened on 8th June, 1912. The factory site contains about 123 acres. The buildings, which are of brick, have a floor space of nearly 2 acres. They are well lighted with electricity, and arranged for economically handling the product. The approximate total expenditure on the factory has been £182,000.

Expenditure on Defence.

The expenditure on defence in Australia is controlled entirely by the Commonwealth Government. Separate figures cannot be shown for the State of New South Wales. The expenditure in Australia for the year 1912–13 was: Army, £3,089,000; Navy, £2,349,000; Total £5,438,000, equal to £1 3s. 10d. per inhabitant. The expenditure per inhabitant, taken from the latest returns, were for Great Britain, £1 11s. 9d; Germany, 18s. 9d.; France, £1 7s. 5d.; Italy, 13s. 9d.; United States of America, 12s. 10d.; Japan, 4s. 6d,; Canada, 3s. 11d.

Royal Naval House.

The Royal Naval House, erected in Sydney exclusively for the accommodation of the men of the British Navy, was built in 1889, at a total cost, inclusive of land, of £25,000, contributed by citizens and by the Government of New South Wales. A new wing was added in 1908 at a cost of £8,600. The House contains large reading, smoking, dining, and billiard rooms, besides a gymnasium, and other accessories. Sleeping accommodation is available for 400 men. The institution is self-supporting, but annual grants from the Lords Commissioners of the Admiralty and from the Government of New South Wales are devoted to maintaining the House during the absence of the Squadron from Sydney. About 60,000 men are lodged annually, including petty officers and men of the Australian Navy.

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

Visiting War Vessels.

The following statement shows the war vessels, other than those on the Australian station, which visited the port of Sydney during the year 1912:—

Nationality.	Name of War Vessel.	Type.	From.	To.
France ...	Kersaint	Third-class cruiser...	19 Jan. ...	21 March.
	Zelée...	Gunboat	1 March ...	20 April.
Germany ...	Condor	Protected cruiser ...	1 March ...	18 April
	Cormoran	Protected cruiser ...	11 Oct. ...	17 Oct.
Japan	Aso	Armoured cruiser	15 Jan.	22 Jan.
	Soya	Protected cruiser		
United States of America.	Princeton	Gunboat	25 Sept. ...	19 Oct.

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

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

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

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

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

Date of Census.	Males.	Females.	Total.	Increase.	
				Number.	Per cent.
— Nov., 1828	27,611	8,987	36,598	.....	...
2 Sept., 1833	44,644	16,150	60,794	24,196	66·1
2 Sept., 1836	55,539	21,557	77,096	16,302	26·8
2 Mar., 1841	87,298	43,558	130,856	53,760	69·7
2 Mar., 1846	114,769	74,840	189,609	58,753	44·9
1 Mar., 1851 Incl. Victoria	155,845	112,499	268,344	78,735	41·5
1 Mar., 1851 Excl. Victoria	109,643	81,356	190,999	....	.....
1 Mar., 1856	150,488	119,234	269,722	78,723	41·2

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

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

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

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

Census Enumerations, 1861-1911.

At the census taken in New South Wales on 7th April, 1861, the ascertained population was 350,860. Thereafter the numbers were determined decennially, the last census having been taken on 2nd April, 1911, when the population had increased to 1,648,746. This number does not include the population of the Federal Capital Territory, which was transferred to the Commonwealth of Australia on 1st January, 1911; and the inhabitants of which, at the census of 1911, were 997 males and 727 females, 1,724 persons, of whom 10 were aborigines. The population of New South Wales at each census period from 1861 to 1911 is stated below, also the estimated population as at 31st December, 1912. Aboriginal natives are included, except for 1861, when they were not enumerated; their number in 1911 was 2,012 (1,152 males and 860 females).

Year.	Males.	Females.	Total.	Numerical Increase.
1861	198,488	152,372	350,860	....
1871	275,551	228,430	503,981	153,121
1881	411,149	340,319	751,468	247,487
1891	612,562	519,672	1,132,234	380,766
1901	712,456	646,677	1,359,133	226,899
1911	858,850	789,896	1,648,746	289,613
1912	935,979	842,983	1,778,962	130,216

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
1912	507	7·90	4·44	5·75

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

since the census of 1911 has been greater than during any period in the table. In 1861 the number of persons per square mile was 1·1, in 1891 it was 3·6, and in 1912 it was 5·7.

The following statement gives the population of each State of the Commonwealth at the last census, in comparison with the census of 1901, 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, 1912.	Proportion in each State.		Average Annual Rate of Increase since census, 1911.
			1911.	1912.	
			per cent.	per cent.	per cent.
New South Wales ...	1,646,734	1,776,950	36·96	37·54	4·44
Victoria	1,315,551	1,380,561	29·53	29·17	2·79
Queensland	605,813	636,425	13·60	13·45	2·86
South Australia	408,558	430,090	9·17	9·09	2·98
Western Australia ...	282,114	306,129	6·33	6·47	4·78
Tasmania	191,211	197,205	4·29	4·17	1·78
Northern Territory ...	3,310	3,475	·08	·07	2·82
Federal Capital Territory	1,714	1,940	·04	·04	7·33
Commonwealth ...	4,455,005	4,732,775	100·00	100·00	3·52

The average annual increase of the Commonwealth since the census of 1911 was 3·52 per cent. The rate was highest in Western Australia, 4·78 per cent., and New South Wales ranks next with 4·44 per cent; Tasmania showed the lowest rate, 1·78 per cent. The population of New South Wales, in 1912, represented 37·54 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 of Australia and the individual States, as, for instance, in the distribution amongst the States of the representation in the Federal Parliament, and in the determination of the amount of revenue to be paid back to each State by the Commonwealth.

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

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

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

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

The estimated population of New South Wales, including aborigines, at the end of each year since 1901, was as follows; the population of the Federal Capital Territory has been excluded since 1st January, 1911. Additional information regarding immigration has been obtained since the last issue of this publication, and the figures, as amended, are shown below:—

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

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

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. During the last nine years, however, the rate has risen; in 1912 it was the highest since 1893.

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

MIGRATION.

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

Year.	Arrivals.			Departures.		
	By Sea.	By Land.	Total.	By Sea.	By Land.	Total.
1901	76,139	87,474	163,613	72,758	101,100	173,858
1902	81,191	79,459	160,650	72,149	88,031	160,180
1903	70,570	81,773	152,343	67,525	85,266	152,791
1904	72,978	83,283	156,261	67,549	87,979	155,528
1905	74,165	98,134	172,299	69,606	98,982	168,588
1906	79,465	113,870	193,335	75,421	114,431	189,852
1907	101,125	140,213	241,338	90,748	143,004	233,752
1908	101,589	143,570	245,159	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

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

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

Year.	Other Australian States.	New Zealand.	United Kingdom.	China, India.	Other British Possessions.	Foreign Countries.	Total.
1901	(—) 12,665	1,238	(—) 775	(—) 132	(—) 807	2,896	(—)10,245
1902	(—) 1,767	(—) 98	(—) 1,365	(—) 103	(—) 532	4,275	470
1903	1,251	(—) 807	(—) 1,070	(—) 324	(—) 2,133	2,635	(—) 448
1904	(—) 630	1,069	(—) 1,207	(—) 185	(—) 953	2,639	733
1905	1,724	2,346	(—) 837	(—) 11	(—) 940	1,429	3,711
1906	2,673	531	852	(—) 479	(—) 842	748	3,483
1907	2,610	387	3,288	(—) 565	1,119	747	7,586
1908	(—) 1,465	(—) 1,529	3,070	(—) 596	1,715	416	1,611
1909	(—) 4,547	5,228	8,291	33	(—) 1,368	1,093	8,730
1910	(—) 1,394	5,163	8,703	(—) 226	(—) 1,015	962	12,193
1911	5,710	8,415	15,380	78	(—) 844	3,003	31,742
1912	13,034	7,005	25,278	874	(—) 2,071	2,999	47,119

(—) Signifies Loss.

The excess of arrivals from countries outside the Commonwealth during 1912 was 34,085, the largest excess during the period reviewed. The excess of arrivals from New Zealand amounted to 7,005, and there was a gain of 598 persons from Canada.

The most remarkable feature shown by the above table is the change in the movement of population with the United Kingdom. In the first five years of the period reviewed there was a substantial loss of population to that country, but since 1906 there has been a steadily increasing excess of arrivals, amounting in 1912 to 25,278. This is due to the revival of the assisted immigration policy in 1905.

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 and to provide adequate defence, the State Government made arrangements for the systematic advertisement throughout the United Kingdom of the advantages offered to immigrants. The cost to suitable immigrants of the passage to Australia is lessened by Government contributions. Residents of New South Wales may arrange, by nomination, assisted passages for relatives and friends desirous of settling in this State.

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

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

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

Year.	Total Assisted Immigrants.			Nominated by Relatives or Friends in New South Wales (included in preceding).		
	Males.	Females.	Total.	Males.	Females.	Total.
1906	...	...	590	...	...	114
1907	...	...	2,917	...	...	490
1908	...	...	3,048	...	...	1,237
1909	...	...	4,308	...	...	1,979
1910	3,039	2,019	5,058	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	5,278	5,545	10,823

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, viz.:—

Length of Residence in Australia.	Males.	Females.	Total.
Years.	No.	No.	No.
0—4	31,686	15,190	46,876
5—9	6,724	3,147	9,871
10—14	7,142	3,265	10,407
15—19	7,610	4,597	12,207
20—24	18,856	12,417	31,273
25—29	26,943	17,545	44,488
30—34	17,030	9,926	26,956
35—39	7,043	3,820	10,863
40—44	4,954	3,112	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 above, are reflected in this table, which shows that, exclusive of the Australian born, persons who had resided in Australia less than five years, that is, those who arrived since 1905, outnumbered those in any other five-year period; the next in numerical order were those who arrived during the years 1881-6, and whose period of residence was from 25-29 years. On the other hand, persons whose period of residence was from 5-9 years were exceeded by those in every other period up to 40 years.

Distribution of Population.

The distribution of population, as estimated at 31st December, 1912, 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, 1912.		
		Total.	Proportion in each Division.	
	sq. miles.		per cent.	per sq. mile.
Sydney	5	116,400	6·6	23,280·0
Suburbs	180	578,400	32·5	3,213·3
Metropolis	185	694,800	39·1	3,755·7
Country Municipalities	2,848	444,190	25·0	156·0
*Shires	181,177	621,550	34·9	3·4
Western Division (Part unincorporated).	125,257	18,315	1·0	·1
Lord Howe Island	5	107	·0	21·4
Total, New South Wales	309,472	1,778,962	100	5·7

* The Ku-ring-gai Shire, area 36 sq. miles, population 11,020, is included with Suburbs of Metropolis.

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

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

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, with the exception of parts of Ryde and Canterbury. The following statement shows, at the Census of 1911, and on 31st December, 1912, 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., 1912.		Census, April, 1911.	Estimated 31st Dec., 1912.
City of Sydney* ...	119,771	116,400	Manly	10,465	11,930
Alexandria ...	10,123	11,070	Marrickville ...	30,653	33,580
Annandale ...	11,240	12,120	Mascot	5,836	6,990
Asbfield	20,431	23,670	Mosman ...	13,243	15,190
Balmain	32,038	33,230	Newtown ...	26,498	27,790
Bexley	6,517	7,960	North Sydney ...	34,646	38,060
Botany	4,409	5,000	Paddington ...	24,317	25,690
Burwood	9,380	10,430	Petersham ...	21,712	23,230
Canterbury ...	11,335	16,540	Randwick ...	19,463	24,180
Concord	4,076	4,810	Redfern	24,427	25,230
Darlington ...	3,816	3,920	Rockdale ...	14,095	16,530
Drummoyne ...	8,678	10,630	Ryde	5,281	6,530
Eastwood ...	968	1,120	St. Peter's ...	8,410	9,540
Enfield	3,444	4,010	Strathfield ...	4,046	4,510
Erskineville ...	7,299	7,690	Vaucluse ...	1,672	1,920
Glebe	21,943	22,790	Waterloo ...	10,072	10,770
Homebush ..	676	890	Waverley ...	19,831	22,920
Hunter's Hill ..	5,013	5,170	Willoughby ...	13,036	15,700
Hurstville ...	6,533	8,190	Woollahra ...	16,989	18,720
Kogarah	6,953	9,090	Ku-ring-gai Shire	9,458	11,020
Lane Cove ...	3,306	3,790			
Leichhardt ...	24,254	26,250	Total ..	636,353	694,800

* Includes shipping and islands of Port Jackson.

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

POPULATION OF CHIEF CITIES.

In Australia.

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

Metropolis.	Census, 1911.			Estimated Population, 31st Dec., 1912.
	Males.	Females.	Total.	
Sydney	305,728	323,775	629,503	694,800
Melbourne	277,956	311,015	588,971	628,430
Brisbane	67,628	71,852	139,480	145,022
Adelaide	90,578	99,068	189,646	196,567
Perth	53,231	53,561	106,792	*
Hobart	18,487	21,450	39,937	39,107

* Not available.

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

In United Kingdom.

The population of the large cities of the United Kingdom at the Census of 1911 were as given in the subjoined table :—

City.	Population Census, 1911.	City.	Population Census, 1911.
England—		Scotland—	
London (Administrative County)...	4,521,685	Glasgow	784,496
Liverpool	746,421	Edinburgh...	320,318
Manchester	714,333		
Birmingham	525,833	Ireland—	
Sheffield	454,632	Belfast	386,947
Leeds	445,550	Dublin	304,802
Bristol	357,048		

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 1912 being 56,750. 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, 1912, the populations of the principal country municipalities of New South Wales :—

Municipalities.	Census, 1911.	Estimated Dec., 1912.	Municipalities.	Census, 1911.	Estimated Dec., 1912.
Albury	6,309	6,600	Lithgow	8,196	8,600
Armidale	4,738	5,100	Liverpool	3,938	3,950
Ballina	2,061	2,600	Maitland	11,313	11,700
Bathurst	8,575	8,650	Moree	2,931	3,100
Bega	1,969	2,050	Mudgee	2,942	3,000
Broken Hill... ...	30,972	32,500	Murrumburrah ...	2,136	2,200
Casino	3,420	4,200	Murwillumbah ...	2,206	2,800
Cobar...	4,430	5,000	Narrabri	3,320	3,380
Cooma	2,063	2,100	Narrandera ...	2,374	2,750
Coonamble	2,262	2,500	Newcastle	55,380	56,750
Cootamundra ...	2,967	3,000	Orange	6,721	6,850
Corowa	2,063	2,250	Parkes	2,935	3,200
Cowra	3,271	3,650	Parramatta ...	12,465	12,600
Deniliquin	2,494	2,600	Penrith	3,682	3,750
Dubbo	4,452	4,600	Quirindi	2,240	2,350
Forbes	4,436	5,000	Singleton	2,996	3,050
Glen Innes	4,089	4,400	Tamworth	7,145	7,400
Goulburn	10,023	10,100	Temora	2,784	3,100
Grafton	5,888	6,900	Tenterfield... ...	2,792	2,900
Gunnedah	3,005	3,150	Wagga Wagga ...	6,419	6,750
Hay	2,461	2,500	Wellington ...	3,958	4,100
Inverell	4,549	4,900	Windsor	3,466	3,490
Junee...	2,531	2,600	Wollongong ...	4,660	4,900
Katoomba	4,923	5,400	Yass	2,136	2,150
Kempsey	2,862	2,900	Young	3,139	3,350
Lismore	7,381	8,200			

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

Sex Distribution.

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

Year.	Proportion of Males.	Proportion of Females.	Males per 100 Females.
	per cent.	per cent.	No.
1861	56·57	43·43	130
1871	54·67	45·33	121
1881	54·86	45·14	121
1891	54·14	45·86	118
1901	52·42	47·58	110
1911	52·09	47·91	109
1912*	52·61	47·39	111

* Estimate.

From 1871 to 1881 the proportion of males remained constant at about 55 per cent., but immigration was checked towards the end of the next decade, and in 1891 the proportion of males had decreased slightly. During the following period there was very little immigration, and in 1901 the difference between the sexes had become less than at any previous period, the proportion of males being 52·42 per cent. or 110 males to every 100 females. According to official estimates, the proportion of males remained fairly constant from 1901 to 1907, but since that year it has decreased; at the census of 1911, the percentages were—males 52·09, females 47·91, or 109 males to every 100 females. At the end of the year, 1912, it is estimated that there were 111 males per 100 females.

Age Distribution.

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

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

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

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

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

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

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

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

Age-Group.	Number.			Proportion per cent.		
	Males.	Females.	Total.	Males.	Females.	Total.
Years.						
Under 5	102,179	99,014	201,193	11·91	12·55	12·22
5–14	164,555	161,365	325,920	19·19	20·45	19·79
15–64	554,306	498,293	1,052,599	64·63	63·15	63·92
65 and over	36,658	30,364	67,022	4·27	3·85	4·07
Total	857,698	789,036	1,646,734	100·00	100·00	100·00
School age, 6–13	130,123	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 birthplaces 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 birthplaces at the census of 1911, in comparison with the figures obtained at the previous census. Aboriginal natives of full-blood have been excluded :—

Birthplace.	1901.			1911.		
	Males.	Females.	Total.	Males.	Females.	Total.
Australasia—						
New South Wales	487,039	490,137	977,176	608,517	610,340	1,218,857
Victoria	30,358	25,661	56,019	42,701	34,835	77,536
Queensland	7,097	7,871	14,968	11,018	12,275	23,293
*South Australia	11,981	10,078	22,059	13,005	11,189	24,194
Western Australia	450	437	887	1,253	1,229	2,482
Tasmania	3,722	3,855	7,577	5,209	5,112	10,321
*Northern Territory	...	...	...	12	5	17
Australia (undefined)	239	229	468	10,021	10,498	20,519
	540,886	538,268	1,079,154	691,736	685,483	1,377,219
New Zealand	5,425	5,164	10,589	7,296	6,667	13,963
	546,311	543,432	1,089,743	699,032	692,150	1,391,182
Europe—						
England (including Isle of Man) ...	76,187	49,930	126,117	75,015	47,448	122,463
Wales	2,254	1,368	3,622	2,791	1,591	4,382
Scotland	18,586	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	96,996	240,535	136,553	87,612	224,165

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

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

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

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

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

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

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

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

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

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

Of the persons resident in the State where they were born the proportions are highest among the natives of New South Wales, 92·8 per cent.; Queenslanders 92·1 per cent.; and Western Australians 91 per cent. The proportions are much lower with regard to the Victorians, 85·5 per cent.; Tasmanians, 82 per cent.; and South Australians, 80·7 per cent. of whom resided in South Australia at the Census of 1911. 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 represents a very small proportion—8 per 1,000—of the total population.

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

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

Chinese.

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

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

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

Aborigines.

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

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

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

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

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

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

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

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

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

NATURALISATION.

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

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

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

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

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

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

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

State.	1903.	1904.	1905.	1906.	1907.	1908.	1909.	1910.	1911.	1912.
New South Wales	400	1,379	544	475	458	396	644	665	565	565
Victoria	397	319	213	301	214	243	507	329	491	295
Queensland ...	355	115	150	177	193	377	378	333	469	464
South Australia ...	43	25	34	45	27	45	600	299	282	343
Western Australia	75	248	166	150	134	152	221	187	248	243
Tasmania	149	21	11	39	16	28	81	36	22	35
Total ...	1,419	2,107	1,118	1,187	1,042	1,241	2,431	1,849	2,077	1,945

Since 1849, certificates have been granted in New South Wales to 14,503 persons. Germans numbered 5,855 ; Swedes, 1,442 ; Danes, 893 ; Italians, 830 ; and Russians, 821. No Chinese have been naturalised 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.	1903.	1904.	1905.	1906.	1907.	1908.	1909.	1910.	1911.	1912.
Austria	20	48	40	18	13	15	22	16	21	19
Denmark	22	96	23	31	31	24	39	50	38	39
France	14	69	36	14	27	17	37	57	35	26
Germany	109	412	170	154	163	140	217	213	190	160
Greece	15	53	33	27	19	15	34	37	24	30
Italy	34	116	58	44	51	38	66	53	40	40
Norway	19	111	32	28	20	13	34	39	23	28
Russia	30	148	11	18	10	40	62	50	42	44
Sweden	48	226	58	69	54	56	55	81	60	87
Switzerland	11	24	11	6	15	8	11	14	7	14
Other European	6	45	36	18	11	22	27	28	23	20
United States	3	26	10	20	16	8	24	24	26	23
Syria	62	...	...	...	3	...	...	...	...	...
Others	7	5	26	28	25	...	16	3	36	35
Total	400	1,379	544	475	458	396	644	665	565	565

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.

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

New South Wales has been divided into registry districts, in each of which a District Registrar has been appointed; there are 221 District Registrars, of whom 77 are private persons, 20 Postmasters, 83 Clerks of Petty Sessions, 32 Crown Lands Agents and Clerks of Petty Sessions, and 9 Police Officers.

All births must be registered within sixty days by the father, or, if he is dead or absent, by the mother or guardian. 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 for the district.

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.

Conjugal Condition.

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

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

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

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

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

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

A comparison of the conjugal condition of the people at various periods of age, at the Censuses of 1901 and 1911, shows that the proportion of un-

married males has decreased, the proportion of married males has increased at every age, and the proportion of widowers is slightly lower in every group. With regard to the females the decrease in the proportion never married has taken place in the age-groups 15–29 years, as there has been an increase at all ages over 30 years. The married females in 1911 showed a proportionate increase in every group except 30–49 years, at which ages they have decreased. The widows have decreased in proportion in every age-group, but as the decrease has been smallest at the older ages when the proportion is high, the total rate 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	13,409	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	3·92	·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 1912 was 16,664, corresponding to a rate of 9·58 per 1,000 of the population. The number is the highest on record, and the rate is the highest since 1859.

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	1895–99	8,760	6·74
1875–79	4,987	7·88	1900–04	10,240	7·37
1880–84	6,738	8·39	1905–09	12,080	7·97
1885–89	7,679	7·67	1910	14,294	8·85
1890–94	7,954	6·80	1911	15,267	9·17
			1912	16,664	9·58

Until the year 1891 the increase in the number of marriages was remarkably steady, very few checks being experienced, but in 1892 there was a sudden decline, which continued until 1895, when the figures again took an upward movement, but the proportion married per 1,000 of the population did not reach the 1891 level until 1900. In 1901 the rate was the highest since 1886, but in the next two years it again declined largely. Since 1903, however, there has been a constant improvement. Compared with the rates of the quinquennium 1905–09, the marriage rate of 1912 discloses an advance of about 21 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	1896	54·65	58·13
1876	64·78	83·66	1901	65·92	62·69
1881	65·21	82·32	1906	65·32	62·87
1886	65·08	82·81	1911	79·25	75·03
1891	57·85	71·28	1912	86·19	80·12

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 has been a large increase since 1906, amounting to 32 per cent. in the male rate, and 27 per cent. in the female rate.

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.	1907-1911.	1912.	Country.	1906-1910.	1911.
South Australia	8·83	9·62	Roumania	9·6	10·5
New South Wales ...	*8·51*	*9·58*	Servia	9·7	10·3
Queensland	7·86	8·92	Ontario, Canada ...	9·8	10·2
New Zealand	8·61	8·85	Hungary	9·1	9·2
Victoria	7·74	8·67	France	7·9	7·8
Western Australia ...	7·98	8·37	German Empire ...	7·9	7·8
Tasmania	7·72	7·86	Austria	7·6	7·6
			England and Wales ..	7·6	7·6
			Italy	7·9	7·5
			Denmark	7·4	7·2
			Netherlands	7·3	7·2
			Spain	7·1	7·1
			Scotland...	6·8	6·7
			Norway	6·1	6·2
			Finland...	6·6	6·0
			Sweden	6·1	5·9
			Chile	6·1	5·7
			Ireland	5·1	5·4

South Australia has the highest marriage rate in Australasia, followed very closely by New South Wales, with Tasmania last on the list. In 1912 in all the States except Tasmania the rates showed a decided improvement.

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 1912 was 142, equal to 4·26 per 1,000 persons married. The number of mark signatures has steadily declined for many years past. In 1870 the proportion of signatures made with marks was as high as 18·23 per cent. of the whole, while in 1912 the percentage had fallen to ·4, 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 1912 show that during that year 16,313 marriages were performed by Ministers of Religion, and 351 by District Registrars, giving the proportions of 97·9 per cent. and 2·1 per cent. respectively of the total number, 16,664.

The Church of England performs the largest number of marriages, the Roman Catholic Church coming next, followed by the Presbyterian and Methodist Churches. "Matrimonial Agencies" which appear on the following list are no longer in existence, as the Registrar-General, in the year 1907, refused to renew the licenses of certain ministers of religion who performed marriages at these matrimonial agencies.

The following table shows the number and proportion per cent. of marriages registered by the several denominations during 1912, in comparison with the preceding five years:—

Denomination.	Marriages.			
	1906–11.		1912.	
	Number.	Proportion per cent.	Number.	Proportion per cent.
Church of England ...	27,144	40·25	6,979	41·88
Roman Catholic	12,235	18·14	2,922	17·54
Presbyterian	9,080	13·46	2,325	13·95
Methodist	8,370	12·41	2,248	13·49
Congregationalist... ...	3,722	5·52	1,064	6·38
Baptist	1,148	1·70	280	1·68
Hebrew	164	·24	58	·35
All other Sects	4,131	6·13	437	2·62
Matrimonial Agencies ...	92	·14	...	...
District Registrars ...	1,354	2·01	351	2·11
Total Marriages ...	67,440	100·00	16,664	100·00

In 1912 the denominations which showed an increased rate as compared with the previous five years were Church of England, Presbyterian, Methodist, Congregational, and Hebrew.

Condition before Marriage.

During the year 1912, of the males married, 15,652 were bachelors, 886 were widowers, and 126 were divorced. Of the females, 15,657 were spinsters, 826 were widows, and 181 were divorced. The proportion of males re-married was 6·1 per cent., and of females 6·0 per cent.

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

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

Age at Marriage.

Of the 16,664 couples married in 1912, the ages of 16,660 bridegrooms and of 16,661 brides are known. An examination of the figures shows that in 71·5 per cent. of the marriages the husband was older than the wife; in 10 per cent. the ages of the contracting parties were the same; while in the remaining 18·5 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 1912 are shown in the following table:—

Ages of Bridegrooms.	Ages of Brides.												
	Under 18	18	19	20	21—24	25—29	30—34	35—39	40—44	45—49	50 and over.	Not stated	Total.
Under 18 years ..	10	3	2	1	2	..	..	..	..	..	..	..	18
18 years	39	22	18	7	11	2	..	..	..	..	..	..	99
19 ,, ...	57	57	46	31	36	8	1	1	.	..	..	..	236
20 ,, ...	64	57	82	76	112	24	1	..	..	..	..	..	416
21—24	333	306	540	540	2,488	625	81	22	3	8	..	1	5,032
25—29	137	188	303	370	2,395	1,902	375	85	21	2	1	..	5,779
30—34	36	34	66	104	683	900	522	141	29	8	2	1	2,556
35—39	15	15	24	26	238	352	286	177	45	14	3	..	1,195
40—44	1	4	3	9	69	117	96	103	72	32	11	..	519
45—49	2	6	2	4	31	52	53	105	53	48	12	..	373
50 and over	1	..	..	3	12	28	52	90	71	70	140	..	467
Not stated	..	..	..	..	..	1	1	..	1	..	..	1	4
Total	695	782	1,066	1,171	6,076	4,011	1,475	724	295	177	169	3	16,664

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

Year.	Average age of Bridegrooms.	Average age of Brides.	Year.	Average age of Bridegrooms.	Average age of Brides.
	Years.	Years.		Years.	Years.
1903	29·20	25·04	1908	29·02	25·19
1904	29·00	24·93	1909	29·11	25·30
1905	29·13	24·98	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

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 1912 were, of bachelors 28·35 years, and of spinsters 25·02 years, being about seven months lower in the case of bridegrooms and five months lower in the case of brides.

Marriage of Minors.

The number of persons under 21 years of age married during 1912 was 4,503, or 13·5 per cent. of the total. The proportion of bridegrooms who were minors was 4·6 per cent., and of brides 22·1 per cent. The proportion

of bridegroom minors was considerably above the average, but in the case of the brides the proportion was below the average. The figures at quinquennial intervals since 1881 are appended :—

Year.	Minors.		Percentage of—	
	Bride-grooms.	Brides.	Bride-grooms.	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

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

Births.

The number of births during 1912 was 51,993, equal to a rate of 29·90 per 1,000 of the total population. The actual number of births was the highest ever recorded in this State, and the rate was 7·6 per cent. above the average for the last ten years. The birth-rate, which fell away sharply after 1888, declined considerably down to 1903, but since that year there has been an improvement, and in 1912 it was the highest rate since 1895. The following table shows the average annual number of births and birth-rate per 1,000 of the total population in quinquennial periods since 1870 :—

Year.	Average Births.	Birth-rate per 1,000 of Population.	Year.	Average Births.	Birth-rate per 1,000 of Population.
1870–74	20,733	39·36	1900–04	37,498	26·99
1875–79	24,388	38·51	1905–09	41,788	27·56
1880–84	30,417	37·89	1910	45,533	28·17
1885–89	36,877	36·85	1911	47,677	28·64
1890–94	39,550	33·80	1912	51,993	29·90
1895–99	37,042	28·68			

Maternity Allowances.

Since 10th October, 1912, the Commonwealth Government has provided a maternity allowance of £5 to every woman on each occasion when she gives birth to a child in Australia, only one allowance being payable where more than one child is born at one birth. Details are given in chapter "Social Condition."

Birth Rates.

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

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

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

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

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

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

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

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

(+) Indicates increase.

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

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

State.	1907-11.	1912.	Country.	1906-10.	1911.
Tasmania	28·15	30·53	Roumania	40·3	43·0
New South Wales ...	*27·99*	*29·90*	Chile	38·3	38·5
Queensland	27·17	29·70	Servia	39·1	36·2
Western Australia ...	29·04	28·86	Hungary	36·7	35·0
South Australia	26·05	28·65	Italy	32·7	31·5
New Zealand	26·82	26·48	Austria...	33·8	31·4
Victoria	24·69	26·45	Spain	33·6	31·2
			Finland	30·9	29·1
			German Empire ...	31·6	28·6
			Netherlands	29·6	27·3
			Denmark	28·2	26·8
			Norway	26·3	25·9
			Scotland	27·6	25·6
			England and Wales ...	26·3	24·4
			Sweden...	25·4	23·8
			Ireland...	23·3	23·2
			Ontario, Canada ...	23·7	21·7
			France	19·6	18·7

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

Generally the decline which has characterised the birth-rate, not only of Australia, but also of European countries, has discontinued in the Australian States, as all the rates in 1912 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 1912, in the former, 20,140 births, and in the latter 31,853, corresponding to rates of 29·80 and 29·97 per 1,000 of population respectively. The country has shown a higher rate than the metropolis since 1893, but prior to that year the metropolitan rate was the 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	27·78	29·11	28·64
1912	20,140	31,853	51,993	29·80	29·97	29·90

The highest rate exhibited for the whole of New South Wales during the last thirty-two years was 38·65 in 1880. The maximum rate for the metropolis was reached in 1884, when the births were 43·88 per 1,000 of the population; and in the country districts the greatest number of births in proportion to the population occurred in 1880, when the rate was 38·73 per 1,000.

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 during the last three years there has been an improvement in each division; the country rate, on the average, has been 3 per 1,000 of the population better than that of the metropolis.

Sexes of Children.

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

The excess of males over females born during the past fifty-three years has ranged from 2 per cent. in 1875, 1876, and 1901, to 8 per cent. in 1889, 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-three years:—

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

Illegitimacy.

The number of illegitimate births in 1912 was 2,934, equal to 5·64 per cent. of the total births. A statement of the illegitimate births in New South Wales, distinguishing metropolis and country districts, is given below :—

Year.	Number of Illegitimate Births.			Ratio per cent. to Total Births.		
	Metropolis.	Country Districts.	New South Wales.	Metropolis.	Country Districts.	New South Wales.
1880	561	665	1,226	6·72	3·36	4·35
1890	1,056	995	2,051	7·81	3·91	5·26
1900	1,222	1,383	2,605	10·08	5·53	7·01
1905	1,530	1,382	2,912	11·11	5·37	7·37
1906	1,457	1,425	2,882	10·42	5·28	7·04
1907	1,546	1,423	2,969	10·79	5·11	7·04
1908	1,545	1,387	2,932	10·40	5·01	6·89
1909	1,549	1,330	2,879	10·02	4·70	6·58
1910	1,530	1,370	2,900	9·44	4·67	6·37
1911	1,680	1,269	2,949	9·42	4·25	6·19
1912	1,647	1,287	2,934	8·18	4·04	5·64

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 natural 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, and amounted on the average to 23 per cent. during the twenty years since 1891. The decline has been general at all ages, but larger in general than in the legitimate rate.

Legitimation Act of 1902.

An Act was passed in New South Wales in 1902 to legitimise children born before marriage, on the subsequent marriage of their parents, provided that no legal impediment to the marriage existed at the time of birth. Any such child born before or after the passing of the Legitimation Act is deemed, on registration as provided in the Act, to have been legitimated from birth by such marriage, and is entitled to the status of a child born in wedlock. Legitimation is effected on the father of the child producing to a Registrar the necessary statutory declaration and a certified copy of the entry of his marriage with the child's mother. The child, whether dead or alive, is then registered as the lawful issue of the parents. If the child had been registered previously as illegitimate, a note of the entry under this Act must be made in the Register where the previous entry was made. Since the passing of the Act there have been 2,542 registrations :—

Year.	Registrations.	Year.	Registrations.
1902	6	1909	267
1903	158	1910	288
1904	173	1911	394
1905	175	1912	405
1906	191		
1907	247	Total	2,542
1908	238		

Plural Births.

During the year 1912 there were seven cases of triplets, consisting of 15 males and 6 females, and 540 cases of twins, 490 males and 586 females—in all, 1,076 children, four still-births not being included. Of these 547 cases of plural births, 528 were legitimate and 19 illegitimate. The number of children born as triplets and twins formed 2·11 per cent. of the total births.

The following table shows the number of cases of twins, triplets, and quadruplets born in New South Wales during the twenty years 1893–1912, excluding those still-born, and distinguishing legitimate and illegitimate :—

Cases of—	Legitimate.	Illegitimate.	Total.
Twins	7,814	400	8,214
Triplets	76	5	81
Quadruplets ...	3	...	3

The total number of confinements recorded during the twenty years was 797,769. It follows, therefore, that the rates per million confinements were 10,296 cases of twins, 102 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 128 confinements recorded, whereas under 20 years the proportion is 1 to 189.

The results of the observations for the twenty years 1893–1912 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	29,555	156	5·28
20–24	171,389	1,122	6·55
25–29	212,208	2,102	9·91
30–34	166,814	2,203	13·21
35–39	114,519	1,710	14·93
40–44	44,965	555	12·34
45 and over	4,845	38	7·84

It is a remarkable fact that of 7,886 plural births, 4,506 occurred to mothers whose ages were 30 years or upwards ; this gives a proportion of 57 per cent., whereas of all legitimate births only 45 per cent. occurred at those ages.

Natural Increase.

The excess of births over deaths, or the "natural increase," was 33,107 in 1912, and is the highest yet recorded, the lowest during the period from 1880 to 1912 being 16,886, in 1882. 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.
	Metropolis.	Country Districts.	Whole of State.			
			Males.	Females.	Total.	
1903	6,836	12,633	8,949	10,520	19,469	1·39
1904	7,540	15,767	11,124	12,183	23,307	1·64
1905	7,999	16,524	11,497	13,026	24,523	1·70
1906	8,281	17,692	12,351	13,622	25,973	1·77
1907	8,096	17,689	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

The natural increase is now 1·95 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 1912, the number of females added to the community by excess of births exceeded the males by 14,670, 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 1912 and in the other countries for 1911 :—

Country.	Birth-rate.	Death-rate.	Natural Increase.	Country.	Birth-rate.	Death-rate.	Natural Increase
Tasmania	30·5	10·7	19·8	Scotland	25·6	15·1	10·5
New South Wales ...	*29·9*	*10·9*	*19·0*	Italy...	31·5	21·4	10·1
Queensland	29·7	11·0	18·7	Sweden	23·8	13·8	10·0
South Australia ...	28·7	10·3	18·4	Hungary	35·0	25·1	9·9
Western Australia ...	28·9	11·1	17·8	Switzerland (1910)...	25·0	15·1	9·9
New Zealand ...	26·5	8·9	17·6	England and Wales.	24·4	14·6	9·8
Roumania	43·0	25·7	17·3	Austria	31·4	21·9	9·5
Servia	36·2	21·8	14·4	Ontario, Canada ...	21·7	12·6	9·1
Victoria	26·5	12·3	14·2	Belgium (1910) ...	23·7	15·2	8·5
Netherlands	27·8	14·5	13·3	Spain	31·2	23·2	8·0
Denmark	26·8	13·6	13·2	Chile	38·5	31·1	7·4
Norway	25·9	13·2	12·7	Ireland	23·2	16·5	6·7
Finland	29·1	16·5	12·6	France	18·7	19·6	(−)·9
German Empire ...	28·6	17·3	11·3				

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. Tasmania stands first on the list and New South Wales second.

Ages of Mothers.

During the twenty years 1893–1912 the ages of the women giving birth to children ranged from 11 to 58 years. The majority of the very young mothers were unmarried; thus of 10,358 mothers under 18 years of age, 5,249 were unmarried. The total number of married women who gave birth to children during the twenty years was 744,351, the ages of whom were as follow. The proportion of married mothers at each age per 10,000 of all ages is also shown :—

Ages.	Married Mothers.		Ages.	Married Mothers.	
	Number.	Per 10,000 at all ages.		Number.	Per 10,000 at all ages.
Years.			Years.		
13	2	...	25	43,410	583
14	21	...	26	43,881	590
15	159	2	27	42,766	575
16	1,073	14	28	42,737	574
17	3,754	50	29	39,414	530
18	8,781	118	30–34	166,814	2,241
19	15,765	212	35–39	114,519	1,538
20	21,257	286	40–44	44,965	604
21	29,810	401	45 and over	4,845	65
22	36,096	485	Not stated	56	1
23	41,020	551			
24	43,206	580	Total ...	744,351	10,000

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

The mothers of illegitimate children are in some cases very young, as will be seen from the following table, which shows the ages of the mothers who gave birth to illegitimate children during the twenty years 1893–1912. The proportion of unmarried mothers at each age per 10,000 of all ages is also shown :—

Ages.	Unmarried Mothers.		Ages.	Unmarried Mothers.	
	Number.	Per 10,000 at all ages.		Number.	Per 10,000 at all ages.
Years.			Years.		
11	1	...	27	1,744	326
12	2	...	28	1,589	297
13	29	6	29	1,341	251
14	140	26	30	1,301	244
15	576	108	31	763	143
16	1,529	286	32	927	174
17	2,972	556	33	765	143
18	4,354	815	34	764	143
19	5,218	977	35	744	139
20	5,024	941	36	652	122
21	4,881	914	37	501	94
22	4,163	779	38	558	105
23	3,645	682	39	464	87
24	2,981	558	40 and over.	1,050	197
25	2,484	465	Not stated	145	27
26	2,111	395	Total ..	53,418	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 1912 numbered 18,886, equal to a rate of 10·86 per 1,000 of the population, which is the highest since 1903, and is 3 per cent. above the mean rate of the last ten years. This total includes 11,102 males and 7,784 females, so that amongst males the rate was 12·16, and amongst females 9·43 per 1,000 living of each sex. The average annual number of deaths of each of the sexes, with the rate per 1,000, in quinquennial periods, from 1870 is given below :—

Period.	Average Annual Number of Deaths.			Death-rate per 1,000 of total Population.		
	Males.	Females.	Persons.	Males.	Females.	Persons.
1870–74	4,391	2,948	7,339	15·58	12·32	13·93
1875–79	6,199	4,360	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

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

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

State.	1907-1911.	1912.	Country.	1906-1910.	1911.
Victoria	11·63	12·25	Chile	31·3	31·1
Western Australia ...	10·63	11·07	Roumania	26·0	25·7
Queensland	10·12	10·96	Hungary	25·0	25·1
New South Wales ...	*10·31*	*10·86*	Spain	24·3	23·2
Tasmania	10·59	10·73	Austria	22·4	21·9
South Australia	9·99	10·28	Servia	24·3	21·8
New Zealand	9·75	8·87	France	19·2	19·6
			German Empire ...	17·5	17·3
			Finland	17·4	16·5
			Ireland	17·3	16·5
			Scotland...	16·1	15·1
			England and Wales ...	14·7	14·6
			Netherlands	14·3	14·5
			Sweden	14·3	13·8
			Denmark	13·7	13·6
			Norway	13·8	13·2
			Ontario, Canada ...	14·0	12·6

The comparatively favourable conditions of Australasia will be manifest from an inspection of these rates. New South Wales occupies the fourth place on the list for 1912, more favourable rates being shown by New Zealand, South Australia, and Tasmania.

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

Deaths—Metropolis and Country.

It is not possible to show the exact difference between urban and rural mortality in New South Wales, but an approximate idea may be obtained from a comparison of the experience of the metropolis with that of the country districts, although a few large towns are contained in the latter. Separating the State, therefore, into these two broad divisions, there were, during 1912, 7,681 deaths in the metropolis and 11,205 in the country, corresponding to the rates of 11·37 and 10·54 per 1,000 living respectively. The average annual number of deaths and the rate per 1,000 in each of these divisions since 1880, in five-year periods, is given in the subjoined table:—

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

In both metropolis and country the rate has steadily improved, but very much more in the metropolis, so that there the rate is now very little higher than in the country districts, whereas twenty-five years ago it was 50 per cent. higher. The fall began in the metropolis after 1889, the year when the improved sewerage system was installed, and about the same time that the Dairies Supervision Act came into operation. The decline in the rates for each division and for the State will be further emphasised when it is stated that the metropolitan rate fell from 19·5 in the period 1885–9 to 11·4 per 1,000 in 1912, or 42 per cent. The rate in country districts declined from 12·2 to 10·5 or 14 per cent., and for the whole State from 14·5 to 10·9, or 25 per cent.

Mortality of Infants and Young Children.

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

Children under 1 year.

The number of children under 1 year of age who died in 1912 was 3,707, equal to a rate of 71·3 per 1,000 births. With the exception of the rate in 1911, this is the lowest on record, and is 10 per cent. below the mean rate for the last ten years. Male infants died at the rate of 78·1 per 1,000 births, and female infants at the rate of 64·2 per 1,000 births. To the total the metropolis contributed 1,530 deaths, or 76·0 per 1,000 births, and the country 2,177, or 68·3 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

The infantile mortality rate has improved more in the metropolis; in fact, until 1900, in the country districts it was increasing. In the year 1904 there was a large decrease in both divisions compared with the rate for the previous five years, and this improvement continued in 1905 and 1906. In 1907, in consequence of an epidemic of whooping-cough, the rate took an upward movement, greater in the country than in the metropolis, but it has since declined. The rate in the country districts has always been more favourable than in the metropolis, although the difference now is not nearly so great as twenty, or even ten, years ago.

The improvement in the rate in the metropolis is no doubt partly due to the preventive measures taken by the Sydney Municipal Council to reduce the death from diarrhœal diseases which have largely contributed to the infantile mortality. These measures were initiated in 1903 by the distribution of instructional circulars and pamphlets for the guidance of mothers regarding the care and feeding of young children. Circulars are despatched to the mother immediately after the registration of a birth in the thickly-populated areas of the city. In 1904 the scheme was supplemented by the appointment of a trained woman inspector to visit the houses in those districts as soon as possible after the registration of a birth therein, with the object of instructing the mothers, and encouraging them in the exercise of hygienic principles in the care of their infants. The satisfactory results achieved within the city boundaries led to the appointment in 1909 of an additional health visitor to carry out similar work in the more populous suburbs immediately surrounding the city.

Of the total number of deaths of infants under 1 year of age, nearly one-third die within a week of birth; by the end of the first month the proportion is over two-fifths; and after three months it reaches three-fifths. Judging by the experience of the last five years, it may be said that one in every 46 children born dies within a week of birth. The following statement shows for 1912, 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 succeeding month. The experience in the metropolis is distinguished from that in the country districts, and the sexes are taken together. Also for the year 1912, illegitimate children are distinguished from legitimate for the State as a whole.

Age.	Metropolis.		Country.		New South Wales.			
						1912.		
	1907–11.	1912.	1907–11.	1912.	1907–11.	Legitimate.	Illegitimate.	Total.
Under 1 week	23·4	21·7	21·0	21·4	21·8	20·7	35·5	21·5
1 week	4·7	4·3	4·0	3·5	4·3	3·7	5·4	3·9
2 weeks	3·1	2·4	3·2	2·4	3·2	2·2	5·8	2·4
3 ,, ...	2·6	2·1	2·5	2·2	2·5	1·9	6·5	2·1
Total under 1 month	33·8	30·5	30·7	29·5	31·8	28·5	53·2	29·9
1 month	7·8	6·3	7·3	6·1	7·5	5·5	18·1	6·2
2 months	6·1	5·2	5·7	4·0	5·8	3·6	19·4	4·5
3 ,, ...	6·1	5·6	5·2	4·1	5·5	3·9	18·1	4·6
4 ,, ...	5·7	4·7	4·5	4·5	4·9	3·8	17·4	4·6
5 ,, ...	4·2	4·2	3·9	3·7	4·0	3·3	13·6	3·9
6 ,, ...	4·0	4·0	3·6	3·1	3·8	3·2	7·5	3·4
7 ,, ...	3·5	3·9	2·9	2·9	3·1	3·3	4·4	3·3
8 ,, ...	3·0	3·1	2·5	3·0	2·7	2·9	4·1	3·1
9 ,, ...	3·0	3·3	2·6	2·4	2·7	2·6	4·8	2·7
10 ,, ...	2·7	2·4	2·1	2·6	2·3	2·3	5·4	2·5
11 ,, ...	2·3	2·9	2·1	2·5	2·2	2·6	2·7	2·6
Total under 1 year ...	82·2	76·1	73·1	68·4	76·3	65·5	168·7	71·3

In the first week of life the mortality is more than five times as great as in the second, and in the second about twice as great as in the fourth. From the first month to the second the mortality falls rapidly, and from the second to the twelfth gradually. Comparing the mortality in the two divisions of New South Wales—metropolis and country—the usual experience is that at every stage of life children die more quickly in the metropolis. In 1912 the metropolitan rate was 76·1 and the country 68·4 per 1,000 births, the latter being 10 per cent. lower than the former. At the earlier ages the difference was least, the metropolitan rate being 30·5 per 1,000 during the first four weeks, as compared with 29·5 in the country. After the first month the difference fluctuated, but the rate was greater in the metropolis at every age except the tenth month.

The table also shows the great waste of life among illegitimate children, the mortality under 1 year being 168·7 per 1,000, as compared with 65·5 among legitimate children. The largest proportional excess is not immediately after birth, but from two to four months later. During the first week the mortality of illegitimates exceeds that of legitimates by 71 per cent., thereafter it increases until in the second month the excess is 439 per cent., after this it drops irregularly until in the eleventh month the excess is about 4 per cent.

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

State.	1911.	1912.	Country.	1910.	1911.
Western Australia ..	76·2	82·1	Chile	267	332
Victoria	68·7	74·5	Hungary	194	207
Queensland	65·4	71·4	Austria	189	207
New South Wales ...	*69·5*	*71·3*	German Empire ...	162	192
Tasmania	73·7	66·6	Netherlands	108	137
South Australia	60·5	61·6	England and Wales ...	105	130
New Zealand	56·3	51·2	Ontario, Canada ...	123	117
			Finland	118	114
			Denmark	102	106
			Ireland	95	94

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 18 per cent. in excess.

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

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

The improvement in the metropolis has been greater than in the country; in the former the rate has decreased by 40 per cent. since 1890, and in the latter by 32 per cent. In the country the rate did not vary a great deal until 1904, when there was a large decline, which has continued. During the year 1912 there was a saving of the lives of 19 in every 1,000 children under 5 years of age in the metropolis and 10 in every 1,000 in the country, as compared with the mortality rate of twenty years ago.

The table appended gives, for 1912, 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—						
1907–1911	14,347	69·29	2,577	176·16	16,924	76·34
1912	3,212	65·47	495	168·71	3,707	71·30
Under 5 years—						
1907–1911	19,325	21·86	3,040	53·82	22,365	23·78
1912	4,522	22·71	602	51·28	5,124	24·30

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 1912 one-sixth of the illegitimate children born did not live through the first year.

Children Surviving at the age of Five Years.

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

The table is based on the experience of the seven years 1906–12,, the year 1906 being the first for which the details are available, and it appears that out of 10,000 boys born, 1,064 will die before reaching 5 years of age, and out of 10,000 girls, 915 will die. Of the number who fail to survive five years, 243 boys and 191 girls die within the first week of birth, and 323 boys and 254 girls within the first month. At the end of the first year there will be 9,181 boys and 9,317 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 ...	9,321	9,442	9,380
1 ,, ..	9,757	9,809	9,782	8 ,, ...	9,287	9,412	9,348
2 weeks ...	9,701	9,773	9,741	9 ,, ...	9,256	9,386	9,320
3 ,, ...	9,677	9,746	9,711	10 ,, ...	9,229	9,359	9,293
				11 ,, ...	9,204	9,336	9,269
1 month ...	9,651	9,724	9,686				
2 months...	9,572	9,661	9,616	1 year	9,181	9,317	9,247
3 ,, ...	9,510	9,612	9,560	2 years.....	9,028	9,176	9,100
4 ,, ...	9,456	9,560	9,507	3 ,, ...	8,974	9,121	9,045
5 ,, ...	9,405	9,514	9,458	4 ,, ...	8,936	9,085	9,008
6 ,, ...	9,362	9,475	9,418				

Deaths in Quinquennial Age Groups.

In the year 1912 the deaths of persons in quinquennial age groups were as follow :—

Age Group.	Males.	Females.	Total.	Age Group.	Males.	Females.	Total.
Years.				Years.			
0—4	2,832	2,292	5,124	65—69	732	465	1,197
5—9	207	171	378	70—74	820	495	1,315
10—14	141	128	269	75—79	851	534	1,385
15—19	223	165	388	80—84	544	370	914
20—24	317	292	609	85—89	206	175	381
25—29	332	319	651	90—94	59	78	137
30—34	368	293	661	95—99	22	19	41
35—39	403	324	727	100—110	7	5	12
40—44	418	287	705	Age not stated (adults)	15	2	17
45—49	551	300	851				
50—54	664	367	1,031				
55—59	671	318	989	All ages	11,102	7,784	18,886
60—64	719	385	1,104				

Deaths of Centenarians.

The following return shows, for the years 1903–12, the number of deaths in New South Wales of persons aged 100 years and upwards :—

Year.	Males.	Females	Total.	Year.	Males.	Females	Total.
1903	8	1	9	1908	8	3	11
1904	4	3	7	1909	2	6	8
1905	2	3	5	1910	5	5	10
1906	4	6	10	1911	6	5	11
1907	6	1	7	1912	7	5	12

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. In this can probably be seen the influence of the Dairies Supervision Act of 1886, the Diseased Animals and Meat Act of 1892, the Public Health Act, 1896, and, moreover, in the early nineties, an improved sewerage system was carried on after the transfer in 1889 to the present Board of the old sewerage works. Over the whole period the fall for all ages was as much as 37 per cent. Up to age 35 the decline was over 50 per cent., namely, 67 per cent. at ages 5–9, 53 per cent.

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

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

Age Group.	1861–70.	1871–80.	1881–90.	1891–1900.	1901–10.	1911.
MALES.						
Years.						
0— 4	100	95	92	78	58	48
5— 9	100	83	64	51	37	36
10—14	100	85	73	62	53	50
15—19	100	96	86	72	65	53
20—24	100	79	87	66	55	50
25—34	100	80	83	64	49	47
35—44	100	95	82	69	56	53
45—54	100	91	84	70	61	58
55—64	100	99	85	82	71	72
65—74	100	101	90	80	83	83
75 and over ...	100	108	97	97	93	98
All ages ...	100	94	87	75	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 1912 were found to be as follows, and for purposes of comparison the crude rates are attached :—

State.	Index of Mortality.	Crude Death-rate.	City.	Index of Mortality.	Crude Death-rate.
New South Wales ...	10·73	10·86	Sydney	11·19	11·37
Victoria	11·59	12·25	Melbourne	13·22	14·03
Queensland	11·11	10·96	Brisbane	12·68	13·05
South Australia ...	9·83	10·28	Adelaide	12·10	13·04
Western Australia ...	12 03	11·07	Perth	*	*
Tasmania	10·66	10·73	Hobart	13·97	15·79

* 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.

Until 1906 the system of classifying the causes of death was that adopted by the Registrar-General, England. In 1906, however, at a conference of Australian Statisticians, it was agreed to adopt the Bertillon classification, and causes of death in New South Wales are now tabulated according to that classification. As the Bertillon system differs in many cases from the old, a comparison of the results since 1906 with previous years is, to some extent, impaired.

The causes of deaths in Sydney and suburbs and in New South Wales during 1911 and 1912, were classified as follows:—

Causes of Death.	Sydney and Suburbs.				New South Wales.			
	1912.			1911.	1912.			1911.
	Males.	Females.	Total.	Total.	Males.	Females.	Total.	Total.
General Diseases—								
Typhoid Fever	36	23	59	54	151	85	236	184
Measles	96	93	189	3	198	173	371	44
Scarlet Fever	5	3	8	4	6	5	11	11
Whooping-cough	24	24	48	63	59	59	118	160
Diphtheria and Croup	47	63	110	65	129	137	266	237
Influenza	16	22	38	57	74	57	131	172
Dysentery	1	3	4	6	23	24	47	45
Plague	...	...	...	...	...	...	...	...
Other Epidemic Diseases	8	12	20	13	17	24	41	42
Septicæmia	9	7	16	28	19	12	31	47
Tetanus	14	2	16	17	35	9	44	49
Tuberculosis—Lungs	211	182	393	445	643	435	1,078	1,099
Other Organs	39	36	75	76	77	69	146	151
General	11	7	18	11	17	11	28	24
Syphilis	28	11	39	32	38	22	60	58
Cancer	301	320	621	572	726	586	1,312	1,233
Rheumatism	29	37	66	40	71	82	153	94
Diabetes	31	38	69	62	58	91	149	148
Exophthalmic Goitre	3	14	17	13	6	22	28	21
Anæmia	21	25	46	63	45	46	91	111
Other General Diseases	51	18	69	55	131	45	176	147
Local Diseases—								
Meningitis	48	20	68	69	103	64	167	157
Diseases of Spinal Cord	47	15	62	59	89	36	125	123
Hæmorrhage, &c., of Brain	163	148	311	323	414	320	734	756
General Paralysis of Insane	48	13	61	63	63	17	80	85
Convulsions of Infants	25	17	42	40	95	68	163	146
Other Nervous Diseases	73	68	141	111	159	112	271	217
Acute Endocarditis	38	37	75	44	56	58	114	79
Organic Diseases of Heart	386	313	699	713	1,035	666	1,701	1,677
Other Diseases Circulatory System	101	82	183	167	231	156	387	340
Bronchitis	96	111	207	214	318	234	552	569
Pneumonia, Broncho-pneumonia	234	173	407	384	699	399	1,098	973
Other Diseases Respiratory System	51	45	96	88	160	102	262	267
Diseases of Stomach	36	46	82	82	87	96	183	189
Diarrhœa and Enteritis (under 2)	353	307	660	448	759	643	1,402	963
,, ,, (over 2)	49	78	127	105	173	166	339	270
Appendicitis	33	28	61	53	78	58	136	129
Intestinal Obstruction	31	24	55	62	88	61	149	152
Cirrhosis of Liver	53	22	75	82	115	33	148	131
Other Diseases Digestive System	37	62	99	83	111	130	241	207
Nephritis	301	176	477	452	581	342	923	840
Other Diseases Urinary System	68	15	83	79	183	26	209	172
Diseases of Genital Organs	...	46	46	34	2	76	78	54
Puerperal Condition	...	112	112	114	...	305	305	279
Diseases of Skin	18	16	34	48	58	41	99	104
Diseases of Bones, &c.	11	8	19	26	20	13	33	38
Congenital Malformations	43	24	67	43	95	61	156	136
Diseases of Early Infancy	317	222	539	495	803	610	1,413	1,348
Senility	141	191	332	272	762	501	1,263	1,127
Violence—								
Suicide	85	32	117	91	192	69	261	203
Accident	249	78	327	353	809	218	1,027	1,017
Homicide	13	7	20	21	31	11	42	44
Execution	...	...	...	...	1	...	1	...
Not Classed (Open Verdict)	20	10	30	18	52	16	68	60
Ill-defined Causes	25	21	46	49	157	82	239	250
Total	4,174	3,507	7,681	6,973	11,102	7,784	18,886	17,179

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, 1912.	Average Number, 1907–11.	Causes of Death.	Number, 1912.	Average Number, 1907–11.
Organic Diseases of the Heart	1,701	1,607	Suicide	261	198
Endocarditis	114	116	Typhoid Fever	236	276
Diarrhœa and Enteritis (under 2 years)	1,402	1,208	Convulsions (under 5 yrs.)	163	202
			Meningitis	156	170
			Congenital Malformations	156	115
Diarrhœa and Enteritis (over 2 years)	339	323	Diabetes	149	154
			Intestinal Obstruction ...	149	144
Cancer	1,312	1,252	Cirrhosis of the Liver ...	148	125
Old Age	1,263	1,075	Appendicitis	136	143
Pneumonia	1,098	1,004	Influenza	131	198
Tuberculosis—Lungs ...	1,078	1,161	Whooping-cough	118	219
Accident	1,027	1,005	Gastritis	114	111
Bright's Disease	840	729	Embolism, Thrombosis ...	110	97
Premature Birth	828	767	Acute Rheumatism ...	102	85
Hæmorrhage, &c., of the Brain	734	700	Alcoholism	77	54
			Epilepsy	70	68
Bronchitis	552	571	Syphilis	60	57
Congenital Debility ...	377	511	Dysentery	47	71
Measles	371	60	Others	2,896	2,795
Puerperal Condition ...	305	297			
Diphtheria and Croup ...	266	206	All Causes ...	18,886	17,874

Of the seven most numerous causes, all showed increases except tuberculosis of the lungs, which was 7 per cent. below the average of the previous five years.

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

Smallpox.

No severe epidemic of smallpox has occurred in New South Wales. The early historical records indicate that the disease in a virulent form was prevalent amongst the aborigines in 1789, and between the years 1830 and 1840, but the infection did not spread amongst the white population.

In 1877 a case of smallpox was discovered on a steamer in Sydney Harbour, and some cases occurred in residences adjoining the wharf, and on other ships in the port; 4 deaths were recorded. In 1881 the disease broke out in Sydney, and was epidemic for several months; 3 deaths were recorded in 1881, and 23 in the following year. A few cases were reported in 1883.

From 1883 to 1913 no cases of smallpox occurred in New South Wales; those brought occasionally by ships from oversea ports were isolated in the quarantine area, and the strict observance of the quarantine regulations prevented its introduction amongst the residents.

In 1913, smallpox, of the mildest type, became epidemic in Sydney. In the absence of severe symptoms the disease escaped detection till it had become distributed throughout the metropolitan area, and thence, in a few instances, to country districts. The total number of cases notified to 30th September, 1913 was 851; one death occurred.

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.

The following is a return of persons vaccinated by the Government medical officers since the year 1903 :—

Age-Groups.	1903.	1904.	1905.	1906.	1907.	1908.	1909.	1910.	1911.	1912.
Under 1 year	2	...	...	3	1	...	...	2	3	5
1 year and under 5 ...	43	2	5	10	2	2	3	59	5	7
5 years and under 10 ...	251	9	12	14	16	11	5	122	9	6
10 years and upwards ...	309	9	15	15	20	29	3	97	3	17
Total	605	20	32	42	39	42	11	280	20	35

During the year 1913, in consequence of the occurrence of smallpox in the State, there was a great demand for vaccination, and many depôts were opened. In the period 1st January to 30th September, 1913, the Government medical officers vaccinated about 416,000 persons, and a large number were vaccinated by private medical practitioners.

Typhoid Fever.

The number of deaths from typhoid fever during 1912 was 236, equivalent to 1·36 per 10,000 living, which is 14 per cent. lower than the rate for the previous five years. This is essentially a preventable disease, and readily yields to sanitary precautions, but the rate is still high, notwithstanding the great improvement in the last twenty years. It is higher than in England, where in 1912 the rate was ·43 per 10,000, or less than one-third of the rate in New South Wales.

The number of deaths and rates since 1884 have been as stated below:—

Period.	Males.		Females.		Persons.	
	Deaths.	Rate per 10,000.	Deaths.	Rate per 10,000.	Deaths.	Rate per 10,000.
1884–88	1,356	5·12	1,115	5·13	2,471	5·13
1889–93	959	3·11	714	2·74	1,673	2·94
1894–98	1,107	3·27	731	2·46	1,838	2·89
1899–1903	1,054	2·93	733	2·25	1,787	2·63
1904–08	748	1·93	507	1·42	1,255	1·69
1909	169	2·07	118	1·55	287	1·82
1910	196	2·33	98	1·26	294	1·82
1911	106	1·22	78	·98	184	1·11
1912	151	1·65	85	1·03	236	1·36

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 nineteen years, and, as will be noticed, the rate in the metropolis has been only about two-thirds of that in the remainder of the State. It would appear that the drainage of some of the country towns is very defective, and the water supply less pure than in the metropolis.

Period.	Metropolis.		Country Districts.	
	Deaths.	Rate per 10,000.	Deaths.	Rate per 10,000.
1894–98	507	2·26	1,331	3·24
1899-1903	426	1·72	1,361	3·12
1904–08	334	1·21	921	1·97
1909	86	1·44	201	2·05
1910	94	1·53	200	2·00
1911	54	·84	130	1·27
1912	59	·87	177	1·67

Most deaths occur in the summer and autumn. In 1912 there were 97 deaths in the summer months, December, January, February, and 71 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 considerable lower fatality rate than amongst persons not so protected.

Typhoid is a disease of youth and early manhood, and the following table shows, in various age-groups, the death-rate per 10,000 of each sex in decennial periods since 1881 and in 1911 :—

Age-group.	Males.				Females.				Persons.			
	1881–1890.	1891–1900.	1901–1910.	1911.	1881–1890.	1891–1900.	1901–1910.	1911.	1881–1890.	1891–1900.	1901–1910.	1911.
Years.												
0— 4... ...	3·67	1·46	·44	·39	3·76	1·38	·43	·20	3·71	1·42	·44	·29
5— 9... ...	2·60	1·47	·75	·35	2·85	1·37	·76	·24	2·72	1·42	·76	·29
10—14... ...	2·57	1·94	1·20	·50	4·12	2·12	1·69	·51	3·33	2·03	1·44	·50
15—19... ...	5·85	4·22	2·71	1·19	7·28	4·20	2·99	1·95	6·56	4·21	2·85	1·56
20—24... ...	8·41	5·75	4·58	2·59	7·01	3·66	2·83	2·26	7·75	4·72	3·71	2·43
25—34... ...	7·45	5·02	4·08	2·24	6·34	3·23	1·98	1·27	6·99	4·21	3·07	1·77
35—44... ...	4·15	3·18	2·63	1·02	4·07	2·16	1·69	·94	4·12	2·75	2·21	·98
45—54... ...	3·53	1·88	1·94	1·37	3·23	1·37	1·29	·73	3·41	1·67	1·66	1·09
55—64... ...	3·13	1·20	1·29	1·03	2·98	1·65	·65	·53	3·07	1·38	1·02	·81
65—74... ...	3·14	1·31	·56	·76	2·82	·79	·73	·91	3·02	1·08	·63	·83
75 and over ...	2·63	1·08	·24	...	3·43	·49	·15	...	2·93	·83	·20	...
All ages ...	4·73	3·00	2·22	1·22	4·73	2·37	1·61	·98	4·73	2·71	1·93	1·11

The rate has steadily declined in every age-group throughout each decennial period—the decrease being greater for females than for males.

Among males during the first ten years of life, there is not much variation in the rate. After that, it rises fairly rapidly to a maximum at ages 20–24, and then gradually declines with advancing age. With females the experience is similar, except that the maximum point is reached at ages 15–19, five years earlier than with males. At ages 5–19 and 65–74 the rates for females are slightly higher than for males, but at all other ages the rates for males are the higher.

Measles.

Measles was the cause during 1912 of 371 deaths, equal to a rate of 2·13 per 10,000 living. The rate for males was 2·17, and for females 2·10, the male rate being the higher, which is contrary to the usual experience. 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

The rate in 1912 was six times as great as 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 371 deaths last year, 280 were of children under 5, and 64 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 1912 the number of deaths from this disease was 11, equivalent to a rate of ·06 per 10,000 of the population, which is the lowest yet recorded, and 166·7 per cent. lower than the rate during the previous five years. The number of deaths in the metropolis was 8, and in the remainder of the State 3, the equivalent rates being ·12 and ·03 respectively per 10,000 living; the rate in the metropolis is usually about three times as large as in the country districts. Since 1884 the deaths from scarlet fever and the rates for each sex have been as follows :—

Period.	Males.		Females.		Persons.	
	Deaths.	Rate per 10,000.	Deaths.	Rate per 10,000.	Deaths.	Rate per 10,000.
1884–88	287	1·08	342	1·57	629	1·30
1889–93	185	·60	236	·90	421	·74
1894–98	162	·48	218	·73	380	·60
1899–1903	84	·23	114	·35	198	·29
1904–08	88	·23	91	·26	179	·24
1909	10	·12	20	·26	30	·19
1910	9	·11	14	·18	23	·14
1911	6	·07	5	·06	11	·07
1912	6	·07	5	·06	11	·06

Over the whole period the deaths from scarlet fever show a steady and most satisfactory decrease in both sexes. Generally the rate for females is higher than for males. Like measles, it is an epidemic disease chiefly affecting children. The last years of heavy mortality were 1893 and 1894. Since when the rate has fluctuated, ranging from ·63 in 1898 to ·06 in 1912.

Whooping-cough.

Whooping-cough is another of the diseases which chiefly affect children. During 1912 the deaths numbered 118, of which 59 were of boys and 59 of girls. The rate was ·68 per 10,000 living, and is 46·5 per cent. below the average of the previous five years. In 1907 whooping-cough was epidemic, and 594 cases proved fatal, the rate being the highest since 1878. The deaths and rates for each sex since 1884 have been as stated below :—

Period.	Males.		Females.		Persons.	
	Deaths.	Rate per 10,000.	Deaths.	Rate per 10,000.	Deaths.	Rate per 10,000.
1884–88	327	1·24	472	2·17	799	1·66
1889–93	495	1·61	666	2·55	1,161	2·04
1894–98	343	1·01	502	1·69	845	1·33
1899–1903	573	1·59	726	2·23	1,299	1·90
1904–08	369	·95	445	1·25	814	1·10
1909	8	·10	9	·12	17	·11
1910	93	1·11	81	1·04	174	1·08
1911	78	·90	82	1·03	160	·96
1912	59	·65	59	·71	118	·68

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 1912, 69 were under 1 year of age and 113 under 5.

Diphtheria and Croup.

Diphtheria, with which is included membranous croup, was the cause of 253 deaths in 1912, while croup, so defined, caused 13. The rate for 1912 was 1·53 per 10,000 living, being 28·5 per cent. above the rate for the previous five years. In the metropolis the number of deaths was 110, and in the remainder of the State 156, corresponding to rates of 1·63 and 1·47 per 10,000 living in each. The following table shows the number of deaths and the rates in five-year periods since 1884 :—

Period.	Males.		Females.		Persons.	
	Deaths.	Rate per 10,000.	Deaths.	Rate per 10,000.	Deaths.	Rate per 10,000.
1884–88	1,069	4·04	980	4·51	2,049	4·25
1889–93	1,433	4·65	1,399	5·36	2,832	4·98
1894–98	712	2·10	710	2·39	1,422	2·24
1899–1903	310	·86	299	·92	609	·89
1904–08	367	·95	338	·95	705	·95
1909	96	1·17	89	1·17	185	1·17
1910	113	1·35	120	1·55	233	1·44
1911	122	1·41	115	1·44	237	1·42
1912	129	1·42	137	1·65	266	1·53

Until 1893 the rate did not show very much diminution, but it has since declined considerably, and is now less than one-third of what it was twenty years ago. Nearly 92 per cent. of the persons who died from diphtheria were under 10, and about 64 per cent. under 5 years of age.

Notifiable Infectious Diseases.

The following statement shows the total number of cases of notifiable infectious diseases reported to the Board of Health, with regard to the metropolitan and Newcastle districts during the years 1903 to 1912, together with the death-rates and the fatalities per 100 cases :—

Notifiable Diseases.	Notified Cases.		Deaths.		
	Number.	Per 10,000 of Population.	Number.	Per 10,000 of Population.	Per 100 cases.
Metropolis.					
Scarlet Fever	10,995	18·9	160	·3	1·5
Diphtheria	11,969	20·6	541	·9	4·5
Typhoid Fever	6,455	11·1	661	1·1	10·2
Infantile Paralysis ...	26	·1	.....	.....	.....
Newcastle District.					
Scarlet Fever	2,491	44·9	13	·2	·5
Diphtheria	664	12·0	48	·9	7·2
Typhoid Fever	1,030	18·6	79	1·4	7·7
Infantile Paralysis ...	.....	.....	.....	.....	.....

In both districts during the last four years there was an unusual prevalence of diphtheria, fortunately of a very mild type; in 1912 the number was about twice the decennial average. In the metropolis the number of typhoid cases notified in 1912 was 18 per cent. below the decennial average, and the scarlet fever cases were the lowest during the ten years. In Newcastle the cases of typhoid were 38 per cent. and of scarlet fever 70 per cent. below the average.

In Newcastle the case incidence of scarlet fever and typhoid fever is greater than in Sydney, but the fatality rate is lower. With regard to diphtheria, Sydney shows the higher case rate but the lower proportion of fatalities.

It is interesting to compare the experience of Sydney with that of London, where the fatality from scarlet fever is 1·2 per cent. of notified cases, from diphtheria 6·3 per cent., and from typhoid fever 16·6 per cent. Diphtheria and typhoid fever are more virulent in their effects in London, the rates being respectively 39 per cent. and 63 per cent. higher than in Sydney.

With regard to infantile paralysis, which was declared a notifiable disease on 1st February, 1912, a serious study of the disease is now being undertaken. Although it is unusual to find more than one case in one family, the Public Health authorities consider it prudent that patients, during the acute stages of infantile paralysis, should be isolated, and precautions taken against possible infection. An opportunity will be afforded thereby of inquiring into the circumstances surrounding the occurrence of the illness and discovery of its cause.

Influenza.

There were 131 deaths attributed to influenza during the year, equal to a rate of ·75 per 10,000, which is 34 per cent. below the average of the previous five years. The rate for males was ·81, and for females ·69 per 10,000 living. Prior to 1891 this disease was very little known, or rather few deaths were ascribed to it, but in that year there was a very severe epidemic, and it has since always been more or less prevalent. The majority of deaths from influenza occur in the four months, July—October.

Tuberculous Diseases.

To the several forms of tuberculous diseases, 1,252, or 6·6 per cent. of the total deaths in New South Wales during 1912 are attributable, equivalent to 7·20 per 10,000 living. This rate was 9·4 per cent. below the average for the previous five years.

The death rates from all forms of tuberculosis, other than pulmonary, are stated hereunder for decennial periods since 1881, and for 1911. The rates are per 10,000 of each sex in various age-groups.

Age-group.	Males.				Females.				Persons.			
	1881-1890.	1891-1900.	1901-1910.	1911.	1881-1890.	1891-1900.	1901-1910.	1911.	1881-1890.	1891-1900.	1901-1910.	1911.
Years.												
0— 4 ...	24·10	15·93	7·11	3·96	22·10	13·41	5·98	3·79	22·63	14·69	6·55	3·88
5— 9 ...	·82	1·64	1·11	·92	·87	1·29	·89	·71	·85	1·47	1·01	·82
10—14 ...	·39	·70	·73	1·86	·46	·80	·67	·38	·42	·75	·70	1·13
15—19 ...	·30	·59	·73	·36	·28	·83	·74	·24	·29	·71	·74	·30
20—24 ...	·48	·75	·71	·45	·46	·89	1·00	·72	·47	·82	·85	·58
25—34 ...	·39	·86	·90	·49	·46	·86	1·13	·67	·42	·86	1·01	·58
35—44 ...	·42	·71	1·08	·84	·17	·73	1·04	·31	·32	·72	1·06	·59
45—54 ...	·42	·74	1·25	·69	·30	·44	·50	·53	·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, including phthisis, with 1,078 victims, caused more deaths during the year than any other disease, except diarrhœa and enteritis, cancer, and pneumonia. The rate was 6·20 per 10,000 living; amongst males 7·04, and amongst females 5·27 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. A slight rise occurred after 1907, when the rate was 6·33 per 10,000, but the rate for 1912 was 5 per cent. below the average for the five years 1907–11.

The table below shows the deaths from this disease and the rates for each sex since 1884 :—

Period.	Males.		Females.		Persons.	
	Deaths.	Rate per 10,000.	Deaths.	Rate per 10,000.	Deaths.	Rate per 10,000.
1884–88	3,132	11·83	2,022	9·30	5,154	10·69
1889–93	3,269	10·61	1,925	7·38	5,194	9·13
1894–98	3,191	9·43	1,983	6·68	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

The decrease in the number of deaths from tuberculosis has taken place since the passing of the Dairies Supervision Act of 1886, the Pure Food Act, 1908, the Diseased Animals and Meat Act of 1892, and the Public Health Act of 1896, and may be attributed to their operation. The Board of Health is empowered by these Acts to supervise dairies and the production of milk, cream, butter, and cheese, and to prevent the sale of tuberculous meat. The Dairies Supervision Act was improved in the powers conferred by the Pure Food Act, 1908, which makes the finding of a diseased cow in a dairy herd *primâ facie* evidence that its milk had been sold for food, and a prosecution for selling diseased milk can be instituted by the health inspectors. An Advisory Board was appointed in 1912, to advise the Government as to the best method of dealing with tuberculosis; particulars of its operations and other matters relating to the treatment, cure, and prevention of tuberculosis, will be found in chapter "Social Condition" of this volume.

If the deaths be distinguished in the two divisions of the metropolis and the country districts, as in the following table, it will be seen that in 1894–98 the rate in the former was 47 per cent. higher than in the latter. Since that period the rate in the country districts has remained fairly constant, but in the metropolis the decline has been very marked, and amounts to 76 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

Within the City of Sydney, pulmonary tuberculosis is a notifiable disease. The observance of the health regulations, and the general and widespread improvements and ventilation of business and residential buildings and places of amusement, and the destruction in recent years of very many unhealthy tenements, have resulted in a most satisfactory fall in the rate of mortality from phthisis. Although the population of the metropolis has increased considerably, the deaths from this disease have decreased from 589 in the year 1903 to 393 in 1912.

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 :—

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. As compared with the previous ten years there was in 1911 a marked decline in the death rates at all ages up to 55 years; above that age the difference was not great. The male rate is lowest at ages 5–9 years, after which it rises in each successive group up to 65 years. For the females the lowest rate is also at 5–9 years, but the highest is at ages 35–44 years. The female rate exceeds the male at ages 5–24 years, but for the other groups the male rate is considerably higher.

Of the 1,078 persons who died from tuberculosis of lungs or phthisis in 1912, 716 were born in Australia, and of the remainder, 76 had been resident in the Commonwealth less than five years, 46 from five to twenty years, and 215 for more than twenty years; in 25 instances either birth-place or length of residence was not stated.

The following comparison of death-rates from tuberculosis of lungs or phthisis 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.	
	1901-10.	1911.		1901-10.	1911.
Ireland	2·03	1·73	Victoria	1·01	·84
Switzerland	1·77	.....	South Australia ...	·82	·70
Spain	1·41	1·22	Western Australia ...	·75	·75
Scotland	1·38	.....	*New South Wales* ...	*·73*	*·66*
Netherlands	1·30	1·19	Queensland	·71	·60
Italy	1 19	1 22	New Zealand	·66	·53
England and Wales ...	1·16	1·08	Tasmania	·64	·60

New South Wales stands fourth from the bottom of the above list. The rate in all the European countries is higher than in New South Wales. The experience of the countries in the table, is similar to that of New South Wales, namely, that the rate is decreasing.

Tuberculosis of Meninges.

Tuberculosis of meninges caused 59 deaths during 1912, which is equal to a rate of ·34 per 10,000 living. Nearly all were children, 43 or 75 per cent., being under the age of 5 years.

Abdominal Tuberculosis.

Included under this heading are deaths from tabes mesenterica. There were 47 deaths in 1912, of these 23 or 49 per cent. were of children under 5 years of age.

Other Tuberculous Diseases.

Tuberculous diseases, other than those referred to above, caused 68 deaths, being at the rate of ·39 per 10,000 living.

CANCER.

There were 1,312 deaths from cancer in 1912, equal to a rate of 7·55 per 10,000 living, which is 4·6 per cent. above the average for the preceding five years. The deaths during the year were 726 amongst the males and 586 amongst the females, the rates being 7·95 and 7·10 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	6·78	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

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 1912 ranged from 4 days to 102 years, but cancer is essentially a disease of old age; 95 per cent. were aged 35 and over.

The following table shows for each sex the death-rate per 10,000 in age-groups after 25 years, during each decennial period since 1881 and for the year 1911 :—

Age Group.	Males.				Females.				Persons.			
	1881–1890.	1891–1900.	1901–1910.	1911.	1881–1890.	1891–1900.	1901–1910.	1911.	1881–1890.	1891–1900.	1901–1910.	1911.
Years.												
25—34 ...	·75	·94	·89	1·19	1·36	1·24	1·37	1·42	1·01	1·07	1·12	1·30
35—44 ...	2·88	3·63	3·93	4·55	5·25	6·79	7·16	6·50	3·82	4·96	5·39	5·46
45—54 ...	9·36	12·13	12·53	14·19	14·63	17·93	19·21	20·03	11·37	14·52	15·41	16·75
55—64 ...	11·95	30·36	34·96	35·56	22·88	33·20	36·54	33·35	21·09	31·52	35·65	34·59
65—74 ...	34·78	51·32	72·00	74·14	31·85	43·00	62·06	58·98	33·63	47·18	67·71	67·27
75 and over	41·24	63·78	86·36	88·89	35·97	62·95	79·98	101·51	39·24	63·43	83·49	94·52
All ages ...	3·24	4·99	6·90	7·68	3·19	4·77	6·62	7·13	3·22	4·88	6·77	7·42

It will be seen that 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.	
	1901–1910.	1911.		1901–1910.	1911.
Switzerland	1·27	...	New Zealand	·70	·80
Netherlands	1·00	1·08	*New South Wales* ...	*·68*	*·74*
Scotland	·92	...	Italy	·59	·65
England and Wales ...	·90	·99	Queensland	·59	·65
Victoria	·77	·83	Ontario, Canada ...	·59	·63
Austria	·76	·82	Tasmania	·59	·63
Ireland	·76	·82	Western Australia ...	·52	·62
South Australia	·72	·74	Spain	·47	·51
Prussia	·70	·81	Hungary	·42	·46

Diabetes.

The deaths attributed to diabetes in 1912 numbered 149, equal to a rate of ·86 per 10,000 living, which is 3·4 per cent. below the average for the preceding five years. The rate for males was ·64 and for females 1·10 per 10,000 living of each sex. Most of the deaths occur after middle life. Of the total, 110 were of persons over 45 years of age.

Meningitis.

Inflammation of the brain or its membranes caused 167 deaths, equal to a rate of ·96 per 10,000 living. This is 2 per cent. below the average rate during the previous five years. The disease is principally one of childhood. Of those who died during the year, 98, or 59 per cent., were under 5 years of age. Included in the total are 30 deaths from cerebro-spinal fever.

Hæmorrhage of the Brain.

To cerebral hæmorrhage and apoplexy there were due 611 deaths, of which 345 were males and 266 females. The rate is 3·51 per 10,000 living, 3·78 for males and 3·22 for females, in each case being above the average.

The following table shows the rates for these diseases for each sex in quinquennial periods since 1884:—

Period.	Males.		Females.		Persons.	
	Deaths.	Rate per 10,000.	Deaths.	Rate per 10,000.	Deaths.	Rate per 10,000.
1884–88	778	2·97	467	2·15	1,245	2·58
1889–93	796	2·58	618	2·37	1,414	2·48
1894–98	943	2·79	710	2·39	1,653	2·60
1899–1903	1,050	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

Generally the male rate is a little higher than the female. There has been slight difference in the rate for many years—it has fluctuated, first with a tendency to decrease down to 1895, and then to increase. Possibly the variations in the rate are due to some extent to differences in classification.

Convulsions of Children.

Convulsions of children (under 5 years) caused 163 deaths during 1912, or ·94 per 10,000 living, which is 20 per cent. below the average for the previous five years. This disease, however, being entirely confined to children under 5, the rate is more properly stated as a proportion of those ages. Comparing therefore the deaths with the number living at those ages, the rate during 1912 was ·77 per 1,000, as against ·98, the average of the previous five years.

Insanity.

Insanity is classed as a distinct disease of the nervous system; but of the total number of deaths of insane persons in 1912, only 155 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 1·63 in the case of males, and ·42 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 1912 there were 6,470 persons under official control and receiving treatment. This is equal to 3·64 insane persons per 1,000 of population. The average during the preceding five years was 3·70 per 1 000.

The percentage of deaths of insane persons in New South Wales is comparatively light. The following table has been computed on the basis of the average number of patients resident in Hospitals for the Insane :—

Period.	Males.		Females.		Persons.	
	Deaths in Hospitals for Insane.	Proportion of average number resident.	Deaths in Hospitals for Insane.	Proportion of average number resident.	Deaths in Hospitals for Insane.	Proportion of average number resident.
		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

Of the insane who died during 1912, 149 persons, or 30 per cent., were aged 65 years and upwards.

Diseases of the Heart.

Diseases of the heart were the cause of 1,881 deaths, equivalent to a rate of 10·82 per 10,000 living, which is 5·9 per cent. above the average for the preceding five years. Of the total, 1,130 were males and 751 females, the rates being 12·38 and 9·10 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

The ages of the persons who died ranged up to 100 years; and, as might be expected, the great majority of deaths occurred after middle age had been passed, 1,505 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	33·37	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 referred to some form of heart disease. The rates above show that the increase has been in the ages 65 and over, and that it was most marked during the periods 1891 to 1910. The rates do not vary greatly up to age 24 years but rise steadily after that age.

The death-rate for males generally is higher than for females, probably due to the greater risks and shocks to which males are exposed. At ages 5 to 45 years the female rate is higher than the male; after 45 the male rate is much the higher. Among both sexes the rates in 1911 and 1912 were generally higher than in the decennium 1901–10.

Bronchitis.

Bronchitis caused 552 deaths in 1912, equivalent to 3·17 per 10,000 living which is 3·6 per cent. below the mean rate of the previous five years. The rate for males was 3·48 and for females 2·83 per 10,000; of the total deaths 231 were stated to be due to acute and 321 to chronic bronchitis. This disease chiefly affects the extremes of life. In 1912, of those who died, 146, or 26 per cent., were under 5, and 322, or 58 per cent., over 65 years of age.

Pneumonia.

The total deaths from pneumonia were 1,098, equal to a rate of 6·32 per 10,000 living. Included in the total are 367 deaths which were ascribed to broncho-pneumonia. Among males the rate was 7·66, and among females 4·83 per 10,000 living of each sex respectively. The rate is 9·1 per cent. above the average of the previous five years. Pneumonia is more fatal to males than to females, as the following table, giving the rates by sexes since 1884, shows:—

Period.	Males.		Females.		Persons.	
	Deaths.	Rate per 10,000.	Deaths.	Rate per 10,000.	Deaths.	Rate per 10,000.
1884–88	2,032	7·68	1,301	5·08	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	5·13	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

Most deaths from pneumonia occur in the cold weather. In 1912 there were 327 deaths, or 30 per cent. in the three months June to August.

There has been little reduction in the mortality for some years. There was a drop after 1888, but it then steadily increased, with a few fluctuations, to the highest point on record, in 1902. The general rates, however, for the last ten years have been much below the figure for that year.

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	·65	·12	1·02	·93	1·10	1·14	1·12	·74	1·02	·63
15—19 ...	2·33	2·01	2·29	1·66	1·90	1·26	1·49	·24	2·12	1·64	1·90	·96
20—24 ...	3·99	3·08	3·00	2·14	2·63	1·90	1·54	1·19	3·36	2·50	2·28	1·68
25—34 ...	4·90	3·91	3·67	2·80	4·21	2·60	2·30	1·79	4·61	3·32	3·01	2·31
35—44 ...	7·35	6·69	6·06	4·18	5·97	3·97	3·92	3·67	6·98	5·55	5·09	3·94
45—54 ...	12·98	9·61	9·47	7·67	7·35	5·33	4·78	2·78	10·83	7·85	7·45	5·52
55—64 ...	17·00	16·08	16·15	9·72	8·87	10·78	10·19	7·94	13·85	13·92	13·56	8·94
65—74 ...	26·01	28·21	28·47	26·86	22·22	18·66	22·98	17·37	24·53	23·89	26·10	22·56
75 and over	30·21	42·40	46·54	54·84	28·26	35·38	50·32	53·06	29·47	39·42	48·24	54·04
All ages ...	7·77	7·46	7·68	6·63	5·86	5·22	5·50	5·00	6·91	6·42	6·64	5·85

A very large increase has taken place in the rates for the oldest group, 75 years and over, the rates for the groups under 5 years and 65–74 are also greater than in the period 1881–1890, but in all the other groups the rate has declined slightly. The rate is at a minimum at ages 10–14 years, after which it rises gradually up to age 35, and then very rapidly with increasing age.

In 1911 all age-groups except 5–9 years and 75 and over, showed decreased rates as compared with the previous ten years.

Diseases of Digestive System.

The deaths attributed to these diseases numbered 2,598, equivalent to 14·94 per 10,000 living, the rates for males and females being 15·45 and 14·38 as compared with 14·69 and 12·69 respectively, the rates during the preceding five years. Deaths in this system were ascribed mainly to diarrhœa and enteritis, which with appendicitis and cirrhosis of the liver are discussed hereunder. Gastritis caused 114 deaths, 49 being of children under 5 years of age; and 44 deaths were ascribed to gastric ulcer.

Diarrhœa and Enteritis.

In 1912 there were ascribed to these two causes 1,741 deaths, or 10·01 per 10,000 living, which is 13·4 per cent. above the average of the preceding five years. The rate for males was 10·40 and for females 9·61 per 10,000 living. The following table gives the deaths and rates of males and females since 1884 :—

Period.	Males.		Females.		Persons.	
	Deaths.	Rate per 10,000.	Deaths.	Rate per 10,000.	Deaths.	Rate per 10,000.
1884–88	3,412	12·89	3,048	14·02	6,460	13·40
1889–93	3,451	11·20	2,851	10·92	6,302	11·07
1894–98	4,042	11·94	3,638	12·26	7,680	12·09
1899–1903	4,422	12·29	3,901	11·99	8,323	12·15
1904–1908	3,714	9·61	3,000	8·41	6,714	9·03
1909	834	10·19	652	8·59	1,486	9·42
1910	769	9·15	662	8·53	1,431	8·85
1911	698	8·04	535	6·72	1,233	7·41
1912	932	10·40	809	9·61	1,741	10·01

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 1402, or 81 per cent. of the total, and in the second 339. The mortality rate of children under 2 years during 1912 was 13 per cent. above the average of the previous quinquennium, being 15·77 per 1,000 children under 2 as compared with 14·01 during 1907–11.

Of the total deaths from these causes, 830, or 48 per cent., occurred in the three summer months, January, November, and December; and 518, or 30 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 136 deaths were ascribed in 1912, the rate being ·78 per 10,000 living, which is 5 per cent. below the average of the preceding five years. The rate for the males in 1912 was ·85, and for the females ·70 per 10,000 living. This disease is much more fatal to males than to females.

Cirrhosis of the Liver.

In 1912 deaths from cirrhosis of the liver numbered 148, the rate being ·85 per 10,000 living, which is 18 per cent. above the average of the previous five years. This disease is more prevalent among males than females—the rate for the former in 1912 being 1·26, and for the latter ·36 per 10,000 living in each sex.

Bright's Disease.

Of the 1,132 deaths due to diseases of the urinary system, 840 were caused by chronic nephritis or Bright's disease, and 83 by acute nephritis. Taking these two diseases together, the rate was 5·31 per 10,000 living; for males 6·36, and for females 3·75 In 1912 the rate was 16·4 per cent. above the quinquennial average. The changes in the rates of these two diseases, acute and chronic nephritis, will be seen below:—

Period.	Males.		Females.		Persons.	
	Deaths.	Rate per 10,000.	Deaths.	Rate per 10,000.	Deaths.	Rate per 10,000.
1884–88	626	2·37	386	1·78	1,012	2·10
1889–93	907	2·94	570	2·18	1,477	2·60
1894–98	1,291	3·81	821	2·77	2,112	3·33
1899–1903	1,659	4·61	996	3·06	2,655	3·88
1904–1908	2,056	5·32	1,199	3·36	3,255	4·38
1909	447	5·46	256	3·37	703	4·46
1910	465	5·54	272	3·50	737	4·56
1911	525	6·05	315	3·96	840	5·05
1912	581	6·36	342	3·75	923	5·31

During the whole period covered by the table the rate, both for males and females, has been doubled. The male rate is about half as high again as the female. Not many persons under 35 die from nephritis, the proportions per cent. for 1912 being: under 35, 13·1; and over 35, 86·9.

Since 1881 the rate has steadily risen, the increase being greatest at ages over 45 years. The rates per 10,000 are shown below for males and females in decennial periods since 1881 and in 1911 :—

Age Group.	Males.				Females.				Persons.			
	1881–1890.	1891–1900.	1901–1910.	1911.	1881–1890.	1891–1900.	1901–1910.	1911.	1881–1890.	1891–1900.	1901–1910.	1911.
Years.												
0– 4 ...	1·19	1·31	1·52	·77	1·12	1·44	1·23	·50	1·16	1·37	1·38	·64
5– 9 ...	·42	·44	·48	·23	·32	·44	·50	·47	·37	·44	·49	·35
10–14 ...	·35	·26	·49	·50	·27	·38	·53	·38	·31	·32	·51	·44
15–19 ...	·47	·76	·72	·59	·68	·61	·77	·61	·57	·68	·74	·60
20–24 ...	·81	1·01	1·04	1·35	1·18	1·26	1·07	1·79	·98	1·13	1·05	1·56
25–34 ...	1·76	1·80	1·85	1·82	1·74	2·38	1·74	1·42	1·75	2·06	1·80	1·63
35–44 ...	2·94	4·48	4·36	4·55	3·69	4·52	4·12	3·57	3·24	4·50	4·25	4·09
45–54 ...	5·41	8·40	9·92	10·99	4·09	6·65	7·98	7·75	4·91	7·68	9·08	9·56
55–64 ...	10·58	15·39	20·17	22·12	6·50	10·47	12·83	16·68	9·00	13·39	16·98	19·73
65–74 ...	14·67	26·47	40·87	54·84	11·41	15·77	25·06	36·12	13·39	21·71	34·05	46·37
75 and over	19·18	29·29	59·12	67·14	6·42	16·59	29·65	40·37	14·33	23·90	45·89	55·08
All ages ...	2·40	3·62	5·16	6·06	1·77	2·63	3·33	3·96	2·13	3·16	4·29	5·05

At ages under 5 the mortality is higher than at any subsequent age up to 25 years. The minimum point is from ages 5 to 9, but after that point the mortality increases steadily up to age 35, and then rapidly to the highest ages. At all ages, except 5 to 24, the male rate is the higher. In 1911 the rate was lower than in the previous ten years in all ages up to 45 years; above that age there were considerable increases.

Deaths in Child-birth.

The number of deaths of women in 1912 in child-birth was 305, corresponding to a rate of 5·9 per 1,000 births. Of these, 117 were due to puerperal septicæmia, 39 to accidents of pregnancy, and 149 to other puerperal accidents. The deaths resulting from various diseases and casualties incident to child-birth are about 7 per 1,000 births, or 1 death to every 147 births. During the twenty years ended 1912, the deaths were as follow :—

Cause of Death.	1893–1896	1897–1900	1901–1904	1905–1908	1909–12.	1893–1912.	
						Total Deaths.	Proportion due to each cause.
							per cent.
Accidents of Pregnancy ..	132	197	176	280	143	928	17·14
Puerperal Hæmorrhage ...	142	159	135	106	114	656	12·11
Puerperal Septicæmia	369	362	378	295	442	1,846	34·08
Albuminuria and Eclampsia ...	100	126	113	141	179	659	12·17
Other Casualties of Child-birth	272	279	256	301	219	1,327	24·50
Total ...	1,015	1,123	1,058	1,123	1097	5,416	100·00

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

During the twenty years, 1893–1912, of the 5,416 women who died from diseases of child-birth, 4,865 were married, and 551 single, and as there were during this period 744,351 legitimate and 53,418 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 153, and amongst single women 10·3 per 1,000, or 1 in 97.

Violence.

Of 18,886 persons who died during the year, 1,399, or 7·41 per cent., met with violent deaths. The rate per 10,000 living was 8·05, being 4·2 per cent. higher than the mean rate during the previous quinquennium. The mortality rate from violence amongst males is three times as great as for females, since of the deaths of this kind, 1,085, equal to 11·88 per 10,000 living, were of males, and 314, equal to 3·81 per 10,000, were of females.

Accident.

The number of fatal accidents during the year was 1,027, viz., 809 of males and 218 of females, equal to rates of 8·86 and 2·39 per 10,000 living of each sex. Accidental deaths have always been numerous in the country. Of the total number registered during 1912, 327 occurred in the metropolis and 900 in the country districts, and, as a rule, about three-fourths of the accidents occur in the country, which contains about three-fifths 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	7·23
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

Thus, although the accident rate is still high compared with that of more settled countries, it has been steadily decreasing; among males the decline has been more rapid than amongst females. In 1912, however, the rate showed an increase of 2 per cent., as compared with the average of the previous five years. For the years prior to 1894 the rates are really slightly lower than are shown in the table, because certain causes formerly classed as accidents are now recorded elsewhere.

Experience shows that out of every 1,000 accidents 163 are due to drowning, 136 to burns or scalds, 151 to vehicles and horses, 107 to falls, 87 to railways and tramways, 50 to mines and quarries, and 38 to weather agencies. Among males the greatest number are due to drowning, and among females to burns or scalds.

SUICIDE.

The number of deaths due to this cause during 1912 was 261, equal to a rate of 1·50 per 10,000 living, which is 32 per cent. above the average of the previous five years. The number of males was 192, equal to a rate of 2·10 per 10,000 living, and of females 69, equal to ·76 per 10,000, so that the rate for males is about three 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

The means usually adopted by men for self-destruction are shooting, poisoning, stabbing, or hanging. Amongst women, weapons are avoided, and poison has been the means most often used. Out of every 100 cases, during the last five years, 31 were by poisoning, 29 by shooting, 16 by stabbing, 13 by hanging, and 8 by drowning.

Experience shows that morbidity is largely influenced by the seasons. As regards suicides, this is most plainly seen amongst males, who are more inclined to attempt self-destruction in the last quarter of the year. For the ten years ended 1912, the proportion of male suicides per 1,000 during the first quarter of the year was 258; second, 227; third, 242; and fourth, 273. 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, 267 per 1,000; second, 235; third, 250; and fourth, 248.

Suicide at ages under 20 is not common, but after that age, especially with males, it increases with increasing age. The rates per 10,000 for each sex in age-groups from 1881 to 1911 is shown below:—

Age Group.	Males.				Females.				Persons.			
	1881–1890.	1891–1900.	1901–1910.	1911.	1881–1890.	1891–1900.	1901–1910.	1911.	1881–1890.	1891–1900.	1901–1910.	1911.
Years.												
15–19	·28	·21	·29	·24	·44	·59	·53	·61	·36	·43	·41	·42
20–24	1·01	1·29	1·18	1·35	·46	·86	·86	·12	·75	1·08	1·02	·75
25–34	2·15	2·06	2·04	2·17	·60	·67	·51	·75	1·50	1·43	1·30	1·48
35–44	2·64	3·78	3·06	3·62	·82	·94	·80	1·15	1·91	2·58	2·04	2 46
45–54	4·25	4·72	3·97	3·89	1·05	·88	·75	·88	3·03	3·14	2·58	2·57
55–64	4·54	6·32	5·55	6·00	·95	1·35	·78	·79	3·15	4·29	3·48	3·71
65–74	5·43	7·39	6·24	3·40	1·19	·79	·51	·91	3·77	4·59	3·77	2·28
75 and over ...	4·47	7·73	4·15	6·62	·86	1·95	·45	1·15	3·09	5·28	2·49	4·16
All ages ...	1·52	1·93	1·76	1·89	·39	·50	·44	·49	1·01	1·26	1·13	1·22

The suicide rate shows very little variation throughout the period under review, but is now slightly higher than in 1881–1890. Comparing the mortality at various ages, the rates for males rose gradually up to ages 65–74, though in 1911 the rate in this group was unusually low. In 1901–10 the highest rate for the females was at ages 20–24 years, in the next group it was lower, but rose again at ages 35–44, after which it declined.

Except at the ages 15–19, the male rate is considerably higher than the female.

Seasonal Prevalence of Diseases.

The statement below shows the principal diseases, the deaths from which vary according to the seasons. The figures are based on the experience of the ten years 1903–12, 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.	Influenza.	Diphtheria and Croup.	Whooping Cough.	Phthisis.	Pneumonia.	Bronchitis.	Diarrhœa, Enteritis, and Dysentery.	Bright's Disease.
January ..	141	37	44	90	79	48	47	152	76
February ..	144	18	71	74	71	43	42	127	72
March ...	148	18	78	61	76	46	43	111	78
April ...	132	30	115	86	81	60	61	110	77
May ...	108	45	120	86	86	77	82	69	85
June ...	67	86	123	72	86	102	119	40	89
July ..	37	119	100	85	90	119	138	29	96
August ...	31	178	93	95	94	134	140	24	96
September.	26	184	85	86	90	125	127	25	91
October ...	25	138	53	89	88	95	83	46	80
November.	44	92	65	81	82	84	69	117	88
December..	97	55	53	95	77	67	49	150	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 three months in the year are January, February, and December; and the coldest June, July, and August. Phthisis does not vary a great deal throughout the year, but the rates show that in the cold months the deaths are most frequent. Bright's disease, also, is most fatal in the cold weather.

Causes of Infantile Mortality.

The mortality of infants in New South Wales was exceptionally low during the nine years 1904–12. An upward movement in 1907, when the rate was higher than in any of the three preceding years, was followed by a decline in the two following 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. Prior to 1904 there had been practically little change in the rates for thirty years, but from 1860 up to 1873 the rate was lower than in the years immediately preceding 1904.

Although at very early ages children are most susceptible to the attacks of disease, and the rates for preventable diseases are highest, there is no doubt that many children succumb through parental ignorance of the proper food or treatment required. In New South Wales, out of every 10,000 children born, as will be seen from a previous table, about 1,000 die before reaching their fifth year.

As the death-rate of infants is usually looked upon as a reliable sanitary test, and as it is of interest to know the diseases most fatal to children, the following statement has been prepared. It shows the principal causes of deaths of children—under 1 per 1,000 births and under 5 per 1,000 living—in 1912 and in the five years 1907–11, 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.	
	1907–1911.	1912.	1907–1911.	1912.	1907–1911.	1912.	1907–1911.	1912.	1907–1911.	1912.	1907–1911.	1912.
Measles	·3	1·5	·3	1·1	·3	1·2	·3	2·2	·2	·9	·2	1·3
Scarlet Fever	·0	·0	·0	·0	·1	·0	·1	·0	·1	·0	·1	·0
Whooping-cough	2·6	1·3	2·9	1·3	2·8	1·3	1·2	·6	·9	·5	1·0	·5
Diphtheria and Croup	·3	·5	·3	·2	·3	·3	·5	1·1	·7	·7	·6	·8
Tuberculosis—Meninges	·6	·4	·2	·1	·4	·2	·5	·4	·1	·1	·2	·2
,, Peritoneum	·5	·1	·6	·2	·6	·2	·2	·1	·2	·1	·2	·1
,, Other Organs	·1	·1	·2	·1	·1	·1	·1	·1	·1	·1	·1	·1
Syphilis	1·4	1·3	·4	·3	·7	·7	·4	·4	·1	·1	·2	·2
Meningitis	1·1	·6	1·0	1·0	1·0	·8	·5	·4	·4	·4	·5	·4
Convulsions	2·6	1·5	3·8	2·8	3·4	2·3	·8	·6	1·0	·9	1·0	·8
Bronchitis	2·6	1·9	3·2	2·4	3·0	2·2	·8	·6	·9	·7	·9	·7
Broncho-pneumonia	3·5	2·6	3·1	2·8	3·2	2·8	1·3	1·3	1·1	1·1	1·2	1·2
Pneumonia	1·6	1·2	1·9	1·0	1·8	1·1	·8	1·0	·8	·6	·8	·8
Diarrhœa and Enteritis	25·3	27·4	17·7	19·2	20·4	22·4	7·8	9·0	5·3	5·4	6·2	6·7
Congenital Malformations	2·5	3·0	2·2	2·4	2·3	2·6	·6	·9	·6	·6	·6	·7
Infantile Debility	10·0	5·3	11·5	8·5	11·0	7·3	2·5	1·4	2·7	2·0	2·7	1·8
Premature Birth	18·1	16·9	14·6	15·3	15·8	15·9	4·5	4·6	3·3	3·5	3·7	3·9
All others	9·0	10·3	9·2	9·6	9·1	9·9	3·5	4·3	3·7	4·0	3·6	4·1
Total	82·1	75·9	73·1	68·3	76·3	71·3	26·4	29·0	22·2	21·7	23·8	24·3

In comparison with the preceding five years there was a considerable improvement in 1912, among children under 1—the reduction amounted to 6·5 per cent. Among children under 5, there was a slight increase—2·1 per cent.—due mainly to an epidemic of measles.

It will be seen that 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 1912 were equal to 25·8 per 1,000 births, or 36 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 71 per cent. of this mortality is due to deaths from congenital debility or defects. After these, in 1912, came diarrhœa and enteritis, which were responsible for deaths to the extent of 22·4 per 1,000

births. The deaths from infectious diseases amounted to 2·8 per 1,000 births, of which whooping-cough caused 1·3. Respiratory diseases are rather fatal to children, bronchitis, in 1912, caused 2·2, broncho-pneumonia 2·8, and pneumonia 1·1 per 1,000 births. The rates for these respiratory diseases showed decreases in 1912. Convulsions had a death-rate of 2·3, tuberculosis diseases ·5, and meningitis (not tuberculous) ·8 per 1,000 births.

It has already been pointed out that life in the metropolis is more unfavourable to children than in the country. The total excess mortality in the metropolis is 11 per cent., but the excess from diarrhœa and enteritis is 43 per cent., and it should be noted that in 1912 the mortality from these causes was above the quinquennial average in both divisions.

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, measles, and bronchitis in the order stated.

Deaths of Illegitimate Children.

A further statement is given below in which the causes of death of illegitimate children are compared with those of legitimate children. The figures represent the deaths of children under 1 year per 1,000 births in the State as a whole in 1912.

Causes of Death.	Deaths under 1 per 1,000 Births.		
	Legitimate.	Illegitimate.	Total.
Measles	1·1	3·1	1·2
Scarlet Fever	...	...	...
Whooping-cough	1·3	2·4	1·3
Diphtheria and Croup	·3	·3	·3
Tuberculosis—Meninges	·2	·3	·2
,, Peritoneum ...	·1	1·0	·2
,, Other Organs ...	·1	·7	·1
Syphilis	·5	4·1	·7
Meningitis	·7	2·8	·8
Convulsions...	2·2	3·4	2·3
Bronchitis	2·1	3·7	2·2
Broncho-pneumonia	2·7	3·7	2·8
Pneumonia	1·0	2·4	1·1
Diarrhœa and Enteritis	19·6	69·2	22·4
Congenital Malformations ...	2·5	4·8	2·6
Infantile Debility	6·6	18·4	7·3
Premature Birth	15·2	28·3	15·9
All others	9·3	20·1	9·9
Total...	65·5	168·7	71·3

The reasons for the greater mortality of illegitimate children are seen from this table. Excluding diseases which may be ascribed to inherent weakness, there is strong evidence of neglect or want of care as regards these unfortunate children. Infantile debility, including congenital malformations and premature birth, showed 51·5 per 1,000 births as against the legitimate rate, 24·3. Diarrhœa and enteritis were 69·2 as compared with 19·6; respiratory diseases, bronchitis, broncho-pneumonia, and pneumonia, 9·8 as compared with 5·8; and syphilis 4·1 as compared with ·5. Among the epidemic diseases the great difference was in deaths from measles—3·1 as against 1·1.

MAP OF NEW SOUTH WALES

1914

QUEENSLAND

NEW SOUTH WALES

VICTORIA

SOUTH AUSTRALIA

PACIFIC OCEAN

TABLE

Area of State	309,367 sq. miles
Population (31st March, 1914)	1,646,183
Average Density per Sq. Mile (31st March, 1914)	5.32 persons
Tablelands	30,765 sq. miles
Riverina	35,592 "
Western Slopes	29,915 "
Western Plains	29,931 "
Western Division	42,964 "
Government Railways (30th March, 1914)	3,966 miles
Tramways	232 "
Telegraph & Telephone lines (1913)	53,553 "
Number of Sheep (1913)	31,044,000
Wool (in the grease) (1913)	326,804,000 lbs.
Coal (1913)	12,454,810 tons value £3,779,272
Gold (1913)	£97,703
Silver, Silver Lead & Base (1913)	3,508,125 fine ozs.
Copper	" 650,733 "
Iron	" 286,222 "
Lead, pig &c.	" 362,742 "
Kerosene Shale	" 7,339 "
Tin Ingots & Ore	" 425,262 "
Zinc Spelter & Concentrates	1,941,967 "

NOTES

Note :—Important deposits of Antimony, Bismuth, Tungsten & Molybdenum occur in many localities in addition to Gems of various kinds.

NOTE.—Localities of Principal Minerals from data supplied by E. F. Pittman, A.R.S.M., Government Geologist.

Compiled, Drawn and Printed at the Department of Lands, Sydney, N.S.W. 1914.

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 quantity and 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 and necessarily diverted to the development of other industries, such as agriculture, which, with the increased population, became remarkably profitable.

In the last thirty years other metals have been discovered and worked in New South Wales, and though gold still occupies a prominent place in the mineral wealth of the State, such metals as silver, tin, copper, and iron now contribute considerably to the importance of metal mining as a primary industry.

GEOLOGICAL SURVEYS.

The geological survey of the State is conducted by the Geological Survey Branch of the Department of Mines. The main objects of its operations are (1) the mapping of the various geological formations, so that geological maps of the State may be prepared, and (2) the examination of the mineral deposits and the preparation of reports for scientific and economic purposes. A new edition of the geological map of the State is in course of preparation, in addition to detail maps of special areas.

The location of the principal minerals may be seen on the map in this volume.

GEOLOGICAL FORMATION.

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

CAINOZOIC.	Post-Tertiary	Recent; auriferous and stanniferous soils, and alluvial deposits in the beds of existing rivers.
		Pleistocene; alluvial leads containing gold, tin, and gem-stones.
	Tertiary	Pliocene; alluvial leads, frequently covered by basalt, and containing gold, tin, and gem-stones.
		Miocene; quartzites with plant remains at Dalton, near Gunning.
		Eocene; marine limestones and calcareous sandstones of the Lower Darling; plant beds of the New England district.

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

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 Silurian and Devonian rocks between the Bogan River and the Barrier Range. Tertiary fluviatile deposits constitute the chief sources of alluvial gold, stream tin, and gem-stones. The Cretaceous formation was the source of supply of the first artesian water struck. Lower Cretaceous rocks occupy the greater part of the basin of the Upper Darling and its tributaries, overlying a considerable area of Triassic water-bearing formation. The Upper Cretaceous formation is opal-bearing, rich deposits being worked at White Cliffs and Lightning Ridge. Rocks of Jurassic age are limited in occurrence to the locality of Gulgong. Triassic and Trias-Jura rocks extend over a large part of the coastal district. Wianamatta shales, Hawkesbury sandstone, and Narrabeen shales constitute the Hawkesbury series. 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. The Wianamatta shales form the cappings of hills throughout 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

section of this chapter relating to coal-mining. The Carboniferous strata are developed in the Hunter and Manning River districts. 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 on the Blue Mountains 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 Namoi, Clyde, Upper Shoalhaven, and Macleay Rivers. At Milparinka and at Bateman Bay they carry the chief metalliferous deposits, gold, silver, tin, copper, lead, and antimony, and the limestone beds in which the Jenolan, Wellington, Yarrangobilly, and Wombeyan Caves occur.

Lower Silurian 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. Rocks of Cambrian contain the Broken Hill lode, and probably occur also in the Cooma-Albury districts.

Mining and Geological Museum.

The Mining and Geological Museum in Sydney contains 42,066 exhibits, and during the year 1912 seventeen collections, comprising 1,950 specimens, were prepared. The Museum is open to the public free of charge.

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.

In the preparation of this chapter, the information has been derived chiefly from the "Annual Reports of the Department of Mines," and has been supplemented by the "Memoirs of the Geological Survey of New South Wales," and the series of "Monographs on the Mineral Resources of the State," issued by the Department of Mines, as well as Pittman's "Mineral Resources of New South Wales." Reports of Royal Commissions have been consulted also.

In the chapter of this Year Book relating to "Employment and Industrial Arbitration," a summary is given of the principal clauses of the statute laws affecting the mining industries of this State, as contained in the Mining Acts, 1906-7, the Mines Inspection Acts, 1901-4, the Coal Mines Regulation Act, 1912, which consolidated previous enactments, the State Coal Mine Act, 1912, and the Miners' Accident Relief Act, 1900, with its subsequent amendments. Regulations under these 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.

Warden's Courts.

The Mining Act, 1906, provides for the establishment of Warden's Courts, and at the end of the year 1912 there were 174 of these Courts in New South Wales. Warden's 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 lands.

A miner's right entitles the holder to occupy Crown land for the purpose of mining for gold or other minerals, to construct works for mining purposes, to conserve water or obtain timber in connection with mining, except within exempted areas, and for residence. The areas which may be held, and the classes of tenements, are defined by the Regulations.

A business license entitles the holder to occupy one quarter of an acre of Crown land in a town or one acre outside town boundaries, for the purpose of carrying on any business.

A miner's right or a business license may be issued for any period from six months up to twenty years, the fees payable being determined according to the currency of the right or license. For a miner's right, the fee is 5s. per annum, and for a business license £1 per annum.

Under a provision of the Crown Lands (Improvement Purchase) Act, 1909, holders of business areas exceeding the limit allowed by the Mining Act, 1906, within the suburban boundaries of any town, may obtain by purchase a freehold title to such areas, provided that registration was effected prior to July, 1907, and that the areas do not exceed one acre.

Regulations prescribe the areas which may be held as prospecting areas or claims for dam or machinery sites, and the contingent labour conditions; and provision is made for registration and survey in certain instances, transfer, creation of shares, and all other matters affecting holdings under miner's right or business license.

Special provision is made for the issue, to any holder of a miner's right, of an authority to prospect upon any Crown land, whether exempted from ordinary occupation under miner's right or not. Such authority is subject to payment of rent, and upon finding gold or minerals the holder must report the discovery within fourteen days and may be required to take out a lease.

Leases of Crown Lands.

The term "Crown Lands" embraces all lands vested in the Crown or in any trustee or constructing authority for public purposes, all lands held under lease from the Crown (except conditional lease or conditional purchase lease), and any navigable water, road, street, or highway.

Leases of Crown lands are divided into two classes—(*a*) Mining leases, and (*b*) leases for "mining purposes."

Mining leases are for either gold or minerals, the annual rent in each case being 5s. per acre, except in the case of leases for coal or shale, which are subject to a rental of 1s. per acre, and a royalty of 6d. per ton on all shale or large coal, and 3d. per ton on all small coal raised. The amount paid as rent may be deducted from the royalty.

Gold-mining leases are limited to 25 acres, mineral leases (other than coal, shale, or opal) to 80 acres, coal or shale leases to 640 acres, and opal leases to 10 acres; and the maximum term for which a lease may be granted is twenty years, with the right of renewal for a similar term.

Under special conditions, where there are exceptional difficulties in mining the land, leases for larger areas may be granted, subject to report by the Prospecting Board. Such special leases are subject to payment of a rent or royalty to be fixed by the Minister in each case.

The definition of "mining purposes" covers all operations in connection with mining, such as erecting buildings or machinery, conserving water, treatment of tailings, or any other purpose in connection with mining for gold or minerals. These leases for mining purposes are limited to the surface and to a specified depth, and do not authorise the holder to mine for any minerals contained in the land.

Mining on Private Lands.

Holders of miners' rights may obtain from Mining Wardens authority to enter upon any private land to prospect for gold, or upon land granted with the reservation of minerals to the Crown, to prospect for minerals other than coal or shale. The fee for such authority is 5s., and the holder must pay to the owner of the land such rent and compensation for surface damage as the Warden, after inquiry, may assess. Having obtained authority to enter, the holder may search for the specified mineral on the area granted (not more than 25 acres for gold nor 80 acres for minerals), and may apply for a lease of the whole or any part of the land. Such lease may be for any term not exceeding twenty years, with the right of renewal for a like term. The rent to the owner of the land is £1 per acre, payable in respect only of such part of the surface as is granted. A royalty of 1 per cent. on the gross value of the gold and minerals won is payable to the Crown. The owner of private land, or the occupier, with the owner's consent, may obtain authority to enter or lease any area, not exceeding that prescribed for an ordinary lease, and to mine for gold or for any minerals, without any payment of rent or compensation, and such owner or occupier may also obtain a lease of any area not exceeding 640 acres to mine for coal or shale. Such owners' leases are subject to the payment to the Crown of 1 per cent. royalty on gold or minerals, 6d. per ton on large coal or shale, and 3d. per ton on small coal.

The owner of any private land may enter into an agreement with the holder of a miner's right, giving him permission to mine for gold or minerals (if reserved to the Crown) on any area not exceeding that prescribed for an ordinary lease. Such agreement must be submitted for the Minister's concurrence, and is subject to the payment of 1 per cent. royalty to the Crown on all gold or minerals won. All agreements must be registered.

All lessees or holders of agreements are entitled to deduct rent paid from the amount of royalty payable.

Under special conditions, or where there are exceptional difficulties in mining the land, leases for extended areas may be granted, subject to report by the Prospecting Board.

The Closer Settlement (Amendment) Act, 1909, provides that all grants of land under that Act shall contain a reservation of all minerals in such land. The effect of this provision is to make such lands "private lands" within the meaning of the Mining Act, 1906.

Dredging.

Leases of Crown or of private land may be granted for the purpose of mining for gold or any mineral by dredging, sluicing, or other method. Such leases may cover any area not exceeding 100 acres, and continue for any term not exceeding twenty years, with the right of renewal for a similar term. The lessee is required to employ a certain number of men, and to expend a certain sum in the purchase and erection of machinery and appliances. The rent of Crown land is 2s. 6d. per acre, and of private land such amount as may be assessed by the Warden. 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 miner's product 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.

Certificates of competency are issued by examining boards to managers, under-managers, engine-drivers, and electricians.

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, 1912, was approximately 299,125 acres, made up as follows:—

			Acres.
Crown Lands under lease			230,239
,, ,, ,, application for lease			12,142
,, ,, ,, ,, races, machine sites, &c. ...			43
Reserved Lands under authority to mine			2,411
Private Lands under application for lease			1,564
,, ,, ,, ,, races, machine sites, &c. ...			85
,, ,, ,, authority to enter			16,770
,, ,, ,, agreement, Mining on Private Lands Act	13,330		
,, ,, ,, agreement, Mining Laws Amendment Act	4		
,, ,, ,, agreement, Mining Act, 1906	2,279		
			15,613
,, ,, ,, permit to remove materials			3,064
Dredging Lands under application for lease			2,947
Miners' Rights			11,503
Authority to Prospect			139
Under application for Authority to Prospect			2,605
Total			299,125

The aggregate number of applications received during 1912 by the Department of Mines for leases and authorities to mine was 1,906, relating to 79,172 acres. Of these, 838 applications, covering 54,973 acres, referred to Crown lands, and 1,068 applications, relating to 24,199 acres, referred to private lands.

The applications granted during 1912 under the Mining Act, 1906, were as follows:—

	Applications. Number.	Aggregate Area. Acres.		
Crown and Reserved Lands—				
For Gold Leases	235	1,566		
,, Mineral Leases (coal and shale) ...	24	4,820		
,, Other	256	6,851		
,, Sites for Dams, &c., mining purposes	25	110		
,, Authorities to Prospect (other than coal or shale)	7	183		
			547	13,530
Crown, Private, and Reserved Lands— Dredging Leases	...	...	47	2,018
Private Lands—				
Leases to Mine for gold and other minerals, excepting coal and shale ...	118	2,378		
Leases to Mine for coal and shale ...	11	495		
Leases for Dam sites, machinery areas, &c	17	83		
			146	2,956
Total			740	18,504

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 for each of the following years.

The Prospecting Board, constituted of the Under Secretary for Mines and Government Geologist, as Chairman, the Assistant Government Geologist, the Chief Inspector of Mines, and three Inspectors, the Chief Mining Surveyor, and a Geological Surveyor, deals with all applications for aid, and miners desiring a grant from the vote have to satisfy the Board that the locality to be prospected is likely to yield the mineral sought, and that the mode of operation is suitable for its discovery. Aid given may represent, as the maximum, 50 per cent. of the value of the developmental work done, inclusive of the cost of the necessary implements and materials. Assistance for sinking from the surface is not usually given, applicants being required generally to prove their *bona-fides* by carrying out a certain amount of work unassisted. Miners assisted from the vote are not entitled to claim any reward that may be offered for the discovery of a new gold or mineral field.

Under the regulations governing the distribution of the vote, the amount advanced must be refunded in the event of the discovery of payable mineral by means of the aid granted.

During 1907 provision was made by Parliament, to the extent of £5,000, for the erection of Government crushing batteries; and in 1911 arrangements were made to assist prospectors to erect plants. To procure the erection of a State battery, reasonable evidence must be adduced that the plant can be kept employed, or that there are prospects of new lodes being opened up as a result of the installation.

The proposal to make advances to prospectors to assist them to purchase plants was designed to meet the case of small mine-owners, as, while satisfying their requirements, it would relieve the Government of the cost of operating and maintaining State batteries. Assistance up to 75 per cent. of the cost of the plant and water supply may be advanced, and the prospector's contribution may be made up, either wholly or in part, of labour and material. No interest is chargeable for the advance, but the Government imposes a condition that the prospector shall crush parcels of ores for the public on a specified number of days, the maximum charges being fixed by regulation.

During 1912 the total amount expended from the prospecting vote was £7,217, out of £12,091 allotted to eligible applicants. Of 376 applications for aid received during the year, 144 were dealt with as satisfactory.

Of numerous applications for the erection of Government crushing batteries, none were regarded as satisfactorily proving that sufficient stone was available to justify the expenditure.

The following statement summarises the prospecting votes and the amount of the grants made therefrom for the various minerals, in quinquennial periods since the establishment of the annual vote in 1887.

The figures are for calendar years from 1887 to June, 1895, thereafter for the financial years ended 30th June:—

Period.	Amount Available.	Amounts granted to Prospectors for—						
		Gold.	Silver and Lead.	Copper.	Tin.	Coal.	Other Minerals.	Total.
	£	£	£	£	£	£	£	£
1887-9	55,000	26,332	886	138	34	338	283	28,011
1890-4	130,000	111,878	7,254	1,367	1,261	3,752	3,283	128,795
1895-1900	120,673	107,581	4,886	7,762	3,389	.....	4,021	127,639
1901-1905	101,192	80,636	5,108	10,136	7,828	40	1,430	105,178
1906-1910	75,000	38,822	7,986	20,765	3,146	310	871	71,900
1911	15,000	8,470	1,280	2,635	543	.....	451	13,379
1912	15,000	7,040	2,429	1,929	1,854	.....	382	13,634
1913	15,000	12,405	1,738	1,541	1,194	.....	1,006	17,884

In the aggregate, approximately 85 per cent. of the amount allotted has been expended, the total sum disbursed to the end of December, 1912, being £433,359.

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, having produced gold to the value of £1,170,936 from the commencement of operations in 1901 to the end of the year 1912.

The Queen Bee copper mine owes its present successful position to the aid granted, and the Crowl Creek mine at Shuttleton was opened up indirectly as the result of assistance from the same source. 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.

During 1912 substantial aid was granted with the object of exploiting the deeper levels of the Hill End, Hargraves, and Grenfell Gold-fields, which formerly contributed large yields.

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.

The drills have been specially useful in proving the coal measures, a notable example being the bores sunk to a depth of 3,000 feet in the neighbourhood of Sydney, in order to prove the continuity of the coal measures under the harbour. Valuable work has been done also in prospecting deep alluvial leads of metalliferous areas. During the years 1896-98 boring operations were supervised by this branch of the Department in the Island of Funafuti, Ellice Group, on behalf of the Royal Society of London and the Royal Geographical Society of Australasia, and valuable scientific information was obtained in connection with the creation and formation of coral atolls.

An innovation in regard to core boring was introduced during the year 1911, following upon an investigation of the system in use elsewhere, notably in Victoria, of core boring with the aid of chilled shot or steel cutters, as opposed to boring with diamond drills through bands or patches of loose conglomerate. In applying this system in New South Wales, a large drill was remodelled to bore with diamond, shot, or steel cutters, and utilised for a bore in the Aberdeen district.

During 1912 twenty-nine bores were sunk to a maximum depth of 2,442 feet, including eighteen at Maroubra, with the object of locating a deposit of sandstone suitable for a State quarry; five at the Kyloe Copper-mine, Adaminaby; and two at the State Limestone Quarries, Galong.

Employment in Mines.

The extent to which mining industries provide employment is indicated in the following statement of the approximate number of men employed in the various groups during each of the years 1902-1912.

Year.	Metalliferous.						Coal and Shale.	Total number of men employed.
	Gold.	Silver, Lead, and Zinc.	Copper.	Tin.	Other.	Total.		
1902	10,610	5,382	1,699	1,288	1,602	20,581	13,114	33,695
1903	11,247	6,035	1,816	2,502	1,842	23,442	14,117	37,559
1904	10,648	7,071	1,850	2,745	1,377	23,691	14,146	37,837
1905	10,309	7,887	2,171	2,884	1,544	24,795	14,137	38,932
1906	8,816	9,414	3,047	3,795	2,275	27,347	15,199	42,546
1907	7,468	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

These figures do not include persons employed in works manufacturing lime, cement, or coke.

The outstanding feature of this statement is a considerable and persistent decline in the numbers employed in gold-mining. In other branches of metalliferous mining the movement, over the whole period, has been rather progressive than otherwise, as may be more clearly evidenced by comparison of quinquennial averages for 1902-6 and 1907-1911, with the numbers for 1912:—

Period.	Annual Average Number Employed.							
	Metalliferous.						Coal and Shale.	Total all Mines.
	Gold.	Silver, Lead, Zinc.	Copper.	Tin.	Other.	Total Metalliferous.		
1902–6	10,326	7,158	2,116	2,643	1,728	23,971	14,143	38,114
1907–11	5,863	8,056	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

Metal Mines.

In gold-mining, the decrease in the numbers employed in the last ten years has been most noticeable as regards the alluvial mining:—

Year.	Gold Miners.			Year.	Gold Miners.		
	Alluvial.		Quartz.		Alluvial.		Quartz.
	European.	Chinese.			European.	Chinese.	
1903	5,515	391	5,341	1908	2,640	211	3,512
1904	4,926	327	5,395	1909	2,176	208	3,201
1905	4,786	305	5,218	1910	2,230	125	2,892
1906	3,948	307	4,561	1911	1,706	130	2,814
1907	3,006	244	4,218	1912	1,424	58	2,416

In quartz gold-mining, few, if any, Chinese are engaged.

In tin-mining, as in gold-mining, the number of Chinese engaged has decreased, as the following statement of the persons employed since 1900 will show:—

Year.	Tin Miners.			Year.	Tin Miners.		
	European.	Chinese.	Total.		European.	Chinese.	Total.
1900	1,050	363	1,413	1907	2,739	434	3,173
1901	972	456	1,428	1908	2,076	380	2,456
1902	986	302	1,288	1909	1,688	349	2,037
1903	2,047	455	2,502	1910	1,868	160	2,028
1904	2,150	595	2,745	1911	2,040	185	2,225
1905	2,212	672	2,884	1912	2,418	228	2,646
1906	3,157	638	3,795				

Coal and Shale Mines.

Coal and shale mines are subject to supervision under the Coal Mines Regulation Act, 1912. 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.
1903	65	8,161	2,300	17	2,273	634	21	614	135	103	11,048	3,069	14,117
1904	63	8,217	2,243	15	2,450	594	18	527	125	96	11,194	2,962	14,146
1905	67	8,265	2,240	15	2,397	653	23	469	113	105	11,131	3,006	14,137
1906	73	8,482	2,532	15	2,540	709	23	751	185	111	11,773	3,426	15,199
1907	71	9,697	2,806	17	2,673	739	25	1,187	254	113	13,557	3,799	17,356
1908	80	10,072	3,171	16	2,863	724	24	988	260	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	8,809	3,583	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

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.
1903	256	215	95	39	9	9	360	263	623
1904	229	206	93	39	4	11	326	256	582
1905	259	257	77	44	6	5	342	306	648
1906	251	261	93	57	6	6	350	324	674
1907	371	277	104	49	14	13	489	339	828
1908	341	314	78	38	9	9	428	361	789
1909	246	285	78	45	26	21	350	351	701
1910	271	246	70	44	22	11	363	301	664
1911	229	234	85	42	19	13	333	289	622
1912	199	235	76	51	16	19	291	305	596

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 1912, viz.:—

District.	Collieries Recording.	Days Worked.	Average days worked per Colliery.
Northern	47	10,964	233
Southern	11	2,752	250
Western	11	2,801	255
Total	69	16,517	239

The slackest months were in the first quarter of the year.

WAGES.

In the more important branches of mining the wages are fixed for the most part by Boards constituted under the Industrial Disputes Act, 1908, and the Industrial Arbitration Act, 1912. Details are given in the chapter relating to Employment and Industrial Arbitration. The following summary may be taken as illustrative of all the branches of the mining industry:—

Trade or Calling.	1895.	1900.	1905.	1910.	1911.	1912.
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	2 0 to 2 11	1 10 to 3 2	1 9½ to 3 0	2 0¾ to 4 2	2 0¾ to 4 2	2 0¾ to 4 2
	s. d.					
Wheelers .. per day	7 0	7 0 „ 8 6	6 6 „ 9 0	7 0 „ 9 6	8 0 „ 9 6	8 0 „ 9 6
	s. d. s. d.					
Screenmen „	6 6 to 8 3	6 6 „ 7 6	6 6 „ 7 6	7 0 „ 9 6	8 0 „ 9 0	8 0 „ 9 0
Engine-drivers „	7 6 „ 10 0	11 0 „ 12 6	11 0 „ 12 6	8 9 „ 13 0	8 9 „ 11 0	8 9 „ 11 0
					s. d.	s. d.
Labourers .. „	5 6 „ 8 6	6 6 „ 7 6	6 6 „ 7 6	7 0 „ 8 0	8 0	8 0
Metal-mining—	s. d.	s. d.	s. d.	s. d.		
Miners .. .. „	9 0	9 0	9 0	11 0	11 0	11 0
Truckers.. .. „	7 6	7 6	7 6	9 6	9 6	9 6
	s. d. s. d.	s. d. s. d.	s. d. s. d.	s. d. s. d.	s. d. s. d.	s. d. s. d.
Engine-drivers „	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	11 0 to 14 0
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Labourers .. „	7 6	7 6	7 6	9 6	9 6	9 6

MINERAL PRODUCTION.

The incompleteness of the statistics of production, as evidenced by the fact that in many instances the export trade is taken as the measure of the output, is to be regretted.

Moreover, the variety of the units of measurement employed in the different branches of the mining industry militates against comparison of the output of the several minerals, except by the standard of value of the products. And, even in measuring the production by the standard of value, it is necessary to remember that these values are taken at different stages of production; for instance, the value of the tin output represents the values of ingots and ore; with some metals also, the export trade, which is accepted as representing the total production, is mainly in ore.

The summary given below shows the value of the production of the various minerals, exclusive of iron made from scrap, and stone other than that exported, and Portland cement and lime, during the five years ended 1912:—

Minerals.	Value.				
	1908.	1909.	1910.	1911.	1912.
Metals.	£	£	£	£	£
Gold—domestic ores	954,854	869,546	802,211	769,353	702,129
Silver and silver-lead† ...	2,160,195	1,653,615	1,861,479	2,442,764	3,481,266
Lead†—pig, &c.	186,746	186,073	248,561	209,784	264,530
Zinc†—Spelter and Concentrates	600,883	1,041,280	1,289,634	1,414,980	1,766,242
Copper†—Ingots, matte, and ore	502,812	424,737	486,257	590,102	579,791
Tin†—Ingots and ore ...	205,447	211,029	228,156	307,089	338,074
Iron—					
Pig-iron	98,777	100,357	161,948	145,416	130,708
Iron oxide†	1,857	4,948	714	2,377	4,763
Ironstone flux	6,199	3,471	1,321	861	761
Tungsten—					
Wolfram†	6,742	11,249	16,258	29,991	16,584
Scheelite†	11,082	14,618	15,747	11,342	4,963
Platinum	439	1,720	1,418	2,999	3,880
Molybdenite†	929	3,249	5,667	2,591	3,706
Antimony†	1,141	711	1,450	2,019	355
Bismuth†	2,017	1,624	2,004	1,800	1,210
Chrome†	.....	.....	.....	300	60
Cobalt†	.....	55	55	.....	.....
Manganese†	7	.....	.....	.....	.....
Non-metals.					
Fuels—					
Coal	3,353,093	2,618,596	3,009,657	3,167,165	3,660,015
Coke	199,933	137,194	189,069	184,337	162,454
Shale (oil)	26,068	23,617	33,896	36,980	34,770
Structural Materials*—					
Limestone—flux	14,779	13,851	16,946	12,541	11,066
Stone (building)†	229	378	2,792	2,417	559
Marble	2,200	1,700	2,134	1,610	1,340
Chemical material—Alunite†	2,705	8,791	2,840	3,795	13,700
Gem Stones—					
Noble Opal	41,800	61,800	66,200	57,300	35,008
Diamonds	1,358	3,959	2,881	4,064	2,601
Abrasives—Grindstones† ...	204	192	325	191	176
Other Minerals†	1,654	4,850	5,550	5,360	8,566
Total ... £	8,384,150	7,403,210	8,455,150	9,409,519	11,228,677

* See following tables as to value of Portland cement and lime manufactured. † Exports only.

The production of minerals can be shown to better advantage by the standard of values as given in the above table. The following return of quantities, in conjunction with values, will prove interesting. The figures are for the years 1911-12:—

Minerals.	1911.		1912.	
	Quantity.	Value.	Quantity.	Value.
Metals.	oz. fine.	£	oz. fine.	£
Gold—domestic ores	181,121	769,353	165,295	702,129
Silver†—	oz.		oz.	
Silver (Ingots and matte) ...	1,767,496	177,095	2,389,195	251,652
	tons.		tons.	
Lead ore, concentrates, &c. ...	338,469	2,265,669	345,307	3,229,614
Lead†—pig, &c.	17,276	209,784	17,251	264,530
Zinc†—Spelter and concentrates	516,378	1,414,980	520,518	1,766,242
Copper†—Ingots, matte, and ore	12,100	590,102	11,034	579,791
Tin†—Ingots and ore	1,929	307,089	2,074	338,074
Iron—				
Pig iron	36,354	145,416	32,677	130,708
Iron oxide†	1,586	2,377	3,757	4,763
Ironstone flux	1,216	861	1,093	761
Tungsten—				
Wolfram†	283	29,991	172	16,584
Scheelite†	108	11,342	56	4,963
	oz.		oz.	
Platinum	470	2,999	610	3,880
	tons.		tons.	
Molybdenite†	21	2,591	57	3,706
Antimony†—Metal and ore ...	166	2,010	63	355
Bismuth†—Metal and ore ...	8	1,800	6	1,210
Chrome†	150	300	23	60
Non-metals.				
Fuels—				
Coal	8,691,604	3,167,165	9,885,815	3,660,015
Coke	264,687	184,337	241,159	162,454
Shale (oil)	75,104	36,980	86,018	34,770
Structural Materials*—				
Limestone—flux	46,237	12,541	33,186	11,066
Stone (building)†	.....	2,417	.....	559
Marble	.....	1,610	.....	1,340
Chemical material—Alunite† ...	1,006	3,795	3,425	13,700
Gem Stones—				
Noble Opal	.....	57,300	.....	35,008
	cts.		cts.	
Diamonds	5,771	4,064	2,239	2,001
Abrasives—Grindstones†... ...	.....	191	.....	176
Other minerals and ores†... ...	.....	5,360	.....	8,566
Total value	.....	9,409,519*	.....	11,228,677*

* Portland cement and lime have been omitted from the table. The figures are : Portland cement, 1911 value, £315,569 ; 1912, value, £368,280. Lime, 1911, quantity, 29,930 tons ; value, £32,918 ; 1912, quantity 35,657 tons ; value £44,478. † Exports only.

The value of the mineral production during 1912 represents the maximum for any year in the history of the State, and exceeds that of the year 1907, hitherto the highest recorded, by £769,381. The increase in the value is due to the highly favourable prices obtainable for the industrial metals, which have steadily improved since 1908 and 1909, when the prices were low, to a marked expansion in the coal trade and the absence of serious industrial dislocations.

The outstanding features of mining operations in New South Wales during 1912 were the large output of coal and of silver-lead, constituting a record in each case; the remarkable activity at Broken Hill; the opening of a promising silver-lead ore body at Mineral Hill; the discovery of stanniferous lodes at Ardlethan; and the high price of tin.

The totals quoted in the tables of production are exclusive of iron made from scrap, Portland cement, and lime, which, for statistical purposes, are included in the returns of the manufacturing industry. The following shows the value of production of each of these items for the last five years, and to the end of 1912:—

	Annual Production.					Aggregate Production to end of 1912.
	1908.	1909.	1910.	1911.	1912.	
	£	£	£	£	£	£
Iron made from scrap ...	19,447	6,000	.....	.....	.....	1,416,030
Portland cement ...	184,400	202,200	251,110	315,569	368,280	1,839,684
Lime	21,610	24,283	30,189	32,918	44,478	277,927
Total ...	225,457	232,483	281,299	348,487	412,758	3,533,641

The value of the mineral production in quinquennial periods since 1856 is shown in the following statement. The figures are exclusive of iron made from scrap, Portland cement, and lime.

Period.	Value of Production.	Period.	Value of Production.
	£		£
1856-60	6,069,118	1891-95	26,324,780
1861-65	9,980,397	1896-1900	26,159,491
1866-70	7,001,454	1901-05	29,880,914
1871-75	10,768,230	1906-10	42,450,535
1876-80	9,184,015	1911	9,409,519
1881-85	12,381,842	1912	11,228,677
1886-90	18,681,548		

To the end of 1912 the aggregate value of the mineral output of the State was approximately £226,000,000. The following statement shows the aggregate quantity and value to the end of 1912 for each of the minerals; the

figures are exclusive of iron made from scrap, and stone, other than that exported, and Portland cement, and lime:—

Minerals.		Production to end of 1912.	
		Quantity.	Value.
	Metals.		£
Gold	oz. fine	13,998,775	59,462,975
Silver*—			
Ingots and matte	,,	26,194,502	3,328,713
Concentrates and ore	tons	6,879,031	54,892,276
Silver-sulphide and silver-lead*	,,	562,976	
Lead*—			
Pig, &c.	,,	138,192	2,000,911
Zinc*—			
Spelter and Concentrates	,,	2,819,718	7,539,913
Copper*—			
Metal and ore	,,	216,073	11,784,102
Tin*—			
Ingots	,,	78,476	9,327,609
Ore	,,	26,669	
Iron—			
Pig-iron—from domestic ore	,,	185,304	697,756
Iron oxide*	,,	23,696	30,748
Ironstone flux	,,	106,917	81,618
Tungsten ores—			
Wolfram*	,,	1,357	132,517
Scheelite*	,,	1,130	100,848
Platinum	oz.	12,990	29,010
Molybdenite*	tons	305	36,036
Antimony*	,,	16,654	305,225
Bismuth*	,,	541	128,537
Chrome*	,,	30,835	101,468
Cobalt*	,,	885	8,065
Manganese*	,,	577	1,662
Quicksilver	lb.	1,010	126
	Non-metals.		
Coal	tons	181,595,980	69,087,688
Coke	,,	3,012,084	2,138,667
Shale (Oil)	,,	1,651,434	2,322,831
Limestone flux	,,	1,124,671	702,814
Stone (Building)*	...	.....	24,176
Marble†	...	.....	23,064
Slates*	No.	79,234	890
Alunite*	tons	39,035	119,543
Noble Opal	...	.....	1,330,207
Diamonds	cts.	178,971	120,408
Grindstones*	...	.....	2,842
Other Minerals unclassified*	...	.....	122,084
Total	£	.....	225,985,329

* Exports only. † Up to end of 1901 includes exports only.

Measured by the aggregate output, coal is the most valuable mineral in New South Wales, followed closely by gold and silver.

As compared with the total mineral output of Australia for 1912, the position of New South Wales is shown by the following percentages:—

	New South Wales Production in proportion to Australian. per cent.
Gold	7·11
Silver and Lead	88·85
Copper	17·55
Tin	25·16
Coal	82·84
All Minerals (excluding lime and cement)	43·44

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.
	£	£	£	£	£
1908	150	390	183	84	189
1909	156	464	210	104	144
1910	153	425	213	113	171
1911	165	479	275	138	182
1912	180	608	243	128	206

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 and gold and tin.

Quarries.

The quantities and values of building stones, except stone exported, do not appear in the statements of mineral production, but are given hereunder in a return of quarries for the year 1912:—

Description of Quarry.	Quantity of Stone raised.	Value of Stone raised.
Building Stone—	tons.	£
Sandstone ...	67,921	28,629
Granite ...	65,386	13,129
Syenite (Trachyte)	478	1,100
Limestone ...	10,580	1,339
Limestone, crude...	138,079	27,200
Basalt (Bluestone)	446,232	91,539
Others—		
Sandstone, for breakwater	81,497	18,186
Kerbing, Guttering, Ballast, &c., for roads	117,759	11,469
Ironstone ...	55,170	9,194
White metal	22,500	3,938
Gravel and Sand ...	147,599	5,721
Shale and Clay ...	34,292	5,695
Andesite ...	187,000	46,750

Prices of Minerals.

With 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.

As regards silver, production is very largely influenced by prices realisable. Since 1875 the value of standard silver of ·925 fineness has fallen by nearly 58 per cent., and the steady fall in the price of the metal, which had already

set in before the opening of the Broken Hill mines, and which, notwithstanding a slight recovery in 1890, has persisted since with slight fluctuations, helped greatly to diminish the output of the New South Wales mines and its value. 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 35⅝d., falling to 29d. in 1894; since 1894 that average has been exceeded only in the years 1895, 1896, 1906, and 1907, when it was slightly over 30d. In 1911 the average for the year was only 24 $\frac{9}{16}$d. per oz., but in 1912 it was 28 $\frac{1}{16}$d., showing a rise of 3½d. per oz. as compared with 1911.

The variations in the price of lead have likewise affected the value of the output. From 1904 nearly to the end of 1907 the price rose with corresponding benefit to the industry; but in 1908 the prices of silver, lead, tin, and zinc dropped considerably. With zinc and tin the average prices have risen steadily in the last five years, but the improvement in silver and lead did not take place until the latter months of 1911.

The prices of copper have shown considerable fluctuation; the average was very low in 1894, and remained unfavourable for some years. Satisfactory prices were obtainable in the periods 1899-1901 and 1905-7, but a decline took place in 1908. During the year 1912 the prices advanced steadily, and the average was considerably higher than in the previous four years.

The average prices shown in the following table for silver, lead, copper, and tin relate to the f.o.b. prices, Sydney, based on the London prices. In the case of zinc, the averages are those quoted by the Department of Mines in connection with the Broken Hill field:—

Year.	Silver.	Lead.	Zinc.	Copper.	Tin.
	per oz.	per ton.	per ton.	per ton.	per ton.
	s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
1904	2 1 $\frac{11}{12}$	11 0 0	22 13 1	55 18 4	123 16 8
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 $\frac{1}{8}$	18 10 0	25 15 9	85 1 8	170 10 0
1908	2 0 $\frac{5}{16}$	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 $\frac{3}{8}$	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

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

Metals and Metallic Ores.

The value of the output from metalliferous mines, and mines other than coal and shale mines, in the last four years, is summarised in the following statement:—

Metal.	1909.	1910.	1911.	1912.	Value of Output per Person Employed, 1912.
	£	£	£	£	£
Gold	869,546	802,211	769,353	702,129	180
Silver, lead, zinc	2,880,968	3,399,674	4,067,528	5,512,038	608
Copper	424,737	486,257	590,102	579,791	243
Tin	211,029	228,156	307,089	338,074	128
Other	237,523	306,250	286,965	239,406	359
Total	4,623,803	5,222,548	6,021,037	7,371,438	393

Even in these four years the dwindling gold yield is noticeable, and in comparison with other metals the value of the output per person employed is low.

GOLD.

Amongst the metals which occur in the State, gold occupies an important place, both on account of the quantity which has been raised and of the influence of its discovery on the settlement of the country.

Early Discoveries.

The first definite record of the discovery of gold in New South Wales was made by Assistant Surveyor Jas. McBrien, in February, 1823. He found numerous particles of gold while surveying in the Fish River district, between Rydal and Bathurst, a locality where, in recent years, surfacing operations have enabled considerable amounts of gold to be obtained.

In 1839, Count Strzelecki, while engaged in geological exploration, discovered auriferous pyrites in the Vale of Clwydd, but for fear of 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, Dubbo, and Guyong. 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 more or less quantity in rocks of almost every geological age throughout New South Wales.

The deposits which have been worked profitably in the last sixty years include the following types:—

(1) Alluvial or detrital gold.

(2) Auriferous reefs or lodes.

(3) Impregnations in (*a*) stratified deposits and (*b*) 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, in the north of the State, 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 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, where gold has been found in slate rocks. 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; in quartz porphyry; in 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.

Below will be found the quantity of value of the gold produced during each quinquennial period between 1851 and 1910, and for the last two years. New South Wales gold which was received at the Sydney Mint for coinage in 1912 amounted to 119,262 oz., of the gross value of £397,555, the average price being £3 6s. 8d. per oz.

Period.	Quantity.	Equivalent in oz. fine.	Value.
	oz. crude.	oz. fine.	£
1851—1855	1,920,200	1,492,154	6,338,257
1856—1860	1,360,763	1,222,377	5,192,326
1861—1865	2,233,001	2,026,093	8,606,290
1866—1870	1,309,911	1,193,535	5,069,812
1871—1875	1,613,049	1,462,040	6,210,345
1876—1880	640,210	557,076	2,366,310
1881—1885	626,931	549,319	2,333,358
1886—1890	546,954	464,527	1,973,183
1891—1895	1,176,325	1,002,527	4,258,462
1896—1900	1,691,012	1,429,860	6,073,658
1901—1905	1,353,526	1,133,143	4,813,285
1906—1910	1,316,144	1,119,708	4,756,207
1911	215,274	181,121	769,353
1912	200,243	165,295	702,129

The aggregate value of the output of New South Wales up to 1912 represents approximately 11 per cent. of the total output for the Commonwealth; the value recorded for this State for 1912 is the lowest since 1902, when the output was valued at £684,970 as against £737,164 in 1901, these two years being the exceptions to a series of years between 1894 and 1907, when the lowest output value was £1,050,730 in 1907, and the highest £1,623,320 in 1899. Prospecting for gold has been neglected owing to the remunerative employment to be obtained in connection with other branches of the mining industries and in the last seven years there has been a persistent decline in the value of the gold production of the State.

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.
1903	69,413	226,365	295,778	1908	62,390	199,293	261,683
1904	79,040	245,956	324,996	1909	55,435	182,612	238,047
1905	80,512	248,235	328,747	1910	51,681	173,134	224,815
1906	78,690	223,866	302,556	1911	43,326	171,948	215,274
1907	76,478	212,565	289,043	1912	33,893	166,350	200,243

As before stated, the value of the gold of domestic production received at the Sydney Mint during 1912 was £397,555, representing rather more than half the gold won in the State. Following is a statement showing the gross weight of the gold received at the Mint from the more important mining districts during 1912:—

Mining District.	Ounces.	Mining District.	Ounces.
Cobar	28,942·09	Peel and Uralla	9,926·22
Tumut and Adelong	21,987·97	Bathurst	7,890·11
Mudgee	18,471·28	Tambaroora and Turon ...	3,239·35
Lachlan	15,287·38	Other...	1,577·31
Southern	11,940·80		
		Total	119,262·51

Of the aggregate production of domestic ores during 1912, two-fifths, viz., 66,801 oz., valued at £283,751, was obtained from the mines of the Cobar district, as may be seen from the available records of the chief mining districts contributing to the aggregate production during the year:—

Mining District.	Alluvial.		Quartz.	Total.
	By Dredging.	Otherwise.		
	oz. crude.	oz. crude.	oz. crude.	oz. crude.
Cobar	.....	.....	69,690	69,690
Lachlan	2,178	311	19,067	21,556
Southern	9,555	1,250	9,538	20,343
Mudgee	918	81	16,371	17,370
Tumut and Adelong	1,019	1,851	7,988	10,858
Peel and Uralla	967	2,568	6,695	10,230
Tambaroora and Turon	769	4,416	974	6,159
Bathurst	1,391	.....	2,746	4,137

In the Cobar district the Mount Drysdale gold-field was discovered in 1892, and for many years contributed a large proportion of the output, but more recently the Mount Boppy mine, near Canbelego, has become the premier gold-mine of the State. A most important find was made at Wyalong, in the Lachlan district, in 1893, and for the period 1897-9 the production of Wyalong was the highest from any gold-field; but since 1900 the annual output of the Cobar district has been the highest. In 1908 there was a marked decrease in the output from the Wyalong mines, and the yield has fallen below those from the Adelong, Wellington, Araluen, and Hillgrove districts.

The annual gold yield for the Cobar district since 1900 is shown below :—

Year.	Quantity.	Value.	Year.	Quantity.	Value.
	oz. crude.	£		oz. crude.	£
1900	44,676	157,108	1907	58,399	228,981
1901	42,299	145,146	1908	82,474	271,682
1902	26,956	90,209	1909	78,206	246,567
1903	79,860	266,355	1910	68,534	260,254
1904	69,140	262,213	1911	69,054	265,870
1905	70,109	230,386	1912	69,690	283,751
1906	68,685	224,052			

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 1909 were affected by the cessation of smelting operations at the Great Cobar mine owing to industrial troubles. In connection with the operations of the Cobar mining field, some further details are given in relation to the production of copper, which is the principal metal obtained.

Dredging.

Development.

During 1899, great interest was displayed in the introduction to New South Wales of dredging, to turn over alluvial flats which from the point of view of the individual miner were already worked out. 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, till in practically all the rivers of New South Wales, which drain auriferous country, dredging leases have been taken up. 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.

Plant.

Three dredges were at work during 1899, but at the end of 1900, 22 were operating, and applications had been received for 21,331 acres under dredging leases. At the end of 1901 the dredges operating, and in course of construction numbered 43, their value being estimated at £289,333; 40 of them were equipped for gold dredging, 2 for tin dredging, and 1 was arranged to treat both gold and tin. The following

statement shows the type, number, and aggregate value of dredges and pumping plants in operation at the end of each year since 1903.

Year.	Dredging Plants.				Value of Plants.	Year.	Dredging Plants.				Value of Plants.
	Gold.		Tin.				Gold.		Tin.		
	Bucket.	Pump.	Bucket.	Pump.			Bucket.	Pump.	Bucket.	Pump.	
					£						£
1903	25	10	1	5	253,480	1908	23	8	1	31	315,555
1904	23	12	1	6	235,576	1909	18	13	2	33	309,833
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

The plants equipped for tin as well as gold dredging have been classified as for gold dredging.

Output.

The records of sixteen "bucket" dredges working for gold in 1912 show that 3,921,525 cubic yards of material were treated, the gold won amounting to 16,803 oz., valued at £65,905, or an average of 2·05 grains, worth 4d. for every yard. The records of eight "pump" dredges show that 509,081 cubic yards of material treated yielded 3,525 oz. of gold, valued at £13,119, or an average of 3·34 grains, worth 6·18d. per cubic yard.

Dredging for tin, four bucket dredges treated 503,653 cubic yards of material, recovering 171 tons of ore, valued at £22,415, the average yield being ·76 lb., valued at 10·68d. per cubic yard treated. The records of thirty-three pump dredges show that 2,313,753 cubic yards of material treated yielded 1,336 tons of ore, valued at £185,192, the average being 1·29 lb., valued at 19·21d. per cubic yard of material treated.

The following table demonstrates the value of the metals recovered by dredging since the inauguration of dredging in this State:—

Year.	Area under Lease at 31st Dec.	Gold			Stream-tin.	
		Quantity.		Value.	Quantity.	Value.
	acres.	oz. crude	oz. fine.	£	tons.	£
1900	6,943	8,882	7,924	33,660	.....	.....
1901	8,702	23,585	21,100	89,628	49	3,542
1902	11,709	25,473	23,046	97,891	110	8,300
1903	9,015	27,237	24,555	104,303	244	20,100
1904	9,855	32,345	29,111	123,656	319	26,180
1905	13,571	35,388	32,038	136,090	532	50,904
1906	15,595	36,649	33,218	141,101	1,032	120,661
1907	16,614	39,946	36,136	153,498	1,692	176,212
1908	16,117	40,890	37,917	161,059	1,562	129,952
1909	11,132	36,168	32,635	138,626	1,677	146,842
1910	16,442	31,487	28,660	121,741	1,607	158,467
1911	10,392	25,509	23,364	99,245	1,742	208,095
1912	10,419	20,649	18,899	80,276	1,621	223,813

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.

Occurrence—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 quite eclipses other metals, even gold, in spite of a persistently low price for silver itself.

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 goldfields 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 of New South Wales consisted of a shipment to London for smelting, in 1864, of 120 tons of ore from the Moruya Silver Mine. This ore proved extremely refractory, yet averaged 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, and at other places on the Barrier Range, and in the Burragorang Valley.

Lead.

Mining for the lead product alone has not been carried on extensively in New South Wales, because all the lead ores yet discovered 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 opened in 1848 at Yass, and closed as unprofitable after a brief period. The principal ores of lead discovered in New South Wales are galena and cerussite; but less common ores, viz., oxide, sulphate, phosphate, arseniate, molybdate, and tungstate of lead have been found in varying quantities in several localities. The chief source of lead supplies in New South Wales is the Broken Hill silver lode; its ores consist mainly of argentiferous cerussite in the upper oxidised zone, and in the lower portion, of argentiferous sulphides of lead and zinc, consisting of a crystalline mixture of galena and zinc-blende. As the ore from the lower workings of the Broken Hill lode shows in recent years a decreasing proportion of silver, and as the price of silver declined, while the value of lead improved, the production of latter has increased in quantity and in value.

Zinc.

Ores of zinc have been located in various parts of New South Wales, 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. Zinc-blende, the most common ore of zinc, is found in association with

galena in the majority of the silver mines of the State; yet, though thus widely distributed, zinc-blende is not mined specially for the production of metallic zinc. On the contrary, till recently its occurrence was regarded as militating against the successful extraction of the silver and lead with which the zinc-blende is associated, and for several years after the opening of the Broken Hill mines the zinc content of the ore was lost in smelting. Improvements in methods of treatment, however, resulted in the saving of a proportion of the zinc concentrates, and subsequently rendered possible the profitable extraction of zinc from the tailings accumulated since the opening of the mines. The formation of companies to recover the zinc contents of large quantities of tailings, and the installation by mining companies of treatment plants have added greatly to the vast wealth of minerals extracted from this field, and indicate this State as one of the principal producers of spelter in the future.

Production.

Assessment of the total output and value of production of silver-lead ores mined in New South Wales is hampered by the fact that the process of extracting the metallic contents has been conducted for the most part outside the boundaries of the State, a proportion being treated within the Commonwealth, while large quantities of concentrates are exported to Europe for treatment. For this reason the value of the output credited to New South Wales does not represent the value of the finished product, but the estimated net value of the ore, concentrates, bullion, &c., as declared 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 1912 are shown in the following table:—

Period.	Silver.		Silver-sulphides, Silver-lead, and Ore.			Total Value.
	Quantity.	Value.	Quantity.		Value.	
			Ore.	Metal.		
	oz.	£	tons.	tons.	£	£
To 1885	1,730,297	382,884	7,074	191	237,810	620,694
1886-1890	2,481,253	464,081	165,756	94,002	6,478,515	6,942,599
1891-1895	3,009,187	445,873	663,754	231,847	12,615,432	13,061,305
1896-1900	2,352,092	269,663	1,771,983	86,005	9,592,856	9,862,519
1901-1905	4,154,020	445,051	1,877,515	108,353	8,910,586	9,355,637
1906	284,994	36,431	349,720	22,218	2,826,542	2,862,973
1907	2,043,887	257,314	413,720	*20,360	3,658,632	3,915,946
1908	2,490,163	253,920	358,730	.....	1,906,275	2,160,195
1909	1,718,005	168,974	269,306	.....	1,484,641	1,653,615
1910	1,773,913	175,775	317,697	.....	1,685,704	1,861,479
1911	1,767,490	177,095	338,469	.....	2,265,669	2,442,764
1912	2,389,195	251,652	345,307	.....	3,229,614	3,481,266

* Lead contents shown in the following table.

Similar information regarding the lead (pig, in matte, also lead-carbonate and lead-chloride) exported is shown below; the quantity as stated for 1907 and subsequent years represents the contents, based on average assay, of bullion produced within the State.

Period.	Quantity.	Value.
	tons.	£
1889-1890	648·30	8,298
1891-1895	738·30	7,413
1896-1900	13,292·90	258,874
1901-1905	17,550·30	255,366
1906	59·40	1,084
1907	19,768·35	374,182
1908	14,936·40	186,746
1909	15,475·85	186,073
1910	21,195·00	248,561
1911	17,276·00	209,784
1912	17,251·00	264,530

The following statement shows the quantity and value of zinc (spelter and concentrates), the product of domestic ores, exported, since 1889. These exports represent practically the total production :—

Period.	Quantity.	Value.
	tons.	£
1889-1893	307·30	3,366
1891-1895	663·15	7,677
1896-1900	137,931·05	146,023
1901-1905	183,782·24	440,402
1906	103,665·60	292,806
1907	237,218·95	536,620
1908	276,720·05	600,883
1909	373,906·20	1,041,280
1910	468,627·00	1,289,634
1911	516,378·00	1,414,980
1912	520,518·30	1,766,242

The steady increase in the production of silver, lead, and zinc may be seen in the following summary of the values during the last ten years:—

Year.	Silver, Silver-lead, Concentrates, Ores.	Lead (Pig, &c.)	Zinc (Metal and Concentrates).	Total.
	£	£	£	£
1903	1,501,403	38,586	86,587	1,626,576
1904	2,065,540	65,964	117,978	2,249,482
1905	2,494,052	2,657	221,155	2,717,864
1906	2,862,973	1,084	292,806	3,156,863
1907	3,915,946	374,182	536,620	4,826,748
1908	2,160,195	186,746	600,883	2,947,824
1909	1,653,615	186,073	1,041,280	2,880,968
1910	1,861,479	248,561	1,289,634	3,399,674
1911	2,442,764	209,784	1,414,980	4,067,528
1912	3,481,266	264,530	1,766,242	5,512,038

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 1912 the value of production was the highest on record owing to the favourable prices which prevailed throughout the year.

As previously stated, the bulk of the ores produced in the silver-lead mines are exported for treatment outside the State and the figures shown in the preceding tables do not convey an adequate idea of the importance of these mines. During the last ten years, however, the Department of Mines has collected independent records from the various mining and smelting companies and ore-buyers with the object of ascertaining the actual value accruing to the Commonwealth from the silver-lead mines. Thus particulars have been obtained regarding the quantity and value of the silver, lead, and zinc extracted within the Commonwealth, and the gross metallic contents of concentrates exported oversea have been estimated on the basis of average assays:—

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.	£	£
1903	6,489,689	92,293	286	1,790,929	76,824	1,736,512	29,706	14,625	308,714	2,099,643
1904	7,751,667	106,038	299	2,088,784	140,464	2,945,058	59,507	22,318	642,125	2,730,909
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	58,683	33,427	1,876,834	3,989,811
1907	5,921,457	79,870	984	2,228,420	337,823	6,228,225	111,830	76,645	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	2,707,680	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	188,669	3,259,246	5,208,517
1912	5,220,538	101,811	2,545	2,477,442	537,733	8,293,711	97,736	194,214	3,692,352	6,169,794

In connection with the above figures, it should be mentioned that, 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 1912 amounted to 292,842,076 oz. fine valued at £44,619,611:—

	oz. fine.	£
Metal obtained in Commonwealth	135,350,505	20,051,496
Contained in concentrates, &c., exported ...	157,491,571	24,568,115
Total	292,842,076	44,619,611

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 by a boundary-rider on Mount Gipps run. 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 as 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.	Quantity.		Total.
	Oxidised Ore.	Sulphide Ore.	
	tons.	tons.	tons.
1903	22,072	1,078,442	1,100,514
1904	14,895	1,327,381	1,342,276
1905	11,157	1,327,877	1,339,034
1906	20,943	1,231,193	1,252,136
1907	32,142	1,620,749	1,652,891
1908	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

During the year 1912 remarkable activity prevailed on the Broken Hill field, owing to the high prices obtainable for the metals. Operations were somewhat hampered by a shortage of skilled labour.

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

In the utilisation of tailings during 1912 three companies were actively engaged in treating zinciferous tailings, &c. 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 1912 was estimated at £4,436,759, as compared with £3,832,431 in 1911. In addition, the treatment of zinc tailings in 1912 yielded an output valued at £1,033,098, bringing the total production of the Broken Hill field to £5,469,857 for the year.

The following statement summarises the recorded operations of the companies engaged in mining on the Broken Hill field: —

Name of Company.	Authorised Capital.	Value of Output from inception of Operations to December, 1912.	Dividends and Bonuses paid, to December, 1912.
	£	£	£
Broken Hill Proprietary (Limited)	600,000	34,710,053*	10,256,000
Broken Hill Proprietary, Block 14 (Limited) ...	155,000	3,448,108	536,660
British Broken Hill Proprietary (Limited)	339,000	2,682,937	474,100
Broken Hill Proprietary, Block 10 (Limited) ...	1,000,000	3,993,513	1,280,000
Sulphide Corporation (Limited), Central Mine ...	1,100,000	13,409,085	1,230,625
Broken Hill South Silver-mining (No Liability) ...	200,000	4,978,900	1,195,000
North Broken Hill (Limited)	600,000	2,708,202	658,940
Broken Hill Junction Lead-mining (No Liability) ...	150,000	838,569	85,000
Junction North Broken Hill Mine (No Liability) ...	250,000	1,359,044	79,793
Broken Hill South Extended (Limited), formerly New Australian Broken Hill Consols	337,500	150,344	50,000
Zinc Corporation (Limited)—Mining Department, formerly Broken Hill South Blocks (Limited) ...	†	870,271	10,000*
Tailings Treatment Companies—			
Zinc Corporation (Limited)	575,000	1,033,098	321,462
Amalgamated Zinc (De Bavay's) (Limited) ...	500,000		
Total	5,806,500	70,182,124	16,177,580

* The value of the ores purchased during 1908-12 is not included. † Since amalgamation with Zinc Corporation separate figures regarding capital and dividends of Mining Department not available.

In addition to the dividends and bonuses paid is to be considered the nominal value, £1,744,000, of shares in Block 14, British, and Block 10 Companies, allotted to shareholders of the Broken Hill Proprietary Co.

As a result of the early success of the Broken Hill mines, numbers of miners were attracted to the district, and the population of the municipality, which prior to 1883 consisted of only a few station hands, at the census of 1911 numbered 30,972—16,921 males, and 14,051 females. At the end of 1912 the population was estimated at 32,500. The average number of men employed in and about the mines during 1912 was 8,219:—4,161 underground, 4,010 on the surface, including 374 at zinc-treatment plants, and 48 at isolated mines. Compared with the previous year there was an increase of 515 men, notwithstanding that the supply of labour in all branches, particularly miners, was short of the demand.

Yerranderie Field.

Next in importance to the Broken Hill field are the Burragorang silver lodes, in the Yerranderie Division. In this field rich galena occurs in bunches, but the deposits are very variable in width and composition. Owing to the excessive cost of transport, only high-grade ore is sent away, and a considerable quantity of second-grade is left in the mines or dumped at the surface for future treatment. The operations of the mines on this field since 1900 are shown in the following statement:—

Year.	Ore raised and sold.	Metallic contents of Ore.			Net value received.
		Gold.	Silver.	Lead.	
	tons.	oz.	oz	tons	£
1900	616	101	58,527	118	9,125
1901	152	174	86,017	125	11,000
1902	1,553	306	146,018	229	18,373
1903	1,293½	308	145,275	217½	18,304
1904	3,733	550	263,621	448¾	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	719,264	1,654	99,374
1910	7,338	1,399	783,295	1,873	113,071
1911	6,606	1,025	728,340	1,674	105,600
1912	7,055	1,438	676,095	1,906	121,859

Other Fields.

The other fields which contributed to the output of silver-lead ores include the Kangiara mines, in the Yass Division, where 7,943 tons of ore were raised in 1912. The metallic contents were estimated as follows:—Silver, 93,088 oz.; gold, 233 oz.; lead, 1,177 tons; and copper, 250 tons. The gross value of the ore was £45,536.

The Conrad mines, in the Tingha Division, yielded 21,958 tons of ore, estimated to contain silver 95,244 oz., lead 1,646 tons, zinc 480 tons, copper 220 tons. The total value was £51,907.

During 1912 a promising silver-lead ore body, the most important discovered in New South Wales for many years, was opened up at Mineral Hill, north of Condobolin, in the Melrose district; 1,643 tons of ore, valued at

£18,516, were raised, and were estimated to contain silver 49,920 oz., gold 400 oz., and lead 326 tons.

The Cobar copper mines, of which details are given in connection with copper mining, yield large quantities of silver and lead, the figures for 1912 being silver 275,861 oz., and lead 1,420 tons.

Copper.

Ores of copper are worked chiefly in the central part of the State, between the Macquarie, Bogan, and Darling Rivers. Deposits occur also in the New England and Southern districts, as well as at Broken Hill, thus showing a wide distribution.

The principal useful ores are native copper found in most of the cupriferous deposits; red and black oxides; grey and yellow sulphides; and green and blue carbonates of copper.

The earliest effort to develop copper-mining in this State dates from 1844, and in 1851 the first geological examination of the known copper deposits of the State was made by Surveyor Stutchbury. As with the development of mining generally, but particularly with the copper-mining industry, disadvantages of distance from commercial centres, and lack of transport facilities, militated against steady development, and in the majority of cases, after the extraction of the richest oxidised ores in the upper levels, the mines closed down, especially when the market value of the metal showed any tendency to depreciate. Since 1894 an increasing demand for copper for industrial purposes has assured a fair price, and with extension of transport facilities and improvement in methods of treatment, particularly of low-grade sulphide ores, copper has advanced to third place in the aggregate value of production from the metal mines of the State, the total output of metal and ore being assessed at £11¾ millions at December, 1912.

Production.

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, and 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

For the year 1912 the total value, £579,791, represents £560,025, value of ingots, matte, and regulus, and £19,766, 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.

The diminished output in 1912, as compared with the previous year, is due to the decrease in the yield from the smaller mines.

Several important centres of production have been opened up in recent years.

At Nymagee, copper to the value of £236,845 was produced during the three years, 1905-7; but in 1908 operations were suspended, as low market prices, combined with the heavy cost of transport, rendered it impossible to treat the ore profitably. At the end of 1912, however, preparations were being made for the resumption of work at the principal mines. At Crowl Creek, Shuttleton, in 1912, 192 tons of blister copper, valued at £10,735, were produced, and at Adaminaby, Cangai, and Dandaloo satisfactory outputs were recorded.

Cobar Field.

The Cobar mines constitute the chief centre of the copper-mining industry, contributing over 70 per cent. of the value of the year's production. From the point of view of combined output, the gold-copper mines worked in the Cobar district rank next, in value of production, to the silver-lead mines of the Broken Hill field. The following statement shows the quantities and values of the minerals taken from the Cobar field in each of the last ten years:—

Year.	Quantity.				Value.				
	Gold.	Silver.	Copper, Metal, and Ore.	Lead.	Gold.	Silver.	Copper, Metal and Ore.	Lead.	Total.
	oz. fine.	oz.	tons.	tons.	£	£	£	£	£
1903	62,705	50,841	3,642	...	266,355	5,089	221,242	...	492,686
1904	61,730	50,334	3,825	...	262,213	5,033	236,510	...	503,756
1905	54,480	91,440	6,303	225	231,418	9,366	444,858	3,000	688,642
1906	52,746	80,751	5,950	957	224,052	10,034	516,320	17,416	767,822
1907	53,946	84,375	5,647	317	229,150	10,117	474,681	4,258	718,206
1908	64,082	90,218	6,099	...	272,204	9,343	347,429	...	628,976
1909	58,047	79,887	5,630	...	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

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 *viâ* 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 are silica and iron. Where possible, the contract system is operative in stoping and trucking below ground. 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 made in 1881 of Cobar copper revealed 92·65 per cent. copper, 1 oz. 5 dwt. of silver, and 2 oz. 12 dwt. 4 grs. of 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 its gold and silver content.

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	1910	293,324	6,248
1900–4	599,891	16,010	1911	352,149	6,548
1905–9	984,934	22,432	1912	361,298	6,650

Since 1904 quantities of ore obtained from subsidiary mines controlled by the Great Cobar (Limited), and also purchased ores, are included; to facilitate smelting, the different furnace ores are blended.

Operations were restricted during 1912 owing to scarcity of labour.

Tin.

Tin, unlike copper, is relatively restricted in its geographical and petrological range. It is the rarest of the common metals of 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, approximately, 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 New South Wales, 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, Tas-

mania, too rare to be commercially valuable. Other ores of tin, caufieldite, cylindrite, franckeite, stokesite, and tealite are comparatively rare in New South Wales.

Tin ore occurs in the extreme Northern, Southern, and Western divisions of the State, 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.

The ore has been discovered also in small quantities in the Barrier district, at Poolamacca and Euriowie; near Bombala, in the Monaro district; at Gundle, near Kempsey; at Jingellic and Dora Dora, on the Upper Murray; in the valley of the Lachlan; and in fine particles in beach sands along the coast, in association with gold, platinum, and monazite.

The earliest traceable reference to tin in Australia was made by Governor Phillip in September, 1788, who suggested the probability of mining development; and the first record of local occurrence of the mineral was noted by Josiah Wedgwood, in 1790, in a rock specimen sent to him by Governor Phillip. In 1824 W. C. Wentworth included tin as a fossil production of New South Wales; the Rev. W. B. Clarke, writing in 1849, predicted the discovery of tin in abundance; in 1851 he recorded his first authentic discovery of tin ore in New South Wales, in the Snowy Range, locality of 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 leases taken up, 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 furnished 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 in past ages 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 have been worked in neighbouring districts, but abandoned owing to the exhaustion of payable ore.

As the available sources of the world's tin supplies are comparatively restricted, and no known important fields await development, the necessity for preserving stanniferous areas for legitimate mining is apparent. In New South Wales these areas are usually rugged and unfit for close settlement, but their grazing capacity can be fully developed without hampering mining activities. In regard to alluvial deposits, the possibility of redredging, after they have been exploited by the modern system of dredging or hydraulic sluicing, is not alluring. As to lode-tin mining, the majority of the innumerable lodes are small, and the tin ore capricious in occurrence; but the principal lodes certainly offer inducement for systematic development work.

Output.

From the opening of the fields, in 1872, the annual output of tin increased rapidly until 1881, when its value was £568,795, being almost equal to the output of gold for the year, and but slightly behind coal. From 1881 to 1902 the effects of periods of dry weather, and consequent restriction of water supplies combined with fluctuations in the price of metal, tended to make the output very variable from year to year, the minimum output being £45,638 for 1898. Since 1902 the activity which has characterised tin-mining on the various fields throughout the State, owing to the satisfactory prices obtained, has resulted in a steadily increased output value, so that tin has contributed in a very considerable degree to the total production of the mineral wealth of the State, its aggregate yield, in point of value, standing in the fifth place, after coal, gold, silver, and copper.

The output and the value of production of tin since 1872 have been as follows :—

Period.	Ingots.	Ore.	Aggregate Value.
	tons.	tons.	£
1872–1879	18,364	12,996	2,015,407
1880–1884	22,842	2,700	2,194,533
1885–1889	12,974	1,635	1,415,374
1890–1894	7,196	1,040	677,392
1895–1899	4,608	197	342,503
1900–1904	4,220	1,222	617,446
1905–1909	5,567	3,712	1,191,635
1910	847	1,021	228,156
1911	958	971	307,089
1912	900	1,175	338,074

The figures for 1912 show value of ingots £183,000, and ore £155,074, making the total as above, £338,074.

In the years 1908 and 1909 the value of the output showed a decrease below the records of the preceding years, due to a drop in the market price and to the lesser output of ore principally from the dredges in the Tingha division. Since 1910 the price has risen steadily, and as a result the value of the output has increased, though the quantity is but slightly higher. In 1902 the value of production was £338,074, as compared with £307,089 in the previous year.

The proportion of ore to ingots, as may be seen, has been very variable. The output of dressed ore from the tin lodes of the State has been comparatively small. Local treatment plants are neither numerous nor extensive, and the industry of tin-dressing has been intermittent and relatively unimportant. The recovery and cleaning of alluvial tin ore form a simple process in the early stages, but become more complicated in the final steaming stage. In the first year of tin-mining, the crude product of the mines was exported, but with the introduction of local auction sales, penalties for depreciation below a minimum standard forced sellers to remove the heavy associates of tin in the ore. Though the first tin ore from Elsmore, New England, was smelted in 1872, smelting has not been carried on extensively; but, as dressed tin ore is sufficiently pure, very valuable, and of relatively small bulk in proportion to its metallic content, the absence of local smelting facilities does not seriously handicap the export trade.

Tin Output for the Commonwealth.

In comparison with the total value of the output of tin for the Commonwealth, New South Wales stands second:—

State.	Value of Output to end of 1912.	Value of Output during 1912.
	£	£
Tasmania	11,634,617	543,103
New South Wales... ...	9,327,609	338,074
Queensland	8,106,741	364,503
Western Australia... ...	1,048,706	65,159
Victoria	782,680	5,733
Northern Territory ...	328,898	27,001

Dredging.

Tin dredging was commenced in New South Wales in 1900, at Cope's Creek, vicinity of Tingha. During 1912 dredging plants furnished a yield of 1,621 tons, valued at £223,813, and representing 66·2 per cent. of the total output. Figures in detail in regard to tin dredging have been given in connection with gold-dredging operations.

The principal leads worked during the year were at Tingha; at Vegetable Creek, near Emmaville; at Deepwater; and at Wilson's Downfall.

During 1912, twenty-one pump dredges, operating on the stanniferous gravels in the Tingha division, recovered 714 tons of stream tin, valued at £98,495. The plants operating in the Emmaville division obtained 744 tons of stream tin as the result of the year's work; the value is set down at £101,943. The dredges operating in the Wilson's Downfall division recovered 140 tons, valued at £19,977. There were also several smaller plants operating in the Bendemeer division, recovering 14 tons, valued at £2,007; in Glen Innes division 9½ tons, valued at £1,353, were obtained; and a quantity of stream tin was saved by several of the gold dredges. Within the forty-one years that have elapsed since the opening of the tin-fields, the value of the net export, which is regarded as the production, has been £9,327,609.

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.
1908	397,800	287	23,440	129,952	18·0
1909	494,000	405	36,923	146,842	25·1
1910	1,086,200	702	69,074	158,467	43·6
1911	1,183,804	713	83,308	208,095	40·0
1912	1,039,789	744	101,943	223,813	45·5

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 Conrad mines, Howell, were opened in 1890 as a

silver-lead proposition, and later developed copper and tin. In 1912, 21,958 tons of ore raised were estimated to contain silver, 395,244 oz.; lead, 1,646 tons; zinc, 430 tons; and copper, 220 tons—the total value being £51,097. The whole of the tin in the ore has been left in the slag awaiting separation.

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. In the effort to solve the complex problem of stannite metallurgy, the ore and silver are matted and the tin slagged, as at the Conrad mines.

Iron and Iron Ores.

The commercial ores of iron are classified as follows:—

Magnetic ore or magnetite.	Spathic ore.
Red ore or hematite.	Aluminous ore.
Brown ore or limonite.	Chrome ore.

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, the means of transport available, and the cost of raising the ore.

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 61·36 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 (near Orange), 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.

Ore Supplies.

Estimates made during 1905 in the Geological Survey Branch 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 announced as conservative approximations:—

District.	Description of Ore.	Estimated minimum quantity of Ore.
		tons.
Bredalbane	Brown ore and hematite	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. The Carcoar ore costs, approximately, 7s. per ton delivered at Lithgow.

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 capable of being utilised for the production of ferro-manganese.

For the first blast furnace erected in New South Wales, supplies were obtained from the ironstone deposits of county Camden, but though excellent ore is available, the quantity there is not sufficient to warrant the outlay of much capital in ironworks and equipment.

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 titanic 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 the suitability of domestic ores for the manufacture on a large scale 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, were of quantity and quality amply to warrant the outlay of capital in the equipment of blast furnaces, and iron and steel works for manufacturing; and, further, that the coalfields in the northern and southern districts of New South Wales can supply sufficient reasonably good coke to meet the maximum demand.

Iron and steel works are in course of construction by the Broken Hill Proprietary Company near Newcastle.

Ironstone Flux.

Varying quantities of iron ore have been despatched from the different producing centres to the smelting works at Dapto and Cockle Creek, and to the ironworks at Lithgow, for use as flux, the gold contents of the ore helping to defray the cost of railway carriage. The estimated quantity of ironstone flux raised during the last ten years is shown in the following table:—

Year.	Quantity.	Value.	Year.	Quantity.	Value.
	tons.	£		tons.	£
1903	22,120	15,834	1908	8,087	6,199
1904	8,661	6,628	1909	4,339	3,471
1905	6,801	4,525	1910	1,648	1,321
1906	935	723	1911	1,216	861
1907	10,659	7,707	1912	1,093	761

The decrease in the output since 1903 was due partly to the closing down of the smelting works at Dapto. The establishment of ironworks at Eskbank resulted in a greatly increased output in 1907. The requirements of the smelting companies, owing to suitable ores being obtained, were on a lessened scale during the last three years, and the quantity of ironstone flux consequently shows a decrease.

Iron Oxide.

Parcels of iron oxide are sent from the Mittagong, Port Macquarie, and Goulburn districts to various gas-works for use in purifying gas.

Following is a statement of the output of iron oxide for the last ten years:—

Year.	Quantity.	Value.	Year.	Quantity.	Value.
	tons.	£		tons.	£
1903	1,194	1,181	1908	1,827	1,857
1904	415	239	1909	4,900	4,948
1905	542	417	1910	1,351	714
1906	584	336	1911	1,586	2,377
1907	1,595	1,961	1912	3,757	4,763

The total recorded output, measured till 1902 by exports, was, to the end of 1912, 23,696 tons, valued at £30,748.

Production of Iron and Steel.

Under the Manufactures Encouragement Act, 1908, the Commonwealth Government has provided a bounty, to a total amount of £150,000, on all pig-iron made from Australian ore, and on puddled bar-iron and steel made from Australian pig-iron within the Commonwealth, from 1st January, 1909, to 30th June, 1914; the bounty is payable at the rate of 12s. per ton produced, and the maximum amount payable in any financial year is £30,000. The bounty paid under these terms, on the output of New South Wales, during the last four years, is as follows:—

Year.	Pig-iron.		Puddled Bar-iron.		Steel.	
	Production.	Bounty Paid.	Production.	Bounty Paid.	Production.	Bounty Paid.
	tons.	£	tons.	£	tons.	£
1909	23,180	13,908	1,939	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	.....	.....

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.	£
1903	6,086	85,790	1908	40,207	118,224
1904	6,303	80,504	1909	29,762	106,357
1905	4,447	85,693	1910	40,487	161,948
1906	8,000	112,848	1911	36,354	145,416
1907	29,902	178,632	1912	32,677	130,708

The recorded output of pig-iron, &c., to the end of 1912, was 337,445 tons, valued at £2,113,786. 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	.....

For the last three 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 the chief producers of tungsten ores. In New South Wales, tungsten ores, generally associated with minerals such as tinstone (cassiterite), bismuth, and molybdenite, occur in many districts. 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 at Torrington, in the Deepwater division; plants are being installed on this field to work extensive low-grade deposits. Supplies of wolfram have been obtained also, at irregular intervals, from the districts of Emmaville, Glen Innes, Wagga, and Wilson's Downfall.

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.	£
1903	96	140	9	608
1904	16	1,406	89	8,432
1905	138	10,122	87	7,361
1906	110	7,647	132	9,057
1907	196	23,781	207	26,235
1908	154	11,082	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

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. 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. 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 more or less 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 also 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.	£
1903	13	135	1908	117	1,141
1904	109	503	1909	96	711
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

The value of antimony ore raised during 1910 was enhanced by gold contents. The total output of antimony to the end of 1912 is estimated at 16,654 tons, valued at £305,225.

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 1912 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. The total value of bismuth, the produce of New South Wales, exported up to the end of 1912 was £128,537, representing 541 tons of metal and ore. The total quantity exported during 1912 was 5 tons 16 cwt., valued at £1,210. At Whipstick in the locality of Pambula 68 tons of bismuth ore raised in 1912 yielded metal valued at £859. At Kingsgate nearly 3 tons of bismuth, valued at £580, were won. Assays of samples from Tenterfield in 1912 revealed 10 per cent. of bismuth.

Molybdenum.

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 it is associated with ores of bismuth. 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, in association with bismuth, has been found in the locality of Deepwater. In 1912 about 80 tons of ore were raised, but not treated. During 1912, 56·55 tons of molybdenite, valued at £3,706, were exported.

Platinum.

Platinum is known to occur 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, since which date small quantities of platinum have 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 total yield of platinum for the year 1912 was 610 oz., valued at £3,880, as compared with 470 oz., valued at £2,999, in 1911. The quantity of platinum produced to the end of 1912 was 12,990 oz., valued at £29,010.

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.

An assay in 1911 of dredge concentrates from the locality of Wellington revealed platinum 6 oz. 3 dwt. 12 grs. per ton of "fines"; osmiridium to the extent of 5 dwt. 20 grs. was also present.

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 in New South Wales 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 then till 1911, when 150 tons, valued at £300, were raised; in 1912 the output was 23 tons, valued at £60. The total production up to 1912 was 30,835 tons, valued at £101,468. Assays of chrome iron ore from the localities of Wallendbeen and Mingay during 1912 yielded from 39 to 44 per cent. of chromic acid.

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. Workable quantities have, however, 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 two years no ore was raised, and the value of the total production to the end of 1912 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 up to the present it has not been discovered in a sufficiently concentrated form to enable it to be economically 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 recorded to the end of 1912 amounted to 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 have disclosed, in many instances, a high percentage of mercury. At the end of 1912 it was estimated that 2,000 tons of ore had been raised, and experiments were being conducted with the object of reducing the heavy cost of treatment.

There is a considerable demand for mercury on account of its use in the metallurgy of gold and silver, especially in the recovery of gold by amalgamation.

As an encouragement in the search for quicksilver ores, the Government of New South Wales has offered a reward of £500 for the production of 50,000 lb. of quicksilver from domestic ores.

Other Metals.

A specimen of uranium ore was found some years ago in the dump at the old cobalt workings at Carcoar, and again, in 1912, radio-active ores were noted, but no exploratory work has been done.

Tellurium has been discovered at Bingara and other parts of the northern districts, as well as at Tarana, on the Western railway line, though at present only in small quantities, which would not repay the cost of working. It has also been found at Captain's Flat in association with bismuth.

Selenium has been discovered at Mount Hope, also in association with bismuth.

Aluminium is not included in the specified mineral output of New South Wales, 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.

Smelting as a distinct industry is carried on in several centres in New South Wales, the most important works being at Cockle Creek, 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 blister copper produced at Mount Morgan, Queensland, though a small proportion is derived from New South Wales ores. Complete statistics are not available as to the capital invested in smelting works in New South Wales and the numbers of persons employed, but the extent to which domestic ores are exported is an indication that local smelting and refining operations are not considerable.

The following statement shows the recorded operations of smelting companies during 1912:—

Works.	Output.					Value.
	Gold.	Silver.	Lead.	Copper.	Tin.	
	oz. fine.	oz.	tons.	tons fine.	tons.	£
Cockle Creek	12,487	1,056,268	15,605	...	...	410,409
Port Kembla	115,218	475,257	...	16,888	...	1,781,338
Waratah	...	...	...	787	...	54,700
Woolwich	...	...	...	...	900	183,000

The output shown above for the works at Waratah and Woolwich is from domestic ores only. At Port Kembla local ores included in the above statement yielded as follows:—Gold, 1,058 oz. fine; silver, 3,302 oz.; copper, 295 tons; total value, £26,729.

In November, 1912, a demonstration was given at Woolwich of processes of elimination by which almost pure radium bromide was produced. The ore treated consists of ilmenite coated with carnotite and obtained from a lode at Olary, South Australia. After being crushed at the mine the ore is treated in a magnetic separator, and the concentrates, when bagged, are sent to Sydney for further treatment. Besides radium salts, oxide of uranium in marketable quantity and of fair quality is obtained.

A report on the Olary field furnished during 1913 by the Government Geologist of South Australia states that prospecting has disclosed several lode formations, through which the metallic minerals are distributed in the form of irregular shoots. The uranium-bearing lodes are in the early stages of development, and so far the amount of high-grade ore proved is very small. One company only produces a regular output, but there are favourable indications in the workings of other mines.

The standard grade of uranium ores specified by foreign buyers is 2 per cent. of uranium oxide, and, moreover, the price of such ores in European markets is very low, therefore the profitable treatment of lower-grade ores within the Commonwealth would be of immense value to the industry in Australia. The cost of treatment, as published by the Radium Hill Company, is stated at £19 10s. per ton, and the total cost, including mining, crushing, concentrating, and transporting concentrates to Sydney, at £29 17s. 11d. per ton.

Further details in regard to smelting works, &c., are 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.
	ft.		
Tertiary—Eocene to Pliocene.	100	Kiandra, Gulgong, Forest Reefs.	Brown or lignite.
Mesozoic—Triassic or Trias-Jura.	2,500	Clarence and Richmond Rivers.	Suitable for local use.
Palæozoic—Permo-Carboniferous.	13,000	Newcastle and Maitland, Illawarra, Blue Mountains.	Suitable for gas-making, steam-raising, and household use.
Palæozoic—Carboniferous.	10,000	Strond, 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 considered to be 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. Mesozoic coal is remarkably free from sulphur, and comparatively smokeless; it contains a large proportion of

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 115,347,000 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 northwards beyond Gunnedah, and then runs in a south-easterly direction to Port Stephens. The widest part of this area is between Rylstone and Newcastle—100 miles; the basin is deepest in the neighbourhood of Sydney, where the uppermost seam is nearly 3,000 feet below the surface.

From Sydney the measures rise gradually in all directions, and emerge to the surface at Newcastle on the north, at Bulli in the Illawarra district to the south and at Lithgow in the Blue Mountain region to the west.

The Permo-Carboniferous rocks have been classified in descending order as follows:—

	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 1912.

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; between that date and 1829 the total quantity of coal raised 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 that 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 1912 amounted to £9,885,815 tons, valued at £3,660,015, being a record in the history of the State's coal-mining industry. The average price secured at the pit's mouth in 1912 was 7s. 5d. 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 1912, the total production being 181,595,980 tons, valued at £69,087,688.

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

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 seven years:—

Year.	Consumed within Commonwealth.			Exported Oversea—			Total Production.
	Domestic Consumption	Sent to other Australian States.	Total.	As Cargo.	As Bunker Coal.	Total.	
	tons.	tons.	tons.	tons.	tons.	tons.	tons.
1906	2,664,822	1,902,712	4,567,534	2,057,381	1,001,447	3,058,828	7,626,362
1907	2,914,417	2,019,959	4,934,376	2,644,507	1,079,041	3,723,548	8,657,924
1908	3,048,349	2,267,218	5,315,567	2,558,366	1,273,092	3,831,458	9,147,025
1909	2,626,276	1,814,705	4,440,981	1,580,564	998,334	2,578,898	7,019,879
1910	3,483,075	2,098,742	5,581,817	1,700,184	891,507	2,591,691	8,173,508
1911	3,667,524	2,149,630	5,817,154	1,686,482	1,187,968	2,874,450	8,691,604
1912	3,832,697	2,514,970	6,347,667	2,150,600	1,387,548	3,538,148	9,885,815

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

Year.	Proportion of Output.		Oversea Exports.
	Used for Domestic Consumption.	Sent to other Australian States.	
	Per cent.	Per cent.	Per cent.
1906	34·94	24·95	40·11
1907	33·66	23·33	43·01
1908	33·32	24·79	41·89
1909	37·41	25·85	36·74
1910	42·61	25·68	31·71
1911	42·20	24·73	33·07
1912	38·77	25·34	35·89

Coal-cutting by Machinery.

The machine-cut coal in 1912 represented 29·3 per cent. of the total output. Of the machines in use, 135 were driven by electricity, and 79 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 four years:—

Year.	Machines driven by—			Coal obtained by machines driven by—		
	Electricity.	Compressed Air.	Total.	Electricity.	Compressed Air.	Total.
				tons.	tons.	tons.
1909	96	67	163	1,169,203	507,338	1,676,541
1910	112	69	181	1,691,986	558,284	2,250,270
1911	128	74	202	2,074,767	562,905	2,637,672
1912	135	79	214	2,189,968	706,644	2,896,612

Coal Exports.

The relative 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 1912 was 64 per cent., and the overseas exports amounted to 36 per cent.; the local

consumption is increasing with the growth of population, the increasing use of electric-power plants, the extension of railways, manufactures, smelting, and other industries, and the multiplication of gas works. The quantity exported to each oversea country, in the last six years, is shown below; only the coal taken as cargo has been included :—

Country.	1907.	1908.	1909.	1910.	1911.	1912.
	tons.	tons.	tons.	tons.	tons.	tons.
New Zealand	221,094	285,043	240,345	228,023	211,160	387,391
Fiji	33,114	44,649	31,623	36,267	32,453	30,256
Straits Settlements ...	142,795	217,809	150,380	140,620	131,029	113,376
India	52,835	164,352	68,027	67,763	38,165	123,330
Hong Kong	63,623	86,632	40,277	9,584	.....	294
Mauritius	1,001	791	3,475	5,020	.....	3,243
Union of South Africa ...	1,800	1,249	1	947	.....	.....
Canada	1,014	.....	1,841	.. ...	.....	53
United Kingdom	.....	48	29	.....	.....	30
Papua	.....	422	691	404	.....	1,185
Other British Possessions	13,452	23,956	69	621	6,161	13,047
Total, British Possessions	530,728	824,951	536,758	489,249	419,968	672,205
Chile	878,012	789,620	469,420	553,302	619,806	850,017
United States of America	539,876	188,498	106,777	202,474	180,769	103,609
Philippine Islands ...	314,235	351,441	224,651	199,509	156,280	104,570
Hawaiian Islands... ...	98,530	65,918	65,769	64,016	53,201	61,979
Peru	101,131	78,223	41,450	41,796	64,559	65,447
Java	37,784	87,226	64,160	92,343	134,742	211,316
Mexico	50,312	55,732	18,522	20,202	22,659	20,858
Panama	6,402	15,528	.....	.....	.....	.....
New Caledonia	12,816	10,079	6,228	7,712	16,683	21,706
South Sea Islands... ...	4,172	5,911	6,019	1,825	870	1,273
Ecuador	7,519	36,092	12,734	6,927	4,235	9,876
China	41,058	43,394	15,608	2,105	6,125	788
Other Foreign Countries...	21,932	5,753	12,468	18,724	6,585	26,956
Total, Foreign Countries	2,113,779	1,733,415	1,043,806	1,210,935	1,266,514	1,478,395
Total, Export Oversea	2,644,507	2,558,366	1,580,564	1,700,184	1,686,482	2,150,600

The largest exports are to Chile, New Zealand, Java, India, the Straits Settlements, and Philippine 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.

The collieries working in the Maitland-Cessnock district on the Greta seams, located in 1886, have raised some 21,000,000 tons of coal. In nearly all these collieries coal-cutting machines are in use. Geologically, the seams on this area are thick, varying, over many thousand acres, between 15 and 33 feet; the commercially workable portions of the seams average 13 feet. The life of mines working on the field was estimated in 1911 as from 34 to 139 years.

In the collieries in operation in the Northern district, including the Sydney Harbour Colliery, the quantity of coal raised during 1912 was 6,913,810 tons, representing 70 per cent. of the whole production for New South Wales; the value was £2,798,764.

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.	£
1903	10,461	8,161	4,410,565	540	1,783,409	8 1	219
1904	10,450	8,217	4,042,739	492	1,450,300	7 2	176
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	9,692	6,058,580	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

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. An eastern breakwater is being carried out to a length of 2,585 feet; a northern breakwater is also under construction, and it is contemplated extending this to within 900 feet of the end of the eastern breakwater. These breakwaters will give a still-water harbour, which can be used in any weather. The eastern breakwater is nearing completion, and the jetties from which coal is shipped are afforded considerable protection from the south-easterly and easterly gales that affect the coast.

Detail geological survey work is proceeding in the southern district with a view to greater development. The production during the last ten years is shown in the following table:—

Year.	Persons employed.		Quantity of Coal raised.		Value of Coal raised.		
	Above and below ground.	Below ground.	Total.	Per person employed below ground.	Total value.	Average value per ton.	Average value per person employed below ground.
	No.	No.	tons.	tons.	£	s. d.	£
1903	2,887	2,255	1,476,005	654	418,919	5 8	186
1904	3,044	2,450	1,558,383	636	436,640	5 7	178
1905	3,050	2,397	1,556,678	649	421,768	5 5	176
1906	3,249	2,540	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	540	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

Western District.—The output from this district has expanded largely during the period under review, the increase being due to more regular work, and to the absence of labour troubles. In the early part of 1910 the coal from this district was in great demand, as mines in the other districts were closed.

The average quantity of coal raised per miner is much greater in the Western collieries than elsewhere in the State. This is due to a variety of causes, but chiefly to the greater thickness of the seams, the friable character of the coal, and the accessibility of the coal beds. In some cases the coal is worked by means of adits or tunnels, so that the facilities for winning the mineral are much greater than in the Newcastle mines, where shafts must be sunk in most instances. But though the output is greater per miner than in the other coal-mining districts, the price for hewing is lower, so that the earnings of the individual miner do not differ greatly wherever the mine is situated.

The following table shows the growth of coal production in the Western district during the last ten years. Situated in close proximity to the principal iron-fields of New South Wales, the prospects of these mines are extremely favourable since the manufacture of iron from the ore is now carried on in this part of the State:—

Year.	Persons employed.		Quantity of Coal raised.		Value of Coal raised.		
	Above and below ground.	Below ground.	Total.	Per person employed below ground.	Total value.	Average value per ton.	Average value per person employed below ground.
	No.	No.	tons.	tons.	£	s. d.	£
1903	569	494	468,276	948	117,332	5 0	238
1904	540	455	418,687	920	108,012	5 2	237
1905	464	392	429,718	1,096	107,698	5 0	275
1906	675	570	506,779	889	124,178	4 11	218
1907	1,184	1,006	763,919	759	174,732	4 7	174
1908	919	737	706,787	959	157,625	4 6	214
1909	1,064	814	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

Summary—New South Wales.

In New South Wales, calculated on the total value of the production during the decade, the average quantity of 626 tons extracted yearly by each person employed underground represents a value of £219. In 1912 the average value of production was £280 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 valne per ton.	Average value per person employed below ground.
	No.	No.	tons.	tons.	£	s. d.	£
1903	13,917	10,910	6,354,846	582	2,319,660	7 4	213
1904	14,034	11,122	6,019,809	541	1,994,952	6 8	179
1905	14,019	11,054	6,632,138	600	2,003,461	6 1	181
1906	14,929	11,588	7,626,362	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	686	3,167,165	7 3	250
1912	17,795	13,089	9,885,815	755	3,660,015	7 5	280

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.

The coal obtained from a State mine is to be used only by the State Departments.

Up to the end of the year 1912 no coal mines were worked by the State, but the northern State coal bore at Aberdeen had been bored to a depth of 1,011 feet.

Prices.

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.	1903.	1904.	1905.	1906.	1907.	1908.	1909.	1910.	1911.	1912.
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Northern ...	8 1	7 2	6 4	6 5	7 4	8 0	8 3	8 1	8 0	8 1
Southern ...	5 8	5 7	5 5	5 7	5 7	5 11	6 0	6 2	6 2	6 1
Western... ...	5 0	5 2	5 0	4 11	4 7	4 6	4 9	5 6	5 1	5 0
New South Wales	7 4	6 8	6 1	6 2	6 9	7 4	7 5	7 4	7 3	7 5

Proximate Analyses.

Proximate analyses have been made of 194 thoroughly representative samples of coal taken 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, as made by the Government Geologist, 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 coal dust explosions in collieries.

For many years the question of coal dust in relation to colliery explosions has been a subject of controversy, and the report of the investigations of the Committee will be of great value.

Coke.

The quantities of coke manufactured in New South Wales during the last ten years were as follows:—

Year.	Quantity.				Total Value at Ovens.
	Northern District.	Southern District.	Western District.	Total.	
	tons.	tons.	tons.	tons.	£
1903	34,730	125,862	.....	160,592	108,764
1904	31,825	139,181	.....	171,006	110,692
1905	25,329	137,632	.....	162,961	100,306
1906	55,991	130,069	.....	186,060	110,607
1907	31,453	210,614	12,542	254,609	159,316
1908	29,132	228,778	25,963	283,873	199,933
1909	23,564	155,443	25,267	204,274	137,194
1910	24,352	207,760	50,225	282,337	189,069
1911	26,376	201,451	36,860	264,687	184,337
1912	27,217	193,893	20,049	241,159	162,454

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.
1893	22 8	1900	17 4	1907	12 6
1894	19 3	1901	16 5	1908	14 1
1895	17 10	1902	14 2	1909	13 5
1896	16 7	1903	13 7	1910	13 5
1897	14 1	1904	12 11	1911	13 11
1898	15 7	1905	12 4	1912	13 6
1899	16 0	1906	11 11		

In 1912 the average values per ton at the ovens were—Northern, 16s. 4d.; Southern, 13s.; Western, 14s.

Coke-making is carried on in each of the three coal-mining districts of the State, but the bulk of the output, as the above table shows, 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 more or less 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 range of costs for coke and, approximately, for carriage from the respective districts is shown in the following statement presented to the Royal Commission on the Iron and Steel Industry in 1911 :—

District.	Cost of Coke on Trucks at Ovens.	Cost of Carriage.	
		For Local Use.	For Shipment.
	per ton.	per ton.	per ton.
	s. d. s. d.	s. d.	s. d. s. d.
Northern	17 0 to 20 0	9 5	6 5 to 9 1
Western	14 0 ,, 21 0	6 3	4 3 ,, 5 8
		s. d. s. d.	
Southern	12 6 ,, 14 0	3 2 to 4 2	2 4 ,, 2 11

Following are the percentage yields of coke from the coal used for coke-making in the different districts:—

Northern	55 to 60 per cent.
Western	60 ,, 67½ ,,
Southern	66 ,, 75 ,,

It is to be noted, however, that in the northern coal-field particularly, there is scope for larger and better production.

The following statement shows the coke ovens working, and idle, and the number of men employed in each district during 1912:—

District.	Coke Ovens.			Men Employed.
	Working.	Idle.	Total.	
Northern ...	145	48	193	68
Southern ...	468	8	476	279
Western ...	52	190	242	22
Total ...	665	246	911	369

The aggregate capacity of all plants (911 ovens) in 1912, in the different districts was, approximately, 6,000 tons per week; the weekly average output was 4,638 tons, of which 3,729 tons per week came from the southern district.

During the early part of the year 1912 the coke trade was in a very depressed 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.

In the northern district fifty by-product ovens—the first in New South Wales—are under construction.

At the old Bulli mine a coal seam 6 feet thick has been for about half its thickness transformed into a natural coke, apparently through the intrusion of igneous matter underneath the seam. This coal is regarded as obviating the smoke nuisance, and has also a high calorific value.

Oil Shale.

Discovery.

Oil-bearing "shale" is found on several horizons and at a number of localities in New South Wales. It is 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.

The production of oil shale, from the opening of the mines in 1865 to the end of 1912, 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				
1900–04	213,163	177,246	0 16 8	Total ...	1,651,434	2,322,831	1 8 2
1905–09	213,024	131,456	0 12 4				

The noticeable feature of this table is the steady fall in the average price of the mineral.

A very large proportion of the output in the last ten years came from the western district, though in 1912 operations were suspended at the Newnes mines in the Hartley Valley. In 1902 and 1903 there was a small output from the southern and south-western district. In 1912 no shale was worked in these districts. In the last seven years there has been an increasing output from the northern district, rising from 200 tons in 1906 to 1,500 tons in 1910 and 40,185 tons in 1912, the result of the establishment by the British Australian Oil Company of oil works at Murrurundi and a refinery at Hamilton.

During 1910 the Shale Oil Bounties Act was passed by the Commonwealth Government, making 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	

During the years ended 30th June, 1911 to 1913, the bounties paid were as follow :—

	1911.	1912.	1913.
On Kerosene	£920	£2,629	£2,792
On Refined Paraffin Wax ...	553	739	967
Total	£1,473	£3,368	£3,759

These amounts were received by the Commonwealth Oil Corporation, Ltd., with the exception of the following paid to the British Australian Oil Company, Ltd.:—In 1911-12, £340 on kerosene; and in 1912-13, £1,988 on kerosene and £86 on paraffin wax.

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, napthaline, 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 warships.

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 6¼ 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 $\frac{5}{16}$ carats. Sapphires and zircons are numerous in the wash where this diamond was discovered. During 1904 diamonds were discovered at Oakey Creek, locality of Inverell, embedded in solid dolerite, this being the first known instance of dolerite having been found in any part of the world as the matrix of the diamond.

There is a difficulty in obtaining exact statistics of the production of diamonds in New South Wales. The following table, compiled from the available information, is believed to understate considerably the actual output. The majority of the diamonds have been obtained from the mines in the Bingara and Copeton (Tingha) districts; in recent years the whole output is from the latter district.

Period.	Carats.	Value.
		£
1867–1885	2,856	2,952
1886–1890	8,120	6,390
1891–1895	19,743	18,245
1896–1900	69,384	27,948
1901–1905	54,206	46,434
1906–1910	16,651	12,374
1911	5,771	4,064
1912	2,240	2,001

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 1912:—

Year.	Value.	Year.	Value.
	£		£
1890	15,600	1902	140,000
1891	.....	1903	100,000
1892	2,000	1904	57,000
1893	12,315	1905	59,000
1894	5,684	1906	56,500
1895	6,000	1907	79,000
1896	45,000	1908	41,800
1897	75,000	1909	61,800
1898	80,000	1910	66,200
1899	135,000	1911	57,300
1900	80,000	1912	35,008
1901	120,000		

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 1912 from the Lightning Ridge field was valued at £26,180, as compared with £8,828 from White Cliffs.

The best market for the gems is Germany, where they are sold readily; but it is stated that the principal gem merchants of Europe have now agents on the fields for the purchase of the stone.

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. During 1912, 3,425 tons of alunite, valued at £13,706, were shipped to England, where it was found that the stone can be treated more cheaply than is possible locally. The quantity and value of

alunite, the produce of this State, exported to the end of 1912, is shown in the following statement:—

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

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 during 1912. 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 1912 was not recorded.

Marble, Stones, Pigments, Clays, and Slates.

New South Wales possesses abundant materials for building purposes, and considerable use is made of domestic supplies, but quarries generally are not subject to mining legislation. Complete records of operations are not readily available, but a return of quarries given on a previous page contains information as to the quantity and value of building stone raised in 1912.

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 1912 marble valued at £1,340 was obtained, principally from quarries at Caloola and Rockley, and from Borenore, in the Orange division.

Marble quarries have been opened in the Cow Flat, Marulan, Wallerawang, Orange, and Tamworth districts; but the total value, at the place of production, of the marble raised to the end of 1912, amounted only to £23,064.

From Borenore, about 600 tons of marble were raised during 1912, and from Caloola some 200 tons were obtained.

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 was established in 1913 at Maroubra, near Sydney, where a deposit of good "yellow block" stone suitable for the construction of large public buildings has been located.

Syenite.

Syenite, commonly called trachyte, is found at Bowral; as a building material it is equal to granite in solidity, and takes a beautiful polish. It is a fine-grained, hard, crystalline rock, though difficult to dress; in colouring it is light-grey or dark-grey. For building purposes, the short distance from the metropolis at which it is to be found enables it to be used for large structures on comparatively favourable terms.

Granite.

Granite is found at Bathurst, Moruya, Trial Bay, and on Montagu Island, and at many other places throughout the State. Most of the granite hitherto used in Sydney has been obtained from Moruya, a port 141 miles south of Sydney, where the deposits are of dark-grey granite, and are so located as to derive advantage from cheap water carriage. This applies also to the pale-pink granite of Trial Bay and the red granite of Gabo Island.

Road Metal.

Basalt, or "blue metal," suitable for road metal and 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 Blue-metal Quarries.

At Port Kembla, 48 miles from Sydney, a large quarry has been worked by the State primarily to provide blocks of stone of large size for the breakwater under construction. As facilities exist for easy and quick transport of metal by rail or water, the small stone not required for the breakwater is broken into road metal and utilised for tramway ballast and concrete.

In August, 1911, the Government purchased from the Kiama Road Metal Company the Kiama quarry, including a full working plant and a steamer. During the six months ended 29th February, 1912, the metal quarried and broken for ballasting amounted to 25,937¼ tons. Deliveries included 10,294¼ tons to Government departments, and 14,162 tons to municipalities and other buyers.

Quarry Licenses and Permits.

During the year 1912 there were 109 quarry licenses, and twenty-two permits issued at the Department of Lands, chiefly for areas within the Metropolitan Land District.

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 Tarrawingee, 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.	£
1903	23,824	14,221	1908	53.668	14,779
1904	24,975	14,434	1909	45,078	13,851
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

The total value of the limestone raised for flux to the end of 1912 was £702,814, representing 1,124,671 tons.

Prepared lime for building and other purposes is manufactured at various localities; State works were established in 1912 to treat extensive deposits at Taree.

Limestone for the manufacture of cement is obtained from quarries in the Capertee division, and the principal works are Granville and at Portland, near Wallerawang.

The quantity of lime manufactured in 1912 was 35,657 tons, valued at £44,478; and the value of cement was £368,280. Further details regarding lime and cement works may be found in the chapter "Manufacturing Industry."

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 1912 14,152 tons of fireclay were raised in the Wollongong division; and from 150 tons raised at Bathurst, firebricks valued at £150 were manufactured.

From Hartley a good output of high-grade silica bricks has been maintained, the approximate value of the output being £3,500 in 1910, and £2,800 in 1911. During 1912, 1,820 tons of quartzite from Hartley were used in the manufacture of silica bricks, valued at £3,600. A deposit of silica in the locality of Goulburn is judged suitable for the manufacture of metal polish.

In the latter part of 1911 the Government initiated State Brickworks at Homebush, near Sydney, where a considerable area of suitable clay was located.

Kaolin.

Kaolin, or China clay, derived from the decomposition of the felspars in granite, is found in many granitic districts, such as Bathurst, Gulgong, Uralla, and Tichborne, near Parkes. The clay is of excellent quality, and superior to the best obtained in England and France.

In 1912, 394 tons of kaolin raised in the Parkes, Murrumburrah, and Goulburn divisions, realised £185. At Burrabadeen, in the Dubbo division, a large area is being tested for kaolin, mineral pigments, &c.

Deposits of pigments are found near Mudgee and Dubbo, and also in the Orange district, where a fair quantity of the raw material, consisting principally of purple oxide and yellow ochre, has been produced. During 1912 15 tons of ochre from the Dubbo district realised £22; and 18 tons from the Marulan district were sold for £27.

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.

Tests of the Boggabri Fuller's Earth have demonstrated its efficacy in reducing wool carrying 20 per cent. yolk to a commodity, carrying only 3 per cent. yolk.

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 disposed of; 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 local demand has increased since the imposition of a Customs duty on white foundry facing and French chalk. Experiments are being carried out to test the suitability of the Wallendbeen deposits for the manufacture of fire-bricks.

Barytes.

Barytes have been obtained at Bethungra and Cobargo, and at Lue, near Mudgee. During 1912, 292 tons of barytes, valued at £498, were raised at Lue, and 102 tons, valued at £254, at Bethungra; from Cobargo 300 tons of stone were obtained, but the quality was inferior.

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, were raised, but owing to absence of demand the ore was not treated. Samples of magnesite analysed in 1912, from Melrose and Armidale, contained 97 per cent. of magnesium carbonate; from Fifield, 95 per cent.; and from Wee Waa, 88 per cent.

Graphite.

Graphite, or plumbago, occurs in the Walcha division, and at Undercliffe, in the Wilson's Downfall division, where there are several lodes, one of which is 6 feet wide, but of inferior quality. During 1911 60 tons of ore were dispatched from the latter division for shipment to England to test its commercial value.

Slates.

Slates occur at Gundagai, Bathurst, and Moruya. They are commercially worked at Chatsbury in the Goulburn district.

Asbestos.

Asbestos has been found in veins in serpentine in the Gundagai, Rockley, and Barrier Range districts—in the last-named in considerable quantities.

Mica.

Mica is known to exist in many parts of New South Wales, but has never yet been worked, although there is a considerable demand for the article, especially if in blocks of fairly large size that could be split easily into thin plates. It is to be obtained in the numerous granitic areas which occur in various parts of the State, especially in the coarsely-crystalline granitic formations in the Silverton district, and elsewhere in the Barrier Ranges.

ABRASIVES.

Grindstones.

The output of grindstones for 1912 was valued at £176, making a total output value to date of £2,842, 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; during 1912, 31 tons, valued at £132, were raised at Bunyan, in the Cooma division.

Emery.

A sample of emery from the locality of Quirindi was analysed in 1911, the result being—alumina, 54·54 per cent.; iron oxide, 31·61 per cent.; titanium dioxide, 4·60 per cent.; phosphoric anhydride, 1·10 per cent.

Rock Phosphate.

Under the Commonwealth Wood Pulp and Rock Phosphate Bounties Act, 1912, a reward of £1,000 may be granted under certain conditions to the discoverer of any deposit or vein of rock phosphate suitable for making phosphatic manure, provided the deposit or vein be worked, and 10,000 tons of rock phosphate be produced and used in the manufacture of marketable phosphatic manure.

Although an occurrence of phosphatic rock was recorded during 1913 at Wellington Caves, 5 miles south of Wellington, New South Wales, it does not appear to be of economic importance, as an examination reveals 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 28·80 phosphoric acid.

Mining Accidents.

During the last five years, 248 persons were killed and 650 seriously injured as the result of mining accidents. The number of fatalities in the more important branches of mining and the rate per 1,000 employees is shown below:—

Year.	Metaliferous Mines.						Coal and Shale Mines.	Total.
	Gold.	Silver, Lead, and Zinc.	Copper.	Tin.	Other.	Total Metalliferous		
	Number of Fatalities.							
1908	4	19	6	3	...	32	21	53
1909	4	11	4	...	1	20	14	34
1910	4	17	7	1	...	29	21	50
1911	1	23	10	...	1	35	15	50
1912	8	17	5	1	...	31	30	61
	Per 1,000 *Employees.*							
1908	·63	2·51	2·19	1·22	..	1·53	1·16	1·36
1909	·72	1·77	1·98	...	·50	1·12	·75	·93
1910	·76	2·12	3·06	·49	...	1·70	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

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; in other metalliferous mines the fatal cases were below the average. There were

thirty fatalities in coal and shale mines, the result of twenty-nine separate accidents. In proportion to the number of persons employed the rates were highest in copper and gold mines.

The number of persons seriously injured in mining operations during the last five years, and the ratio per 1,000 persons employed, are shown in the following statement:—

Year.	Metalliferous Mines.						Coal and Shale.	Total.
	Gold.	Silver, Lead and Zinc.	Copper.	Tin.	Other.	Total Metalliferous		
Number of Persons Seriously Injured.								
1908	17	18	19	...	1	55	111	166
1909	10	17	14	2	...	43	59	102
1910	7	20	9	..	...	36	109	145
1911	6	20	5	1	...	32	92	124
1912	3	22	6	1	...	32	81	113
Per 1,000 Employees.								
1908	2·67	2·38	6·92	...	·57	2·63	6·19	4·26
1909	1·79	2·74	6·92	·98	...	2·41	3·18	2·80
1910	1·33	2·50	3·94	...	...	1·86	6·04	3·88
1911	1·29	2·35	2·32	·45	...	1·65	5·21	3·35
1912	·77	2·43	2·59	·38	...	1·61	4·49	2·98

The coal and shale mines show the highest rates of serious accidents, 4·5 per 1,000 in 1912; in copper mines the rate was 2·5 per 1,000, being slightly higher than in silver, lead, and zinc mines.

Many of these accidents and fatalities occurring on the surface can scarcely be regarded as true mining accidents. During 1912 one fatality occurred in connection with dredging, but 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 and Dredge Accidents.	
	Fatal.	Serious.	Fatal.	Serious.
Gold (quartz)	7	2	...	1
,, (alluvial)	...	...	1	...
Silver and Lead	14	18	3	4
Copper	5	3	...	3
Tin	...	1	1	...
Other	...	...	...	...
Total	26	24	5	8

In connection with coal and oil-shale mines, in 1912 sixteen fatal accidents underground resulted from falls in the mines; six were classified as miscellaneous underground accidents, one being caused by explosive; of eight surface accidents, three were in connection with machinery and two on railways, &c. During 1912 no accidents resulted from explosions 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.	Accidents.		Number of employees per person—		Number of tons of mineral raised to each person —	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured
1903	13	71	1,086	199	491,509	89,995
1904	12	65	1,180	218	504,807	93,195
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
Average	19	83	880	200	418,572	95,153

The experience of coal-mining in this State with respect to accidents bears very favourable comparison with that of other countries.

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 1897-1912, 107 classes were enrolled, the minimum membership being ten. The classes formed during 1912 numbered five.

Interesting information regarding the sickness experience of Friendly Societies in mining districts is given in chapter "Social Condition."

Below is a comparison of the records of the coal and shale mines of New South Wales with those of the mines of Great Britain and Ireland, under the British Coal Mines Regulation Acts; the figures represent the annual averages over a period of twenty years, 1892-1911:—

Twenty-Year Averages.	New South Wales.	Great Britain and Ireland.
Mineral output ... ... Tons	5,934,365	237,698,630
Persons employed—		
Surface	2,862	160,979
Underground	10,399	663,868
Total...	13,261	824,847
Mineral raised per life lost ... ... Tons	284,621	210,023
Persons employed per life lost ... . ,,	636	729
Death rate per million tons of mineral raised ... ,,	3·51	4·76

Lead Poisoning.

As regards lead-poisoning, no cases were recorded in New South Wales under the Mines Inspection Act, in 1910, nor in 1911, but three were reported in 1912. Since 1902 the following cases were reported from the mines in the Broken Hill District:—

Year.	Cases.	Year.	Cases.
1902	56	1907	3
1903	40	1908	1
1904	26	1909	1
1905	11	1912	1
1906	16		

In 1909 a case of lead-poisoning was recorded from Condobolin, and in 1912 two cases from Mineral Hill.

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 are 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 1912 was 192, and at the end of the year 178; the deaths reported as the result of fatal accidents numbered 77, and the disablements 6,211. The benefits paid during 1912 were:—Funeral allowances, £883; relief to relatives of deceased persons, £13,362; and to persons disabled, £30,056; the total amount being £44,301.

The beneficiaries on the fund, at 31st December, 1912, in respect of fatal accidents, were 374 adults and 536 children, and in respect of non-fatal accidents, 232 persons permanently disabled, and 192 children.

A detail account of the Miners' Accident Relief Fund may be found in the chapter "Social Condition" of this Year Book.

MANUFACTURING INDUSTRY.

In 1810 the manufacturing establishments in New South Wales included a pottery, a tannery, a brewery, a manufactory for tobacco pipes, and another for coarse woollen cloths, and for the twenty years following the principal articles manufactured locally were cloths and woollens, cabbage-tree hats, salt, candles, leather, boots, drain-pipes, and other earthenware.

Naturally the development of manufacturing was influenced by sparseness of population, and the industries established were connected mainly with the preparation of foodstuffs for local consumption. Subsequently to 1851, economic and industrial conditions were altered materially, as compared with the years prior to the discovery of gold in payable quantities, and impetus was given to the establishment and extension of manufactures. A gauge of progress exists in the following records of the description and number of manufacturing establishments operating in New South Wales in 1829, in 1848, and in 1861 :—

Class of Industry.	Establishments.			Class of Industry.	Establishments.		
	1829	1848	1861		1829	1848	1861
Treating Raw Materials—				Food and Drink (*continued*)—			
Boiling Down	...	...	38	Bakeries (steam)	...	...	2
Tanneries	11	40	76	Coffee Mills (steam) ...	...	...	2
Oils and Fats—				Distilleries, Breweries ...	9	25	16
Soap and Candles	6	18	28	Tobacco & Snuff Factories	...	4	11
Stone, Clay, Glass, &c—				Grain Mills	48	172	184
Potteries	...	7	5	Clothing and Textiles—			
Glassworks	...	1	...	Cloth Factories	6	6	8
Brickworks...	...	...	118	Hat-Making	2	4	2
Stone-Crushing	...	...	1	Dye Works	...	...	4
Wood-working—				Rope Works	...	4	2
Saw-mills (steam & water)	...	...	61	Ship & Boat-building, &c.—			
Metal Works, Machinery, &c.				Docks and Slips	...	...	4
Type Foundries	...	...	1	Ship & Boat-building, &c.	...	...	56
Smelting	...	1	2	Drugs and Chemicals—			
Iron and Brass Foundries	...	13	13	Chemical Works	...	...	1
Food and Drink—				Heat, Light and Power—			
Sugar Refineries	..	2	5	Gasworks	...	1	1
Saltworks	2	2	1				
Meat Preserving	...	5	7	Total for the year ...	84	305	649

The following records at decennial intervals from 1871 indicate the aggregate number of establishments in operation, and the number of persons engaged therein. These records and their relation to the general population are shown in the following statement :—

Year.	Manufacturing Establishments.	Persons Employed in Factories, including Working Proprietors.		
		Number.	Per Factory.	Per cent. of General Population.
1871	1,813	13,583	7·5	2·7
1881	2,961	31,191	10·5	4·1
1891	3,056	50,879	16·6	4·3
1901	3,367	66,230	19·6	4·8
1911	5,039	108,624	21·6	6·5
1912	5,162	115,561	22·4	6·6

Expansion of Industries.

The extent and importance of the manufacturing industries of New South Wales are indicated in the following statement, which shows for the last ten years the number of the establishments in operation, values of plant and machinery, wages and salaries paid to employees, and the corresponding annual output :—

Year.	Establishments.	Persons Employed, including Working Proprietors.	Value of Plant and Machinery.	Salaries and Wages paid.†	Value of Goods Manufactured or work done.
			£	£	£
1903	3,476	65,633	7,121,806	4,839,557	26,391,028
1904	3,632	68,036	7,648,903	5,012,758	27,159,230
1905	3,700	72,175	8,031,948	5,191,350	30,028,150
1906	3,861	77,822	8,407,337	5,591,888	34,796,169
1907	4,432	86,467	9,155,772	6,650,715	40,018,301
1908	4,453	89,098	9,718,842	7,218,556	40,163,826
1909	4,581	91,702	10,330,724	7,665,125	42,960,689
1910	4,821	99.711	11,578,620	8,687,007	49,615,643
1911	5,039	108,624	12,510,600	10,047,662	54,346,011
1912	5,162	115,561	13,795,195	11,592,052	61,163,328
Increase per cent. 1902 to 1912 ...	52·0	74·4	102·6	128·2	138·5

† 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 nearly £7,000,000, have been introduced, and the salaries and wages have increased by 128 per cent., and the output by 139 per cent. Comparing the figures for 1912 with those of the previous year, continued and remarkable expansion is apparent; under every heading of the table given above there were substantial increases.

Legislative Regulation.

Between 1871 and 1881 manufacturing became an important part of the industrial life of the State, and attention was given to the development of the more highly organized branches. By 1891 the average number of persons engaged in manufacturing had increased to 16·6 per establishment. In 1895 the first measure of legislative regulation was initiated in New South Wales, the Factories and Shops Act, 1896, requiring the registration and inspection of factories and the inspection of shops, so as to secure the maximum advantage to the workers in the matter of safety to health and life. Substantially this Act remains the law of the present day, but it has been amended by Acts passed in 1908 and 1909, by the Early Closing Acts, 1899, 1900, 1906, and 1910, and by the Saturday Half-holiday Act, 1910. The Factories and Shops Act, 1896, and 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 Chinese 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 being paid to all employees, whether engaged within or outside the factory; to keep records of employees, their ages, &c. The provisions of the Act are applicable only in proclaimed factory districts.

Legislative Encouragement.

Under Section 51 (iii) of the Commonwealth of Australia Constitution Act, the Parliament of the Commonwealth is empowered to make laws with respect to the payment of bounties on the production or export of goods, but so that such bounties shall be uniform throughout the Commonwealth. The enactments made in this connection include: Sugar Bounty Acts, 1903–12, Bounties Act, 1907–12, Manufactures Encouragement Act, 1908–12, the Shale Oils Bounties Act, 1910–12, and the Wood-pulp and Rock Phosphate Bounties Act, 1912.

Bounties on Manufactured Products.

Particulars regarding the bounties on sugar and agricultural products will be found in the chapter relating to Agriculture. For manufactured products the following have been provided:—

Item.	Period.	Rate of Bounty.
Under Bounties Act, 1907–12:—		
Fish, preserved	for 10 years from 1st July, 1907	½d per lb.
Combed wool or tops, exported	for 3 years from 1st July, 1909	1½d. per lb.
	for 2 years from 1st July, 1912	1d. per lb.
	for 2 years from 1st July, 1914	1d. per lb. for first 1,000,000 lbs. made by any one manufacturer; ¾d. per lb. in excess of 1,000,000 lbs. made by any one manufacturer.
Manufacturers Encouragement Act, 1908–12:—		
Pig iron, Puddled bar iron, Steel	from 1st Jan., 1909, to 30th June, 1914	12s. per ton.
Galvanised sheet or plate iron or steel, Wire netting (not being prison-made), Wire, Iron and steel tubes or pipes (except riveted or cast) not more than 6in. internal diameter.	from 1st Jan., 1909, to 30th June, 1914	10 per cent. on value.
Shale Oil Bounties Act, 1910:—		
Kerosene, product of shale.	from 1st July, 1910, to 30th June, 1913	2d. per gal.
Refined paraffin wax	from 1st July, 1910, to 30th June, 1913	2s. 6d. per cwt.
Wood Pulp and Rock Phosphate Bounties Act, 1912:—		
Wood pulp	for 5 years from 1st Jan., 1913	15 per cent. on market value.
Rock phosphates (manufactured into marketable phosphatic manure)	for 5 years from 1st Jan., 1913	10 per cent. on market value.

Bounties are payable only on articles manufactured in Australia from Australian products, with the exception of wire-netting, on which bounty may be paid also if made from wire manufactured in the United Kingdom. The amounts paid in New South Wales to the end of June, 1913, in respect of the bounties shown above were as follows :—

Product.	1908-9.	1909-10.	1910-11.	1911-12.	1912-13.
	£	£	£	£	£
Fish, preserved	.....	.....	.....	...	.....
Combed wool or tops, exported	.....	4,933	8 522	16,898	13,061
Pig iron	2,314	23,510	20,462	15,611	16,949
Puddled bar iron	568	1,254	2,080	671	38
Steel	575	1,491	1,939	723	.....
Galvanised sheet iron	192	287	122	74	.....
Wire-netting	.....	6,036	4,824	5,968	1,110
Kerosene	.....	.....	920	2,629	2,792
Paraffin wax	.....	.....	553	759	967

New South Wales Chamber of Manufactures.

The New South Wales Chamber of Manufactures was constituted in 1895, with the object of developing the manufactures, products, industries, and commerce of New South Wales, and generally to promote the manufacturing interests of the State, so as to assist in making Australia self-supporting. By mutual co-operation towards scientific efficiency, and the encouragement of industrial education, efforts are being made to bring Australian goods to the highest standard of quality.

Classification of Manufactories.

The manufacturing industries of New South Wales are classified for statistical and comparative purposes in nineteen groups according to a standardised classification adopted at a Conference of Statisticians held in 1902.

The following table shows concisely the principal details respecting each class of industries for the year 1912 :—

Class of Industry.	Establishments.	Average Number of Employees.			Average time worked per Employee.	Total Salaries and Wages, exclusive of Drawings of Working Proprietors.	Horse-power of Machinery—Average used.	Value of Machinery, Tools, and Plant.
		Males.	Females.	Total.				
					Months	£	H.-p.	£
Treating Raw Materials, &c. ...	287	3,785	87	3,872	10·02	313,753	4,668	374,577
Oils and Fats, &c.	45	692	203	895	11·85	74,352	717	212,958
Processes in Stone, Clay, Glass, &c.	297	5,875	57	5,932	11·54	695,204	11,823	902,759
Working in Wood	684	8,815	65	8,880	10·99	885,674	16,192	782,910
Metal Works, Machinery, &c. ...	536	25,357	193	25,550	11·79	3,302,604	28,182	3,098,426
Connected with Food and Drink, &c.	765	10,773	3,476	14,249	11·21	1,368,832	21,105	2,962,061
Clothing and Textile Fabrics, &c. ..	994	7,808	19,251	27,059	11·77	1,805,040	3,861	499,845
Books, Paper, Printing, &c.... ...	426	7,051	2,390	9,441	11·83	993,444	4,261	1,045,208
Musical Instruments	14	376	40	416	12·00	49,432	308	13,779
Arms and Explosives	6	178	10	188	11·74	24,021	292	90,717
Vehicles, Saddlery, and Harness, &c.	393	4,319	96	4,415	11·86	425,391	1,031	111,620
Ship and Boat Building, &c. ...	47	3,168	1	3,169	11·97	427,045	3,009	496,131
Furniture, Bedding, and Upholstery	220	3,583	391	3,974	11·64	404,703	1,553	61,749
Drugs, Chemicals, and By-products	87	943	604	1,547	11·84	140,122	1,311	218,198
Surgical and other Scientific Instruments	13	79	18	97	11·96	8,964	19	4,522
Jewellery, Plated Ware, &c. ...	53	763	100	863	11·96	91,579	248	25,737
Heat, Light, and Power	203	3,334	53	3,387	11·67	449,254	74,888	2,802,203
Leatherware, N.E.I.	24	408	87	495	11·87	45,486	234	11,440
Minor Wares, N.E.I.	68	871	261	1,132	11·70	87,052	911	89,355
Total	5,162	88,178	27,383	115,561	11·59	11,592,052	174,613	13,795,195

Naturally, 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 1912 :—

Class of Industry.	Establishments.	Average Number of Employees.			Average time worked per Employee.	Total Salaries and Wages, exclusive of Drawings of Working Proprietors.	Horse-power of Machinery—Average used.	Value of Machinery, Tools, and Plant.
		Males.	Females.	Total.				
					Months	£	H.-p.	£
Treating Raw Materials, &c. ...	107	2,189	81	2,270	11·79	223,282	3,311	243,037
Oils and Fats, &c.	23	454	166	620	11·82	54,502	411	142,524
Processes in Stone, Clay, Glass, &c.	106	3,455	32	3,487	11·78	452,081	4,231	399,226
Working in Wood	187	4,012	35	4,047	11·78	452,795	7,253	300,246
Metal Works, Machinery, &c. ...	371	16,477	170	16,647	11·88	2,019,766	9,475	1,213,454
Connected with Food and Drink, &c.	192	5,911	3,124	9,035	11·70	848,887	9,513	1,559,230
Clothing and Textile Fabrics, &c. ...	706	6,611	17,217	23,828	11·79	1,601,691	3,556	432,835
Books, Paper, Printing, &c.	237	5,682	2,298	7,980	11·84	850,432	3,770	809,992
Musical Instruments	14	376	40	416	12·00	49,432	308	13,779
Arms and Explosives	4	23	6	29	12·00	2,627	22	1,086
Vehicles, Saddlery, and Harness, &c.	155	2,282	84	2,366	11·87	247,527	576	51,557
Ship and Boat Building, &c.... ..	35	3,022	1	3,023	11·99	412,353	2,936	489,449
Furniture, Bedding, and Upholstery	198	3,389	381	3,770	11·62	386,876	1,473	56,926
Drugs, Chemicals, and By-products	80	839	604	1,443	11·83	123,338	1,131	129,133
Surgical and other Scientific Instruments	12	77	18	95	11·96	8,938	18	4,372
Jewellery, Plated Ware, &c. ..	50	747	100	847	11·96	80,725	248	25,047
Heat, Light, and Power	87	1,812	52	1,864	11·67	250,471	56,989	1,699,734
Leatherware, N.E.I.	23	406	87	493	11·88	45,306	225	11,040
Minor Wares, N.E.I.	62	831	261	1,092	11·69	85,367	890	78,689
Total	2,650	58,595	24,757	83,352	11·81	8,215,296	106,942	7,691,380

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 such institutions are, however, recorded.

Establishments.

Number.

In the following table the number of establishments operating in each class is indicated at intervals since 1896 :—

Class of Industry.	Establishments.					
	1896	1901.	1906.	1910.	1911.	1912.
Treating Raw Material, &c.	274	256	256	289	272	287
Oils and Fats, &c.	48	51	48	43	48	45
Processes in Stone, Clay, Glass, &c.	240	244	252	298	309	297
Working in Wood	399	430	457	620	662	684
Metal Works, Machinery, &c.	280	301	376	476	509	536
Connected with Food, Drink, &c.	753	673	707	767	769	765
Clothing and Textile Fabrics, &c.	394	538	724	936	981	994
Books, Paper, Printing, &c.	286	298	335	407	436	426
Musical Instruments, &c.	3	6	6	13	12	14
Arms and Explosives	1	2	3	5	5	6
Vehicles and Fittings, Saddlery, &c.	176	246	259	361	384	393
Ship Building and Repairing	16	25	34	42	41	47
Furniture, Bedding, and Upholstery	87	115	119	176	197	220
Drugs, Chemicals, and By-products	28	19	48	76	82	87
Surgical and Scientific Instruments	5	7	8	11	12	13
Jewellery, Timepieces, and Plated Ware ...	11	14	33	46	48	53
Heat, Light, and Power...	76	106	139	176	191	203
Leatherware, N.E.I.	6	5	12	21	20	24
Minor Wares, N.E.I.	23	31	45	58	61	68
Total	3,106	3,367	3,861	4,821	5,039	5,162
Proportion to total for 1896	100	108	124	155	162	163

By relating the total for each period to the total for 1896 taken as 100, as shown above, the rapid increases in recent years are emphasised.

Reviewing the advances at five-year intervals, the increase between 1896 and 1901 was 261 establishments, representing a percentage increase of 8·4; between 1901 and 1906 the increase was 484, being 14·4 per cent., and between 1906 and 1911 the increase was 1,178, being 30·5 per cent. The advances in the last six years have been most consistent and remarkable.

In 1912 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 at the end of 1912 the number of metropolitan factories was the greater. The following statement shows for the years 1901–1912 the distribution of manufactories as between the metropolis and the remainder of the State, and further, the number of establishments in which machinery was installed :—

Year.	Metropolis.			Remainder of State.			New South Wales.		
	With Machinery.	Without Machinery.	Total.	With Machinery.	Without Machinery.	Total.	With Machinery.	Without Machinery.	Total.
1901	754	661	1,415	1,215	737	1,952	1,969	1,398	3,367
1902	833	658	1,491	1,342	563	1,905	2,175	1,221	3,396
1903	874	676	1,550	1,300	626	1,926	2,174	1,302	3,476
1904	951	699	1,650	1,252	730	1,982	2,203	1,429	3,632
1905	1,035	645	1,680	1,291	729	2,020	2,326	1,374	3,700
1906	1,136	635	1,771	1,360	730	2,090	2,496	1,365	3,861
1907	1,249	746	1,995	1,512	925	2,437	2,761	1,671	4,432
1908	1,380	712	2,092	1,527	834	2,361	2,907	1,546	4,453
1909	1,496	709	2,205	1,593	783	2,376	3,089	1,492	4,581
1910	1,620	724	2,344	1,668	809	2,477	3,288	1,533	4,821
1911	1,793	717	2,510	1,757	772	2,529	3,550	1,489	5,039
1912	1,964	686	2,650	1,811	701	2,512	3,775	1,387	5,162

Location.

Ease of communication with the world's commercial and industrial centres; proximity to coalfields, accessibility by rail or sea from 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 five years or so 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 1912 occurred in classes working in wood; metal works, machinery, &c.; clothing and textile fabrics, &c.; books, paper, printing, &c.; furniture, bedding, and upholstery; heat, light, and power; while outside the metropolitan area the greatest advances were in classes working in wood; metal works, machinery, &c.; clothing and textile fabrics, &c.; vehicles and fittings, saddlery, &c.; heat, light, and power. 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 area and for the remainder of New South Wales at intervals since 1901 :—

Class of Industry.	Metropolis.				Remainder of State.			
	1901.	1906.	1911.	1912.	1901.	1906.	1911.	1912.
Treating Raw Material, &c.	89	82	102	107	167	174	170	180
Oils and Fats, &c.	21	20	22	23	30	28	26	22
Processes in Stone, Clay, Glass, &c.	66	73	103	106	178	179	206	191
Working in Wood	86	114	182	187	344	343	480	497
Metal Works, Machinery, &c.	172	227	341	371	129	149	168	165
Connected with Food, Drink, &c.	160	159	188	192	513	548	581	573
Clothing and Textile Fabrics, &c.	372	495	689	706	166	229	292	283
Books, Paper, Printing, &c.	124	169	227	237	174	166	209	189
Musical Instruments, &c.	6	6	12	14	..	..	..	..
Arms and Explosives	2	3	4	4	..	..	1	2
Vehicles and Fittings, Saddlery, &c.	93	94	142	155	153	165	242	238
Ship Building and Repairing	16	27	30	25	9	7	11	12
Furniture, Bedding, and Upholstery	99	105	180	198	16	14	17	22
Drugs, Chemicals, and By-products	12	43	74	80	7	5	8	7
Surgical and Scientific Instruments	7	8	11	12	..	..	1	1
Jewellery, Timepieces, and Plated Ware	14	31	44	50	..	2	4	3
Heat, Light, and Power	42	61	84	87	64	78	107	116
Leatherware, N.E.I.	5	12	19	23	..	..	1	1
Minor Wares, N.E.I.	29	42	56	63	2	3	5	5
Totals	1,415	1,771	2,510	2,650	1,952	2,090	2,529	2,512

In the metropolis the largest class numerically is clothing and textile fabrics, which includes 27 per cent. of the total metropolitan factories, and the class drugs and chemicals shows the greatest proportionate increase. In the country districts the establishments connected with food and drink outnumber those in any other class, being 23 per cent. of the total. The number of factories working in wood is increasing steadily.

Size of Establishments.

The tendency for manufacturing to become concentrated in large establishments, or the reverse, is a matter of considerable interest from the standpoint of industrial organisation. The following statement shows at intervals since 1901 the distribution of establishments, according to the numbers of persons engaged in the metropolitan area and in the remainder of New South Wales :—

Establishments employing—	1901.		1906.		1911.		1912.	
	Establishments.	*Employees.	Establishments.	*Employees.	Establishments.	*Employees.	Establishments.	*Employees.
METROPOLITAN DISTRICT.								
Under 4 employees	79	188	135	310	238	547	292	678
4 employees ...	105	420	116	464	179	716	155	620
5 to 10 employees	429	3,036	546	3,924	743	5,336	785	5,616
11 to 20 ,, ...	334	4,919	396	5,857	520	7,834	547	8,146
21 to 50 ,, ...	279	8,564	341	10,864	477	14,695	514	16,193
51 to 100 ,, ...	107	7,443	130	8,968	203	14,422	201	14,436
101 and upwards...	82	17,750	107	22,238	150	34,042	156	37,663
Total ..	1,415	42,320	1,771	52,605	2,510	77,592	2,650	83,352
REMAINDER OF STATE.								
Under 4 employees	439	1,094	457	1,090	538	1,282	539	1,265
4 employees ..	256	1,024	267	1,068	371	1,484	323	1,292
5 to 10 employees	768	5,333	837	5,712	993	6,817	1,008	6,852
11 to 20 ,, ...	294	4,236	343	4,824	381	5,390	385	5,515
21 to 50 ,, ...	142	4,612	110	3,400	164	4,874	167	4,992
51 to 100 ,, ...	30	2,086	30	2,193	40	2,858	51	3,572
101 and upwards...	23	5,430	46	6,930	42	8,327	41	8,721
Total ...	1,952	23,815	2,090	25,217	2,529	31,032	2,512	32,209
NEW SOUTH WALES.								
Under 4 employees	518	1,282	592	1,400	776	1,829	831	1,943
4 employees ...	361	1,444	383	1,532	550	2,200	478	1,912
5 to 10 employees	1,197	8,369	1,383	9,636	1,736	12,153	1,793	12,468
11 to 20 ,, ...	628	9,155	739	10,661	901	13,224	930	13,661
21 to 50 ,, ...	421	13,176	451	14,264	641	19,569	681	21,185
51 to 100 ,, ...	137	9,529	160	11,161	243	17,280	252	18,608
101 and upwards..	105	23,180	153	29,168	192	42,369	197	46,384
Total ...	3,367	66,135	3,861	77,822	5,039	108,624	5,162	115,561

* Including working proprietors.

In the metropolitan area the rate of increase has been highest in the smallest and in the largest factories. In the remainder of the State the largest increases, proportionately, were in the groups in which the persons engaged numbered 51 and upwards, and from 5 to 20. A comparison of the relative positions of each group is presented in the following statement :—

Establishments employing—	Proportion of each Group to Total.					
	Metropolis.			Remainder of State.		
	1901.	1911.	1912.	1901.	1911.	1912.
	per cent.	per cent.	per cent.	per cent.	per cent.	per cent.
Under 4 employees ..	5·6	9·5	11·0	22·5	21·3	21·5
4 employees	7·4	7·1	5·8	13·1	14·6	12·8
5 to 10 employees... ...	30·3	29·6	29·6	39·3	39·2	40·1
11 to 20 ,, ...	23·6	20·7	20·7	15·1	15·1	15·3
21 to 50 ,, ...	19·7	19·0	19·4	7·3	6·5	6·7
51 to 100 ,, ...	7·6	8·1	7·6	1·5	1·6	2·0
101 and upwards	5·8	6·0	5·9	1·2	1·7	1·6
Total	100·0	100·0	100·0	100·0	100·0	100·0

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 1912 was 31, as compared with 13 in the country; and this average has been fairly constant over a considerable period.

EMPLOYMENT.

The relative importance of the various classes of industry, as judged by the extent of employment offered, is evidenced in the following comparative statement of the average number of persons engaged in manufacturing:—

Class of Industry.	Persons engaged in manufacturing.*				
	1896.	1901.	1906.	1911.	1912.
Raw Materials, Pastoral Products	3,748	2,981	3,209	3,890	3,872
Oils and Fats, Animal, Vegetable, &c. ...	410	698	681	889	895
Processes in Stone, Clay, Glass, &c.	2,441	3,007	3,877	5,695	5,932
Working in Wood	3,934	5,108	5,205	8,181	8,880
Metal Works, Machinery, &c.	8,705	13,926	15,339	22,862	25,550
Food and Drink, &c.	10,179	11,372	11,607	14,050	14,249
Clothing and Textile Fabrics, &c.	9,750	14,497	19,650	26,504	27,059
Books, Paper, Printing, &c.	4,940	5,573	6,961	9,134	9,441
Musical Instruments	18	226	338	387	416
Arms and Explosives	...	11	17	33	188
Vehicles, Saddlery, Harness, &c.	1,592	2,541	2,667	4,416	4,415
Ship and Boat Building, and Repairing ...	1,132	1,541	1,595	2,429	3,169
Furniture, Bedding, and Upholstery	1,183	2,140	2,317	3,534	3,974
Drugs, Chemicals, and By-products	331	450	1,012	1,460	1,547
Surgical and other Scientific Instruments ...	35	69	86	96	97
Jewellery, Timepieces, and Plated Ware ...	102	165	457	753	863
Heat, Light, and Power	859	1,417	1,883	2,795	3,387
Leatherware, N.E.I.	33	117	240	461	495
Minor Wares, N.E.I.	448	391	681	1,055	1,132
Total	49,840	66,230	77,822	108,624	115,561

* Including working proprietors.

In the figures three classes stand out conspicuously, viz., the industries concerned with metal works and machinery, food and drink, clothing and textiles. In quinquennial periods the aggregate figures for all classes give the following increases:—

1896–1901	32·9 per cent.
1901–1906	17·5 ,, ,,
1906–1911	39·6 ,, ,,
1911–1912	6·4 ,, ,,

Explanation of the relatively small increase in the middle period is to be found, in a measure, in 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 in greater or less degree upon the secondary industries. In the last six years, however, the extension of employment in these industries has been remarkable.

The following table shows separately the average number of persons engaged in manufactures in the metropolis, as compared with the remainder of the State, for the last ten years :—

Year.	Employees (including working proprietors).			Year.	Employees (including working proprietors).		
	Metropolis.	Remainder of State.	Total.		Metropolis.	Remainder of State.	Total.
1903	43,752	21,881	65,633	1908	60,974	28,124	89,098
1904	45,409	22,627	68,036	1909	63,777	27,925	91,702
1905	48,842	23,333	72.175	1910	69,950	29,761	99,711
1906	52,605	25,217	77,822	1911	77,592	31,032	108,624
1907	57,247	29,220	86,467	1912	83,352	32,209	115,561

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 39,600, or 91 per cent. since 1903, the increase for all other parts of the State was only 10,328 persons, or 47 per cent. The following figures will demonstrate the increases in the employees of each sex :—

Year.	Metropolis.		Remainder of State.	
	Males.	Females.	Males.	Females.
1903	32,280	11,472	20,173	1,708
1912	58,595	24,757	29,583	2,626
Increase per cent.	81·5	115·8	46 6	53·7

Sex and Age Distribution.

The following table shows the sex and age distribution of the persons engaged in manufactories for the last ten years :—

Year.	Persons Employed in Manufactories, including working proprietors.								
	Adults.			Juveniles.			Adults and Juveniles.		
	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.
1903	51,679	12,760	64,439	774	420	1,194	52,453	13,180	65,633
1904	52,717	14,127	66.844	740	452	1,192	53,457	14,579	68,036
1905	55,443	15,591	71,034	668	473	1,141	56,111	16,064	72,175
1906	59,098	17.264	76,362	881	579	1,460	59,979	17,843	77,822
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

In the last six years, 1907-12, the term juveniles included boys and girls under 16 years of age. Prior to 1907 the age of demarcation was 15, so that the figures for juveniles for the full period quoted are not strictly comparable.

The proportionate increase in the number of females has been much greater than in the case of males, for in several years the latter showed a decrease. This condition was noticeable in 1902-3-4, the decrease being chiefly of employees in metal works, establishments dealing with pastoral products, and refrigerating works.

The following statement shows the variations in the proportions of adults and juveniles of each sex, to the total number employed in each year since 1907 :—

	1907.	1908.	1909.	1910.	1911.	1912.
Adults—	per cent.	per cent.	per cent.	per cent.	per cent.	per cent.
Males	73·49	73·11	72·79	73·14	73·29	74·37
Females ...	21·55	22·03	22·41	22·37	22·35	21·89
Total ..	95·04	95·14	95·20	95·51	95·64	96·26
Juveniles—						
Males	2·78	2·78	2·65	2·46	2·28	1·93
Females ...	2·18	2·08	2·15	2·03	2·08	1·81
Total ...	4·96	4·86	4·80	4·49	4·36	3·74
Grand Total.	100·00	100·00	100·00	100·00	100·00	100·00

The most satisfactory feature of this comparison is the decrease in the proportion of juvenile labour, which in 1912 was nearly 25 per cent. lower than in 1907. The proportion of adult females has increased slightly during the period reviewed, but in 1912 was lower than in any year since 1907.

Women and Juveniles.

The average number of women and juveniles engaged in manufacturing has increased fourfold since 1896. In proportion to the total employment of men, women, and juveniles, the increase in the numbers of women and juveniles was much smaller, as the following table will indicate :—

Year.	Proportion to Total Average Employment.				
	Females.		Males—Juvenile.	Total—Women and Juveniles.	Adult Males.
	Adult.	Juvenile.			
	per cent.	per cent.	per cent.	per cent.	per cent.
1896	13·61	·30	1·09	15·00	85·00
1901	17·19	·44	1·19	18·82	81·18
1906	22·18	·75	1·13	24·06	75·94
1911	22·35	2·08	2·28	26·71	73·29
1912	21·89	1·81	1·93	25·63	74·37

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 74·4 per cent. in the proportion of males above those ages to total employed, and coincidently the increase of women and juvenile labour from 15·0 per cent. to 25·6 per cent. of the total since the year 1896.

The following table shows, at quinquennial intervals since 1896, the industries in which women and girls have been employed in greatest numbers, and for 1901, 1911 and 1912 the proportion to every hundred males employed in the same industries:—

Industry.	Average Number of Women and Girls.					Proportion per 100 Males.		
	1896.	1901.	1906.	1911.	1912.	1901.	1911.	1912.
Food, &c.—								
Aerated waters	34	49	43	152	151	4	11	11
Biscuits	136	350	522	705	757	71	108	107
Condiments, coffee, and spices ...	172	167	224	216	219	42	102	84
Confectionery	118	225	388	483	519	39	64	58
Cornflour, oatmeal...	16	71	139	199	235	46	73	83
Jam and fruit canning	81	140	214	449	472	28	114	127
Meat and fish preserving	2	24	42	121	117	3	13	16
Pickles, sauces, and vinegar ...	...	58	62	174	192	129	125	115
Tobacco	170	428	390	755	742	71	112	109
Clothing, &c.—								
Dressmaking and millinery ...	1,738	2,526	3,602	5,053	4,952	4,141	5,677	5,053
Hats and caps	50	198	694	1,029	1,051	150	192	192
Oilskins and waterproofs	94	290	129	98	88	203	377	275
Shirts and ties	56	337	1,028	1,655	1,978	1,021	1,191	1,244
Slop clothing	1,290	2,636	3,971	5,503	5,073	434	528	530
Tailoring	1,036	1,437	1,773	3,004	3,436	100	136	149
Woollen and tweed mills	70	72	178	389	413	44	111	118
Hosiery and Knitting Factories...				180	308		529	474
Sails, tents, and tarpaulins ...	15	86	127	245	265	88	147	144
Boots and shoes	849	1,118	1,589	1,593	1,612	39	57	58
Chemicals and drugs	32	66	199	365	347	20	79	66
Furnishing drapery, bedding ...	43	128	143	271	302	7	58	58
Printing and bookbinding	394	703	915	1,539	1,640	16	26	26
Paper, paper bags, and boxes ...	150	148	495	754	738	149	157	152
Other industries	386	417	976	1,609	1,776	1	3	3
Total	6,932	11,674	17,843	26,541	27,383	21	32	31

The classes of industry in which women and children engage most 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 1912 was 31 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. From 30th December, 1909, the Minister decided that permission would not be granted except under extreme circumstances to any girl under 14 years of age.

Out of 4,318 juveniles engaged in manufacturing, 3,424 were employed in factories within the metropolitan area. Reviewing the records of juveniles since 1896, it is noticeable since male labour constitutes three-quarters of the labour force employed in manufacturing, that male juveniles have formed consistently a larger body than female juveniles. But practically all the girls employed are working in Sydney and suburbs, while a fair proportion (31 per cent.) of the boys are employed in establishments located outside the metropolitan area.

Certificates of Physical Fitness.

The employment of juveniles under age 16 is conditional upon a medical certificate as to physical fitness being secured by the factory occupier under the Factories and Shops Acts. Particulars regarding such certificates issued in each year since 1905, are as follows :—

Year.	Metropolitan District.		Newcastle.		Western.		Broken Hill.		Goulburn.		Albury.	Total.		
	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Males.	Females.	Total.
1905	1,261	591	169	39	39	3	1	...	...	...	...	1,470	633	2,103
1906	1,751	686	209	52	46	4	27	...	...	...	...	2,033	742	2,775
1907	1,924	838	297	84	46	...	...	...	3	...	...	2,270	922	3,192
1908	2,182	1,172	229	57	27	...	...	...	6	...	...	2,444	1,229	3,673
1909	2,265	1,282	206	58	36	...	...	...	4	...	...	2,511	1,340	3,851
1910	2,221	1,709	276	59	42	...	...	...	11	1	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

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 District.		Newcastle.		Western.	Broken Hill.	Goulburn.	Albury.	Total.		
	Males.	Females.	Males.	Females.	Males.	Males.	Males.	Males.	Males.	Females.	Total.
1903	264	95	36	7	...	...	...	...	300	102	402
1904	190	95	36	7	...	...	...	...	226	102	328
1905	165	93	17	9	3	1	...	...	186	102	288
1906	212	77	19	6	1	...	...	...	232	83	315
1907	287	128	17	7	2	...	3	...	309	135	444
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

Occupational Status.

Of all the persons engaged in the manufactories in 1912, approximately 84 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 or industry for 1912 :—

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 Materials, &c. ...	431	95	197	3,003	146	...	3,872
Oils and Fats, &c.	75	80	28	687	25	...	895
Processes in Stone, Clay, Glass, &c.	416	186	183	4,879	268	...	5,932
Working in Wood	1,013	422	445	6,534	466	...	8,880
Metal Works, Machinery, &c. ...	1,128	797	393	22,821	403	8	25,550
Connected with Food and Drink, &c.	1,029	849	664	11,242	465	...	14,249
Clothing and Textile Fabrics, &c...	1,572	374	58	24,045	154	856	27,059
Books, Paper, Printing, &c. ...	850	649	38	7,723	162	19	9,441
Musical Instruments...	19	29	4	361	2	1	416
Arms and Explosives	19	11	5	149	4	...	188
Vehicles, Saddlery and Harness, &c.	531	200	13	3,614	53	4	4,415
Ship and Boat-building, &c. ...	123	112	36	2,806	92	...	3,169
Furniture, Bedding, and Upholstery	347	71	12	3,499	39	6	3,974
Drugs, Chemicals, and By-products	122	136	22	1,226	41	...	1,547
Surgical and other Scientific Instruments	16	7	...	70	4	...	97
Jewellery, Timepieces, and Plated Ware..	78	57	...	720	8	...	863
Heat, Light, and Power	223	153	561	2,205	245	...	3,387
Leatherware, N.E.I.	41	20	3	426	5	...	495
Minor Wares, N.E.I....	108	36	12	966	9	1	1,132
Total	8,141	4,284	2,674	96,976	2,591	895	115,561

Capital Invested in Premises.

In regard to the capital invested in manufacturing industries, only scanty particulars are available. Where the land, buildings, and fixtures in use for manufacturing purposes are the property of the occupier the assessed value is recorded ; otherwise the rental value is stated. The following statement serves to show the extent to which in the last five years the capital value and the rental value of premises have both increased, and have been accompanied by an increase in the value of plant and machinery installed :—

Year.	Premises.		Value of Machinery, Tools, and Plant.
	Capital Value when occupier is owner.	Annual Rental Value when leased or rented.	
	£	£	£
1908	6,508,164	245,756	9,718,842
1909	6,625,066	274,331	10,330,724
1910	7,208,392	306,274	11,578,620
1911	8,126,487	334,248	12,510,600
1912	8,833,266	370,784	13,795,195
Percentage increases, 1908–1912 ...	35·73	36·01	41·94

Allowing for interest on owned premises at 5 per cent. net, the aggregate annual income value for land, buildings, and fixtures, used in manufacturing was, for 1912, £812,000 ; or capitalising rentals paid on a 10 per cent. basis the aggregate value of all premises was £12,541,000, being less by one and a quarter million pounds than the assessed value of plant and machinery in all factories at the same date.

The value of the land, buildings, and fixtures in the metropolis as compared with other areas for each class of industry, is shown in the following table for the year 1912 :—

Class of Industry.	Metropolis.			Remainder of State.		
	Land, Buildings, and Fixtures.		Value of Machinery, Tools, and Plant.	Land, Buildings, and Fixtures.		Value of Machinery, Tools, and Plant.
	Capital value.	Rental value.		Capital value.	Rental value.	
	£	£	£	£	£	£
Treating Raw Material, &c....	168,487	7,173	243,067	84,542	1,695	131,510
Oils and Fats, &c.	179,654	1,160	142,524	32,073	351	70,434
Stone, Clay, Glass, &c. ...	371,381	6,113	399,226	245,455	2,884	503,533
Working in Wood	348,362	15,474	300,246	181,623	9,047	482,664
Metal Works, Machinery, &c.	1,343,989	32,797	1,213,454	535,929	3,480	1,884,972
Food and Drink, &c.... ...	1,142,908	28,949	1,589,230	868,678	10,608	1,372,831
Clothing, Textile Fabrics, &c.	361,513	94,030	432,835	72,691	15,087	67,010
Books, Paper, Printing, &c....	360,427	46,184	809,992	73,862	6,730	235,216
Musical Instruments, &c. ...	26,700	2,036	13,779	.....	...	.....
Arms and Explosives... ...	1,850	286	1,080	59,459	100	89,637
Vehicles, Saddlery, &c. ...	144,597	17,588	51,557	95,237	9,205	60,063
Ship-building, &c.	661,044	2,327	489,449	6,982	474	6,682
Furniture, Bedding, &c. ...	87,662	21,349	56,926	8,158	626	4,823
Drugs, Chemicals, &c. ...	127,681	8,179	129,133	17,794	206	89,065
Surgical Instruments, &c. ...	.....	1,648	4,372	.....	75	150
Jewellery, &c....	8,850	8,458	25,047	600	406	690
Heat, Light, and Power ...	877,586	4,784	1,699,734	256,466	4,951	1,102,469
Leatherware, N.E.I.	29,941	1,242	11,040	400	...	400
Minor Wares, N.E.I.	48,475	5,043	78,689	2,210	39	1,666
Total	6,291,107	304,820	7,691,380	2,542,159	65,964	6,103,815

Class of Industry.	State of New South Wales.		
	Capital value.	Rental value.	Value of Machinery, Tools, and Plant.
	£	£	£
Treating Raw Materials, product of Pastoral pursuits, &c.	253,029	8,868	374,577
Oils and Fats, Animal, Vegetable, &c.	211,727	1,511	212,958
Processes in Stone, Clay, Glass, &c.	616,836	8,997	902,759
Working in Wood	529,985	24,521	782,910
Metal Works, Machinery, &c.	1,879,918	36,277	3,098,426
Connected with Food, Drink, &c.	2,011,586	39,557	2,962,061
Clothing and Textile Fabrics and Materials ...	434,204	109,117	499,845
Books, Paper, Printing, and Engraving	434,289	52,914	1,045,208
Musical Instruments	26,700	2,036	13,779
Arms and Explosives...	61,309	386	90,717
Vehicles and Fittings, Saddlery, Harness, &c.	239,834	26,793	111,620
Ship and Boat Building, &c.	668,026	2,801	496,131
Furniture, Bedding, and Upholstery	95,820	21,975	61,749
Drugs, Chemicals, and By-products	145,475	8,385	218,198
Surgical and other Scientific Instruments ...	.....	1,723	4,522
Jewellery, Timepieces, and Plated Ware... ...	9,450	8,864	25,737
Heat, Light, and Power	1,134,052	9,735	2,802,203
Leatherware, N.E.I.	30,341	1,242	11,440
Minor Wares, N.E.I.	50,685	5,082	80,355
Total	8,833,266	370,784	13,795,195

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. By 1901 the value had increased to £5,860,725. In the succeeding ten years this amount was almost doubled, and during the last two years has increased by over £2,000,000.

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.
1903	2,174	7,121,803	81,475	59,353
1904	2,203	7,648,903	86,878	62,407
1905	2,326	8,031,948	90,896	70,054
1906	2,496	8,407,337	97,244	74,756
1907	2,761	9,155,772	108,257	81,293
1908	2,907	9,718,842	116,571	88,109
1909	3,089	10,339,724	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	212,372	147,961

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, nearly the whole of the power used for the purpose of driving machinery is derived from steam; in some instances, chiefly in the metropolis, 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 in use.									
	Full Capacity.					Average used.				
	Steam.	Gas.	Electricity.	Water.	Oil.	Steam.	Gas.	Electricity.	Water.	Oil.
1902	72,534	3,001	16,046	98	130	50,545	2,010	8,820	66	78
1907	90,376	6,624	14,951	135	602	66,620	4,901	10,072	101	429
1908	106,809	8,691	14,521	386	685	80,894	6,578	10,937	154	483
1909	132,069	12,168	16,368	372	740	89,917	8,658	11,773	209	543
1910	140,310	13,985	21,444	362	933	103,857	10,123	15,991	197	649
1911	166,980	16,338	27,466	372	1,399	113,939	12,201	20,671	222	1,185
1912	189,909	20,602	36,331	348	1,513	130,479	16,028	26,652	273	1,181

This classification of the horse-power indicated and developed according to the class of power evidences wide differences in relative importance:

Source.	Developed Horse-power.			Proportion of Total.		
	1902.	1911.	1912.	1902.	1911.	1912.
				per cent.	per cent.	per cent.
Steam	50,659	113,939	130,479	82·19	76·87	74·72
Gas	2,010	12,201	16,028	3·26	8·23	9·18
Electricity	8,820	20,671	26,652	14·31	13·95	15·26
Water	66	222	273	·11	·15	·16
Oil	78	1,185	1,181	·13	·80	·68
	61,633	148,218	174,613	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 1912, 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 Materials, Product of Pastoral Pursuits, &c.	4,046	1,202	904	..	61	2,923	910	787	..	48	39,712
Oils and Fats, Animal, Vegetable..	671	86	348	..	..	385	35	297	..	..	14,652
Processes in Stone, Clay, Glass, &c..	9,767	2,501	3,154	..	96	7,974	1,734	2,070	..	45	197,914
Working in Wood	14,513	1,279	4,526	40	96	11,467	1,056	3,576	28	65	19,161
Metal Works, Machinery, &c. ..	17,974	5,662	12,065	2	276	13,974	4,807	9,180	2	219	532,108
Connected with Food and Drink, &c.	22,407	3,032	3,942	8	286	15,432	2,272	3,178	8	215	163,483
Clothing and Textile Fabrics, and Materials	1,733	1,404	1,648	..	13	1,283	1,133	1,436	..	9	32,142
Books, Paper, Printing, and Engraving	774	1,430	2,923	5	235	617	1,004	2,469	2	169	28,332
Musical Instruments	110	112	91	..	..	110	112	86	..	..	376
Arms and Explosives	437	..	16	..	..	276	..	16	..	..	1,682
Vehicles and Fittings, Saddlery and Harness, &c.	369	430	466	..	181	245	282	373	..	131	11,843
Ship and Boat Building, &c. ..	3,618	49	3,143	..	3	2,334	41	632	..	2	10,269
Furniture, Bedding, and Upholstery	292	451	1,137	..	25	240	338	963	..	12	6,748
Drugs, Chemicals, and By-Products	558	336	862	1	8	403	210	691	1	6	16,445
Surgical and other Scientific Instruments	..	10	14	..	..	..	5	14	..	..	186
Jewellery, Timepieces, and Plated Ware	..	57	222	..	..	..	44	204	..	..	1,959
Heat, Light, and Power	111,870	2,243	478	290	263	72,179	1,824	395	230	260	277,541
Leatherware, N.E.I.	124	201	22	..	..	76	139	19	..	..	823
Minor Wares, N.E.I.	646	117	376	2	..	561	82	266	2	..	4,765
Total	189,909	20,602	36,331	348	1,518	130,479	16,028	26,652	273	1,181	1,360,141

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 1912 to £11,592,052; male workers received £10,283,733, or

£122 9s. 11d. per head; and females £1,308,319, or £48 7s. 9d. per head. A comparison of the total amount of salaries and wages paid during each year of the decennium, 1903–12, is shown below, also the average amount received and the average time worked per employee.

Year.	Salaries and Wages (excluding working proprietors).		Average time worked per Employee.
	Total.	Average per Employee.	
	£	£ s. d.	months.
1903	4,839,557	79 14 0	11·33
1904	5,012,758	79 17 0	11·36
1905	5,191,350	77 12 2	11·34
1906	5,591,883	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	87 5 5	11·46
1910	8,687,007	90 16 4	11·51
1911	10,047,662	96 7 1	11·55
1912	11,592,052	104 8 10	11·59

In 1903 the general average amounted to £79 14s. per worker; in 1905 and 1906 it was somewhat less but, during the last six years, it has increased steadily, and in 1912 was 35 per cent. higher than in 1906.

The largest amount of wages is paid in the class, metal works and machinery, —£3,302,604 out of a total of £11,592,052 in 1912; 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 1912, are shown below:—

Class of Industry.	Salaries and Wages (exclusive of drawings of Working Proprietors).					
	Total Amount.			Average amount per employee.		
	1906.	1911.	1912.	1906.	1911.	1912.
	£	£	£	£ s. d.	£ s. d.	£ s. d.
Treating Raw Material, &c.	194,407	326,218	313,753	67 11 0	90 3 10	87 7 11
Oils and Fats, &c.	42,366	67,228	74,352	68 8 10	78 7 1	86 3 1
Stone, Clay, Glass, &c.	300,212	601,906	695,304	84 15 2	110 16 7	122 7 10
Working in Wood	376,912	732,465	885,674	81 12 9	97 8 7	107 17 7
Metal Works, Machinery, &c.	1,502,331	2,728,286	3,302,604	102 10 6	121 15 4	131 16 7
Food and Drink, &c.	824,083	1,301,676	1,368,832	77 14 6	95 12 1	99 2 6
Clothing, Textile Fabrics, &c.	907,542	1,633,569	1,805,040	48 18 5	63 17 0	69 3 5
Books, Paper, Printing, &c.	557,245	868,868	993,444	87 18 2	100 4 1	110 10 1
Musical Instruments, &c.	30,584	43,755	49,432	92 13 7	115 9 0	121 15 1
Arms and Explosives	1,077	1,971	24,021	82 16 11	67 19 4	129 16 10
Vehicles, Saddlery, &c.	179,990	391,955	425,391	76 12 6	87 12 5	106 12 10
Ship-building, &c.	167,136	305,932	427,045	108 6 5	127 14 9	136 11 4
Furniture, Bedding, &c.	157,383	354,368	404,703	73 4 9	106 9 0	109 3 5
Drugs, Chemicals, &c.	62,893	124,844	140,122	67 15 5	87 15 11	93 8 4
Surgical Instruments	5,589	8,202	8,964	75 10 6	94 5 6	105 9 2
Jewellery, &c.	33,990	75,042	91,569	82 2 0	105 19 10	113 4 0
Heat, Light, and Power	200,922	370,547	449,254	115 12 1	133 17 4	134 1 4
Leatherware, N.E.I.	14,218	36,789	45,486	64 12 7	83 19 10	98 0 7
Minor Wares, N.E.I.	33,008	74,101	87,052	53 1 4	73 5 11	80 19 7
Total	5,591,888	10,047,662	11,592,052	77 9 6	96 7 1	104 8 10

The increase in the average amount paid per employee has been general throughout every class of industry. The high increase in the class arms and explosives, is the result of the establishment of the Commonwealth small arms factory, where highly skilled labour is engaged; but in other

classes, such as those connected with stone, clay, and glass, with clothing and textile fabrics, with vehicles and saddlery, and with leatherware, the increase since 1906 exceeds 40 per cent.

The average amount per employee is lowest in the class clothing and textiles, where women and juveniles are largely in excess of adult male employees, and in establishments treating raw pastoral products, where employment is intermittent.

Since 1909 particulars have been obtained of the amounts paid to males and females respectively, and the following comparison shows the average earning per employee of each sex in 1909 and in 1912. During the period the general average for male employees has increased by £18 10s. 8d., or 17·8 per cent., and for females by £10 9s. 8d., or 27·7 per cent.; but no allowance has been made for intermittent employment, skilled or unskilled labour, or other important factors affecting the comparison. Available information indicates that the mean average time worked in all industries was 11·46 months in 1909, as compared with 11·59 months in 1912; 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 2½ per cent. of males and 8 per cent. of females in 1912 :—

Class of Industry.	Average Annual Amount of Wages per Employee, excluding Working Proprietors.											
	Males.						Females.					
	1909.			1912.			1909.			1912.		
	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.
Treating Raw Materials, Product of Pastoral Pursuits, &c.	76	18	8	88	9	5	30	2	5	37	0	8
Oils and Fats, Animal, Vegetable	93	0	4	99	18	9	37	6	11	41	6	8
Processes in Stone, Clay, Glass, &c. ...	103	8	6	123	1	10	34	8	7	49	8	11
Working in Wood	90	18	10	108	5	2	49	16	1	59	10	4
Metal Works, Machinery, &c.	113	13	11	132	8	5	59	3	7	55	12	9
Connected with Food and Drink, &c. ...	100	16	11	116	18	0	37	4	1	45	17	11
Clothing and Textile Fabrics, and Materials	98	2	0	121	14	0	38	5	7	49	7	7
Books, Paper, Printing, and Engraving ...	116	3	6	134	5	11	34	10	10	44	11	0
Musical Instruments	112	16	6	129	5	3	32	16	6	51	1	6
Arms and Explosives	94	9	1	134	12	1	47	10	0	46	10	0
Vehicles and Fittings, Saddlery and Harness, &c.	86	17	7	107	15	11	41	17	6	59	7	7
Ship and Boat Building, &c.	125	17	10	136	11	8	.....			90	0	0
Furniture, Bedding, and Upholstery ..	98	13	6	115	18	1	41	0	4	51	15	0
Drugs, Chemicals, and By-Products ...	107	6	11	127	9	8	34	19	11	42	14	9
Surgical and other Scientific Instruments ...	107	13	10	113	11	2	55	9	6	73	1	2
Jewellery, Timepieces, and Plated Ware ...	100	7	7	121	3	1	42	19	8	56	16	0
Heat, Light, and Power	123	18	1	135	7	4	59	0	10	51	10	9
Leather, N.E.I....	77	17	9	108	3	2	36	19	7	51	10	10
Minor Wares, N.E.I.	81	8	3	93	2	0	37	13	10	42	3	11
Total	103	19	3	122	9	11	37	18	1	48	7	9

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 1912, excluding the production of factories dealing with milk products, amounted to £57,265,091. Of this amount, £34,701,153 represent the value of materials and fuel used, the value added by the processes of treatment including salaries and wages being £22,463,938.

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	3,655,897	33,466,544	37,122,441	60·7
Fuel	25,532	1,334,609	1,360,141	2·2
Salaries and wages...	125,443	11,466,609	11,592,052	19·0
Total	3,806,872	46,267,762	50,074,634	81·9
Goods manufactured or work done ...	3,898,237	57,265,091	61,163,328	.....
Balance	91,365	10,997,329	11,088,694	18·1

The difference between the cost of material, fuel, and wages, as shown, represents the values accruing to proprietors and manufacturers, from which are to be deducted cost of premises rented, depreciation, &c. Under the heading of fuel is included the cost of rented power, but waste product fed for fuel, as in sawmills, is for purposes of these tables regarded as valueless.

Thus out of every hundred pounds worth of goods produced in factories, materials and fuel used in the manufacture thereof cost £62 18s., while the workers received £19, and the proprietors £18 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 Materials, Pastoral Products	4,643,811	3,880,346	39,712	313,753	83·6	·8	6·8	10·0
Oils and Fats, &c.	1,099,693	783,901	14,652	74,352	71·3	1·3	6·8	20·6
Processes in Stone, Clay, Glass, &c.	1,807,287	340,556	197,914	695,304	18·8	11·0	38·5	31·7
Working in Wood	3,648,227	2,237,277	19,161	885,674	61·3	·5	24·3	13·9
Metal Works, Machinery, &c. ..	15,372,532	8,678,576	532,159	3,302,609	56·4	3·4	21·5	18·7
Connected with Food and Drink, &c.	18,787,001	14,599,131	163,483	1,368,832	77·7	·9	7·3	14·1
Clothing and Textile Fabrics, &c. ..	5,692,009	2,839,433	32,142	1,805,040	49·9	·6	31·7	17·8
Books, Paper, Printing, and Engraving	2,545,941	898,053	28,332	993,444	35·3	1·1	39·0	24·6
Musical Instruments, &c.	154,504	68,908	376	49,432	44·6	·2	32·0	23·2
Arms and Explosives..	17,085	13,192	1,682	24,021	†	†	†	†
Vehicles, Saddlery, and Harness, &c.	1,079,984	433,249	11,843	425,391	40·1	1·1	39·4	19·4
Ship and Boat Building, Repairing, &c.	700,023	189,018	10,269	427,045	27·0	1·4	60·8	10·8
Furniture, Bedding, Upholstery, &c.	1,171,320	567,159	6,748	404,703	48·4	·6	34·6	16·4
Drugs, Chemicals, and By-products	1,008,795	544,730	16,445	140,122	54·0	1·6	13·9	30·5
Surgical and other Scientific Instruments	25,424	7,296	186	8,964	28·7	·7	35·3	35·3
Timepieces, Jewellery, and Plated Ware	286,317	130,981	1,956	91,579	45·7	·7	32·0	21·6
Heat, Light, and Power	2,526,540	564,232	277,543	449,254	24·0	11·0	18·0	47·0
Leatherware, N.E.I.	225,893	140,601	823	45,486	62·2	·4	20·1	17·3
Minor Wares, N.E.I.	370,936	214,804	4,763	87,052	57·8	1·3	23·5	16·4
Total	61,163,328	37,122,441	1,360,141	11,592,052	60·7	2·2	19·0	18·1

* Exclusive of drawings of working proprietors. † The return received from the Small-Arms Factory is incomplete, as only the values of finished rifles are shown.

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 60·7 per cent. of the value of the output; there was, however, great diversity amongst the various classes, the proportion ranging from 19 per cent. in those industries engaged in processes in stone, clay, glass, &c., to 84 per cent. in those treating raw pastoral products. These variations can be understood easily when the wide difference between the operations of the industries is considered, and the value of the plant employed taken into account. The extensive use of machinery, however, is not always the chief factor controlling the value added to materials, and the industries dealing with food, &c., and those engaged in ship-building, &c., may be cited as examples. In the former class, materials represent 78 per cent. and wages only 7 per cent. of the total value, while in the latter class, the wages amount to more than twice the value of the materials used and represent 61 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.

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 year since 1903 :—

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.	£
1903	16,086,875	512,661	26,391,028	9,791,492	6 19 2	4,839,600
1904	16,492,242	533,304	27,159,230	10,133,684	7 1 10	5,012,800
1905	18,636,720	572,700	30,028,150	10,818,730	7 8 9	5,191,300
1906	22,102,685	609,998	34,796,169	12,083,486	8 2 3	5,591,900
1907	25,533,451	843,686	40,018,301	13,641,164	9 0 0	6,650,700
1908	25,507,414	876,565	40,163,826	13,779,847	8 18 4	7,218,600
1909	27,314,486	940,840	42,960,689	14,705,363	9 6 6	7,665,100
1910	31,379,604	1,184,282	49,615,643	17,051,757	10 11 1	8,691,007
1911	33,670,951	1,242,613	54,346,011	19,432,447	11 13 6	10,047,622
1912	37,122,441	1,360,141	61,163,328	22,680,746	13 0 11	11,592,052

The production per head of population has increased by £6 1s. 9d., or 87 per cent. since 1903.

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 Materials, 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 1912 for these groups are :—

Industries.	Establishments.		Average number of Employees, including working Proprietors.		Average time worked per Employee.	Power used.			Value of Machinery, Tools and Plant.
	Total.	Using Machinery	Males.	Females.		Steam.	Electricity	Other.	
					Months	H.-p.	H.-p	H.-p.	£
Boiling-down, Tallow Refining, &c....	33	30	444	11	11·58	600	89	60	55,741
Sausage-skin making	6	...	183	1	11·13	...	...	...	660
Tanning	77	74	975	8	11·98	626	26	407	83,179
Wool-scouring and Fellmongering..	59	58	1,508	64	9·85	1,301	578	425	180,224
Chaff-cutting, Corn-crushing, &c....	112	112	680	3	6·33	396	94	66	54,773
Total	287	274	3,785	87	10·02	2,923	787	958	374,577

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 coincidently 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	1908	420,630	117,610
1903	220,710	114,200	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	131,660
1907	490,430	115,770			

Exclusive of operations on stations and large farms, for which details are not available, the value of carcases, fat, refuse, bones, etc., treated during 1912 in boiling-down works, was £554,010, and 5,691 cwt. of raw tallow were used; the output included 364,987 cwt. of raw and refined tallow, valued at £544,884; 440,616 cwt. of manure, valued at £126,254; whilst the values of hides, skins, oils, bones, horns, glue-pieces, sinews, &c., amounted to £31,290.

Sausage-skin Making.

This industry was, until recently, classified with the miscellaneous industries, in which only one or two establishments are operative. Sausage-making is manifestly a hand industry, no machinery being installed in any of the establishments.

Tanning.

In tanneries, 478,791 hides and 1,629 cwt. of hide pieces produced 4,067,410 pelts, valued at £74,009, and 13,449,696 lb. of leather, worth £806,583. In addition, 4,308,651 pelts and 147,500 other skins were operated on; 10,492 tons of wattle bark were used in treating these materials; 498,780 pelts, valued at £11,959, were pickled; others were converted into 4,029,744 lb. of basils, valued at £148,174. Other skins after treatment were valued at £30,287.

Wool-scouring and Fellmongery.

In wool-scouring works and fellmongeries 32,379,719 lb. of greasy wool and 4,596,997 skins were treated, producing 14,438,070 lb. and 14,922,561 lb. respectively, of scoured wool, valued in the aggregate at £1,946,544.

Included with wool-scouring works are two wool-combing factories established at Botany, near Sydney. As previously stated, the amount of bounty paid on wool-tops exported in the year ended 30th June, 1913, was £13,061.

II.—Oils and Fats.

The industries in which oils and fats, animal and vegetable, are treated, are grouped under two heads, and particulars for each group for 1912 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.	Electricity.	Other.	
					Months	H.-p.	H.-p.	H.-p.	£
Oil and Grease	11	9	199	7	11·92	38	94	35	52,486
Soap and Candles ...	34	25	493	196	11·83	347	203	...	160,472
Total	45	34	692	203	11·85	385	297	35	212,958

Establishments dealing with mineral oils are included in the Class in connection with the development of heat, light, and power.

In the last ten years the establishments dealing with oil and grease have doubled, and the average number of workers has increased from 105 to 206.

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.
1903	47	520	199,807	3,231,842	744
1904	46	508	208,677	3,984,035	556
1905	40	574	212,658	4,226,082	520
1906	41	602	221,834	5,076,048	522
1907	34	547	234,022	5,656,354	489
1908	29	553	232,441	5,566,776	454
1909	26	571	229,846	6,922,488	427
1910	33	624	251,662	6,689,875	648
1911	37	658	277,449	5,388,848	872
1912	34	689	290,953	5,581,858	837

The candles manufactured in 1912 weighed 5,581,858 lb., valued at £117,485, while the soap manufactured included household, 245,917 cwt., valued at £354,658 ; toilet, 14,199 cwt., valued at £73,723 ; sand, 23,898 cwt., valued at £20,620; soft, 6,939 cwt, valued at £6,355, making the total value for all soap £455,356. And in addition 1,193,845 lb. of soap extract and powders valued at £10,907, and soda crystals valued at £18,109 were made. Tallow, 131,600 cwt.; alkali, 6,946,303 lb. ; and other materials such as copra oil, resin, and paraffin, valued at £201,295 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 1912 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	
					Months	H.-p.	H.-p.	H.-p.	£
Bricks and Tiles	202	73	3,101	27	11·26	3,853	503	1,397	533,287
Glass (including Bottles)	8	5	851	2	11·98	26	89	61	25,041
Glass (Ornamental)	18	10	275	5	11·80	10	121	...	10,482
Lime, Plaster, Cement, and Asphalt	35	17	941	4	11·71	3,914	1,066	205	280,413
Marble, Slate, &c.	14	13	246	...	12·00	15	197	71	15,620
Modelling	2	...	13	...	12·00	...	...	...	430
Pottery, Earthenware, &c. ...	18	14	448	19	11·86	156	94	45	38,086
Total	297	132	5,875	57	11·54	7,974	2,070	1,779	902,759

With the exception of 45 horse-power derived from oil-engines, and used in brick and tile works, all the "other power" used was derived from gas.

Brick-works.

Brickworks have been established in proximity to nearly every large town throughout the State.

In 1891 there were 2,018 persons employed, and the output of bricks was 184,682,000. Subsequently there was a decline in building operations, and the annual output fell below 100,000,000. In 1901 the output was 159,254,000 bricks from 182 works, employing 1,823 persons.

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.
1903	163	1,921	202,681,000	2,243
1904	165	1,893	154,480,000	2,701
1905	172	2,006	162,643,000	2,974
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

The output of brickworks for 1912 was valued at £804,214.

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.

To supply the requirements of railways and other public works the Government established State brickworks during 1911. A suitable area of clay land was selected at Homebush Bay, near Sydney. The first bricks were manufactured in November, 1911, but most of the output in the period of inauguration was used in constructing and amplifying the works of which the estimated capacity is 1,500,000 bricks per week. During the year ended 30th June, 1913, trade bricks manufactured numbered 14,676,279, the cost being £20,309, equivalent to £1 7s. 8d. per 1,000.

State Sand-lime Brickworks (Botany).

Sand-lime brickworks were established 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 produced to 30th June, 1913, being 417,253.

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.	Value of Cement Manufactured.	Lime Manufactured.	
		Quantity.	Value.
	£	tons.	£
1903	55,740	23,579	17,213
1904	54,750	22,173	13,250
1905	88,100	18,018	15,019
1906	128,487	21,126	15,573
1907	144,548	23,587	19,458
1908	184,4.0	24,922	21,610
1909	202,200	25,849	24,283
1910	251,110	30,113	30,189
1911	315,569	29,930	32,918
1912	368,280	35,657	44,478

State Lime-works (Taree).

To work extensive limestone deposits in the locality of Manning River, State lime-works were established during 1912 at Taree. The quantity of limestone produced was 14,804 tons, of which 1804 tons were despatched to Botany, and 13,000 tons were stacked at the quarry at 30th June, 1913.

State Lime-works (Botany)

Up to 30th June, 1913, limestone weighing 454 tons had been treated, producing 358 tons of lime. The stock on hand was 25 tons of lime and 1,350 tons of limestone.

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 1912 were:—Tiles, £37,229; pipes, £76,544; pottery, £51,009; terra-lignum blocks, £3,580; making a total value of £168,362.

IV.—Working in Wood.

Wood-working industries are connected generally with the preparation and supply of building materials, and, as in the class immediately preceding, afford a reliable index to the state of the building trade.

Industries.	Establishments.		Average Number of Employees, including Working Proprietors.		Average time worked per Employee.	Power used.			Value of Machinery, Tools, and Plant.
	Total.	Using Machinery.	Males.	Females.		Steam.	Electricity.	Other.	
					Months	H.-p.	H.-p.	H.-p.	£
Boxes and Cases ...	36	31	655	5	11·59	523	768	150	44,045
Cooperage	14	11	223	.....	12·00	101	41	55	27,268
Joinery	133	116	2,168	18	11·75	872	899	703	100,222
Saw-mills...	469	469	5,554	33	10·55	9,826	1,873	205	597,097
Wood-turning, &c. ..	32	32	215	6	11·59	145	82	36	14,268
Total	684	659	8,815	65	10·99	11,467	3,576	1,149	782,910

Of the 8,880 persons employed in these industries, 4,047 were engaged in the metropolitan district, and 4,833 in the country, the employment in the latter district being almost wholly in connection with saw-mills, which provided work for 4,294 persons.

Power classified as "other" includes 68 h.-p. derived from water or oil, used in saw-mills and joinery works.

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 660 in 1912, and the number of establishments increased from 14 to 36.

State Timber and Joinery Works, Rozelle.

These works, which were purchased from the Chief Commissioner for Railways, were taken over on 1st June, 1912, and have since been maintained as a trading business by the State. The works supply the public, as well as the State, with timber and joinery.

The value of the stock at the works on 30th June, 1913, was £56,083.

State Timber-yard, Uhr's Point.

The State timber-yard, where timber used in constructional work may be properly seasoned, is situated at Uhr's Point, on the Parramatta River, near Sydney.

Saw-mills.

Details concerning the saw-milling industry during the last ten years, in which period the number of workers increased by 42 per cent., were as follows:—

Year.	Saw-mills.	Average Number of Employees, (including Working Proprietors).	Plant and Machinery.		Year.	Saw-mills.	Average Number of Employees (including Working Proprietors).	Plant and Machinery.	
			Power (full capacity).	Value.				Power (full capacity).	Value.
			H.-p.	£				H.-p.	£
1903	333	3,936	6,857	289,258	1908	385	4,127	9,367	367,005
1904	324	3,655	6,379	285,935	1909	407	4,307	10,947	370,671
1905	339	3,886	6,903	286,011	1910	437	4,826	11,961	470,081
1906	338	3,642	6,936	260,810	1911	452	5,205	13,342	526,909
1907	377	3,983	8,969	332,239	1912	469	5,590	15,016	597,097

During 1912 the output of sawn timber from logs obtained from the forests of New South Wales amounted to 162,604,000 superficial feet, of which 117,812,000 superficial feet, or more than two thirds, were hardwoods. From imported logs 12,456,000 superficial feet of timber were sawn, of which 11,174,000 feet were softwoods. The value of the timber sawn from native logs was stated as £1,111,976 at the works, and the imported timber when sawn £147,708.

V.—Metal Works, Machinery, &c.

The industries included in this class are by far the most important to the industrial workers in the State, although the clothing trade employs a greater number of persons.

The following table shows the employment afforded, and other particulars, for each branch of the industry during 1912 :—

Industries.	Establishments.		Average Number of Employees, including Working Proprietors.		Average time worked per Employee.	Power used.			Value of Machinery, Tools, and Plant.
	Total.	Using Machinery.	Males.	Females.		Steam.	Electricity.	Other.	
					Months	H.-p.	H.-p.	H.-p.	£
Agricultural Implements	22	19	607	6	11·97	53	22	110	24,822
Art Metal Works	5	4	43	4	12·00	5	10	7	4,650
Brass and Copper	24	22	313	6	11·73	26	37	70	19,945
Cutlery	7	7	36	3	12·00	...	30	12	3,260
Engineering	194	188	6,429	43	11·72	1,728	1,704	832	540,057
Galvanized Iron	44	26	915	15	11·55	61	160	184	47,289
Ironworks and Foundries ...	71	63	2,490	10	11·29	2,361	822	287	251,914
Nails	2	2	67	...	12·00	...	27	140	11,937
Railway Carriages and Rolling Stock	4	4	1,317	6	12·00	437	...	10	65,323
Railway and Tramway Workshops	22	22	7,130	19	12·00	1,824	1,156	858	572,395
Smelting and Ore Dressing ...	35	34	3,702	6	11·63	7,126	4,699	2,257	1,401,428
Stoves and Ovens	12	10	442	4	12·00	...	65	112	23,230
Tinsmithing	63	25	774	47	11·97	79	26	64	33,055
Wireworking	18	15	675	13	12·00	30	363	24	64,919
Other Metal Works (including Lead Mills)	13	10	332	6	11·94	179	60	91	34,211
Total	536	454	25,357	193	11·79	13,974	9,180	5,028	3,098,426

In 1902 there were only 13,695 persons engaged in works of this class, so that there has been an increase of 11,855, or 87 per cent. since that year. The largest increases are in engineering works and works connected with the manufacture of agricultural implements, the manufacture and repair of railway engines, carriages, and rolling-stock. Engineering works show an increase of 2,624 employees since 1902, the increase during the last four years being due partly to the local manufacture of locomotives.

In connection with the figures in the above table it should be remembered that the work carried out at the railway and tramway workshops is of such a character that the particulars shown under this heading and for engineering should be considered in conjunction.

The building locally of vessels for the Australian Navy at the Fitzroy Dock, Sydney, will give considerable impetus to the iron trades. Steel rails for use in Australian rail and tramways are made at Lithgow. Extensive iron and steel works are under construction at Waratah, near Newcastle

Smelting and Ore Dressing.

In smelting works, including treatment plants in conjunction with mining plants, there are 1,150 more persons employed than there were in 1902. 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. Within recent years, zinc-extraction plants on an extensive scale have been established in the State, and at Broken Hill and elsewhere great attention is being directed to this matter. Further details in connection therewith are given in the chapter dealing with "Mining Industry," where are quoted also the quantities of iron and steel made locally.

Details of bounties provided by the Commonwealth Government in connection with metal manufactures have been shown on a previous page.

VI.—Food and Drink, and Narcotics.

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 1912 :—

Industries.	Establishments.		Average Number of Employees, including Working Proprietors.		Average time worked per Employee.	Power used.			Value of Machinery, Tools and Plant.
	Total.	Using Machinery.	Males.	Females.		Steam.	Electricity	Other.	
					Months.	H.-p.	H.-p	H.-p.	£
Bacon-curing	21	20	194	2	11·71	233	72	27	27,175
Butter Factories and Creameries ..	145	145	908	16	11·73	1,936	11	303	232,931
Butterine and Margarine	4	4	51	2	12·00	56	..	30	5,300
Cheese Factories	29	24	83	2	11·88	85	..	..	10,332
Condensed Milk	2	2	87	..	12·00	40	..	..	11,070
Meat and Fish Preserving	9	9	739	117	8·51	116	6	19	33,795
Biscuits	7	7	709	757	12·00	463	475	16	102,089
Confectionery	44	38	896	519	11·78	88	236	140	81,471
Cornflour, Oatmeal, &c.	12	12	284	235	11·71	358	252	103	80,521
Flour-mills	69	69	957	7	11·34	3,893	43	569	333.068
Jam and Fruit Canning	17	11	373	472	9·86	140	31	..	32,027
Pickles, Sauces, and Vinegar ..	20	12	167	192	11·28	45	21	10	12,239
Sugar Mills	3	3	409	..	5·00	2,425	..	..	466,699
Sugar Refinery	1	1	540	35	12·00	800	876	..	400,299
Aerated Waters, Cordials, &c. ..	231	211	1,413	151	11·91	310	217	258	172,803
Breweries	33	32	1,016	4	11·97	978	94	26	333,716
Condiments, Coffee, Spices, &c. ..	19	18	261	219	12·00	99	87	19	25,938
Distilleries	3	3	20	..	10·65	58	53	3	47,369
Ice and Refrigerating	81	79	923	4	10·90	2,910	379	940	429,956
Malting	4	4	50	..	9·22	88	40	32	23,062
Tobacco, Cigars, &c.	11	7	683	742	11·92	311	285	..	100,101
Total	765	711	10,773	3,476	11·21	15,432	3,178	2,495	2,962,061

In the preparation of food and drink, mechanical power is used considerably, as will be seen from the figures given above.

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 (661 males and 22 females in 1912) 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.		Butter Workers.	Churns.	Cream Separators.	Cheese Presses.	Males.	Females.
										Number.	Horse-power.						
									£		H.-p.	No.	No.	No.	No.		
1903	153	284	31	16	4	3	3	494	246,350	552	3,094	163	262	486	146	1,373	33
1904	145	271	28	14	4	2	1	465	251,322	525	3,066	178	257	431	96	1,364	26
1905	153	255	36	16	3	..	..	463	277,908	546	3,179	195	289	425	104	1,342	9
1906	170	193	57	20	4	..	1	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	218	321	274	113	1,309	30
1908	160	172	42	17	3	3	..	397	287,771	466	3,526	197	283	270	123	1,301	24
1909	168	222	43	17	4	1	..	455	286,517	524	3,109	201	291	310	131	1,398	25
1910	157	346	46	19	5	..	..	573	319,111	680	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	..	..	843	409,909	959	6,250	165	259*	681	152	1,883	42

* Includes combined churns and butter-makers—5 in 1911, and 11 in 1912.

During 1912 the bacon factories, apart from farms, cured 13,766,482 lb. of bacon and ham, valued at £401,736, and produced lard weighing 598,753 lb., valued at £15,889 ; also small goods to the value of £18,741. The butter factories showed during 1912 an output of 72,421,770 lb., valued at £3,694,781. Cheese factories produced 3,463,036 lb., valued at £110,043, and at condensed and concentrated milk factories 3,636,519 lb. of condensed and concentrated milk were made, the value being stated as £49,408.

As bacon, ham, butter and cheese are made also on farms, apart from factories, the special chapter in this Year Book dealing with the Dairy Industry should be consulted for complete information regarding these industries.

Butterine and Margarine Factories.

There were in 1912 four factories for the making of butterine and margarine at which 53 persons were continuously employed. The value of machinery, tools, and plant was stated as £5,300. The output for the year was 2,930,589 lb., valued as £75,294.

Meat and Fish Preserving and Refrigerating.

There were 9 establishments and 856 persons employed in connection with meat and fish preserving during 1912. Following are the records of carcases treated during the last ten years in establishments dealing with meat by preserving or chilling :—

Year.	Meat Preserving Works.		Refrigerating Works.	
	Cattle.	Sheep.	Cattle.	Sheep.
1903	7,794	188,248	3,666	299,131
1904	10,696	58,902	4,133	570,934
1905	10,931	356,894	3,435	1,306,160
1906	9,955	274,950	5,352	1,283,862
1907	5,197	554,072	2,248	1,366,543
1908	4,078	620,013	1,719	1,196,996
1909	18,468	1,061,276	2,482	1,599,663
1910	36,145	1,093,577	10,357	2,226,750
1911	61,596	925,475	10,188	1,469,923
1912	50,941	616,455	11,552	1,191,711

The output of tinned meat in 1912 was 19,373,881 lb., valued at £387,504, and other products valued at £41,772. By-products were valued at £232,627. 47,149 tons of ice, valued at £74,449, were made at the ice-works.

Fish Canning.

Fish canning has not risen to the rank of a definite industry in Australia, and although the waters along the coasts are teeming with edible fishes, local markets are supplied chiefly with imported canned goods. To encourage the industry the Commonwealth Government has provided a bounty of ½d. per lb., up to a maximum of £10,000 per annum, payable for ten years from 1st July, 1907, for fish canned in Australia, but none of this bounty has been claimed on account of products of New South Wales.

During 1912 the Royal Commission of inquiry as to food supplies and prices issued a progress report as to the supply and distribution of fish, and in regard to the lack of local industry the report states that canneries have been started in New South Wales, but they have not proved successful, owing partly to the fact that the people engaged in them were without the necessary experience, and partly to the absence of regular supplies of fish, as the cannery owners made no attempt to engage a special staff of fishermen, and consequently had to compete in the market for fresh fish.

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 1902 and in 1903 on account of a restricted wheat crop. In 1908 also the output was below normal, 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.	£
1903	79	751	6,030,409	121,074	4,947	262,297
1904	81	875	10,418,979	210,137	4,851	293,328
1905	78	875	10,117,793	205,805	5,158	294,760
1906	78	873	11,151,126	225,995	5,532	297,859
1907	74	858	11,617,905	237,614	4,342	273,459
1908	68	792	8,737,228	180,843	5,609	284,954
1909	71	860	10,466,329	214,426	6,126	307,321
1910	72	945	12,045,148	242,813	6,083	326,502
1911	73	967	12,616,111	253,556	6,302	340,316
1912	69	964	12,065,733	255,359	6,268	333,068

During 1912 the value, at the mills, of flour made in 1912 was £2,190,438, the output of bran was 62,855 tons, valued at £343,441, and pollard 45,152 tons, valued at £259,987. The value of other products amounted to £29,213. They included 2,214 tons of sharps and screenings, and 1,460 tons of wheatmeal, etc. Considerable quantities of oatmeal, maizena, etc., are manufactured locally.

In biscuit factories 10,420 tons of flour were used during 1912, and 22,891,000 lb. of biscuits, valued at £536,155 were made.

Jam, Pickle, and Sauce Factories.

The principal articles produced in jam and pickle factories during 1912 were 28,421,834 lb. of jams and preserves, valued at £383,125; 539,380 lb. of candied peel, valued at £12,870; 22,270 lb. of dried and evaporated fruit and pulp, valued at £342; 2,581,314 pints of pickles, valued at £50,421; 2,492,727 pints of sauces, valued at £50,233; and 593,535 gallons of vinegar, valued at £26,843.

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 1912 the following articles were produced:—1,117,824 syphons and 6,077,458 dozen bottles of aerated waters, 194,012 dozen of cordials and syrups, 476,708 dozen of hop beer, 1,485,616 dozen of ginger beer, and 26,194 dozen of other cordials, the total value at the factories being £658,528. The number of persons employed varies with the season of the year, the greatest number at work in 1912 being 1,886.

Breweries.

The number of breweries is decreasing, but the output shows an increase, especially during the last four years. The materials used in breweries for manufacturing purposes and the actual output during the last ten years were as follows:—

Year.	Malt.	Hops.	Sugar.	Other Materials.	Beer and Stout manufactured.
	Bushels.	lb.	Tons.	Centals.	Gallons.
1903	466,673	601,339	3,495	10,081	14,211,888
1904	441,844	557,400	3,252	10,133	13,651,208
1905	458,371	558,661	3,370	6,209	13,873,259
1906	488,982	586,438	3,405	5,530	14,032,390
1907	533,825	636,650	3,651	4,996	15,361,227
1908	559,950	677,884	3,842	4,291	16,202,242
1909	571,526	681,614	3,871	6,440	16,754,728
1910	604,366	718,994	4,119	8,392	17,885,373
1911	667,457	790,866	4,421	7,705	19,804,540
1912	773,194	891,535	5,048	8,286	22,741,332

In the following table is given the quantity on which excise was paid:—

Year.	Breweries.	Average Number of Employees including working proprietors	Beer and Stout on which Excise was paid.	Horse-power of Plant (full capacity).	Year.	Breweries.	Average Number of Employees including working proprietors	Beer and Stout on which Excise was paid.	Horse-power of Plant (full capacity).
			Gallons.	H.-p.				Gallons.	H.-p.
1903	45	969	13,201,098	982	1908	37	885	15,791,878	1,426
1904	42	968	12,877,757	961	1909	37	831	16,154,906	1,416
1905	42	1,028	13,248,336	1,089	1910	38	825	17,411,827	1,466
1906	39	881	13,587,336	1,087	1911	37	912	19,352,995	1,192
1907	38	854	14,994,537	1,253	1912	33	1,020	22,126,426	1,926

The total value at the breweries of the 22,126,426 gallons of beer and stout made during 1912, and on which excise was paid, amounted to £1,032,845.

The local malt works treated 284,493 bushels of barley during 1912, and produced 270,179 bushels of malt, valued at £100,720.

Distilleries.

There are three distilleries in the State, two of which are wine distilleries. The output of the latter was 6,534 proof gallons of brandy, valued at £2,559, from 42,355 gallons of wine ; the other establishment is worked in connection with sugar-refining, and used 252,182 cwt. of molasses in 1912 to produce 1,156,550 proof gallons of white spirit, valued at £43,458. The following is a statement of distilleries since the year 1903 :—

Year.	Distilleries.	Average Number of Employees.	Molasses used.	Spirit distilled therefrom.
			cwt.	proof gallons.
1903	2*	18	128,635	593,131
1904	2*	16	140,973	662,141
1905	2*	18	125,530	620,887
1906	2*	17	133,409	634,240
1907	2*	17	168,100	863,131
1908	2*	24	163,270	844,416
1909	3†	29	222,554	1,132,917
1910	3†	21	260,241	1,191,371
1911	3†	19	251,384	1,157,148
1912	3†	20	252,182	1,156,550

* Includes one wine distillery. † Includes two wine distilleries.

A number of vignerons are licensed by the Customs Department to distill spirit for fortifying purposes ; during 1912 111,205 gallons of wine distilled produced 19,061 proof gallons of brandy.

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 ; the tendency to concentration of manufacturing processes in large central establishments is obvious. 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 sugar manufactured in 1912 was valued at £214,422, and molasses at £6,671, the quantity of cane crushed was 141,274 tons :—

Year.	Sugar Mills.	Average Number of Employees.	Quantity manufactured.		Horse-power of Plant (full capacity).
			Sugar.	Molasses.	Steam.
			cwt.	Gallons.	H.-p.
1903	6	586	435,718	1,367,020	3,146
1904	6	643	400,150	1,296,590	3,146
1905	5	652	402,040	1,263,100	3,140
1906	5	622	479,993	1,305,466	3,485
1907	5	610	583,446	1,211,000	3,491
1908	4	543	239,920	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

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. In the last ten years there has been little alteration in the number of persons employed, but owing to greater power and improvements in plant, the quantity of sugar treated has increased. The following table shows particulars of the industry. The raw sugar used in 1912 amounted to 1,798,460 cwt., and produced 1,770,660 cwt. of refined sugar, valued at £1,373,458 :—

Year.	Persons Employed.	Cane Sugar Melted.	Refined Sugar.	Horse-power of Plant (full capacity).	Year.	Persons Employed.	Cane Sugar Melted.	Refined Sugar.	Horse-power of Plant (full capacity).
		cwt.	cwt.	H.-p.			cwt.	cwt.	H.-p.
1903	415	1,284,380	1,250,560	973	1908	487	1,732,000	1,695,080	982
1904	390	1,313,800	1,276,820	974	1909	555	1,896,500	1,848,180	1,024
1905	410	1,368,000	1,317,500	948	1910	521	1,779,740	1,678,960	1,307
1906	454	1,459,400	1,406,000	932	1911	581	1,869,200	1,828,900	1,490
1907	431	1,554,200	1,514,840	1,031	1912	575	1,798,460	1,770,660	1,676

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.

A large amount of imported leaf is used in the manufacture of tobacco, the proportion of Australian-grown leaf being about one-eighth of the total.

The following table shows details of the operations of tobacco factories for the last ten years. The large increase in the number of females employed is due principally to the extension of cigarette making :—

Year.	Establishments.		Average Number of Employees.*		Tobacco Leaf used, exclusive of waste.		Tobacco, Cigars, and Cigarettes manufactured.			Plant and Machinery.	
	Tobacco.	Cigars and Cigarettes.	Males.	Females	Australian grown Leaf.	Imported Leaf.	Tobacco.	Cigarettes.	Cigars.	Power (full capacity).	Value.
					lb.	lb.	lb.	lb.	lb.	H.-p.	£
1903	5	18	669	426	1,009,745	2,714,578	3,329,938	790,697	45,297	462	92,355
1904	4	17	648	376	1,256,339	2,709,569	3,404,201	829,851	47,756	464	106,793
1905	4	16	573	391	1,145,923	2,606,702	3,318,719	818,400	48,850	425	104,766
1906	5	20	649	397	1,178,183	3,056,906	4,057,965	837,835	50,326	431	104,226
1907	5	23	622	497	1,050,107	3,254,656	3,899,196	972,875	54,048	435	111,346
1908	3	25	665	674	1,039,909	3,549,966	3,916,388	1,119,269	57,716	567	119,723
1909	2	23	629	631	847,030	3,570,143	3,694,918	1,300,045	57,148	571	120,216
1910	3	22	669	763	815,809	4,130,059	3,850,154	1,548,872	73,194	589	125,703
1911	3	23	697	765	745,405	4,617,756	3,996,471	1,899,462	87,818	837	92,138
1912	4	18	694	748	760,543	5,305,654	4,170,853	2,377,554	80,537	935	100,101

* Includes working proprietors.

NOTE.—The reduced value in 1911 of machinery has been caused by writing off obsolete machinery at some of the principal factories.

In addition to the factories enumerated in a previous table, several establishments licensed by the Customs Department are included above.

The value at the factories of the tobacco was £747,278; cigars, £51,678; and cigarettes, £594,389; the total manufactured in 1912 being valued at £1,393,345.

VII.—CLOTHING AND TEXTILES.

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 1912 is shown in the following table :—

Industries.	Establishments.		Average Number of Employees, including working Proprietors.		Average time worked per employee.	Power Used.			Value Machinery, Tools and Plant.
	Total.	Using Machinery.	Males.	Females		Steam	Electricity.	Other.	
					Months.	H.-p.	H.-p.	H.-p.	£
Woollen and Tweed Mills	5	5	351	413	12·00	669	80	106	121,400
Hosiery and Knitting Factories	9	7	65	308	11·62	5	55	22	15,630
Boots and Shoes	103	78	2,779	1,612	11·98	126	211	647	149,233
Slop Clothing	101	90	958	5,073	11·68	..	338	36	41,198
Clothing (Tailoring)	343	37	2,299	3,436	11·66	..	59	..	19,145
Clothing (Waterproof and Oilskin)	4	4	32	88	12·00	10	9	..	2,685
Dressmaking and Millinery (makers' material)	195	38	91	4,071	11·75	..	64	3	12,206
Dressmaking and Millinery (customers' material)	114	13	7	881	11·42	..	15	..	3,479
Dyeworks and Cleaning	9	5	40	31	12·00	11	13	8	3,128
Furriers	4	3	34	36	12·00	..	7	1	425
Hats and Caps	35	31	546	1,051	11·88	280	302	44	61,873
Shirts, Ties, and Scarfs	47	39	159	1,978	11·87	..	202	54	23,262
Rope and Cordage	6	5	263	8	11·96	182	2	209	33,994
Sailmaking	6	3	28	4	12·00	..	4	2	630
Tents and Tarpaulins	13	12	156	261	12·00	..	75	10	11,557
Total	994	370	7,808	19,251	11·77	1,283	1,436	1,142	499,845

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 1912 the number was 2,137.

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 417, of whom the majority are machinists.

Woollen and Tweed Mills.

Although one of the greatest wool-producing countries in the world, only 764 persons find employment in the manufacture of woollen materials. Woollen-mills were amongst the earliest works established in the State, but the industry has progressed little, the number of persons employed, until the last five years, when a decided increase took place, had practically remained stationary for forty years. Details of the persons employed, and the output for the last ten years, are given below :—

Year.	Woollen and Tweed Mills.	Average Number of Employees (includes working proprietors).			Woollen Cloth and Tweed manufactured.	Horse-power of Plant (full capacity).
		Males.	Females.	Total.		
					yds.	h.-p.
1903	4	170	110	280	458,302	330
1904	3	148	97	245	481,289	305
1905	3	151	111	262	459,590	329
1906	5	160	178	338	498,164	327
1907	5	179	216	395	512,640	397
1908	5	210	245	455	524,885	476
1909	5	277	293	570	594,512	901
1910	5	307	353	660	804,146	1,155
1911	5	349	389	738	1,054,845	1,024
1912	5	351	413	764	1,143,046	1,029

During 1912, 1,211,058 lbs. of scoured wool were used in the mills, and, in addition to the tweed and cloth shown above, valued at £192,234, there were manufactured flannel, blankets, rugs, and shawls to the value of £69,284. 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 three 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.		
					£	h.p.
1910	2	6	26	32	5,300	8
1911	8	33	180	213	41,008	51
1912	9	65	308	373	71,692	88

Knitted goods are made from imported yarns; the output, 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 1912 the boots and shoes made were valued at £1,198,091; slippers, &c., at £33,934; and uppers at £14,878. In the manufacture of boots, &c., in 1912 there were approximately 5,093,000 lbs. of sole leather used, and 8,243,000 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 made.	Slippers, Infants shoes, Canvas & Cloth shoes made	Uppers.
					Pairs.	Pairs.	Pairs.
1903	93	2,938	1,350	4,288	3,166,475	397,531	.....
1904	92	2,858	1,459	4,317	3,291,087	477,302	.....
1905	98	3,021	1,444	4,465	3,250,243	435,912	.....
1906	102	3,178	1,589	4,767	3,567,555	378,599	.....
1907	102	3,163	1,623	4,786	3,687,868	460,132	69,068
1908	105	3,048	1,602	4,650	3,672,244	440,571	78,574
1909	102	2,854	1,606	4,460	3,597,359	408,527	103,762
1910	106	2,866	1,609	4,475	3,820,633	502,731	125,142
1911	106	2,818	1,593	4,411	3,730,760	439,425	71,138
1912	103	2,779	1,612	4,391	3,885,267	399,874	61,647

A striking feature of the above table is the large increase in the employment of females. Since 1903 the number of males decreased, while the females increased by 262 and now represent more than one-third of the total number of employees.

Hat and Cap Factories.

There has been a great expansion in the establishments connected with the manufacture of hats and caps. Until 1898 less than 100 persons were employed, but each year subsequently has seen an increase, and between 1903 and 1912 the number of employees increased from 543 to 1597, and in the latter year there were nearly twice as many females as males :—

Year.	Hat and Cap Factories.	Average Number of Employees (includes working proprietors).			Power of Machinery (full capacity).	Value of Machinery, Tools, and Plant.
		Males.	Females.	Total.		
					H.-p.	£
1903	15	225	318	543	142	22,152
1904	18	269	460	729	139	26,117
1905	21	318	586	904	120	29,650
1906	23	342	694	1,036	144	32,570
1907	22	335	759	1,094	175	35,653
1908	26	361	860	1,221	216	34,315
1909	30	398	951	1,349	247	39,966
1910	29	454	944	1,398	382	52,057
1911	32	537	1,029	1,566	625	60,807
1912	35	546	1,051	1,597	863	61,873

The hats and caps manufactured during 1912 numbered 2,839,260, valued at £351,925.

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 under Act 22 of 1912. The trading account at 30th June, 1913, showed stock on hand to the value of £13,202. The value of the manufactured clothing was £15,259, which clothing has been supplied to the Public Service only.

VIII.—Books, Paper, Printing, &c.

These industries give employment to 9,441 persons, who are mostly engaged in printing or bookbinding. In the process of bookbinding and in the manufacture of paper boxes and bags, women are employed largely and on an increasing scale; in 1900, females represented 14 per cent. of the total employees, as against 25 per cent. in 1912. The details of each industry for the latter year 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.	
					Months	H.-p.	H.-p.	H.-p.	£
Electrotyping and Stereotyping ...	4	4	53	...	12·00	...	28	...	10,716
Paper-making, Paper-boxes, Bags, &c.	30	27	485	738	11·75	387	159	89	109,908
Photo-engraving	17	16	184	12	12·00	...	73	3	17,309
Printing and Binding	375	334	6,329	1,640	11·84	30	2,209	1,084	967,075
Total	426	381	7,051	2,390	11·83	617	2,469	1,175	1,095,268

IX.—Musical Instruments.

Fourteen establishments are engaged in the manufacture and repairing of musical instruments and sewing machines, and they employed 376 males and 40 females. The machinery in use was 308 horse-power, of which the greater part was derived from gas; the value of the machinery and plant was £13,779. The most important of the industries is piano-making, and instruments of a high class are produced.

X.—Arms and Explosives.

The manufacture of small arms and ammunition is a matter of national importance, which has occupied the attention of the Commonwealth Government. A small-arms factory at Lithgow, New South Wales, was formally opened on 8th June, 1912. In this State there are now six establishments for the manufacture of explosives; these employed 178 males and 10 females during 1912. The machinery in use was 292 horse-power, and the value of machinery and plant £90,717.

XI.—Vehicles, Saddlery, Harness, &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 1912 :—

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.	
					Months	H.-p.	H.-p.	H.-p.	£
Coach and Waggon Building ...	242	88	2,534	12	11·66	77	180	121	57,467
Cycles	69	63	821	22	11·74	...	142	76	28,505
Perambulators	4	4	81	8	12·00	...	9	4	650
Saddlery and Harness	67	12	731	54	11·95	...	20	12	12,528
Whips	3	...	18	...	12·00	...	...	...	205
Spokes, &c.	8	8	134	...	11·96	168	22	,,	12,265
Total	393	175	4,319	96	11·86	245	373	413	111,620

XII.—Ship and Boat Building and Repairing, &c.

Nearly all the ships built in the State are small wooden vessels for the river and Island trades, or for passenger traffic on Sydney harbour. The ferry steamers which are built in the private docks of Sydney are among the finest in the world. In regard to boat-building, there is always considerable employment afforded in the Metropolitan district by the constant demand for yachts, motor-launches, and other pleasure craft. In the docking of ships, considerably less number of persons are employed than formerly, although

additional accommodation has been provided, and there are now four large graving docks at Sydney. Employment in this connection, however, is subject to great fluctuation, and at one period of the year there were 1,548 persons employed in dockyards and 2,572 in ship and boat building, &c. A description of the docks is given in the chapter "Shipping." The following table shows the details of each industry for 1912 :—

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.	
					Months	H.-p.	H.-p.	H.-p.	£
Docks and Slips	6	6	1,185	...	12·00	2,035	...	...	320,343
Ship and Boat Building and Repairing...	41	25	1,983	1	11·96	299	632	43	175,788
Total	47	31	3,168	1	11·97	2,334	632	43	496,131

An increase of employment in the ship-building trade has resulted by reason of the construction of war vessels for the Australian Navy, at the Fitzroy Dock, Sydney.

State Dockyard and Workshops, Newcastle.

A Government Dockyard and workshops are in course of construction at Newcastle.

XIII.—Furniture, Bedding, &c.

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 1912 are shown in the following table :—

Industries.	Establishments.		Average Number of Employees (includes working proprietors).		Average time worked per Employee.	Power used.			Value of Machinery, Tools, and Plant.
	Total.	Using Machinery.	Males.	Females.		Steam.	Electricity.	Other.	
					Months.	H.-p.	H.-p.	H.-p.	£
Bedding, Flock, and Upholstery	30	18	435	117	11·82	40	229	60	8,861
Billiard Tables...	3	2	63	1	12·00	..	11	19	1,834
Chair-making	17	16	228	15	11·85	..	81	47	4,851
Furnishing Drapery, &c.	8	5	85	185	12·00	...	11	...	1,402
Furniture and Cabinet-making ...	136	102	2,568	23	11·51	200	591	212	41,347
Picture Frames	18	16	137	48	11·82	...	33	2	2,591
Window Blinds	8	3	67	2	12·00	...	2	10	863
Total	220	162	3,583	391	11·64	240	963	350	61,749

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 and Chemicals and By-Products.

There are several large establishments for the manufacture of drugs and chemicals, and nearly three-quarters 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 1912 :—

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.	
					Months	H.-p.	H.-p.	H.-p.	£
Baking Powder and Self-raising Flour...	18	16	87	104	11·58	18	108	16	9,260
Chemicals, Drugs, and Medicines.	38	26	522	347	11·92	180	257	11	161,595
Paints and Varnishes, &c.... ...	31	24	334	153	11·89	205	326	189	47,343
Total	87	66	943	604	11·84	403	691	216	218,198

Essential Oils.

A large proportion of the Australian vegetation yields essential oils, but the industry of oil extraction is as yet undeveloped. From information supplied by the Curator of the Sydney Technological Museum it has been ascertained that the following products can be obtained in large quantities :—Aromatic alcohol geraniol, a constituent used in the manufacture of synthetic rose oils; oil of a eucalyptus species which might be produced at a very cheap rate as a substitute for lemon oil, which it strongly resembles, though containing twice as much citral; citral used for flavouring purposes and perfumes; citronellal, the chief constituent of citronella oil which is used extensively for perfuming soap and for similar purposes; eucalyptus oils which are used for pharmaceutical purposes and in metallurgy as a means of separating metallic sulphides from the gangue by a flotation process.

XV.—Surgical and other Scientific Instruments.

Most of these establishments, which number 13, are engaged in the manufacture of optical instruments, such as spectacles, &c.; 79 males and 18 females were employed. The total average power of machinery in use was 19 horse-power, and the value of machinery and plant £4,522.

XVI.—Timepieces, Jewellery, 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.		Steam.	Electricity.	Other.	
					Months	H.-p.	H.-p.	H.-p.	£
Electro-plating	12	12	163	15	11·96	...	73	44	9,227
Manufacturing Jewellery... ...	41	33	600	85	11·96	...	131	...	16,510
Total...	53	45	763	100	11·96	...	204	44	25,737

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 1912 being 41 establishments with 685 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, and the number of persons employed has been doubled within the last ten years :—

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.	
					Months	H.-p.	H.-p.	H.-p.	£
Coke-works	13	13	449	...	11·16	917	205	...	163,228
Electric Apparatus	25	23	456	5	10·71	...	119	29	21,362
Electric Light and Power ...	113	113	1,071	2	11·84	69,252	...	1,889	1,350,498
Gas-works and Kerosene	47	42	1,296	2	12·00	1,510	55	163	1,236,541
Lamps and Fittings, &c.	4	4	45	44	12·00	...	16	3	2,325
Hydraulic Power	1	1	17	...	12·00	500	...	...	28,249
Total...	203	196	3,334	53	11·67	72,179	395	2,084	2,802,203

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 £1,350,488, exceeding the plant and machinery in gas-works by £113,947, and the engines have a capacity of 110,511 horse-power. In 1912 the electric light produced was 23,736,000 kilowatt hours, valued at £297,219, and the power, 142,966 kilowatt hours, valued at £779,620; coal weighing 286,013 tons was used in 1912 for the generation of electric light and power. The rapid progress of these establishments is shown by the following table:—

Year.	Electric Supply Works.	Average Number of Employees (includes working proprietors).	Machinery, Tools, and Plant.	
			Power (full capacity).	Value.
			H.-p.	£
1903	73	434	21,994	528,587
1904	65	464	24,492	624,686
1905	67	521	31,862	778,313
1906	66	565	38,327	975,723
1907	91	634	43,215	1,109,535
1908	97	748	46,200	1,012,231
1909	103	769	66,428	1,047,689
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

In the metropolitan area there are numerous small establishments; outside that area, in which the tramway and the City Council's systems are the most extensive, the largest establishments are connected with mines, as at Broken Hill and Cobar, or are controlled by municipal councils. Practically all the power is generated from coal.

The electric power for the Sydney tramways is obtained from a principal power-house at Ultimo and several auxiliary stations; a large power plant is in course of construction at White Bay, Balmain.

State Power Supply.

During 1911–12 investigations were carried out, under the direction of the Department of Public Works, for the utilisation of the water and coal resources of the State, in a general scheme for the development and distribution of electric light and power over the more populated parts.

A report of the Chief Electrical Engineer advocates as a first instalment of the complete system, the establishment of a Power Station at one of the South Coast mines with transmission mains covering the coastal area between Sydney and Kiama, enabling the Government to supply power to all Government works and institutions, and to municipalities, mines, &c.

State Water-Power Schemes.

A proposal to develop power on a large scale from the Shoalhaven River is being considered, as also the matter of an electric railway to Batlow, and possibly to Tumbarumba, with power derivable from Gilmore Creek.

Gasworks, &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.

The rate charged to consumers of gas varies in different country localities between 3s. per 1,000 feet in Bathurst and 15s. in Deniliquin. The price charged by the principal company in Sydney to private consumers during 1912 was 3s. 9d. per 1,000 feet.

Year.	Gas-works.	Average Number of Employees.	Gas made.	Machinery, Tools, and Plant.	
				Power (full capacity).	Value.
			1,000 cubic feet.	H.-p.	£
1903	39	716	2,487,807	1,001	542,775
1904	40	692	2,598,650	1,091	601,976
1905	43	663	2,683,396	1,057	598,047
1906	44	654	2,790,494	1,221	628,339
1907	40	679	3,044,756	1,273	607,856
1908	39	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

During 1912 the quantity of coal used for gas was 340,463 tons, which, with 84,194 tons of shale, produced, in addition to the gas (valued at £759,900), 191,420 tons of coke (valued at £101,853), 4,116,935 gallons of tar (valued at £55,479), and 2,513,062 gallons of ammoniacal liquor (valued at £8,747).

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, 369,123 tons of coal were used in 1912 to produce 241,159 tons of coke, valued at £162,454. Further information regarding coke is contained in the chapter "Mining Industry."

XVIII.—Leatherware.

There are 24 establishments with 408 males and 87 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 11·87 months per person. The power of the machinery in average use was 234 horse-power, and the value of the machinery and plant was £11,440.

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 1912 there were 100 males and 1 female 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 1912 were as follows :—

Industries.	Establishments.		Average number of Employees (includes Working Proprietors).		Average time worked per Employee.	Power used.			Value of Machinery, Tools, and Plant.
	Total.	Using Machinery.	Males.	Females.		Steam.	Electricity.	Other.	
					Months	H.-p.	H.-p.	H.-p.	£
Baskets and Wicker-ware, Matting, &c.	8	1	111	4	12·00	...	2	...	210
Brooms and Brushware	25	17	245	18	11·40	...	18	50	5,095
Rubber Goods	5	5	260	47	12·00	396	112	12	49,300
Toys	3	3	17	...	12·00	...	...	16	500
Umbrellas	6	5	54	93	11·29	...	11	...	1,854
Other Industries	21	13	184	99	11·72	165	125	6	22,496
Total	68	44	871	261	11·70	561	266	84	80,355

National Pass, Wentworth Falls, Blue Mountains, N.S.W.

EDUCATION.

The State System of Education.

On the foundation of New South Wales as a British Colony, authority was given to the Governor to reserve 200 acres of land in the vicinity of each township to provide for the maintenance of a teacher. This plan was not followed, however, and for the first sixty years, from 1788 to 1848, education remained the province of private initiative. The first four teachers accredited in New South Wales were provided through the instrumentality of the Society for Promotion of the Gospel in Foreign Parts, the Society granting, at the urgent request of the Rev. R. Johnson, a sum of £40 per annum towards their salaries. The first school was opened at Parramatta in 1796, and most of the schools established subsequently were conducted under the auspices of religious bodies, the cost of their maintenance being met by voluntary subscriptions. From 1810, these subscriptions were supplemented by subsidy from the Government out of Customs Duties, and in 1834, one year after the Imperial Parliament made its first appropriation for elementary schools, the Government of New South Wales made a grant for the same purpose, and the money was distributed to the controlling religious bodies in proportion to the amount expended by them for educational purposes.

In 1839 a grant was authorised from the public funds of New South Wales to provide undenominational schools where required, but little activity was evinced in this connection till 1848 ; when, following a recommendation made in 1844 by a Select Committee of the Legislative Council, an Act was passed authorising the incorporation of a Board of National Education to administer the appropriation for State undenominational education. At the same time a Denominational School Board was created, with one representative each from the Church of England, the Roman Catholic, Presbyterian, and Wesleyan Churches, to distribute to the respective denominations the moneys allotted from the Treasury in support of their educational work.

The period characterised by this dual administrative control of moneys supplied from the Treasury of the State lasted from 1848 to 1866, and was naturally distinguished by a spirit of rivalry. The extension of National Schools was hampered by a regulation that one third of the cost of building and equipment should be contributed by the applicants for such schools. In 1857, arrangements were made for the establishment and maintenance of non-vested schools, property in which was not vested in the Board of National Education. These schools won a degree of public approval, and prepared popular sentiment for a more truly national administration.

The Public Schools Act, 1866, which was operative from January, 1867, to 30th April, 1880, was devised as a measure "to make better provision for public education." A Council of Education of five members was constituted, in which were vested all the lands, moneys, securities, and personal property of the Board of National Education, all lands and school buildings held by trustees under the regulation and inspection of the Denominational School Board as well as all personalty of the latter Board. The new Council was

empowered to disburse all moneys appropriated by Parliament for elementary instruction, to establish and maintain public schools, and to grant aid to certified denominational schools, and, subject to regulations, to define the course of secular instruction generally.

Four classes of schools were recognised, viz., Public, Denominational, Provisional, and Half-time; while, for sparsely settled districts, itinerant teachers might be appointed, or private schools assisted, provided they were subject to inspection as prescribed by the Council. The Council was empowered to authorise a scale of fees to be charged in the public and in the certified denominational schools, but inability to pay such fees did not constitute a valid reason for excluding children from the schools.

Training schools for teachers were authorised; Public School Boards were appointed to exercise a localised supervision; four hours per school-day were reserved for secular instruction exclusively, and a maximum period of one hour per school-day was left available for visiting religious teachers to impart religious instruction; all existing national schools, vested and non-vested, were declared public schools. On its establishment in 1867 the Council of Education assumed control over 259 national and 310 denominational schools. From 1875 the entire cost of building and maintaining public schools was defrayed from the public funds, and the number of schools increased so rapidly that in 1880, when the Department of Public Instruction was created, there were 1,220 schools under control, viz., public, 705; provisional, 313; half-time, 97; and denominational, 105; and a degree of standardisation had been attained.

The Public Instruction Act, 1880, marked a new era. Under it the powers and authority of the Council of Education were vested in a responsible Minister of the Crown as Minister for Public Instruction, with power to disburse all moneys appropriated by Parliament for public instruction. The subsidies to certified denominational schools ceased, after due notice, on 31st December, 1882; an undenominational system of education was established as a public service, and attendance at school for a minimum period of 70 days in each half-year was declared obligatory, failing just cause of exemption, on all children between the ages of 6 and 14 years. The classes of schools to be established and maintained were defined as follows:—Public schools, primary and superior; evening public schools; and high schools for girls and for boys; and the conditions in regard to provisional schools and itinerant teachers, as contained in the Public Schools Act, 1866, were retained but in amplified form, along with other features of that Act, *e.g.*, regarding allocation of hours of instruction, &c.

The Public Instruction Act, 1880, remains the basis of the educational system of the present day, though it was amended by the Free Education Act, 1906, which expressly enacts that instruction in primary and superior public schools shall be free, no fees being chargeable therefor. Previously, the maximum fee chargeable in public primary schools was 3d. per week per child, with a limitation of 1s. per week for all the children of one family. Fees chargeable in higher schools were determined by regulation, and following the lead of the Free Education Act, 1906, amended regulations were issued making instruction in high schools also free from 1st January, 1911.

In the thirty-three years during which the Public Instruction Act, 1880, has been operative, numerous adjustments in organisation and procedure have been made to admit of educational development in consonance with changing ideals. In New South Wales a considerable proportion of the population is located in sparsely settled districts, and in virtual detachment from community life. On the other hand, an urban population is concentrated at a few points

only. These two entirely diverse conditions of settlement complicated 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 was extended steadily, the immediate needs being supplied by the establishment of primary schools on which superior departments were grafted as occasion arose.

Except for the work carried on in high schools in Sydney and in Maitland, secondary education remained the province of denominational or private schools, of which one only, the Sydney Grammar School (for boys) was subsidised from the public funds, while all were exempt from any measure of supervision or superintendence. Some of the private schools and colleges were linked in a defined plan of organisation and administration, but for the most part they existed as independent and isolated units, and consequently the curricula devised varied with the controlling authorities. Failing any other means of co-ordination of standards, entrance to the University as the highest educational institution, was conditioned by a test of fitness prescribed by the University for individual students.

Realisation of the importance of thorough education led to a conference in the beginning of 1902 of representatives of different interests in educational matters in New South Wales. In April of the same year a Royal Commission of two members was appointed to proceed to Europe and America "to enquire into existing methods of instruction in connection with primary, secondary, technical, and other branches of education," and to recommend for adoption whatever improvements might in the judgment of the Commission be introduced with advantage in New South Wales.

Extensive investigations and comprehensive recommendations were made by the Commission, and following these a further Conference, convened by the Minister for Public Instruction, was held in 1904 to consider the question of State Education from every point of view. The plan of action embodied in the most important resolutions adopted at 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 mainly 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 prepared and issued in 1905. Following is the grouping of subjects in this syllabus, in which all the school work is correlated :—

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.

This syllabus was arranged for five classes.

The course outlined for Infants' Departments should be completed, under ordinary conditions, at the age of 8 years. Thence in point of time the work should proceed in gradations of one year each till the Primary course is completed in the fifth class at the age of 12 years.

Pending extension of the secondary school system a Higher-Primary course was arranged to cover the procedure as to sixth and seventh classes.

To suit the special conditions of one-teacher schools a modification of the primary syllabus was made dividing the instruction into that required for a lower division and an upper division.

An important alteration in procedure was the substitution of inspection for examination.

Since 1905 steady progress has been made towards embodying, with a minimum of disruption of existing institutions, the adjustments necessary to effect complete co-ordination of educational effort in all stages and between all the controlling agents; but the last three years have been most fruitful in this direction, having been marked by progress in organisation and administration, expressed in many lines of development. The regular school work has been extended, to include more manual and vocational training for boys, and more general opportunities for domestic science for girls; increased emphasis has been put upon the application of school work in its relation to the daily life of the citizen, as is evident in the specialised courses of the continuation schools newly organised. Decided progress has been made in modernising school buildings; the question of playgrounds has received attention; medical inspection is being conducted over more extensive areas. The increase so lately initiated of high school facilities is significant of the desire to provide a higher standard of education to a greater proportion of the people than has been the case hitherto.

The secondary school system was extended greatly and a new syllabus was introduced in 1911, which, with certain modifications, has been adopted, not only in State High Schools, but in all the private schools registered under the Bursary Endowment Act.

A system of certificates has been introduced. The Qualifying Certificate marks the completion of the Primary course, and gives admission to a secondary school. The Intermediate Certificate is issued on the completion of the first two years of the secondary course, and the Leaving Certificate after the completion of the full High School course. The Leaving Certificate is accepted under certain conditions by the University as equivalent to matriculation, and also secures admission to the Teachers' College.

Important statutory provisions affecting educational matters are contained in the Bursary Endowment Act, 1912, and in the University Amendment Act, 1912, concerning which details are given subsequently.

Under the Public Instruction Act any school with an attendance of twenty pupils who had completed the Primary course, could be made a Superior School, taking the higher primary course or the first two years of the secondary course. These Superior Schools have now been entirely reorganised on a vocational basis, and a special syllabus has been arranged, having for its objective the training of pupils in the direction of their probable future needs. These schools are classed as Commercial, Junior Technical, and Domestic Superior Schools.

Diffusion of Education.

Some idea of the diffusion of education among the people of New South Wales may be gathered from the following figures, derived from the Census of 1911 :—

	Males.	Females.	Total.
English Language—			
Read and write ...	696,258	645,022	1,341,280
Read only	2,565	3,140	5,705
Foreign Language only—			
Read and write ...	5,889	650	6,539
Read only	497	61	558
Cannot read	134,215	123,808	258,023
Not stated	18,274	16,355	34,629
Total	857,698	789,036	1,646,734

As regards those who cannot read, classification according to age shows the following :—

Ages—Years.	Males.	Females.	Total.
0—4	102,003	98,863	200,866
5—9	16,612	14,944	31,556
10—14	605	440	1,045
15—19	641	338	979
20 and upwards	13,934	8,922	22,856
Unspecified...	420	301	721
Total	134,215	123,808	258,023

Persons above the age of 4 years who could not read, in proportion to the total population, were :—Males, 3·7 per cent.; females, 3·1 per cent. These figures relating to persons 5 years of age and upwards who could not read included immigrants and persons who had not come under the jurisdiction 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 entirely 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. In these conditions, the full school age may fairly be taken as from ages 5 to 18 inclusive. The following statement,

derived from the records of the Census in April, 1911, shows the population of the State (exclusive of full-blood aboriginals), in relation to schooling, distinguishing the persons receiving instruction at school, at the University, or at home, and those not so classified :—

Ages—Years.	At School.			At University (Day Students only).	At home.	Not recorded as receiving Instruction.	Total.
	Public.	Private.	Unspecified.				
MALES.							
Under 5 ...	1,463	551	97	...	82	99,810	102,003
5	5,237	1,372	288	...	635	10,990	18,522
6	10,126	2,305	472	...	755	4,200	17,858
7	11,518	2,497	501	...	593	1,266	16,375
8	11,980	2,568	464	...	494	752	16,258
9	12,131	2,449	453	...	455	636	16,124
10	12,529	2,469	518	...	351	567	16,434
11	12,345	2,455	495	...	297	751	16,343
12	11,002	2,224	470	...	250	884	14,830
13	10,348	2,140	436	...	241	2,518	15,683
14	4,953	1,606	308	...	137	8,842	15,846
15	1,882	1,329	80	...	94	12,597	15,982
16	681	963	52	11	52	14,368	16,127
17	295	635	16	36	39	15,851	16,872
18	136	406	24	93	34	16,544	17,237
19	90	238	15	121	14	16,285	16,763
20 and upwards	122	689	51	501	79	502,509	503,951
Unspecified ...	177	79	52	...	15	4,167	4,490
Total ...	107,015	26,975	4,792	762	4,617	713,537	857,698
FEMALES.							
Under 5 ..	1,319	659	70	...	75	96,740	98,863
5	4,870	1,443	337	...	669	10,672	17,991
6	9,108	2,627	406	...	894	4,437	17,472
7	10,431	2,824	425	...	679	1,524	15,883
8	11,409	2,969	445	...	548	821	16,192
9	10,930	2,974	449	...	519	710	15,582
10	11,612	3,091	402	...	458	691	16,254
11	11,315	3,057	393	...	401	770	15,936
12	10,506	2,957	404	...	369	1,092	15,328
13	8,818	2,830	355	...	323	2,757	15,083
14	4,600	2,199	244	...	227	8,127	15,397
15	2,050	1,648	122	...	163	11,910	15,893
16	822	1,261	77	16	97	13,690	15,963
17	373	742	34	18	46	15,100	16,313
18	206	371	37	30	26	16,038	16,708
19	125	226	32	25	13	15,717	16,138
20 and upwards	105	279	816	82	10	442,945	444,237
Unspecified ...	155	71	63	...	13	3,501	3,803
Total ...	98,754	32,228	5,111	171	5,530	647,242	789,036

Summarising the totals under the various heads of the table given above, the following comparison for all ages and for school ages is derived:—

	All ages.			School ages (6-14).		
	Males.	Females.	Total.	Males.	Females.	Total.
Receiving Instruction—						
At School—						
Public	107,015	98,754	205,769	91,979	84,129	176,108
Private	26,975	32,228	59,203	19,107	23,329	42,436
Unspecified	4,792	5,111	9,903	3,809	3,279	7,088
Total	138,782	136,093	274,875	114,895	110,737	225,632
At the University ...	762	171	933	.....	.....	.....
At home	4,617	5,530	10,147	3,436	4,191	7,627
Total receiving instruction.	144,161	141,794	285,955	118,331	114,928	233,259
Not under instruction ...	713,537	647,242	1,360,779	11,574	12,802	24,376
Total	857,698	789,036	1,646,734	129,905	127,730	257,635

Persons of all ages who were receiving instruction formed 17·36 per cent. of the total population; persons of school age (6–14 years) represented 15·67 per cent. of the total, the proportion of girls being rather greater than the proportion of boys, viz., 16·21 per cent. as against 15·17 per cent., respectively.

Improvement in the diffusion of education is shown in a comparison of the records at each census since 1891, of persons aged 5 years and over. 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 is evidence of the extension of educational facilities.

As to the ages of compulsory attendance, viz., 6 and under 14 years, some further details are available to enable a comparison between the urban area of Sydney and suburbs, and the remainder of New South Wales, as at the census of 1911 :—

Children of School Ages. (6-14 years.)	Sydney and Suburbs.		Remainder of State.		Total.		
	Males.	Females.	Males.	Females.	Males.	Females.	Total.
Receiving Instruction at School :—							
Public	30,051	27,433	61,928	56,696	91,979	84,129	176,108
Private	9,086	11,436	10,021	11,893	19,107	23,329	42,436
Unspecified	1,345	1,301	2,464	1,978	3,809	3,279	7,088
Total	40,482	40,170	74,413	70,567	114,895	110,737	225,632
At home	373	694	3,063	3,497	3,436	4,191	7,627
Not under Instruction	2,757	3,131	8,817	9,671	11,574	12,802	24,376
Total	43,612	43,995	86,293	83,735	129,905	127,730	257,635

Of 24,376 children of ages 6 and under 14 years who were not recorded as receiving instruction 18,488 were resident outside the Metropolitan area.

The following statement summarises the records in regard to children of statutory school age, as derived from the last three censuses :—

	Sydney and Suburbs.			Remainder of State.		
	1891.	1901.	1911.	1891.	1901.	1911.
At School—						
Public	44,448	53,876	57,484	103,783	118,476	118,624
Private	16,894	27,280	20,522	18,934	27,213	21,914
Unspecified	477	2,137	2,646	336	4,608	4,442
Under instruction at home	1,590	1,773	1,067	9,173	10,982	6,560
Total receiving instruction	63,409	85,066	81,719	132,226	161,279	151,540
Not recorded as receiving instruction	2,972	3,561	5,888	13,235	13,896	18,488
Total	66,381	88,627	87,607	145,461	175,175	170,028

In 1901 children of compulsory school age were nearly one sixth of the total population ; in 1911 they were more nearly one-seventh.

The following statement shows the figures in each group reduced to percentages of the total number of children of the statutory school age at each date :—

	Sydney and Suburbs.			Remainder of State.		
	1891.	1901.	1911.	1891.	1901.	1911.
At School—	%	%	%	%	%	%
Public	20·98	20·42	22·31	48·99	44·91	46·04
Private	7·97	10·34	7·97	8·94	10·32	8·51
Unspecified	·23	·81	1·02	·16	1·75	1·72
Under instruction at home ...	·75	·67	·41	4·33	4·16	2·55
Total receiving instruction ...	29·93	32·24	31·71	62·42	61·14	58·82
Not recorded as receiving instruction	1·40	1·35	2·29	6·25	5·27	7·18
Total	31·33	33·59	34·00	68·67	66·41	66·00

In the period between 1891 and 1911 there was a gain to the metropolitan area in the proportion of children of school age. There was also an increase in the proportion of the children attending public schools, and of the total receiving instruction. For the rest of the State there were proportionate decreases in the numbers receiving instruction, in all cases except the unspecified schools. The increases in the number of children "not recorded as receiving instruction" are unsatisfactory features of the table.

State Expenditure on Education.

The actual 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 as the figures for the past ten years will show. Relatively to the mean population the increase was almost imperceptible until 1907, but for the last five years there has been a distinct advance in all items of educational expenditure, particularly in the amount spent on schools and other buildings.

In the following statement of the public expenditure on education during the last ten years, the expenditure on buildings, equipment, sites, &c., representing capital expenditure, and contributed from Loan Funds, or since 1907 from Public Works Account, has been distinguished as far as practicable from expenditure for maintenance, including grants and subsidies, all of which constitute annual running costs, and are payable out of Consolidated Revenue:—

Year ended 30th June.	Expenditure.			Cost per head of population.
	Capital.	Annual.	Total.	
	£	£	£	s. d.
1903	72,466	905,439	977,905	13 11
1904	57,951	913,197	971,148	13 7
1905	30,227	916,071	946,298	13 0
1906	42,937	938,640	981,577	13 3
1907	99,338	946,044	1,045,382	13 9
1908	132,753	1,058,864	1,191,617	15 5
1909	203,954	1,110,621	1,314,575	16 8
1910	159,890	1,148,520	1,308,410	16 3
1911	176,778	1,213,368	1,390,146	16 9
1912	185,710	1,419,234	1,604,944	18 6

These figures are exclusive of amounts spent on colleges, experiment farms, or societies for the promotion of agriculture and allied interests, concerning which reference should be made to the chapter on Agriculture. Naturally, under each head, the largest item relates to the Public Schools of the State. The following statement, giving in more detail the expenditure for 1912, demonstrates this fact:—

Object.	Expenditure. Capital.	Annual.
	£	£
Public Instruction Department, Schools, &c. ...	171,559	1,306,742
Educational Institutions, Schools of Arts, &c. ...	1,776	10,357
University, and affiliated Colleges	10,875	47,253
Sydney Grammar School	.....	1,500
Industrial Schools	.....	9,524
Kindergarten Union	.....	1,000
Public Library	.....	9,899
Museums	1,500	10,415
Grants and Subsidies to Various Societies	.....	20,544
Totals	185,710	1,419,234

The major portion of the annual expenditure of the Government in connection with the promotion of educational interests is obviously for institutions which are under control of governmental or delegated officials, as the Department of Public Instruction, industrial schools, public library, &c. The University of Sydney, though a publicly endowed institution, was a notable instance of freedom from any measure of Governmental supervision, but this condition is altered by the University Amendment Act, 1912, under which the Government is represented on the Senate of the University. Grants and subsidies to institutions, schools, and societies represent annual payments conditional upon satisfactory fulfilment of functions.

Schools and Teaching Staffs.

The total number of public and private schools in operation in New South Wales 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.
1903	2,862	841	3,703	5,589	3,368	8,957
1904	2,870	852	3,722	5,699	3,396	9,095
1905	2,901	853	3,754	5,719	3,482	9,201
1906	2,885	852	3,737	5,758	3,557	9,315
1907	2,918	806	3,724	5,965	3,524	9,489
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

These figures are exclusive of Technical Schools, the Sydney Grammar School, the Ragged, and Free Kindergarten Schools, the New South Wales Institution for the Deaf and Dumb and the Blind, Institutional schools under denominational control, Shorthand and Business Colleges, Agricultural Schools, &c. In 1903 there was on the average, one school to 383 persons; in 1912 there was one school to 446 persons in the population of the State. Since 1903 there has been an increase of 372, equivalent to 13 per cent., in the number of public schools, which increase was partly off set by a decrease of 87 in the number of private schools. The Teaching Staff averaged 1 per 158 persons in the population in 1903, and in 1912, 1 to 166. The Teaching Staff per school was much greater for the private schools than for the public, but it must be remembered that the staffs of the private schools include a number of visiting teachers who do not devote their whole time to one school.

As to the private schools, there has been practically a continuous drop in their number since 1901, when there were 889, until in 1912 there were 754, a decrease of 135. Included in these schools are those of the Roman Catholic denomination, which show a substantial increase, in contrast to the diminution of other private schools.

In the public schools there was little advance in numerical strength during the first half of the period covered by the table. The policy of conveying

children to central schools rather than of opening a large number of small schools is partly accountable for this. The granting of educational subsidies has in many cases obviated the necessity of increasing the number of small country schools, but during the last six years an advance is apparent, due mainly to the extension of small schools in scattered districts.

Enrolment.

A comparative review of the enrolment of children at public and private schools is restricted to the last quarter in each year, as the figures collected in regard to private schools refer only to that period. The following statement shows the recorded enrolment of public and of private schools for the December quarter during each of the last ten years :—

Year.	Enrolment.			Proportion of Total Children Enrolled.	
	In Public Schools.	In Private Schools.	Total.	In Public Schools.	In Private Schools.
				per cent.	per cent.
1903	211,558	58,258	269,816	78·2	21·8
1904	207,860	57,811	265,671	78·2	21·8
1905	206,010	57,854	263,864	78·1	21·9
1906	207,298	58,707	266,005	77·9	22·1
1907	209,229	57,440	266,669	78·2	21·8
1908	214,495	57,111	271,606	79·0	21·0
1909	213,739	58,361	272,100	78·6	21·4
1910	214,776	59,247	274,023	78·4	21·6
1911	221,810	60,963	282,773	78·4	21·6
1912	228,529	61,744	290,273	78·7	21·3

During the first half of the period under review the total enrolment appears almost stationary, if not retrogressive, a condition referable probably in large measure to the decline in the birthrate. Latterly, however, there is an appreciable recovery, so that the figures for 1912 are 9 per cent. in advance of those for 1907.

The ratio of enrolment of children in public and private schools for the various years of the decade remains very constant, varying from 77·9 in 1906 to 79·0 in 1908 in the case of the former, and conversely from 22·1 in 1906 to 21·0 in 1908 in that of the latter.

The figures relating to enrolment are exclusive of the Sydney Grammar School for Boys, Business and Shorthand Schools, the School held in connection with the Deaf and Dumb and Blind Institution, the Ragged Schools, and Free Kindergarten Schools, Institutional Schools under denominational control, Agricultural and Technical Schools, etc.

Average Attendance.

A comparison over the last ten years between the average quarterly enrolment and the average attendance for Public Schools is derived from the rolls for all quarters of the year, not for the December quarter only. The pupils attending Subsidised Schools are included only for 1907 and

subsequent years. For Private Schools the ratio is on the December quarter for the first four years (1903-6) and on the average daily attendance during the whole year for the last six years (1907-1912):—

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.
1903	213,318	154,382	72·3	58,258	46,982	80·6
1904	211,489	153,260	72·5	57,811	46,667	80·7
1905	209,227	152,105	72·7	57,854	46,480	80·3
1906	207,741	151,261	72·8	58,707	46,942	80·0
1907	213,709	152,607	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

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 a somewhat unsatisfactory test.

Yearly, quarterly, or weekly rolls of the pupils are functions of the same variable *daily attendance*, and the longer the intervals of compiling the roll, whether for a week, a quarter, or a year, the greater the error introduced by multiple enrolment into the basis of comparison. Figures for the gross enrolment in public schools indicate that in each year approximately 40,000 enrolments result from children attending more than one school and being enrolled more than once.

The Department of Public Instruction finds that 13 per cent. of the gross yearly enrolment must be deducted to obtain the number of individual pupils enrolled. Furthermore, the effective quarterly enrolment is only 90 per cent. of the yearly roll, and the weekly roll again only 91 per cent. of the quarterly.

It is remarkable, however, how greatly the percentage varies in the different inspectorial districts.

As might be expected there is more school migration in the tourist districts, while in the western districts the percentage of pupils who have been enrolled in more than one school during the year is extremely small.

An experience shows that in the Moss Vale district, for example, the percentage was 17·3; Wollongong, 17·1; and Blackheath, 16·3. On the other hand, the percentage at Broken Hill was only 5·7; Hay, 7·6; Albury, 9·1; and Wellington, 9·8.

The weekly roll is clearly the best test, inasmuch as it most nearly approaches the basis (daily) on which the average attendance is computed; but preferably the average attendance of scholars should be compared with the total children who can be regarded as in need of education. Such comparison is rendered possible by, and is given in, the census figures for 1911 already quoted.

The following statement shows, for the last ten years, the average attendance at public and private schools in comparison with the estimated numbers of children requiring education :—

Year.	Estimated children of school age. (6-14).	Other Children under and over school age on roll.	Total Children requiring education.	Averag Attendance Public and Private Schoc s	Proportion per cent. attending school.
1903	265,400	44,682	310,082	201,364	64·9
1904	266,100	44,606	310,706	199,927	64·3
1905	264,200	40,352	304,552	198,585	65·2
1906	262,500	41,436	303,936	198,203	65·2
1907	260,800	43,111	303,911	199,304	65·6
1908	259,400	42,551	301,951	204,203	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

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

Following is a comparison of enrolment and attendance in public schools, excepting subsidised schools, in recent years :—

Enrolment.

Year.	Individual Pupils.			Averages.	
	Boys.	Girls.	Total.	Quarterly.	Weekly.
1905	121,233	106,790	228,023	209,227	*
1906	121,294	108,194	229,488	207,741	*
1907	123,730	112,006	235,736	213,709	*
1908	122,383	110,741	233,124	216,747	194,641
1909	125,116	113,398	238,514	218,248	197,979
1910	129,364	114,475	243,839	218,539	198,874
1911	130,926	118,606	249,532	223,603	203,385
1912	136,719	123,103	259,822	235,803	213,930

Year.	Attendance.						Attendance in Proportion to Enrolment.	
	During the Year.			December Quarter.				
	Boys.	Girls.	Total.	Boys.	Girls.	Total.	Quarterly.	Weekly.
							Per cent.	Per cent.
1905	81,445	70,660	152,105	80,868	70,165	151,033	72·69	*
1906	80,904	70,357	151,261	80,245	70,878	151,123	72·81	*
1907	81,103	71,505	152,608	79,769	70,717	150,486	71·40	*
1908	82,550	73,447	155,997	84,090	75,205	159,295	71·97	80·10
1909	84,830	75,250	160,080	83,379	73,956	157,335	73·34	80·85
1910	83,710	73,788	157,498	80,917	71,328	152,245	72·07	79·19
1911	85,196	75,580	160,776	87,097	77,245	164,342	71·85	79·00
1912	91,492	79,536	171,028	91,661	79,151	170,812	72·53	79·94

* Information not obtainable.

On the individual enrolment the attendance during the year was slightly better for boys than for girls, viz., 66·9 per cent. as compared with 64·6.

The discrepancy between enrolment and attendance is ascribed to several contributing causes—(1) laxity of home control ; (2) indifference to the need for education ; (3) desire to exploit the energies of children, and (4) ineffective compulsory-attendance laws. The question of truancy inspection has aroused considerable attention at various times, and the need for making attendance at continuation schools obligatory has been discussed recently.

To reduce the disproportion between attendance and enrolment, in State schools particularly, and to secure the enrolment of all children of school age, amendment of the Public Instruction Act is projected, to enable the Department to deal more stringently with truants and children who fail to attend a school regularly.

During 1912, in the State schools, 32,098 children between the ages of 6 and 14 years, in the first half of the year, and 31,336 in the second half-year, failed to complete the minimum attendance of 70 days. Legal action to enforce attendance was taken in 840 cases, viz., 465 in the first half-year, and 375 in the second. In 2,605 cases the parents were cautioned.

Age Distribution of Pupils.

The age-grouping of pupils enrolled at schools during the last ten years is shown in the following table ; for Public Schools the basis is the mean quarterly enrolment ; for Private Schools the basis is the enrolment for December quarter in each year :—

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.
1903	8,413	182,421	22,484	213,318	5,336	44,473	8,449	58,258
1904	8,559	180,480	22,450	211,489	5,193	44,214	8,404	57,811
1905	7,430	182,460	19,337	209,227	4,848	44,269	8,737	57,854
1906	8,302	180,228	19,211	207,741	4,972	44,784	8,951	58,707
1907	8,762	184,858	20,089	213,709	4,859	43,180	9,401	57,440
1908	8,933	187,750	20,064	216,747	4,839	43,549	8,723	57,111
1909	9,613	189,074	19,561	218,248	5,007	44,293	9,061	58,361
1910	10,140	188,770	19,629	218,539	5,180	44,652	9,415	59,247
1911	10,688	194,394	18,521	223,603	5,247	46,193	9,523	60,963
1912	11,271	205,009	19,532	235,803	5,279	47,555	8,910	61,744

Since 1907 the figures relating to public schools include enrolment at subsidised public schools.

Retardation.

For the year 1912, figures showing the ages of pupils in various classes were compiled from a limited number of schools.

The result shows that "Retardation" is a feature of the Infants' Departments, and even of the first class of the primary schools. The chief reason appears to be found in the fact that children are enrolled, for the first time, much beyond the minimum age of 6 years. Other contributing factors doubtless are, lack of continuity of education and re-enrolment in different schools. The retardation noticed in the lower classes not only continues throughout the scholastic course, but each class contributes a fresh quota. Thus the scheduled ages for completing the first to fifth classes are 9, 10, 11, 12, and 13 years, respectively, and on this basis the amounts of retardation were 12 per cent., 40 per cent., 55 per cent., 62 per cent., and 60 per cent., respectively.

More complete statistics, covering the Metropolitan and Newcastle Districts, are being compiled for the year 1913, when the definite causes of retardation should be placed.

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.

The first table contains the numerical enrolment and its constituent subdivisions; and the second table supplies the ratios per cent. which such subdivisions bear to the aggregate enrolment, thus providing a ready means for comparisons :—

Year.	Total Enrolment.	Public Schools—Denomination of Children.					Private Schools—Denomination of Schools.		
		Church of England.	Roman Catholic.	Presbyterian.	Methodist.	Other.	Church of England.	Roman Catholic.	Other.
1903	269,816	110,843	31,308	23,841	26,849	18,717	4,466	40,989	12,803
1904	265,671	109,658	30,233	23,829	28,240	15,900	4,116	41,112	12,583
1905	263,864	108,333	29,985	24,070	28,603	15,019	3,954	41,268	12,632
1906	266,005	108,497	30,636	24,207	28,866	15,092	3,922	42,106	12,679
1907	266,669	109,306	31,436	24,453	28,954	15,080	3,434	42,005	12,001
1908	271,606	112,728	32,209	24,913	29,581	15,064	3,415	42,295	11,401
1909	272,100	113,019	31,190	24,941	29,582	15,007	3,308	43,615	11,438
1910	274,023	114,677	30,937	25,021	29,640	14,501	3,560	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

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

Percentage of Total Enrolment.

Year.	Public Schools—Denomination of Children.					Private Schools—Denomination of Schools.		
	Church of England.	Roman Catholic	Presbyterian.	Methodist.	Other.	Church of England.	Roman Catholic.	Other.
	%	%	%	%	%	%	%	%
1903	41·08	11·60	8·84	9·95	6·94	1·66	15·19	4·74
1904	41·28	11·38	8·97	10·63	5·98	1·55	15·47	4·74
1905	41·06	11·36	9·12	10·84	5·69	1·50	15·64	4·79
1906	40·79	11·52	9·10	10·85	5·67	1·47	15·83	4·77
1907	40·99	11·79	9·17	10·86	5·65	1·29	15·75	4·30
1908	41·50	11·86	9·17	10·89	5·55	1·26	15·57	4·20
1909	41·54	11·46	9·17	10·87	5·51	1·22	16·03	4·20
1910	41·85	11·29	9·13	10·82	5·29	1·28	16·15	4·19
1911	42·01	10·98	9·32	10·81	5·32	1·17	16·30	4·09
1912	42·44	10·79	9·30	10·94	5·26	1·15	16·12	4·00

It will be noticed that in the public school figures the column headings indicate the denomination of the children, and in the private school figures the denomination of the schools. In the former case the denomination of the child is ascertained, but not in the latter, and the pupil, although attending

a school of stated denomination, is not necessarily to be considered of that denomination. It may be assumed, however, for purposes of comparison, that on the whole the religion of the child accords with that of the denomination of the private school he is attending, and on this basis the following comparisons are obtained. As to the children of the Church of England, its constituent percentages of the total children were:—

Year.	Per cent. of Total Children attending School in —		
	Public Schools.	Church of England Schools.	All Schools.
	%	%	%
1903	41·08	1·66	42·74
1904	41·28	1·55	42·83
1905	41·06	1·50	42·56
1906	40·79	1·47	42·26
1907	40·99	1·29	42·28
1908	41·50	1·26	42·76
1909	41·54	1·22	42·76
1910	41·85	1·28	43·13
1911	42·01	1·17	43·18
1912	42·44	1·15	43·59

The percentage evidently has been very constant during the whole period, for both classes of schools—public and private—the advance, on the whole, for the period covered by the table being 1 per cent. of the total school children enrolled, and of the Church of England children attending school only 3 per cent. attend their own denominational schools.

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

Year.	Per cent. of Total Children attending School in—		
	Public Schools.	Roman Catholic. Schools.	All Schools.
	%	%	%
1903	11·60	15·19	26·79
1904	11·38	15·47	26·85
1905	11·36	15·64	27·00
1906	11·52	15·83	27·35
1907	11·79	15·75	27·54
1908	11·86	15·57	27·45
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

Here is observed extremely slight fluctuation in the percentage attending public schools, and as to the denominational schools, the rates show a tendency to rise. The Roman Catholic children at present attending the schools of their own denomination represent 60 per cent. of the total Roman Catholic enrolment.

Religious Instruction in State Schools.

A provision of the Public Instruction Act, 1880, retained from the Public Schools Act, 1866, reserves a maximum period of one hour in each school day, during which religious instruction may be given to scholars in State schools by visiting ministers and teachers of religious bodies. That full advantage of this provision is not taken by the various denominations is evident from the total number of visits paid by clergymen and religious teachers during the years 1909–12:—

Denomination.	Number of Visits.			
	1909.	1910.	1911.	1912.
Church of England	24,977	25,209	26,101	27,229
Roman Catholic	936	840	711	887
Presbyterian	6,920	7,132	7,452	8,074
Methodist	8,301	8,430	8,800	9,956
Other Denominations	4,542	5,094	5,536	6,737
Total	45,676	46,705	48,600	52,883

During 1912 some 1,300 visits were paid each week that the schools were open. The extent to which opportunities for religious instruction are used could be measured more closely if the number of children taught were recorded.

In connection with this matter it may be noted that, in all parts of the civilised world a considerable amount of attention is bestowed on the problem of moral education; in New South Wales civics and morals are subjects of study in the Public School curricula, and efforts are being made to devise the best means of teaching ethics.

The State Schools.

Annual Expenditure.

The following statement shows the expenditure by the Department of Public Instruction in each calendar year since 1905, for maintenance, administration, and building, on account of primary and secondary public day schools and technical schools:—

Year.	Primary and Secondary Schools.					Technical Education.	
	Maintenance and Administration.				Building, including Repairs.	Maintenance and Administration.	Land and Building, including Repairs.
	Rent and Rates.	Maintenance and Salaries.	Administration and Training.	Total.			
	£	£	£	£	£	£	£
1905	9,171	729,464	51,692	790,327	49,648	25,315	...
1906	8,570	737,041	54,565	800,176	81,405	26,879	...
1907	10,965	758,131	60,817	829,913	92,382	33,569	187
1908	7,342	873,748	64,557	945,647	139,373	40,896	10,918
1909	17,445	877,916	66,324	961,685	148,254	45,489	15,963
1910	18,657	911,641	71,711	1,002,009	189,704	49,293	16,430
1911	19,494	967,900	80,683	1,068,077	174,499	51,473	10,393
1912	18,875	1,191,743	93,666	1,304,284	285,702	60,762	17,466

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 £1,900 per annum approximately. Rates constitute the greater part of the amount shown under the heading of rent and rates, and include water and sewerage rates.

The figures given above represent the annual normal expenditure. To estimate the total cost of State school education during any year would necessitate investigation of the capital value of buildings and equipment, the rate of depreciation to be allowed, &c. At the present time the Department of Public Instruction has not the necessary data to give an exact valuation, but the latest approximate valuation of the Departmental properties, including the sites, is £2,400,000.

The comparative intensity of annual cost in primary and secondary schools is indicated in the following table, in which the relative cost per school is shown for a series of years :—

Year.	Schools.	Per School.		
		Rent, Rates, &c.	Maintenance and Salaries.	Administration and Training.
	No.	£ s. d.	£ s. d.	£ s. d.
1895	2,563	0 11 8	215 2 2	17 19 7
1900	2,745	2 6 2	223 19 10	18 12 2
1905	2,901	2 12 8	251 9 0	17 16 5
1906	2,885	2 9 10	255 9 5	18 19 2
1907	2,918	3 6 3	259 16 2	20 16 10
1908	3,002	1 18 1	291 1 0	21 10 0
1909	3,075	5 3 7	285 10 0	21 11 5
1910	3,105	5 10 7	293 12 1	23 1 11
1911	3,125	6 4 9	309 14 10	25 16 4
1912	3,234	5 16 9	368 10 1	28 19 3

The following statement shows, in comparative form, the distribution of expenditure (exclusive of rates, &c.) in connection with primary and secondary schools under the Department of Public Instruction in 1911 and 1912 :—

	1911.	1912.
	£	£
School premises	176,194	287,522
Maintenance—		
Primary and Subsidised Schools :		
Teachers' salaries and allowances	869,928	1,062,998
Other expenses	72,320	78,863
High Schools :		
Salaries and maintenance	18,223	24,743
Scholarships and bursaries	7,429	13,445
Evening Continuation Schools :		
Salaries and allowances	.....	9,416
Other expenses	.....	2,279
Training of teachers	30,040	36,274
Administration	50,643	57,392
Total	£1,224,777	£1,572,932

School Accommodation, Sites, and Playgrounds.

There was accommodation in the schools in 1881 for 98,721 children, and at the end of 1911 for 228,253; and comparison of the latter number with the average attendance at the present time shows that there is, on the whole, ample space in the school buildings to meet requirements. On the basis adopted in 1908 in regard to school buildings, 150 cubic feet of air space are required per child, though under the Public Instruction Act, 1880, the minimum apportionment of space inside a public school building is 100 cubic feet for each child ordinarily in attendance. In the last five years, Departmental expenditure for building has been far in excess of that for earlier years, and progress has been made in the work of remodelling existing buildings; effecting improvements in lighting, ventilation, and general sanitation; erecting science, cookery, and manual-training rooms; and providing assembly-halls and supplying furniture of modern type.

During 1912 thirty-two school-buildings, at an average cost of £690, were erected under the Public Works Department, and eighty-four, at an average of £127, under inspector's supervision. In eighty cases additions were made, the total value being in excess of £54,000. Twenty-one residences, at an average cost of £603, were erected; also repairs were effected in 1,230 schoolrooms.

There were many works in progress at the end of the year, amongst them being 56 school buildings, 83 additions, and 27 residences. Omitting the value of the sites, the total cost of these buildings under construction was nearly a quarter of a million sterling.

During 1912, 161 sites for public schools were vested in the Department. Of these, 79 were grants of Government lands, 43 were resumed, 37 purchased, and 2 conveyed as gifts. In eight cases additional land was secured for the purpose of enlarging existing playgrounds. In the city and suburban area the question of adequate ground space in connection with the public schools is complicated by the high resumption values involved, and the authorities controlling some of the Metropolitan and Suburban parks have given assistance to the Education Department in the establishment of "Park Kindergartens."

In the Victoria Park, Sydney, under the City Council, a small area has been fenced off and a shelter shed erected; swings and appliances for the amusement of children are in course of construction; and the children are in charge of a trained Kindergarten teacher.

School Furniture and Equipment.

School furniture and general equipment are supplied in the Public Schools by the Department of Public Instruction. Specific articles, as teaching aids and equipment, may be provided from school funds, a special inventory made during 1911 of articles so provided in the Public Schools showing an aggregate of 2,247 items, of the minimum value of £1 each, the total value being £14,960. This list includes pianos, sewing machines, magic lanterns, barometers, microscopes, typewriters, &c. Most of the schools in the State have school libraries, frequently well stocked, and in the larger schools books of reference are supplied by the Department of Public Instruction, with the object of encouraging research work.

Administrative Offices.

At present the Department of Public Instruction is housed partly in buildings constructed as far back as 1814, and partly in private rented offices.

To relieve the congestion in the clerical department and to centralise the staff, an Act was passed in April, 1912, authorising the construction of new offices on a site adjacent to the present building.

The offices, which are practically fire-proof, are already well advanced, and are built of local freestone, with steel frames and concrete floors. The estimated cost is £65,150, and the construction is being carried out by day-labour. It is expected that the buildings will be completed early in 1915.

Primary and Secondary Schools.

The number of Primary and Secondary Schools open at the end of each of the last eight years is shown in the following statement:—

Year.	Secondary High.	Primary Day.				Primary Evening.	
		Primary and Superior.	Provisional and Half-time.	House-to-house.	Subsidised.	Primary.	Continuation.
1905	4	1,923	768	12	160	32	...
1906	5	1,908	750	10	195	34	...
1907	5	1,927	721	9	220	33	...
1908	5	1,941	727	9	284	33	...
1909	5	1,949	729	12	344	33	...
1910	5	1,950	740	9	362	36	...
1911	8	1,915	746	6	414	16	18
1912	12	1,942	739	6	489	3	41

The number of schools open at any time during the year does not necessarily coincide with the number open at the end of that year, as with variations in population changes are being made constantly in the classification of schools opened, and new schools are established or existing schools closed. The most consistent demand for new schools or additional accommodation is from Sydney and the contiguous suburbs. Country towns, with a comparatively stationary population, present little difficulty; but the continuous demands for new schools in freshly-settled districts, remote from towns, account in great measure for the increase in recent years in the number of subsidised schools.

The following table affords a comparison between the number and type of State schools in operation in 1881, the first full year in which the Department of Pubic Instruction was under immediate ministerial control, and the numbers open during the years 1891, 1901, 1911, and 1912; the figures represent the gross number of schools in operation at any time during the year:—

Type of School.	Schools in operation.				
	1881.	1891.	1901.	1911.	1912.
High	...	5	4	8	12
Public, Primary and Superior Day ...	1,100	1,697	2,049	1,945	1,972
Provisional	246	349	428	514	528
Half-time	93	300	276	303	295
House-to-house	...	92	20	6	6
Evening, Primary	57	14	41	24	16
,, Continuation	...	...	...	18	41
Subsidised	...	...	...	494	633
Reformatory and Industrial	2	3	4	3	2
Total	1,498	2,460	2,822	3,315	3,505

Centralisation of Small Schools.

In 1904 the consolidation of small schools was initiated, the Department of Public Instruction granting a subsidy for the conveyance, to central schools, of children attending various small schools. The advantages of this

system are that better buildings and equipment, as well as a larger teaching staff, can be provided, and a higher range of instruction imparted. The number of central schools and the cost of conveyance of children to them are shown in the following statement for each year:—

Year.	Schools.	Cost of Conveyance. £	Year.	Schools.	Cost of Conveyance. £
1904	12	267	1909	51	3,713
1905	13	959	1910	63	3,967
1906	17	1,802	1911	80	4,650
1907	38	2,812	1912	111	5,859
1908	47	3,280			

Study Courses.

Details have been given previously regarding the Primary School Syllabus as revised in 1905, and instruction in all primary schools is along the lines of this syllabus, with such adaptations from traditional methods in the scope of treatment of each subject as may be essential to bring the schools into close relationship with the outside world, and to fit the pupils for useful citizenship.

Primary and higher primary work are undertaken in schools classifiable broadly in two groups—(*a*) Primary and Superior Schools in more or less populous centres. and (*b*) schools in isolated and sparsely settled districts, viz., Provisional, Half-time, House-to-House, and Subsidised Schools.

House-to-house teaching is restricted generally to English and mathematics. In half-time schools, one teacher divides his time between two schools, so arranging that homework and preparatory study will occupy the time of the pupils in the absence of the teacher. The course of instruction follows that of full-time schools.

Travelling Schools.

The Subsidised School was till recently the outpost of the State's educational activity, but in 1908, to supply means of education for families so isolated that even two could not readily combine to form a Subsidised School, a Travelling School was established in the Narrabri district; the teacher has been provided with a vehicle to carry school requisites, and a tent for use as a schoolroom, and teaches for a week at a time at each centre in his circuit. At the close of 1912, the appointment of itinerant teachers for other districts was contemplated, as investigation had revealed the fact that about 1,000 children in the most inaccessible localities in New South Wales were still lacking any educational facilities.

Another form of the travelling school is established in connection with extensive railway construction works, where Railway Camp Schools render educational facilities available to the children of the men engaged on the works.

Subsidised Schools.

For the education of children resident in places remote from any State schools, the Subsidised School was instituted in 1903 with good effect. The conditions upon which aid is granted are that two or more families must combine to engage a private teacher, who, after approval of the Minister as to his qualifications, will receive, 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, or, 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 for salaries of teachers of subsidised schools for the year 1912 was £17,039.

Following are the records of Subsidised Schools for December Quarter of the last ten years :—

Year.	Teachers.			Pupils.						Attendance per cent. of Enrolment.
				Quarterly Enrolmen			Average Attendance.			
	Males.	Females.	Total.	Boys.	Girls.	Total.	Boys.	Girls.	Total.	
1903	49		49	237	217	454	356		356	78·4
1904	118		118	540	458	998	801		801	80·2
1905	160		160	701	659	1,360	570	538	1,108	81·4
1906	195		195	909	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

During 1912, regulations and arrangements were made whereby subsidised school teachers could be examined, certified, and registered on passing the examination, after which the subsidy would be given only when registered teachers were employed.

Evening Primary Schools.

For some years Evening Primary Schools had been open in localities where there was a definite demand for them, to enable students to make good deficiencies in early education. The pupils enrolled were boys. Following is the record of evening primary schools for the last three years :—

Year.	Schools.	Teachers.	Students.		Average Age, Years.
			Enrolment.	Average Attendance.	
1910	36	36	981	539	17
1911	16	16	639	343	17
1912	3	3	110	60	17

In 1912 only three of the Evening Primary Schools remained, the work having been taken over by the Evening Continuation Schools, particulars of which are supplied below.

Kindergarten.

Three special Kindergarten Schools were in operation in connection with the public schools since 1903, and, in addition, the majority of large schools were equipped for Kindergarten classes under skilled teachers.

During the year 1912 classes were in operation in forty-five public schools. The enrolment was 2,546—1,365 boys, and 1,181 girls ; the average attendance was 1,662—900 boys, and 762 girls.

Montessori Methods.

The published success in 1912 of the Educational methods adopted by Dr. Montessori, of Rome, in the case of mentally deficient children, caused the Education Department of this State to obtain particulars with a view to following the course with normal children.

The underlying principle is individual liberty, and it is claimed that the pupil "acquires" what was taught previously.

An experiment was conducted by the Mistress of the Kindergarten Practice School at Blackfriars, who is also Lecturer in Kindergarten in the Sydney Training College, and so great was the success that it was deemed advisable to study the system firsthand, for which purpose the Mistress visited Rome.

The study of the system not only bore out the first impressions, but, according to the report, the methods were capable of extension to children much older than those usually associated with Kindergarten.

The results of the twelve months' experimental work have been satisfactory, and it has been demonstrated that children learn to read and write without strain and without any formal teaching.

The main benefits of the system, as already tested, are greater liberty, independent work, more rapid progress, and a joyousness in work for both teacher and children hitherto unknown.

Students from the other States are availing themselves of the benefits of the Lecturer's experience in Italy.

Classification.

Public schools are classified according to average attendance, and in the largest schools there are separate departments for infants (up to about age 8), for boys, and for girls.

In the classification of schools, made in January of each year, the schools were graded as follows:—

Class.	Average Attendance.	Schools.				
		1908.	1909.	1910.	1911.	1912.
I	600 and over	58	62	65	70	73
II	400–599	45	45	42	35	31
III	200–399	84	85	85	86	93
IV	50–199	379	378	370	375	388
V	30–49	581	605	600	605	582
VI	20–29	488	482	455	460	545
VII	Under 20	1,034	1,025	1,077	1,030	967

In the smaller schools work beyond the primary syllabus is not usually undertaken, but in the larger schools, constituted in several departments, higher primary work is conducted.

Vocational Training and Secondary Education.

Provision is made in State Schools for education beyond the primary stage in Superior or Continuation District and High Schools, and in Technical Schools and Colleges.

Art and manual training, nature study and the school garden, and elementary science, as adjuncts to the primary work, are initiatory stages in vocational training, which may be continued in a more specialised way in the higher schools.

Superior and Continuation Schools.

Till 1912 the Superior Schools continued the work of the primary syllabus, with such additional subjects as would enable pupils to compete at public examinations.

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

Following are the records of attendance and enrolment (December Quarter), at Superior Schools during the ten years, 1903–12 :—

Year.	Schools.	Departments.	Enrolment.	Average Attendance.
1903	129	302	86,636	63,919
1904	140	320	90,604	66,510
1905	141	323	88,234	64,452
1906	142	325	91,096	68,011
1907	142	325	92,926	68,923
1908	142	325	91,935	69,958
1909	145	326	92,695	69,631
1910	145	328	96,028	70,077
1911	145	328	92,498	70,033
1912	114	255	78,457	58,964

The decrease shown in the figures of 1912 is explained by the increase in the number of High Schools and the exclusion of figures relating to District Schools, previously classified with Superior.

There were twenty-seven District Schools, with sixty-six departments, an enrolment of 16,481, and an average attendance of 12,481.

The course of instruction in superior schools is designed for pupils between ages 13 to 15 years. In 1912 the study course was remodelled, and some of the schools reorganised as Day Continuation Schools.

In the Day Continuation Schools, specialised instruction for any one vocation is not designed, but preparation fundamental to various groups of industry is made possible. The schools are organised as Junior Technical (boys), Commercial (boys and girls), and Domestic (girls), and in all three types provision is made for a group of studies having no immediate bearing upon vocational ends, but designed for training in citizenship. These subjects are, English, civics and morals, history, music, and social exercises. The hours of instruction are twenty-five weekly, as compared with six hours per week in the Evening Continuation Schools. A Special Certificate marks the satisfactory completion of the two years' course.

Such of the Superior Schools as have not been reorganised as Day Continuation Schools will continue the general higher primary work up to the Intermediate Certificate standard till such time as high schools are constituted in the different localities.

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 with advantage be introduced in New South Wales. Following his report, issued in July, 1911, Evening Continuation Schools were organised, and numbers of the evening primary schools are being converted into Continuation Schools.

Prior to the year 1910 Evening Schools were maintained, with the object of affording instruction to those who had failed to receive the full advantage of primary education. As the need for thus simply completing an unfinished primary course became subordinated to the imperative demand for an Evening-School system to serve the requirements of pupils who had completed their primary school work, it became necessary to modify and adjust the Evening-School organisation accordingly. Consequently, the Evening Schools now comprehend two distinct types of training—(*a*) the Primary Schools, to complete elementary education, which are now practically obsolete, (*b*) the Continuation Schools, properly so-called, to provide instruction on special lines for persons engaged in daily employment.

The first of these schools were artisan, commercial, or domestic, and were instituted in populous suburbs of Sydney and Newcastle. At the end of 1912, forty-one such schools had been opened—Commercial Schools in such districts

as Mosman, Petersham, Gladstone Park (Balmain), Cook's Hill, Cleveland-street, &c.; Junior Technical Schools at Paddington, Newtown, Rozelle, Wickham, &c.; and Domestic Schools at Newtown, North Sydney, &c. The enrolment was heavier at commercial than at the junior technical schools, but both types were well supported. In connection with the system the question of compulsory attendance has been the subject of much discussion, particularly as the responsibility for the direction of military training of youths for the Commonwealth Defence Force has been imposed upon the State school teachers primarily. Related to the question of obligatory attendance at Continuation Schools for boys and girls between ages 14 and 16 years is the question of conducting these schools at times which will not involve attendance at late hours of the night.

Following is the record of these Evening Continuation Schools for the year 1912:—

Classification.	Schools.	Pupils.	
		Enrolment.	Average attendance.
Junior Technical (boys)	16	1,010	710
Commercial (boys)	16	1,153	808
Preparatory	3	102	71
Domestic (girls)	6	365	264

In these schools the fee chargeable is 6d. per week for forty weeks, on three nights for two hours each; but on completion of a satisfactory attendance above a stipulated minimum, in each year, the amount paid is returnable to the student. The average age of pupils attending all three classes of schools was 18 years. At the beginning of 1913 there were thirty-one Evening Continuation Schools in the metropolitan area and seventeen in country districts; ten of the latter were artisan schools.

High Schools.

In December, 1912, there were twelve High Schools, including a Technical High School, where both boys and girls attended; of these seven were outside the metropolitan area. The course of instruction covered practically secondary education in literary subjects up to the highest standard of University entrance examination. In 1911 fees in High Schools were abolished; entrance was conditional on satisfactory completion of the primary school work and a guarantee of attendance for the full period of four years. The total expenditure on High Schools for 1912 was £25,685.

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

Year.	Schools	Teachers.			Pupils. Enrolment.		Attendance. Daily av'rage.	Holders of—		Fees received.	Cost per head of enrolment.
		M.	F.	Total.	Total.	Av'rage Q'terly.		Bursaries.	Scholarships.		
										£	£ s. d.
1903	4	15	10	25	672	520	484	...	...	3,546	4 10 3
1904	4	16	12	28	696	550	512	111	138	3,689	4 4 11
1905	4	14	12	26	693	563	524	127	148	3,481	4 11 8
1906	5	21	13	34	917	723	670	126	143	3,350	4 19 5
1907	5	23	12	35	908	739	669	129	149	3,617	6 9 7
1908	5	24	17	41	969	811	728	143	196	3,702	6 5 4
1909	5	25	16	41	1,035	875	786	151	220	3,703	6 5 6
1910	5	29	19	48	1,168	894	826	162	246	3,575	7 13 3
1911	8	59	38	97	2,293	1,864	1,786	201	250	...	10 6 10
1912	12	95	51	146	3,002	2,573*	2,387	470	781	...	8 11 1

*Average weekly enrolment.

The increased attendance at High Schools in recent years is most noticeable. In 1912 the teaching staff was rearranged and reclassified; the revised syllabus now provides for complete secondary courses, extending over four years, designed as preparation for various types of vocation:—(*a*) A general course leading to professional study in higher institutions; (*b*) a commercial course preparatory to business careers; (*c*) a technical course; (*d*) a domestic course, qualifying for home management.

So far the schools are constituted on the basis of professional study, except for the Technical and Agricultural High Schools in connection with the Technical College. Particulars as to the various High Schools for 1912 are as follows:—

School	Teachers.			Pupils.		Attendance.		
	M.	F.	Total.	Total Enrolment.	Average Weekly Enrolment.	Average Weekly.	Holders of Bursaries.	Scholarships.
Sydney:—								
Ultimo ... ... Boys ...	20	...	20	373	317	301	96	146
Elizabeth-street Girls ...	2	16	18	362	310	279	33	124
Fort-street { Boys ..	23	...	23	530	465	435	17	67
Fort-street { Girls ...	1	18	19	368	315	287	19	160
Technical ... { Girls	16	...	16	102	86	80	30	53
Technical ... { Boys				346	294	275		
Newcastle ... { Girls	13	5	18	154	135	126	40	64
Newcastle ... { Boys				175	151	144		
East Maitland ... Boys ...	5	...	5	102	86	82	21	19
West Maitland ... Girls ...	1	8	9	115	102	92	21	7
Grafton ... ... { Girls	*2	1	3	39	32	31	10	10
Grafton ... ... { Boys				75	59	57		
Orange ... ... { Girls	*2	1	3	41	34	29	4	2
Orange ... ... { Boys				56	44	36		
Wagga ... ... { Girls	*2	2	4	49	42	39	6	9
Wagga ... ... { Boys				54	41	37		
Hurlstone Agricultural. Boys ...	8	...	8	61	60	57	8	6
Total	95	51	146	3,002	2,573	2,387	305	607

* Headmaster is not included, as he is also headmaster of the Primary School.

In 1912 High Schools were established at Grafton, Orange, and Wagga, while from the beginning of 1913, Bathurst, Goulburn, and Parramatta, likewise benefited; a new Girls' High School is in course of construction at North Sydney.

District Schools.

In 1912 there were twenty-seven District Schools in country towns, which, as adjuncts to the Superior Public Schools, offered an additional two-years' course of study in higher education. The course includes instruction in science, manual training, and agriculture, and the practical application of these principles. These District Schools also serve as preparatory training schools for probationers who desire to enter the teaching profession. In 1912, for the December quarter, there was an enrolment of 16,481 at these schools, with an average attendance of 12,481.

Schools in Federal Capital Territory.

An arrangement has been made by the Commonwealth and State Governments, by which the Department of Public Instruction will continue to administer Education in the Federal Area.

Buildings will be erected, equipped, and maintained, and the general provisions of the Public Instruction Act of New South Wales enforced. Teachers will be subject to classification, status, and transfer on an equal footing with ordinary State School teachers.

Should the Commonwealth demand teachers of higher qualifications than is provided in ordinary circumstances, the rates of payment will be determined by the Administrator and the State Education Department.

The subjoined statistics of the Federal Capital Territory have been included in the foregoing tables relating to State Schools :—

Year.	Number of Schools.	Teachers.			Gross Enrolment.		
		M.	F.	Total.	Boys.	Girls.	Total.
1911	14	10	4	14	178	170	348
1912	12	9	3	12	177	164	341

The religions of scholars on the net December enrolment was :—

Year.	C.E.	R.C.	Pres.	Meth.	Others.	Total.
1911	98	135	22	21	...	276
1912	93	142	21	23	1	280

The expenditure by the State on behalf of the Commonwealth was for the year 1911, £1,593.; and for 1912, £2,473.

Technical Education.

Technical education in New South Wales developed somewhat fortuitously. The foundation of the New South Wales Technical School was due in great measure to the efforts of a few enthusiasts connected with the Sydney Mechanics' School of Arts ; and, in 1873, it was decided to establish a Technical College, affiliated to that institution, with the object of improving the scientific knowledge of Australian artisans. In the year 1878 a sum of £2,000 was granted by Parliament towards the organisation of a Technical College, and the work of the institution was carried on in connection with the School of Arts. In 1883, however, a Board was appointed by the Government to take over the management, and the Technical College became a State institution. In addition to the classes held in the metropolis, lectures were delivered in country towns, and classes were established wherever sufficient support was given.

Towards the end of 1889 the Board was dissolved, and the Technical College placed under the direct control of the Department of Public Instruction. Technical education is administered by a superintendent, with financial and general procedure independent of primary and secondary education. Suitable accommodation for the classes was provided by the erection of the Technical (Central) College, at Ultimo. This central College was opened for the reception of students in January, 1892, and has, since that date, been subjected to extensive additions and alterations, of which may be mentioned the Turner Hall, opened in August, 1911, to accommodate at least 1,000 persons. Additional land was secured, and the Central College block now comprises 6 acres. During 1911 a new Engineering Department was added, and in 1912 a new building for the Printing trades was completed.

Colleges are established in the more important centres outside Sydney, viz., Bathurst, Newcastle, Maitland, Goulburn, Lithgow, Albury, Broken Hill, and Granville; and special classes are held in many country towns.

In 40 districts new classes in Technical Education were opened during the year.

At the end of 1912 premises for a Technical College were under construction at Balmain, and additions were made to the College premises at Sydney, Granville, and Newcastle.

Many persons require the aid of evening classes for the purpose of receiving instruction only in a few subjects directly related to their daily occupations, and, in the absence of other provision by the State for this class of students, they have been encouraged in the past to attend the Technical College, with the result that the conducted classes came to embrace a miscellaneous group of subjects. The provision of Trade or Continuation Evening Schools with definite vocational courses relieves the Technical Schools, and particularly the Central College, of much extraneous work and further reorganisation of Technical College work, with a view to the concentration of Art Classes (exclusive of Applied Arts) under a Director of Art, and the transfer of commercial classes to a Special Advanced Continuation School, leave opportunity for wider development along the line of pure Technology, the proper province of the Technical Education Branch.

In the large centres of population outside Sydney, the courses of instruction in technical subjects have been adapted to the requirements of the local industries. Thus, at Cobar, there are classes in assaying and mineralogy; at Granville, in trades-drawing and coach painting; at Balmain, in naval architecture; at Lithgow, in iron and steel manufacture; and at Maitland and Newcastle, in electricity as applied to mining; and in connection with Broken Hill Technical College the establishment of a school of mines for the Barrier District is in contemplation.

Generally the course of study in the Technical College is arranged in three schools with various departments, in which the subjects constituting the department are taught. Following are the schools and departments:—

Technology.—Agriculture, architecture, biology, chemistry, domestic economy, engineering (electrical and mechanical), geology, industrial and decorative art, mathematics, printing and lithography, sanitation, sheep and wool, women's handicrafts. Separate Classes: Bootmaking, leather-dressing, naval architecture, saddlery, tailors' cutting, window-dressing, elocution.

Art.—Art modelling, painting.

Commercial.—Bookkeeping, Modern Languages, Shorthand, Typewriting, &c.

Towards the end of 1913, with the object of improving the standard of education in the Technical College, the co-operation of the employers' and employees' associations in various trades was sought, and a system has been evolved whereby the Trade Schools will supply a more practical training in the several trades, and will endeavour to supply part of the practical training missed in the shop or factory experience.

Among the trades thus treated are:—(1) Building, (2) Engineering, (3) Artistic trades, (4) Printing and allied trades, (5) Tanning, (6) Bootmaking, (7) Baking, (8) Tailors' cutting, and (9) Coal-mining.

Under the new scheme only apprentices or those actually engaged in the trades will be allowed to enter the classes, and then only after having passed a qualifying examination; the classes will be under the inspection of Committees, and the Department's certificate of competency will be recognised by the various trades.

The course of training will include three years in the Trade Schools, and a finishing course at the Technical College. To assist those who wish to proceed to the positions of foremen and managers, a Diploma will be granted after a special course at the Technical College; the entrance for the Diploma course will be conditional on the completion of the Trade School course, or the possession of equivalent knowledge and skill.

The effect of the reorganisation will be to class all the present Technical Colleges, with the exception of Sydney and Newcastle, as Trade Schools, and to render necessary the immediate formation of Trade Schools at Sydenham, Leichhardt, Waverley, Redfern, North Sydney, and in other suburbs where such establishments may appear advisable.

In addition to courses given in the central and branch colleges, technical classes—principally in dressmaking, cookery, and science—are conducted at Public Schools. The classes and students in the Technical Education Branch have increased considerably in the last six years, as may be seen from the following record covering the past decade:—

Year.	Classes.		Individual Students.		Average Weekly Attendance.		Fees paid by Students.
	Technical College and Branches.	Public Schools.	Technical College and Branches.	Public Schools.	Technical College and Branches.	Public Schools.	
	No.	No.	No.	No.	No.	No.	£
1903	408	164	7,853	5,379	6,402	2,269	10,205
1904	415	231	7,147	6,074	6,673	2,587	10,053
1905	449	176	7,282	4,344	7,287	2,569	9,861
1906	482	172	8,169	4,232	7,606	2,165	11,007
1907	565	153	10,106	4,129	8,616	2,644	13,046
1908	667	123	12,451	2,415	9,506	992	14,176
1909	736	128	12,434	3,036	10,924	1,341	15,475
1910	777	109	12,712	3,127	12,192	1,083	15,873
1911	816	57	14,147	1,600	14,560	514	16,395
1912	732	61	14,805	1,613	17,204	545	15,846

Except the classes conducted in public schools a great part of the technical work is done in evening classes.

Trade schools include a school of bootmaking at Erskineville, and a school of leather-dressing at McMahon's Point. Technical Secondary Day Schools numbered four—two of them ranking as High Schools, viz., a Technical High School (incorporated with the Central Technical College), the Agricultural High School, Ashfield, and Technical Day Schools at Newcastle and Goulburn (in connection with the Technical Colleges in those places). The Technical High School, Sydney, is preparatory to the Engineering and Building professions; the Agricultural High School is referred to in connection with the teaching of Agriculture. In these High Schools the teaching is free.

The Public School Classes include manual training at Granville and at Newcastle, and science at Goulburn. Shorthand is taught at seventeen schools, typewriting at three, and elocution at thirty-eight, while book-keeping is a subject at only one school.

The teaching staff in connection with technical education consists of lecturers in charge of departments and resident masters in charge of branch

schools, with salaried and partially-paid teachers. The following statement shows the number of teachers in the Technical Education branch in the last four years.

Year.	Lecturers in charge.	Resident Masters.	Teachers.						Total.	
			Salaried.				Unsalaried, receiving Fees.			
			Masters.		Assistants.					
	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

The results of the Technical Examinations for 1912 show that out of 5,714 examinees 4,728, or 82·7 per cent., were successful; 593, or 10½ per cent., obtaining honours. The number of scholarships awarded was 198.

Agricultural and Rural Training.

For the boys of the present school generation education in subjects pertaining to rural industries is commenced in the primary schools with the teaching of the elementary principles of agriculture, both practical and theoretical. School gardens and experiment plots are adjuncts to the majority of State schools, and for these gardens grants are made of farm, vegetable, and flower seeds.

In 1905 an Instructor of School Agriculture was appointed, to direct the work of the teachers in the primary schools; his duties are to visit schools in the interests of school agriculture, and to supply the teachers with information required to direct the work of the pupils.

Rural camp schools are held in each Autumn and Spring, at which metropolitan school-boys are accommodated for a short period, while they visit dairies, farms, &c., under suitable guidance, and are instructed by direct illustration. The object of these camps is to familiarise city lads with the important rural industries of the State, and to foster an inclination for rural pursuits.

At the Rural Camp School, held at Bathurst in the Spring term of 1910, 685 boys and 52 teachers participated. At the Autumn School at Nowra 516 boys and 45 teachers were present.

During 1911, as a result of largely increased attendances, the camp schools were practically continuous throughout the year, being held as follows:—

Location.	Duration.	Attendance.
Richmond	February–April	593 boys.
Morpeth	June–August	636 ,,
Mudgee...	October–December	844 ,,

The teachers taking part in these schools numbered 163; the camp equipment, previously borrowed periodically from the Military Department, was provided by the Department of Public Instruction.

In 1912 the camp schools were held at Nowra, Camden, and Tamworth, with an attendance of 1,528 boys and 109 masters. At Nowra, over 60 farms and dairies were visited, and opportunity was afforded to see the manufacture of butter, cheese, condensed milk, and bacon, as well as the growth of dairy fodder and the conservation of ensilage.

Camden was chosen to illustrate dairy and mixed farms, vineyards, orchards, tree nurseries, bee and strawberry farms, and irrigation areas. At Yerranderie the silver ores formed interesting geological study, and in the vicinity of Jervis Bay and the river entrances, fishing and oyster culture

showed still another avenue of employment. At Tamworth, mustering, branding, shearing, and wool-sorting on the one hand, and hay-making and wheat-harvesting on the other, formed the subjects of the Spring term.

In twenty-five District Schools, in various parts of the State, agricultural science classes, including milk testing, are held regularly, and experimental agricultural work is undertaken strictly on scientific lines. A special Agricultural High School (Hurlstone) is established at Ashfield, and forms part of the Technical Education system; 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 1912 there were sixty-one students on the roll, of whom thirty-one were in residence. At the end of 1912 there were twenty-seven students in residence of whom four were bursars, and six were scholarship holders. For resident students the fee is £6 6s. per quarter; for day students no fees are charged.

The training at Hurlstone Agricultural High School forms a preparatory course to the more advanced work at Hawkesbury Agricultural College and, from the school, three scholarships are available annually to the Hawkesbury College. The school has been endowed privately with a scholarship, known as the "*Herald* and *Mail* Scholarship" in addition to liberal provision of scholarships by the State.

At the Central Technical College at Ultimo, a diploma course covering two years is available for evening students.

Supplementing the training given to pupils under the Department of Education a graduated scheme of agricultural instruction is organised in connection with the development of rural industries, by the Department of Agriculture of New South Wales. This scheme provides for apprentice Schools for lads between the ages of 16 and 20 years who intend to become agricultural workers. These schools are conducted in connection with Experiment and Demonstration Farms at Cowra (mixed farming), Glen Innes (mixed), Grafton—both opened in February, 1912—Yanco (irrigation), Dural (orchard), and Wollongbar; and offer one year practical courses at a charge of £5 per half-year.

Experiment Farm Schools, which provide a preparatory course for older lads to enable them to work their own farms, are established in connection with the Experiment Farms at Wagga, Bathurst, and hitherto at Berry. At these Schools, scholarships are available as follows: Wagga, three; Bathurst, three; Wollongbar, one.

During recent years lads have been received for short courses of agricultural training at the Casual Labour Farm at Pitt Town. Since 1910 the whole establishment, converted into the Government Agricultural Training Farm, has been devoted exclusively to the training of lads, particularly in connection with the Dreadnought Funds, publicly subscribed, of which the Government has undertaken the administration. At 30th June, 1912, ninety-eight lads were in residence.

Hawkesbury Agricultural College provides higher agricultural education. At this College the average number of students in attendance during the year 1912, was 201. The farm covers 3,430 acres, and accommodation is available for 200 students. From the establishment of the College to June, 1913, 1,577 students had passed through the College courses in addition to 609 State school teachers who attended Summer Schools, and 731 farmers who attended Winter Schools, and 118 students of dairy science. The Diploma course at the College covers three years' work and, for the year 1910–11, ten students obtained this award; certificates are obtained for shorter courses. Students holding the Diploma of the College may be permitted to complete the course for the degree of Bachelor of

Science in Agriculture at the University in three years instead of four. Under the direction of the College, Dairy Science Schools have been held in various centres for the benefit of factory managers and assistants. The College has been provided with twenty scholarships and bursaries, as follows :—

Department of Agriculture	3
Department of Public Instruction—	
For Students of the Teachers' Training College	10
For Students of the Hurlstone Agricultural High School... ...	3
Messrs. J. Fairfax & Sons (*Sydney Morning Herald*)	1
The *Daily Telegraph* Newspaper Co.	1
Farrer Research Scholarship...	1
Government Farrer Scholarship	1

In addition to these scholarships, prize funds have been provided liberally from public and private sources.

The following statement shows the attendance during the last six years at Agricultural Farm Schools, and Hawkesbury College :—

Year.	Experiment Farm Schools.			Apprentice Schools.						Pitt Town.	Hawkesbury College.
	Wagga.	Bathurst.	Berry.	Wollongbar.	Cowra.	Yanco.	Dural.	Glen Innes.	Grafton.		
1907	63	23	11	18	...	...	...	...	...	90	230
1908	58	33	5	18	...	...	...	...	...	105	231
1909	60	45	5	19	...	...	...	...	...	199	237
1910	69	48	...	23	...	...	3	...	...	88	221
1911	77	49	...	11	19	20	5	...	...	177	217
1912	75	51	...	2	20	23	3	12	14	98	201

The culmination of agricultural education and training in this State is in the University, where, in the beginning of 1910, in the Faculty of Science, a Department of Agriculture was instituted. A four-years' course leads to the degree of Bachelor of Agricultural Science; and, in providing a higher training ground for teachers and experts, completes the whole system of preparation for rural industries. The Experiment Farms of the State are available for the practical and experimental work in connection with the degree course.

In addition to the educational work undertaken, either under the State system of education, or in the development of rural industries, agricultural interests are developed by means of such institutions as Agricultural Bureaux, shows, &c. In regard to the agricultural shows, detailed figures are given in the part of this volume relating to "Agriculture."

During each year various short courses of study and practice in matters pertaining to rural industries are held. Following is the record of short-course students in the last eight years :—

Year ended 30th June.	Students Attending.		
	Dairy Science Schools.	Hawkesbury.	
		Winter School for Farmers.	Summer School for Teachers.
1906	13	61	102
1907	.....	77	98
1908	17	78	88
1909	19 12	67	96
1910	14 13	113	96
1911	.....	125	81
1912	20	94	48
1913	10	116	.. ...

TEACHERS.

The following table shows the sources from which additions to the teaching staff have been derived during the past eight years, and also the number of departures :—

Year.	Appointed as –				Appointed after undergoing a Training College course.		Teachers re-employed.	Others.	Total.	Teachers who left the Service.
	Pupil Teachers.	Teachers Small Schools.	Junior Assistants.	Sewing Mistresses.	Probationary Students.	Other Candidates.				
1905	160	44	.....	13	.....	.....	5	...	222	232
1906	171	98	.....	9	.....	.....	6	...	284	226
1907	194	182	.....	6	.....	.....	4	...	386	257
1908	36	163	58	5	40	7	...	...	309	237
1909	.....	157	65	6	72	10	2	...	312	220
1910	1	173	114	8	36	5	2	...	339	241
1911	.....	141	77	5	65	9	13	11	321	232
1912	.....	117	61	.....	269		...	132	579	289

Training of Teachers.

Until the year 1905 the teaching staff of the State Schools was recruited, generally through the pupil-teacher system, under which boys and girls commenced between the ages of 14 and 16 years as pupil-teachers, charged with the control and instruction of a certain number of children ; in return for their services they received, in addition to a small salary, instruction and practical advice from the principals of the schools where they were employed. After four years service, marked by annual examinations conducted by the Department of Public Instruction, a limited number who passed the qualifying examinations were admitted to a course at the Training College—men at a non-residential institution in connection with Fort-street Model School ; and women at Hurlstone College, where residence was provided. On completion of the course, trainees were classified as teachers.

Pupil-teachers who did not enter the training schools were appointed as assistants, or placed in charge of small schools ; and after a probationary service were allowed to compete for classification on the same footing as the trained teachers. A number of practically untrained teachers entered the service as teachers of small schools in outlying districts, and became eligible for classification.

The inadequacy of this system for maintaining an efficient and well-trained body of teachers becoming apparent, the pupil-teacher system was abandoned in 1905 ; and a well devised training system instituted for all prospective teachers.

The training schools at Hurlstone and Fort-street were closed, and a general training school established in connection with Blackfriars Public School, with a one-year course, ninety-five students being admitted. In 1911, Hereford House School, Glebe, was opened as an adjunct to the Blackfriars School, but both these establishments were intended as temporary expedients. The necessity for adequate accommodation in a specially equipped building has been obvious, and is accentuated by the urgent need of teachers for primary work in small country centres, and for specialised work in continuation schools, and in secondary schools.

During 1912 the Teachers' College and Building Acts were passed, authorising the construction and maintenance, by the Department of Public Instruction of a Teachers' College, within the domain of the University of Sydney ; the College is now in course of erection.

At the present time training for prospective teachers takes two forms—a short course of six months at Hereford House School for assistant teachers and teachers in small country schools, and a complete course, extending over two years, with the option of a third and fourth year for specialised work for the larger primary and higher primary school-teachers' certificate. Entrance to the short course is conditional upon the passing of a qualifying examination, held twice annually, viz., in February and August.

During 1911 swimming was included in the curriculum for women students of the Training College; 161 students were instructed, and at the end of the season eighteen gained certificates for life-saving, seven obtaining bronze medallions. In 1912 sixty teachers and fifty students were taught swimming.

Entrance to the full course at Blackfriars has been hitherto conditional upon passing a special entrance examination, held annually. The first examination for the Intermediate Certificate in 1912 gave entrance to the Teachers' Training College, but from 1913 entrance will be dependent on the results of the Leaving Certificate examination.

Candidates for admission to the Teachers' College are provided with a two-year preliminary training course in District Schools, &c. At the close of 1912 probationary students numbering 372, viz., 70 males and 302 females, were in attendance. Of these 168, comprising 32 males and 136 females, were in their first year, the remaining 204, composed of 38 males and 166 females, being in their second year.

The maximum age of entrance for candidate probationary students has been 18 years. From 1911 the age limits are over 15 and under 20 in January following the examination. During the year 1912 221 probationers in District Schools qualified for entrance to the Training College.

In 1912, students and graduates underwent courses of instruction at the Teachers' College, their distribution among the different years being as follows:—

Students.	Males.	Females.	Total.
First year	37	114	151
Second year	53	89	142
Third year	10	11	21
Fourth year	4	1	5
Graduates	1	7	8
Short course (May)	48	68	116
,, (October)	52	65	117
Total	205	355	560

On completion of training, trainees qualify for 2A or 3B Teacher's certificates.

The candidates tested during the year 1912 in connection with Teachers' examinations included the following:—

Candidates for Training—	
Probationary students	221
Not previously in Department	21
Pupil-teachers and assistants	19
Small-school teachers...	8
Applicants for probationary studentships...	220
Students of Training College	157
Trainees in Art subjects	453
Admission to Hereford House	448
Teachers examined at Easter	1428
,, ,, (Art subjects only)	715
,, applicants for small schools	275

Conditions of Service.

Prior to 1908 the salaries paid to classified teachers in charge of schools depended entirely on the classification of their schools, as determined by average attendance. Under the present system the classification is rendered more stable by restrictions upon the transference of schools from class to class, and arrangements have been made by which the teachers' promotion depends, not only on the promotion of their schools, but also on the improvement of their qualifications. To qualify for a higher grade the teachers must pass a series of examinations, but to obtain promotion they must show also the requisite degree of efficiency in practical work. During 1911-12 regrading of salaries was effected, special attention being given to the question of residence or rent allowance.

The following statement shows the range of salaries paid as at December, 1912, to teachers at schools having an average attendance of 200 and over :—

Class of School.	Required Average Attendance.	Principal Teachers.		Mistress.				First Assistant.			
				Girls' Department.		Infants' Department.		Male.		Female.	
		Classification.	Salary.	Classification.	Salary.	Classification.	Salary.	Classification.	Salary.	Classification.	Salary.
			£		£		£		£		£
I.	600 and over	1A	450	1A	288	1A	252	1B	288	1B	210
		...	...	1B	252	1B	240	2A	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	363	1B	216	1A	210	1B	240	...	...
		1B	342	2A	204	1B	198	2A	216	...	...
		2A	306	...	...	2A	192	2B	198	...	...

When the average attendance in a boys department exceeds 500, the principal receives £500, and the first assistant £312. When the average exceeds 400, the salaries are £475 and £300 respectively. Similarly, if a girls' department exceeds 400, the mistress receives £312, and the first assistant (1B) £222, or (2A) £192.

At each State school where the average attendance is less than 200 the salary of the principal teacher is as below :—

Class of School with Average Attendance.							
IV. 50–199 Pupils.		V. 30–49 Pupils.		VI. 20–29 Pupils.		VII. Under 20 Pupils.	
Classification.	Salary.	Classification.	Salary.	Classification.	Salary.	Classification.	Salary.
	£		£		£		£
1A	324	2A	234	2B	204	3A	174
1B	306	2B	222	3A	192	3B	156
2A	270	3A	216	3B	174	Uncl.	110
2B	258	3B	192				

Assistants.—The salaries of ordinary assistants are :—1B men £228, women £162 ; 2A men £204, women £156 ; 2B men £186, women £144 ; 3A men £174, women £126; 3B men £156, women £120 ; Unclassified, £110 ; Junior Assistants under 21 years, men £72, women £60.

In addition to these rates, special allowances are made to teachers of District schools and to teachers of special subjects, such as Science, Manual Training, Cookery, &c. If married, teachers in charge of schools are granted residences at an assessed rental. Extra allowances may be granted to teachers stationed in remote localities, where the cost of living is high. Teachers in half-time

schools and teachers of house-to-house schools are paid at the same rates as those in public schools of corresponding classification; subsidised teachers receive £5 per head of average attendance, with a maximum of £50 per annum. In the western districts the subsidy is £6, and the maximum £60 per annum. Teachers are eligible for a minimum salary of £110 per annum on attainment of age 21; and extended leave after twenty years' service is part of the conditions of service.

Classification and Improvement.

State school teachers are graded and obtain promotion after passing a series of examinations, framed to test their progress in scholastic attainments as well as their skill in imparting knowledge. For meritorious service, also, teachers may receive promotion.

Teachers associations are established in inspectorial districts, with the object of keeping the teachers in touch with modern educational methods. Meetings are held at frequent intervals for the discussion of educational topics; addresses are delivered, and demonstration and practical lessons are given on subjects of professional interest. Circulating libraries have been established by a large number of these associations.

In isolated districts, where the teachers are unable to be present at these meetings, they are allowed to attend for a short period, from time to time, at larger schools.

Summer schools are held regularly to improve the skill and knowledge of teachers. During 1912 and 1913 schools for art work, music, and physical culture were conducted. Schools of instruction are held by inspectors.

During 1912, 138 teachers were enrolled either as day or evening students in the University of Sydney; a special day course of instruction for work-mistresses was given at the Central Technical College; special classes in Art and Manual Training were formed at various centres.

Supervision.

A staff of Inspectors has been organised to exercise supervision over educational work in Public Schools. In 1912 the inspectors for primary and superior schools numbered 39. In addition there were attached to the Department of Public Instruction an Inspector of Continuation Schools, and an Inspector of Secondary Schools. The latter, under the Bursary Endowment Act, is charged with the inspection of such private secondary schools as apply for registration.

Methods of inspection have been radically altered in recent years to accord with the spirit pervading the new syllabus. Detailed exhaustive examination of schools has been abandoned, a quarterly examination by the principal of the school in certain subjects having been substituted, which is tested at various points, so as to bring the inspector and teacher into close and friendly contact and to co-ordinate their duties.

This mode enables the inspector to devote his attention to general observation of the work of the school, inspecting minutely where signs of weakness may be apparent.

As the result of his examination, the Inspector will assess the value of the teaching, with special reference to various considerations, as detailed in his official instructions.

The Inspector is required to meet the teachers of his district during each year; the meetings being devoted to lectures, essays, and the discussion of educational topics. In 1912 Schools of Instruction were conducted by Inspectors at various country centres.

Although the whole internal administration of schools is reserved to the Minister, Public School Boards are appointed to visit schools, to induce parents to send their children regularly, and to carry out other duties either

in support of the teachers or to check or report misconduct. These Boards are restricted in supervision to the schools in their respective districts, which are defined by the proclamation of the Governor. About one-third of the members of the Boards are women.

During recent years, a number of Parents' and Citizens' Associations have been formed in connection with schools. Their growth testifies to a widespread desire to do something independently of State aid to make the schools better fitted in the matter of equipment for educational work. These associations have no authority in respect of the internal management of the schools nor in the expenditure of public moneys.

Careers Adopted by Ex-Pupils.

In the last two years returns obtained from teachers in State schools give some indication of the avenues of employment which their ex-pupils seek. In 1911, 12,162 boys, and 10,974 girls; and in 1912, 15,025 boys and 13,485 girls are recorded as passing to other schools, State or private. A statement of the careers adopted in the remaining cases is of interest:—

Objective on Leaving School.	1911.		1912.	
	Boys.	Girls.	Boys.	Girls.
Technical classes	150	...	289	...
University	72	14	62	11
Public Service	504	170	576	220
Business colleges	...	185	...	202
Professions	161	14	124	...
Commercial pursuits	1,031	169	1,046	236
Agricultural pursuits	1,932	...	1,865	...
Building trades	291	...	310	...
Carrying, &c.	421	...	155	...
Mining	248	...	239	...
Metal	134	...	169	...
Clothing	34	518	33	463
Other skilled trades	498	19	302	5
Unskilled trades	379	...	238	...
Shop assistants	262	88	331	100
Factory workers	148	65	211	102
Domestic workers—				
Home	...	4,650	...	5,471
In service	...	244	...	289
Miscellaneous	1,069	64	1,017	42
	7,334	6,200	6,965	7,141

In 1912, 62 boys entered the University; the majority in the Schools of Medicine and of Engineering. Of the boys who entered technical classes 174 were from metropolitan schools, and 115 from schools outside that area. The great majority of entrants to the Public Service were country boys, viz., 400, as against 86 from the city. Also 1,692 boys from country schools entered on agricultural pursuits; on the other hand a majority of city boys, as might be expected, entered commercial pursuits. Of the girls, University entrants were 7 from the city and 4 from the country. The majority of recruits to domestic service were country girls 215, as against 74 from the city; 111 country girls chose teaching for a profession, as against 76 city girls.

Medical Inspection.

In 1907, arrangements were made for the medical inspection of children in the State schools, but inspections were restricted in the first couple of years mainly to schools in the most populous centres of Sydney and Newcastle. During 1911, the medical inspection was extended to the South Coast District and to a number of the largest inland towns, and further extensions occurred in 1912. The ultimate aim is to embrace all the school population of the State in, at least, two medical examinations during the

school life. At the close of 1913, the medical inspection staff of the Department of Public Instruction included ten doctors, and four trained nurses were appointed to assist in the work. Arrangements are practically complete to employ two more nurses.

The following statement shows the extent of the inspection work between 1907 and 1911. Pending a re-organisation in the work no figures are at present available for 1912.

	May, 1907, to April, 1908.	April, 1908, to June, 1909.	1910.	1911.
Medical Officers	2	3	3	4
Schools visited	50	98	127	144
Enrolment	36,118	66,000	75,854	67,577
Children presented	4,000	14,360	16,036	16,909
Complaints disclosed—Boys and girls ...	4,795	22,824	21,558	18,341

The defects disclosed in 1911 are summarised as follows :—

Defect.	Cases observed.			Ratio per cent. of total defects.
	Boys.	Girls.	Total.	
Vision and Eye	2,685	3,663	6,348	34·61
Nose	2,833	2,917	5,750	31·35
Throat	913	1,112	2,025	11·04
Glands	279	214	493	2·69
Teeth	358	293	651	3·55
Ear	680	329	1,009	5 50
Other	801	1,264	2,065	11·26
Total	8,549	9,792	18,341	100·00

In all cases the children concerned were advised to apply to the family doctor for treatment, and in the past two years the proportion of cases in which treatment has been undergone on the School Doctor's advice has risen from 25 to 36 per cent. of complaints diagnosed. Dental troubles generally were not investigated by medical officers, as Dental inspection is undertaken specially by the Dental Association in a limited number of schools.

It is still noticeable that more than half the number presented were girls; the eyesight of girls is, on the whole, worse than of boys; and cases of defective vision are more frequent in the metropolis than in country districts.

In their endeavours to rectify the abnormalities discovered the medical inspectors have delivered addresses to parents; and attention has been given to school architecture, sanitation, &c. Special schools for delinquent or mentally defective children are mentioned elsewhere.

These matters will be discussed in greater detail in the part of this volume relating to "Social Condition."

The school clinic in connection with the Teachers' Training College, established during 1910 to provide opportunity for training women students to take the Infant Teachers' Course is still in active service. The students are trained to observe children, and to treat simple ailments.

Physical and Military Training.

At the close of 1910 there were in the State schools 7,000 cadets in Metropolitan and Country Corps, in addition to senior companies at the Sydney Boys' High School, Fort-street Model School, Hurlstone Agricultural High School, and Cleveland-street School. The ranges in use numbered

239, including 75 miniature rifle ranges, constructed during 1910. On 1st July, 1911, the State Schools' organisation of senior mounted and school cadets was superseded by the Commonwealth compulsory training system, initiated in the latter half of 1911; the first half of the year having been devoted to the preparation of candidates for posts as non-commissioned officers in the forces. The State Department of Public Instruction acts in co-operation with the Defence authorities, since the responsibility for carrying out the defence scheme devolves largely upon teachers. To complete their year's training, junior cadets prior to 1912 served for 120 hours, in periods of 2¾ hours per week for 44 weeks. The Defence Act of 1912 reduced the yearly service to 90 hours. Elementary marching drill occupies one half-hour per week, and the optional subjects include miniature rifle shooting, swimming, running exercises, and first aid. Senior cadets (14–18 years) attend weekly drills after school hours; and 6 half-day musketry parades per annum are required, in addition to 4 whole day parades, and 6 half-day parades on public holidays or Saturdays. Senior cadets having now the option of choosing whether they will drill with the school unit or with the area unit, may be enrolled in the school corps. Particulars concerning the system of universal military and naval training are given in the chapter dealing with "Defence."

To secure the efficiency of the teaching staff for the universal training of cadets, schools of instruction for teachers are arranged—the course to cover physical training, drill, shooting, swimming, first aid, &c. In 1912 there were attending the State Schools 16,113 Junior Cadets and 1,280 Senior Cadets. All other pupils, boys under 12 years of age, and girls, practise drill and physical exercises daily in school.

Three instructors, assigned by the Commonwealth Defence Department to New South Wales, were occupied in visiting schools and instructing teachers.

Swimming is encouraged; one afternoon per week in the season may be devoted to acquiring and practising the art of swimming. In 1912, 14,173 boys, and 7,665 girls from metropolitan schools received regular swimming exercise, the average attendance each swimming day being about 9,000 boys and 4,000 girls; 1,500 boys and 350 girls were taught to swim. Life-saving certificates were obtained by 118 boys and 26 girls; medallions being obtained by 35 boys and 17 girls. At country schools, when possible, instruction in swimming and life-saving is given.

In 1913 the Defence Department of the Commonwealth extended its activities to include the physical training of girls. In April a School of Instruction was held in Melbourne for selected women-teachers from public schools in the several States. Six women teachers attended from New South Wales. After completing the instructional course these teachers specialised in the physical training of girls in their respective districts and gave demonstrations in the practice schools of other divisions.

Scholarships and Bursaries.

In addition to providing schools it has been the policy of the State to assist promising students, especially to High Schools and to the University, by means of scholarships and bursaries, of different tenures and values.

During 1912, 514 scholarships, each of the value of £1 10s. per annum for four years, were awarded in District and High Schools after competitive examination for the qualifying certificate to boys and girls under age 15. For the future the age limit will be 14 years.

The number of Bursaries granted during 1912, was 300 each carrying in addition to the grant of 30s. per annum for books, a maintenance allowance of £10, £10, £15, and £20 in successive years for pupils living at

home, or £30 for the first year, and £30 or such sum in excess of £30 as may be determined for each of the second, third, and fourth years for those who have to live away from home to attend school.

On the results of the Intermediate examination, there were granted 20 scholarships carrying living allowances, and 30 with allowances for text books, tenable at High Schools. In addition 10 scholarships with living allowances, and 15 without, were awarded and made tenable at Technical Colleges or the Agricultural College.

There were also 88 Probationary Student Scholarships granting two years at selected district schools, and carrying living allowances.

Until 1911, Scholarships tenable at the Teachers' Training College were in two classes, carrying different rates of remuneration. In January, 1912, all scholarships were fixed at the higher rate, viz., £50 per annum for students boarding away from home, and £30 per annum for students living at home.

In 1908, Travelling Scholarships of an annual value of £150 to £200, and open to ex-students of the college, were established.

In 1911 a sum of £2,500 was provided by Mrs. Falkiner, of Deniliquin, to establish a scholarship fund for the Hay District. A Falkiner scholarship, carrying University training, with text-books and costs of board and residence while in attendance at lectures and examination, for four years, has been founded. It is open for competition at the Leaving Certificate examination for boys who have passed through the Hay District School.

The Scholarship was granted in 1912, the successful candidate choosing the Engineering course.

In 1912 a special scholarship on the lines of the Falkiner scholarship was provided by the Department of Public Instruction for the Riverina district, and is to be available in alternate years.

Bursary Endowment.

In 1912 the Bursary Endowment Act was passed by the Parliament of New South Wales, providing for the allocation of public moneys for the purpose of establishing a fund for bursaries, tenable in secondary schools, public, or private, and in the University of Sydney. This fund is administered by a specially constituted board, consisting of two representatives each of the University of Sydney, of the Department of Public Instruction, and of the Secondary schools registered under the Act. A representative of the Department of Public Instruction is chairman.

Schools desiring to benefit under the Act must register; and such registration, which is effective for two years, is conditional upon inspection to determine the suitableness of school premises, the organisation and equipment of the school, the method and range of instruction, efficiency of the teaching staff, and the general conduct of the school. The inspection is conducted by the Inspector of Secondary schools under the Department of Public Instruction.

The general conditions attached to registration are (1) a school must be capable of providing a four-year course of instruction beyond the primary stage, (2) such course shall lead to a standard not lower than that of the leaving certificate in at least six subjects (of which mathematics shall count as two subjects), and (3) the subjects of the course shall be such as the Board may approve. Forty-eight private schools were registered in 1912 under the Bursary Endowment Act as eligible to receive bursaries in 1913.

Twenty-one Bursaries, tenable for three years at the Sydney University, in Arts or Science Schools, were awarded to pupils from all schools, according to their positions as candidates at the Senior Examination of November, 1912, the candidates being under 19 years of age at date of examination.

A full Bursary entitles the holder to a grant of text-books not exceeding £5 per annum, and free education, together with an allowance not exceeding

£20 per annum, to those who need not board away from home, and not exceeding £50 per annum to those who must do so; provided that a Bursar who wins and elects to hold a Scholarship or Exhibition offered by the Senate of the University shall be entitled to receive from the two sources conjointly an allowance of not more than £50 per annum. Should a Bursar enter one of the professional schools within the University he will be obliged to pay the prescribed fees. The Bursary allowance will not be continued beyond the third year of the student's attendance at the University.

The following Statement shows the particulars of Scholarships and Bursaries granted during 1912:—

Classification.	Number Awarded.			Value per Annum.	Method of Award.
	M.	F.	T.		
Scholarships	330	184	514	Secondary Education, and £1 10s. text books.	Qualifying Certificate Examination.
Intermediate Scholarships	17	3	20	If at home, £15 and £20 in third and fourth years, and £30 if away from home.	Intermediate Certificate Examination.
do. do.	28	2	30	Education, and text books £1 10s.	do. do.
Technical do.	10	..	10	If at home £15 for first, and £20 for subsequent years; if away from home, £30 p.a. and text books, £1 10s.	do. do.
do. do.	12	..	12	Education and text books.	do. do.
Hawkesbury Agricultural Scholarships.	3	..	3	Two years at College, and £1 10s. text books.	do. do.
Probationary Students Scholarships.	29	59	88	If at home, £12 during second year; if away from home, £30.	do. do.
Bursaries	198	102	300	If at home, £10 for first and second years, and £15 and £20 for third and fourth; if away from home, £30 for first year and such sum in excess of £30 as may be determined for the subsequent years.	Qualifying Certificate Examination.
University Bursaries	13	8	21	If at home, £20 per annum; if away from home, £50, also £5 for text books.	Senior University Examination.

Private Schools.

Concerning private schools, particulars have been given of the aggregate number of schools and of the pupils enrolled. Little other information is available; many of these schools are denominational, and none are subsidised excepting the Sydney Grammar School, which was incorporated by an Act of Parliament of 1854, and opened on 3rd August, 1857; it was established to confer on all classes and denominations of British subjects the advantages of a regular and liberal course of secondary education. The Act authorised the payment of £20,000 for the erection of school buildings, and an annual endowment of £1,500. The following is the record for the last five years of the numbers of teachers and students in the Sydney Grammar School, which since its foundation has been conducted exclusively for boys:—

Year.	Teachers.			Students.				
				Enrolment.		Attendance.	Age Groups.	
							December Enrolment.	
	Holding University Degrees.	Not Holding University Degrees.	Total.	Total.	Quarterly Average.	Daily Average.	6–14 years.	Over 14 years.
1908	17	9	26	700	601	574	123	481
1909	18	8	26	719	604	574	112	469
1910	17	8	25	689	572	536	138	414
1911	18	8	26	696	584	553	153	434
1912	17	8	25	665	561	522	143	379

New pupils admitted in 1912 numbered 179, viz., 96 under, and 83 over, 14 years of age.

This school has occupied a special place in the educational world on account of its early establishment under Government support. Private endowments have made available various prize funds and two exhibitions annually for students proceeding to the University.

The income and expenditure of the school for 1912 were as follows :—

Income.	£	*Expenditure.*	£
From State grant	1,500	Total Expenditure	11,416
From school fees	9,676		
From special prizes, &c.	179		

The cost per pupil in average attendance was £21 17s. 4d., being 15s. 2d. greater than in 1911 ; the expense to the State was £2 17s. 6d. per head, being 3s. 3d. more than in the previous year.

Private Kindergarten Schools.

Free Kindergarten schools are conducted by the Kindergarten Union of New South Wales, which is assisted by a grant from the Government amounting to £800 per annum. In 1911 an additional £200 was granted subject to conditions. There were 11 Free Kindergarten schools in 1912, with 55 teachers. Of the 11 schools 9 were in the metropolitan area and 2 at Newcastle. The number of scholars on the roll during the December quarter was 732, of whom 687 were under 6 years of age, and 45 between 6 and 14 years. The average daily attendance was 471.

The eight schools under the Kindergarten Union are overtaxed for accommodation and there is a large waiting list. Some of the schools allow the use of playgrounds during school hours to children for whom no room can be found.

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

Business Colleges and Shorthand Schools.

Students at many of the public and private schools receive instruction in business methods, and this branch of education is undertaken also at the Technical schools of the Department of Public Instruction.

A return of the number of pupils taught in these special subjects is not available, but the following statement shows that many persons who have passed the school age receive instruction annually at special Business and Shorthand Schools which are entirely under private management. Book-keeping, Business Methods, Shorthand, and Typewriting are the main subjects taught :—

Year.	Schools.	Teachers.		Enrolment.			Average Attendance.			Total Fees Received.
		M.	F.	M.	F.	Total.	M.	F.	Total.	
										£
1907	17	73		1,776	1,185	2,961	1,137	699	1,836	11,447
1908	19	96		2,430	2,237	4,667	1,301	1,281	2,582	16,509
1909	18	99		2,177	2,558	4,735	1,069	1,230	2,299	16,293
1910	18	65	36	2,492	2,638	5,130	1,316	1,184	2,500	17,159
1911	19	66	36	3,336	4,225	7,559	1,490	1,741	3,231	19,436
1912	18	59	44	3,280	5,231	8,511	1,321	2,134	3,455	22,743

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

Evening classes are conducted by various institutions, *e.g.*, classes held at the Young Men's Christian Association ; also, at the Railway Institute. These institutions have really been carrying on Continuation School work for some years.

At the Railway Institute, lectures of a technical and scientific character are arranged, in addition to the regular class work, in subjects ranging from ordinary English and commercial subjects to engine-driving, electrical physics, safe railway working, goods and coaching accounts, &c. The institute, also has succeeded in accumulating a choice collection of New South Wales timbers. Under the ægis of this institute, ambulance classes, &c., are undertaken and the attendance is exceptionally good.

School Savings Banks.

A system of school savings banks in connection with the public schools of the State was initiated during 1887. By this means £436,000 have been received in deposits, and £102,477 transferred to other banks as Children's Individual Accounts. The object of these school banks is to inculcate principles of thrift while the minds of the children are susceptible of deep impressions.

In 1912 these banks numbered 719 ; the estimated number of depositors was 60,000. The deposits amounted to £30,221, and withdrawals, £29,911 ; £5,870, representing individual sums of £1 and upwards, were transferred to the Government Savings Bank, leaving £12,118, as credit balances in the school banks.

Examinations.

Since 1867 the University has conducted annual Public Examinations, Junior and Senior, which are open to candidates from any school, on payment of the necessary fee. These examinations have ranked as tests of the soundness of instruction imparted in the public and private schools of the State.

The number of candidates and the passes at these examinations are shown for quinquennial periods as under :—

Period.	Senior.			Junior.		
	Candidates.	Passes.		Candidates.	Passes.	
		Total.	Per cent. of Candidates.		Total.	Per cent. of Candidates.
1867–1870	35	30	85·7	69	53	76·8
1871–1875	294	174	59·2	951	544	57·2
1876–1880	316	237	75·0	1,737	1,046	60·2
1881–1885	311	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	568	84·3	5,841	3,944	67·5
1906–1910	867	719	82·9	6,408	4,560	71·2
1911–1912	378	298	78·8	2,405	1,830	76·1

The following table shows the distribution of successful candidates in recent years :—

Year.	Senior Passes.			Junior Passes.		
	Boys.	Girls.	Total.	Boys.	Girls.	Total.
1906	92	34	126	582	263	845
1907	104	45	149	531	273	804
1908	101	50	151	582	332	914
1909	90	55	145	604	311	915
1910	114	34	148	721	361	1,082
1911	100	31	131	645	299	944
1912	114	53	167	615	271	886
1913	95	36	131	418	214	632

The scope of the examinations is wide enough to embrace all subjects usually included in the curricula of secondary schools ; seven subjects at the Junior, and eight at the Senior now constitute the maximum for proficiency prizes, and the attainment of specified standards is the equivalent of matriculation. Honours at matriculation are obtainable at the Senior examination.

Examinations for the admission of articled clerks in Law have been conducted by the University since 1877 under a rule of the Supreme Court. The records of these examinations in the past three years were :—

	Candidates.	Passes.
1910	43	25
1911	55	27
1912	49	23

The subjects of examination are English, Latin, Mathematics, and Greek, or French, or German.

Various other public examinations are conducted by different bodies, for which the schools prepare their pupils, notably the Institute of Bankers for admission to the Bank service, and the Public Service examination for admission to the Service of the State.

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

The higher school courses are designed to furnish preparation for various types of vocation, viz :—(1) A general course leading to the professional studies of higher institutions. (2) A commercial course, preparing for business careers. (3) A technical course, leading to industrial pursuits. (4) A domestic course, qualifying for home management. Three certificates mark definite stages in the progress of public school pupils. The Qualifying Certificate indicates that the holder has completed the primary course, and is fitted to enter upon a secondary course. This standard is a condition precedent to admission to all higher schools. The Intermediate Certificate marks the completion of the higher primary stage constituting the first two years of the secondary course. The Leaving Certificate is obtainable on graduation from the full four years' course of the High Schools, and is accepted as indicative of adequate preparation for the University, if it shows a pass in matriculation subjects.

The first examination for the Qualifying Certificate was held in December, 1911, at some 600 centres in New South Wales. The following are particulars regarding the two examinations held to date :—

Year.	Examinees.	Qualifying Certificates Issued.	High School Scholarships and Bursaries.
1911	12,000	7,092	900
1912	16,500	7,869	1,000

As the object of this examination is to avoid stereotyped questions and discourage "cramming," the schools were classified in districts, and the papers set in each had a bias towards problems especially applicable to local conditions. In allotment of the certificates on this examination, which also determines the allocation of Scholarships to District and High (including Agricultural and Technical Schools) the teachers' reports and the record of school attendance are influential factors.

The Examining Board in connection with the Intermediate and Leaving Certificates consists of the Director of Education, the Chief Inspector, the Principal of the Teachers' College, the Inspector of Secondary Schools, and four delegates appointed by the University.

Subject to regulations, Scholars of Private Secondary Schools may compete for the Leaving Certificate.

Specialised Educational Activities.

Reference has been made to the system recently inaugurated in State Schools, of secondary education in preparation for various types of vocation. In this scheme consideration is given to the necessity of commercial, as well as domestic, training.

In the new scheme of the reorganised Superior Public Schools provision has been made for the establishment of Domestic Superior Public Schools for girls. The syllabus came into operation at the beginning of 1913, and the course has been drawn up for Australian girls under local conditions. It includes household accounts, cookery, laundry work, dressmaking, millinery, garden, art of home decoration, music, and social exercises, morals and civics, physical training, as well as a course in English, designed to encourage a taste for wholesome reading.

Three hours per week are devoted to cooking and laundry, the course being practical and diversified. Personal hygiene, nursing of sick, and the care of the infant receive considerable attention.

Botany and gardening are taught, and while the course is designed primarily to train girls to manage a home, provision is also made for a training in commercial horticulture, and an alternative course of business lessons in the second year is intended to fit girls to take up work in the commercial houses in the city.

During 1912, 61 cookery schools were in operation at various centres, and were attended by girls from neighbouring schools, the course covering twelve months, and at the end of the year, 3,338 girls were receiving instruction. The Technical College provides more advanced courses.

Commercial Education.

Preparatory education for commercial life has been provided in the State schools by means of the curricula of classes in which youths receive tuition for the commercial certificates issued in connection with the University public examinations, and special preparation is given in the Commercial Continuation Schools recently established.

Private schools and colleges afford facilities for commercial training, both by day and evening classes, and advanced preparation for commercial life has been provided in the University evening lectures for the diploma in Economics and Commerce. This section of the University teaching was promoted originally by the Sydney Chamber of Commerce in the form of brief lecture courses available to the general public, and in examinations conducted for senior and junior commercial certificates issued by that body. The diploma course was, in 1913, converted into a full degree course; separate Chairs for applied chemistry and for economics have been provided, and it is hoped that means will be provided for practical research work which will be of great benefit to Australian industries. Such industrial research work is warranted by the necessity for keeping abreast of similar movements now being developed, particularly in numerous Universities and higher colleges of the United States of America.

In connection with the question of vocational training and compulsory attendance at continuation schools, it is of interest to note that the Royal Commission of Inquiry into the alleged shortage of labour, &c., in New South Wales, reporting in 1912 under the second head, viz., "Hours

and general conditions of employment of female and juvenile labour in factories and shops, and the effect on such employees," recommended as the most essential reform the raising of the entry age to 16 years, and, as a corollary, education with vocational direction. In regard to the third part of the inquiry, viz., "Cause of the decline in apprenticeship of boys to skilled trades, and the practicability of using technical and trade classes as aids to or substitutes for apprenticeship," the Commission emphasised the fact that children may leave the primary school at age 14. The Technical College evening classes being devised for adults, boys under age 16 are discouraged from attending. Similarly, in entering on an apprenticeship, employers favour boys of at least age 16, so that they may have the benefit of the full five years' term. The interval between ages 14 and 16 thus presents a serious problem. The remedy recommended is an Apprenticeship Commission (with the Director of Education as President) to—

(*a*) Classify for apprenticeship trades and branches of trades which may be deemed skilled ;

(*b*) Determine with regard to apprenticeship the period, rates of pay, length of attendance at technical classes, and amount of pay for certificated attendance ;

(*c*) Supervise the carrying-out by masters and apprentices of the apprenticeship agreement, and transfers of indentures.

Supplementary to the Apprenticeship Commission, a new apprenticeship law is deemed essential, making—

(*a*) Apprenticeship in skilled trades compulsory for future juvenile labour ;

(*b*) Technical education obligatory on all apprentices ; and

(*c*) Additional wage payment enforceable for certified technical study.

Delinquent and Defective Children.

The special provision made for delinquent and defective children expresses the humanitarian tendencies of the times, in striving to enable such of these classes as can profit by education to receive that special training which may best fit them for life, consistently with their capabilities.

In addition to purely educational establishments, the State of New South Wales maintains several reformatories and industrial schools. For girls there is the Industrial School at Parramatta ; and for boys the Carpenterian Reformatory (Brush Farm Home) and the Gosford Farm School, these institutions being under the control of the Minister of Public Instruction. At the Parramatta Industrial School for Girls there was during 1912 an enrolment of 159, including 14 girls on probation. As an annex to the School a Training Home for Girls was established in 1912, and 29 girls were admitted, their average age being 14 years and 5 months, compared with 15 years and 3 months of those entering the Industrial School. The average attendance in the combined institutions was 97, and on 31st December 107 were remaining, 20 in the Training Home, and 87 in the Industrial School. The gross expenditure on the Institution was £3,984 ; but, deducting parents' contribution for maintenance and value of laundry work done, the net cost was £3,505.

During 1912, 69 boys were admitted to the Carpenterian Reformatory (Brush Farm Home), Eastwood, while 71 were discharged. The ages of these boys were :—

	Years.					
	14	15	16	17	18	Total.
Admissions ...	4	13	38	12	2	69
Discharges ...	...	5	24	25	17	71

The total discharges to date number 1,017, and 84·5 per cent. have needed no further treatment. The cost per head to the State, on the yearly enrolment, was £27 6s. The present site having been deemed unsuitable a new one has been selected, consisting of Crown Lands at Penang Mountain, 3 miles from Gosford Railway Station, with an area of 700 acres possessing a healthy aspect, good water supply, land suitable for cultivation and removed from thickly populated areas but nevertheless within easy reach of stores and medical assistance. In the middle of the year a party of the boys, under the direction of skilled workmen, has done much good in the way of clearing, draining, levelling and erecting buildings in concrete.

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 1912, the sum of £2,801 was received from legacies, the whole amount being placed to credit of the Perpetual Subscribers' Fund. The income of the institution, excluding legacies, was £9,415. The expenditure for the year was:—For maintenance, £3,266; salaries and wages, £3,381; total, £6,647. The expenditure for new buildings during 1912 was £4,037. The number of teachers employed was 22, and the average cost per pupil was £47 18s. 3d., as against £46 13s. 4d. for 1911. Pupils in residence during 1912 numbered 149, as compared with 146 in 1911. Of these, 116 were under and 33 were over 14 years of age. The admissions during the year were 23, of whom 22 were under 14 years of age. Thirteen pupils were discharged, 3 being under and 10 over 14 years of age.

Ragged Schools have been conducted since 1860 in Sydney, to provide education and attention for neglected children. During 1912, 5 schools were open, 7 teachers, all females, were employed, and 297 individual scholars were enrolled. The average daily attendance was 162. Of the 213 on the roll in the December quarter 35 were under 6 years, 149 from 6 to 14 years, and 29 above 14 years. Meals and clothing are provided when necessary. The operations of these schools have decreased in recent years, with the enactment of free education in State schools.

At charitable institutions in 1912 there were 14 schools with 39 teachers and a gross enrolment of 1064. In December quarter the enrolment of 957 consisted of 80 under 6 years of age, 740 between 6 and 14 years, and 137 over those ages. These were denominational institutions conducted by the Roman Catholic Church and the Church of England.

The University of Sydney.

An Act to incorporate and endow the University of Sydney was passed by the Parliament of New South Wales on 1st October, 1850, and received Royal Assent on 9th December, 1851.

The Government of the University was vested in a Senate of sixteen elective fellows (at least twelve to be laymen) and a maximum of six *ex officio* members, professors of the University. Vacancies are 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 are elected by the Senate from their own body—the Chancellor triennially under the by-laws, the Vice-Chancellor annually by statute. The Senate is empowered to make by-laws and regulations relating to the government of the University, examinations, conferring of degrees, &c., such by-laws, &c., being subject to approval of the Governor of the State.

By the Act of foundation, the University was required to be undenominational, religious tests for admission to any privilege being prohibited

expressly; degrees in Theology or Divinity are not conferrable. Authority was given to examine, and to grant degrees in Law and Medicine as well as in Arts.

The first Senate was appointed on 24th December, 1850, and established immediately three Chairs—in Classics, Mathematics, and Chemistry and Experimental Physics. On the 11th October, 1852, the University was opened, and twenty-four matriculated students were admitted to membership.

In 1858 a Royal Charter was granted, declaring that "the degrees of this University in arts, law, and medicine shall be recognised as academical distinctions of merit, and be entitled to rank, precedence, and consideration in the United Kingdom as fully as if the said degrees had been granted in any university of the United Kingdom."

Since the passing of the original Act various amendments have been made. In 1884 the Senate's powers as regards teaching and degrees were extended to provide instruction and to grant degrees or certificates in all branches of knowledge, other than Theology or Divinity, subject to a proviso that no student should be compelled to attend lectures or to pass examinations in Ethics, Metaphysics, or Modern History; and the benefits and advantages of the University in all respects were extended to women equally with men. In 1900 the various enactments were consolidated by means of the University and University Colleges Act.

The University Amendment Act, 1912, makes radical alterations in the Constitution of the Senate, which will consist of 24 members, viz.:—

4 Fellows appointed by the Governor of New South Wales.
1 Fellow elected by the Legislative Council.
1 „ „ „ Assembly.
5 Fellows representing the Teaching Staff of the University, *i.e.*, one elected by the Professorial Board, and one each by the four Faculties.
10 „ elected by Graduates.
3 „ „ the aforesaid Fellows.

Special provision is made in the Act for the retention of the Chancellor and Vice-Chancellor as additional Fellows for their lifetime; otherwise the maximum term of office is five years. Authority is given for the establishment and maintenance of evening tutorial classes; the State endowment is 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 are authorised in the proportion of one for every 500 persons between ages 17–20 in the population of the State as shown by Census records.

The establishment of colleges of residence in connection with religious denominations for the association of students in the cultivation of secular knowledge was authorised by an Act passed in 1854. Under this provision three colleges have been established adjacent to the University, namely, St. Paul's (Church of England), St. John's (Roman Catholic), and St. Andrew's (Presbyterian), and action is being taken at the present time for the foundation of a Methodist College. A college of residence for women was established in 1892, on a strictly undenominational basis. The colleges provide assistance to students in preparing for the University lectures and examinations.

Endowment.

On incorporation an endowment of £5,000 per annum was provided from the public revenue for "defraying the stipends of teachers in literature, science, and art," and for purposes of administration; but provision was not made for teaching in other branches of learning.

This endowment remained unaltered until 1880, when £1,000 was added for assistant lectureships; in 1882 a further allocation of £5,000 was made for the establishment of schools of Medicine and Engineering, and to assist the Faculty of Arts. Periodically grants were made, until in 1893 the Government endowment for general purposes amounted to £13,000, and the special grants to £6,595. In 1902 the endowment for maintenance was placed upon a statutory footing at £10,000 per annum, payable quarterly; the special grants for 1903 amounted to £3,750. These included a sum of £2,000 per annum as a provision for evening lectures, which were initiated in 1882. In 1908 and 1909, £2,500 were added for the establishment of departments of Veterinary Science and Agriculture, and a sum of £5,000 is voted annually for the maintenance of these departments. During 1910 the amounts received from the Government for general purposes aggregated £18,800.

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

	£		£
Extensions of existing departments	2,500	Organic and Applied Chemistry ...	1,500
Chair of Agriculture	2,500	Astronomy	200
,, Botany	1,000	Scientific apparatus	2,500
,, Economics and Commerce	2,000	Apparatus for Department of Engineering	1,500
Veterinary Science	3,500	Reduction of Lecture Fees ...	2,500
Library	1,000	Evening and Extension Lectures...	2,500
Science Research Scholarships ...	1,000	Geological Branch	500
Retiring allowances	1,800		

Including the vote for additions, repairs, and furniture, £2,000, the the total endowment from the State for 1912–13 was £44,866.

Private Benefactions.

Many benefactions have been bestowed on the University by private persons. Among the first were gifts of £1,000 each from Mr. Thomas Barker, Sir Daniel Cooper, and Sir Edward Deas-Thomson, represented by lands which have multiplied in value. The sum of £445 given in 1862 by Mr. W. C. Wentworth for the foundation of a travelling scholarship had, in December, 1912, accumulated to £3,534. Many others followed, and at the close of 1912 endowments to the value of £474,812 had been received by the University. Some prizes have been exhausted by award, but by careful investment, increases in value, unawarded scholarships, and other causes, these private foundations showed at 31st December, 1913, credit balances to the extent of £547,239.

These endowments include a sum of £30,000, bequeathed by Mr. Thomas Fisher, for a library, and £6,000 given in 1888 by Sir William Macleay for a Curatorship of the Natural History Museum, the collection contained in the Museum having been presented by him to the University, and for which the Government erected a suitable building. Bequests of property, other than money, are estimated to be worth £51,000; the Hovell bequest—made in 1877—of properties for the endowment of a Professorship in Geology and Physical Geography, is valued at £5,200; and the late Mr. John Henry Challis, in 1880, bequeathed his residuary real and personal estate, subject to certain annuities, to the University, "to be applied for the benefit of that Institution in such manner as the governing body thereof shall direct." In December, 1890, the trustees of the Challis Estate handed over to the University the major part of the Australian portion of the estate, approximating to £200,000 in investments, together with a cash balance. The balance, bringing the capital of the fund to £276,856 was transferred, upon the termination of the last annuity, to the University in 1905, and under the bequest the Senate has created Chairs in Law, Modern

Literature, History, Logic and Mental Philosophy, Anatomy, Engineering, and Biology, and a Directorship in Military Science, in addition to four Lectureships in Law, and three Readerships. To each of these it has given the testator's name. The Hovell and Challis bequests constituted, until 1896, the chief resources of the University for education, apart from the public endowments.

During 1896 Sir Peter Nicol Russell, (formerly of Sydney), presented £50,000 for the purpose of endowing the Department of Engineering as the Peter Nicol Russell School of Engineering, and this gift was supplemented by a further grant of £50,000 in 1904, with the stipulations that efficient teaching in electrical engineering be provided and additional scholarships founded, and that the Government should expend £25,000 upon buildings. Through this endowment, seven Lectureships in Engineering have been established, in addition to Assistant Lectureships and for Instructors and Demonstrators. The deeds of gift stipulate practical and theoretical teaching in Mechanical and Electrical Engineering, Surveying, Mining, Metallurgy, Architecture, and other instruction as the Senate deems necessary. The income of the Fund is applicable to the maintenance of the School, but is not chargeable with the costs of existing buildings, of service of attendants, of Professorships of Mathematics, Chemistry, Physics, Geology, nor of the Challis Professorship of Engineering. Three Scholarships in Mechanical Engineering, each of the annual value of £75, and tenable for four years, are provided out of the fund.

In 1909 the sum of £7,050 was given by Mr. Hugh Dixson to enable the University to purchase the Aldridge Collection of Minerals from the Barrier District of New South Wales. This collection is distributed in four parts, viz., (*a*) a primary collection, completed by exchanges, in the Museum of the University; (*b*) a second collection for exhibition at the Technological or Australian Museum, or other suitable institution; (*c*) a collection for exhibition in London; and (*d*) specimens for exchange, analysis, or cabinet purposes. During 1910 a bequest of £450 was received from Miss Frances M. Busby, for the foundation of a Musical Scholarship, and two subscriptions of £400 for prize funds. In 1912, £200 was received for a H. C. Russell prize in Astronomy, and £100 was given by Messrs. William Cooper and Nephews for the foundation of an annual prize in the Department of Veterinary Science. In 1913 sums of £100, and £225, were received from subscribers to memorials of the late Sidney B. Clipsham, and Ethel Talbot, M.B., Ch. M., respectively.

Receipts and Disbursements.

Below is given a statement showing the amounts derived by the University from each of the principal sources of revenue, and the total expenditure, during each of the last six 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	58,953	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	18,822	24,398	97	87,273	75,618	547,165

The principal item of disbursements in each year is for salaries. In 1911 and 1912 the total expenditure was distributed as follows:—

	Amount.		Percentage of Total.	
	1911.	1912.	1911.	1912.
	£	£		
Salaries	51,296	52,849	71·1	69·9
Maintenance and Apparatus... ...	10,551	12,256	14·7	16·2
Buildings and Grounds	4,207	3,486	5·8	4·6
Scholarships and Bursaries	3,554	3,770	4·9	5·0
Books, retiring allowances	2,541	3,257	3·5	4·3
Total	72,149	75,618	100·0	100·0

Faculties and Cost of Graduation.

Within the University there are four Faculties, viz., Arts, Law, Medicine, and Science, and in addition there are four Departments. A Dean for each Faculty is appointed for a period of two years. The Professors of the four Faculties, with the Chancellor and Vice-Chancellor, form the Professorial Board which superintends in matters relating to study and discipline. In each faculty the higher degree includes the lower. The degrees and diplomas given, and the cost of graduation, including matriculation in the faculties and departments, are as follows:—

Faculty or Department.	Degree or Diploma.	Minimum Term of Study.	Degree Fee.	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...		10	
	Doctor ,, M.D....	2	10	.....
	Diploma in Public Health (post graduate).	*	10	30 10 0
Department of Dental ... Studies.	Bachelor of Dental Surgery. B.D.S.	4	10	154 16 0
Department of Pharmacy	.....	1	...	15 15 0
Massage Course	.....	2	...	22 1 0
Faculty of Science	Bachelor of Science. B.Sc. ...	3	3	71 3 0
	Doctor ,, D.Sc. ...	3	10	.....
Department of Engineering.	Bachelor of Engineering, B.E.—Civil	4	10	125 8 0
	Mining and Metallurgical			115 19 0
	Mechanical and Electrical			
	Master of Engineering. M.E.	3	10	.....
Department of Veterinary Science.	Bachelor of Veterinary Science. B.V.Sc.	4	3	80 12 0
Department of Agriculture	Bachelor of Science in Agriculture. B.Sc.Ag.	4	3	83 15 0
Department of Military Science.	Diploma in Military Science...	3	1	15 12 0

* Two terms.

The total cost of graduation shown above includes lecture and laboratory fees, matriculation, and degree or diploma fees, also—in the medicine and dentistry course—hospital fees.

The University also awards an Australian Diploma in Tropical Medicine on a post graduate course in the Faculty of Medicine; the cost is £17 17s., including degree fee of £5 5s.; the term of study is 3 months, and includes a course at the Australian Institute of Tropical Diseases, Townsville, Queensland.

Matriculation.

Students proceeding to degrees must qualify for entrance to the University by matriculating, the examination fee being £2.

The subjects of examination for matriculation are—

(1) English.
(2) Mathematics.
(3) Latin, Greek, French or German; and
(4) One or more of the following, depending on the Faculty or Department into which entrance is sought:—
  (*a*) One or more languages not already taken.
  (*b*) Mechanics.
  (*c*) History (i.) English, (ii.) Modern.
  (*d*) One of the following sciences:—Botany, Chemistry (Inorganic), Geology, Physics, Physiology, Zoology.

Of the above-mentioned subjects, certain subjects must be taken at a high standard, as prescribed for admission to the respective faculties or departments of study:—

Arts: Latin or Greek, and one other subject. Law: Latin, and two other subjects. Medicine, Science and Agriculture: Three subjects, of which one must be Latin, Greek, French, or German. In the Department of Engineering, Mathematics, Mechanics, and one of the languages, Latin, Greek, French, or German are prescribed. In the Department of Veterinary Science, two subjects, one of which must be Latin, Greek, French, or German. In the Department of Economics and Commerce, two subjects, one of which must be French or German.

Matriculation examinations are conducted in March of each year, but matriculation passes are obtainable also at the senior public examinations. In 1913, 241 students were admitted to matriculation. Persons of the minimum age of 21 years, not being graduates of any University, may be admitted as advanced students, and graduates in Arts with qualifications for advanced study and research may be admitted as advanced students in Science; they proceed to a Certificate of Research, and thence to the degree of B.A. or B.Sc.

In 1912 arrangements were made with the Government for acceptance, in lieu of matriculation examination, of the Leaving certificate awarded by the Department of Public Instruction. On the examining board for this certificate the University is entitled to four representatives.

Lectures and Lectureships.

Non-matriculated students are admitted to lecture and laboratory practice, but are not eligible for degrees. Lectures are given during the daytime in all subjects necessary for the degrees and diplomas quoted above, and, in addition, evening lectures are provided in the subjects of the Arts course, including elementary science. In 1912, arrangements were made whereby the Government Astronomer of New South Wales was appointed Professor of Astronomy in the University, and lectures are given in connection with this subject.

In 1913, the Teaching Staff included 23 professors, 9 assistant professors, and 98 lecturers and demonstrators, of whom 7 professors and 7 lecturers and readers were paid out of the Challis Fund, and 12 from the Peter Nicol

Russell Fund. There were, in addition, 4 honorary demonstrators. Professors and most of the lecturers are paid fixed salaries, and the remainder receive fees. Provision is made for a pension scheme for professors appointed since 1898 after twenty years' service, and after attaining the age of 50 years.

Degrees and Diplomas.

From the foundation of the University to the end of 1912 there have been 3,875 Degrees of various kinds conferred; the highest annual number, viz., 237, having been granted in 1909. Of the total, male graduates numbered 3,320, and females 555. The Degrees conferred during 1911 and 1912, and the total Degrees from the foundation of the University to the end of 1912, are shown in the following statement :—

Degree.	Conferred during				Total to December, 1912.						
	1911.		1912.		Conferred by Examination.		Admitted *ad eundum*.		Total.		
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	Total.
M.A.	7	5	9	1	332	48	21	2	353	50	403
B.A.	54	22	40	31	1,303	411	9	...	1,312	411	1,723
LL.D.	...	...	...	...	22	...	3	...	25	...	25
LL.B.	10	...	10	...	187	1	4	...	191	1	192
M.D.	3	...	2	...	30	...	26	...	56	...	56
M.B.	57	3	14	...	562	37	9	...	571	37	608
Ch.M.	23	1	26	...	371	27	1	...	372	27	399
L.D.S.	...	...	...	...	28	2	...	...	28	2	30
B.D.S.	3	...	2	...	43	2	...	...	43	2	45
D.Sc.	2	...	2	...	9	...	...	...	9	...	9
B.Sc.	4	2	7	2	96	25	5	...	101	25	126
M.E.	...	...	...	...	5	...	1	...	6	...	6
B.E.	16	...	13	...	249	...	1	...	250	...	250
E.V.Sc	1	...	2	...	3	...	...	...	3	...	3
Total	180	33	127	34	3,240	553	80	2	3,320	555	3,875

In connection with the degrees quoted as conferred in 1911, it is to be noted that examinations are held for most subjects in December and March, and the Degrees, &c., earned at these examinations are conferred publicly, usually in May following.

The diplomas issued are as follows :—

	Half-year, 1912.	Total to 30th June, 1912.
Diploma in Military Science	3	19
,, Public Health	...	2
,, Economics and Commerce ...	15	50
,, Education	...	1
Total	18	72

In addition to the foregoing, Massage and Pharmacy students attend certain courses, and certificates are issued for attendances and examinations passed.

The University has no power to confer honorary degrees, but may admit *ad eundum gradum* graduates of other recognised universities.

Students.

The following statement shows the number of students attending lectures at the University at intervals since 1876 :—

Year.	Matriculated.	Non-matriculated.	Total.
1876	34	24	58
1886	122	81	203
1896	438	16	454
1906	836	218	1,054
1907	871	307	1,178
1908	875	449	1,324
1909	924	350	1,274
1910	1,005	337	1,342
1911	1,060	327	1,387
1912	1,083	389	1,472

The following table shows the distribution of the students attending lectures during 1911 and 1912, and includes students taking more than one degree course :—

Department.	Matriculated.				Non-matriculated.				Total.	
	Men.		Women.		Men		Women.			
	1911.	1912.	1911.	1912.	1911.	1912.	1911.	1912.	1911.	1912.
Arts—Day	109	107	92	90	20	7	14	16	235	220
,, Evening	96	115	20	24	...	19	...	8	116	166
,, Post-graduate	20	22	14	19	...	..	...	...	34	41
Law	86	84	...	...	2	6	...	...	88	90
Medicine...	448	432	14	16	1	...	16	18	479	466
,, Post-graduate ...	4	8	...	...	...	...	...	...	4	8
,, Dentistry	19	23	3	3	26	7	...	...	48	33
Science—Pure	37	29	12	14	16	12	4	10	69	65
,, Agricultural	7	9	...	...	...	1	...	...	7	10
,, Engineering	76	87	...	...	4	8	...	...	80	95
,, Veterinary	16	15	...	...	..	...	...	...	16	15
Pharmacy	...	...	...	...	61	94	1	3	62	97
Military History and Science	...	...	...	...	81	59	...	...	81	59
Economics and Commerce ...	...	...	...	...	84	120	...	...	84	120
Research Study	3	10	1	1	...	...	...	...	4	11
Total	921	941	156	167	295	333	35	55	1,407	1,496

The figures given above show that unmatriculated students, numbering 330 in 1911 and 388 in 1912, represented 23·5 and 25·9 per cent. respectively of the total number of students proceeding through the degree courses. Women students represent 13·6 and 14·8 per cent. respectively of the total students.

Scholarships, Bursaries and Fellowships.

Scholarships, exhibitions, and bursaries have been founded, chiefly by private benefactors, as rewards for proficiency and for the purpose of placing the advantages of a University education within the reach of capable students, who otherwise might be excluded through want of financial means.

Such scholarships and exhibitions are awarded only when the examinations disclose a satisfactory degree of proficiency, and no candidate may hold more than two scholarships.

Candidates for bursaries are required to show that they do not possess sufficient means to attend the University. Bursaries to the number of nineteen are provided by the Senate; they are tenable only in the Faculties

of Arts or Science (not including Engineering), and are supplemented, on the part of the Senate, with exemption from fees. In the case of the Struth Exhibition and the Henry Wait Bursary, awarded to students proceeding from the first year in the Arts course to the Faculty of Medicine, no exemption from payment of lecture fees is granted. In addition, bursaries are granted annually by the Government to pupils of State schools, and under the Bursary Endowment Act, 1912, bursaries will be available for pupils from private secondary schools.

A Rhodes Scholarship of the value of £300 per annum, tenable for three years at the University of Oxford, is awarded annually to students of Sydney University, and a commission in the British Army is also offered every year.

The following statement shows the number of students who attended University Lectures as non-paying students during the last four years:—

Year.	State and University Bursars.	Government Officers.		Military Science.	Other.	Total.
		Departments of—				
		Public Instruction.	Agriculture and Veterinary.			
1910	48	179	...	78	34	339
1911	49	160	7	49	30	295
1912	42	192	9	63	32	338
1913	49	221	9	82	24	385

In 1912 the cost of bursaries allowed by the Senate of the University was £1,005. Scholarships cost the Senate £2,264.

Since 1912 Parliament has made an annual grant of £1,000 for Scientific Research Scholarships.

Fellowships available to graduates in science of the University include four annually under the Macleay bequest of £35,000 made in 1904 to the Linnean Society of New South Wales. These fellowships are intended to encourage research in Natural Science, by means of post graduate work; each is of the annual value of £400.

The Walter and Eliza Hall Engineering Fellowship, awarded annually, is of the annual value of £300 for a maximum period of three years. It is awarded to a graduate in Engineering of the University of Sydney of not more than four years' standing.

The University enjoys the privilege, bestowed through the Orient Royal Line of Mail Steamers, of allotting three first-class return passages to Europe to graduates desiring to continue studies abroad.

Clinics.

In 1873 the Government resumed land for the erection of the Royal Prince Alfred Hospital for the sick, which was designed as a General Hospital and Medical School for the instruction of University students, and for the training of nurses. The Hospital is open for students (during 42 weeks in each year) for certificates of hospital practice necessary for admission to final degree examination in medicine and surgery. Clinical lectures are delivered, in accordance with the University curriculum. All appointments to the Medical and Surgical Staff of the Hospital are made conjointly by the Senate of the University and the Directors of the Hospital.

In 1911 Lectureships in Clinical Medicine and Clinical Surgery were increased from one to three each.

Sydney Hospital, founded in 1811, also provides a Clinical School under the direction of a Board of Medical Studies, and all appointments of clinical lecturers and tutors are subject to the approval of the Senate.

Other hospitals recognised as places where studies may be undertaken in connection with the Faculty of Medicine, are:—The Royal Hospital for Women, Royal Alexandra Hospital for Children, St. Vincent's Hospital, the Gladesville and Callan Park Hospitals for the Insane, and the Women's Hospital.

In connection with the Department of Dental Studies, the United Dental Hospital of Sydney was established in 1901, and provides facilities for instruction of students. It was amalgamated with the Dental Hospital of Sydney in 1905. The University lecturers in Surgical and Mechanical Dentistry are, *ex officio*, honorary dental surgeons of the Hospital. The fee payable by students for dental practice in the Hospital is ten guineas per annum.

Buildings.

The University buildings consist of the main building, containing the great hall, lecture rooms, and offices, all built of Pyrmont sandstone; the Medical School, which is in the same style, and is now being enlarged; the Fisher Library, adjacent to the main building, and designed to form part of the main quadrangle. This is the latest addition to the buildings, and is of modern design, with bookstacks of steel and glass for 200,000 volumes, and with ample reading-room accommodation for students.

Separate buildings for the Departments of Chemistry, Physics, Geology, Biology, and Veterinary Science, and the Macleay Museum are distributed over the grounds, which, including lands vested by the Senate in the Affiliated Colleges, &c., cover an area of 126 acres. The Peter Nicol Russell School of Engineering has a separate building, provided by the State at a cost of £25,000. A building for the School of Agriculture is now in course of erection.

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

EXTENSION LECTURES.

University Extension Lectures were inaugurated in 1886, and have been conducted since that date under the direction of a University Extension Board of eighteen members appointed annually by the Senate, and including at least four members of that body, and four of the teaching staff. Courses of Lectures are given in various centres upon topics of literary, historical, and scientific interest. At the conclusion of a course, which consists of a minimum of three lectures, an examination may be held and a certificate awarded to successful candidates. During 1913 extension lectures were delivered in Sydney and suburban centres, and in other centres embracing country districts in New South Wales. The Board has till recently conferred the benefits of its lectures on other States.

AFFILIATED COLLEGES.

In the affiliated colleges within the University 153 students were in residence during 1912. Following are the figures relating to these colleges:—

College.	Students in Residence.	Principals and Lecturers.	Receipts.	Disbursements.
			£	£
St. Paul's (C.E.) ...	36	4	3,470	3,729
St. John's (R.C.) ...	19	5	1,432	1,460
St. Andrew's (Pres.)...	71	7	8,093	7,952
Women's	27	2	2,289	2,299

These colleges have been endowed from private sources with funds for scholarships, and each college is subsidised by the Government to the extent of £500 per annum for the Principal's salary. The Wesley College Incorporation

Act, 1910, repealed an earlier Act of incorporation (23 Victoria), and empowered the University to grant the land necessary for a college in lieu of the earlier grant for a Wesleyan Methodist College, which had been allowed to lapse. For the purpose of establishing the college the Government, under the University and University Colleges Act, 1900, may subsidise the building fund of a college by sums corresponding to the amounts expended for the purpose of building by the college, out of its subscribed funds, up to a maximum of £20,000.

The Women's College, incorporated by Act 53 Victoria, No. 10, is not attached to any religious denomination.

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 honors, and graduates of Sydney, subject to certain conditions, are eligible for admission as advanced students at Cambridge, proceeding then to Degrees of Bachelor of Arts or of Law, or to Research Certificates.

Admission *ad eundum gradum* in the University of Sydney is obtainable by graduates of approved universities, viz., Oxford, Cambridge, London, Durham, Victoria, St. Andrew's, Edinburgh, Glasgow, Aberdeen, and Dublin, Queen's of Ireland, and the Royal of Ireland; and the universities of Melbourne, New Zealand, and Adelaide, and such other universities as the Senate may from time to time determine.

Congress of Universities of the Empire.

In July, 1912, a Congress of Universities of the Empire was held in London, at which fifty-two Universities in the British Empire were represented. The University of Sydney was represented by four delegates. The subjects of discussion were arranged as follows:—

I. Universities in their relation to one another.
   1. Conditions of entrance—equivalence and mutual recognition of entrance tests.
   2. Interchange of University teachers—conditions.
   3. Inter-University arrangements for post graduate and research students.
   4. Division of work and specialisation among universities.
   5. Establishment of a Central University Bureau—constitution and functions.

II. Universities in their constitutional aspects and in relation to teachers, graduates, and students.
   1. Relation to technical and professional education, and to education for the Public Services.
   2. Courses of study and examination of "other than for degrees," extension and tutorial work, and specialised courses for professional, commercial, and industrial pursuits.
   3. Representation of teachers and graduates on the governing body.
   4. (*a*) Action of Universities in relation to after careers of students. (*b*) Position of women.
   5. The problem of Universities in the East—influence on character and moral ideals.
   6. Residential facilities—colleges and hostels.

The Advancement of Education.

Various organisations exist which have for their objective the encouragement of professional interests, the advancement of Science, Art, and Literature, and the promotion of the social well-being of the members, and the Commonwealth Government has afforded a measure of recognition to the efforts of Australian men of letters by establishing in 1908 a Commonwealth Literary Fund to provide pensions and allowances to literary men and their families. Concerning this Fund reference should be made to part "Social Condition" of this Year Book.

As far back as the year 1821 a scientific society, under the title of the Philosophical Society of Australasia, was founded in Sydney, and after many vicissitudes of fortune was merged, in 1866, into the Royal Society of New South Wales. The Society is now in a flourishing condition, counting amongst its members some of the most eminent men in the State. Its objects are the advancement of science in Australia, and the encouragement of original research in all subjects of scientific, artistic, and philosophic interest, which may further the development of the resources of Australia, draw attention to its productions, or illustrate its natural history.

The study of the botany and natural history of Australia has attracted many enthusiastic students, and the Linnæan Society of New South Wales was established for the special purpose of furthering the advancement of these particular sciences. The Society has been richly endowed through the munificence of the late Hon. Sir William Macleay, and possesses a commodious building at Elizabeth Bay, Sydney, attached to which are a library and museum. The proceedings are published at regular intervals, and contain many valuable papers, with excellent illustrations of natural history.

Other important scientific societies are the Royal Zoological Society of New South Wales, inaugurated in 1879; a branch of the British Medical Association, founded in 1881; a branch of the British Astronomical Association, whose first meeting was held in 1895; the Royal Anthropological Society of Australasia; the Australasian Association for the Advancement of Science; the Royal Geographical Society; the University Science Society; and the Australian Historical Society.

All the learned professions are represented by associations or societies.

The Royal Art Society holds an annual exhibition of artists' work at Sydney; and of the many musical societies, mention may be made of the Royal Sydney Liedertafel, and the Royal Sydney Philharmonic Society, with over 1,000 members.

Last year there were 163 associations existing for the advancement of agriculture, horticulture, and pastoral pursuits, of which 133 were subsidised by the Government. Of these societies, the Royal Agricultural Society of New South Wales, which holds an annual show at Sydney, had a membership of 3,696 persons, and received a subsidy of £1,000.

Sydney Observatory.

The Sydney Observatory, established in the year 1856, is an institution of a scientific and educational character, which the State supports. The immense growth of Sydney has caused such adverse atmospheric conditions that the site is now altogether unfavourable for satisfactory work, and the Government is contemplating the removal of the Observatory to a new site some distance from the city.

Daily time-ball services are maintained at Sydney and Newcastle, and it is proposed to initiate a new time scheme, whereby every telephone subscriber in the metropolitan area may be enabled at any time, day or night, to obtain accurate time, direct from the Observatory.

During 1912, 115 earth tremors were recorded on the seismograph; and at the Red Hill Observatory Station a few test photographic plates were taken for focus and adjustment purposes; the Astrographic Telescope being in process of remodelling, magnetic work was continued at Red Hill. The mean variation for the year, from 60 observations, was 9° 19′ 33″ east. The resultant mean variation of Sydney is 9° 23′ 33″ east.

Observations taken comprised 665 zone stars, 385 clock stars, 108 azimuth stars, and 390 determinations of collimation and azimuth. The 11½ inch equatorial telescope has been used for showing the principal celestial objects to visitors, and during the latter portion of the year for occasional observations of Gale's Comet. The measurement of star plates, undertaken jointly with Victoria, has proceeded during the year.

The Observatory at Sydney was visited by 673 persons during 1912.

Expenditure for 1912 was £2,410, viz., salaries and allowances, £1,866; and maintenance, £544. The Government Astronomer is also Professor of Astronomy at Sydney University.

Meteorological Bureau.

Meteorological observations are directed by a special Bureau, under the administration of the Commonwealth Government. Two bulletins and one weather chart are published daily by the Bureau. They contain full reports from 234 stations as to wind, weather, and sea at 2 p.m.; and in addition, at 9 a.m., as to rain, state of rivers, pressure, and temperature. For the chief centres of the other States a bulletin, showing pressure, temperature, wind, rain, weather, and state of sea, is issued daily at 1 p.m. Weather charts, published each afternoon, contain complete data, isobars, full notes, shaded rain area, and forecast for the ensuing twenty-four hours. A local forecast for Sydney is published at 10 a.m., and forecasts for the whole Commonwealth at 1 p.m. daily. Rain maps show daily, monthly, annual, and storm distribution of rainfall, and departures from the average. An isobaric chart, symbolising for various stations, wind-direction, rain area, thunderstorms, and condition of sea, is prepared for publication in the Sydney daily newspapers, with weekly and monthly reviews of weather over Australia. During the year 1912 there were 11,736 bulletins, 17,845 weather charts, and 11,682 rain maps of New South Wales issued. Forecasts were telegraphed to 111 towns daily.

During 1912, 45 new climatological stations were established, the total at the end of the year being 2,002. All stations are equipped with self-recording instruments. Seven have self-recording thermographs, eleven barographs, 36 mercurial barometers, hygrometers, maximum and minimum thermometers, 90 maximum and minimum thermometers, with properly constructed screens, and 1,876 with rain-gauges only.

Museums, Libraries, and Art Galleries.

Recognising that Museums, Libraries, and Art Galleries are powerful factors in promoting the intellectual well-being of the people, the Government of New South Wales has been active in founding and maintaining such establishments.

The following statement shows the total expenditure by the State on buildings for Museums, Libraries, and Art Galleries, to 30th June, 1913 :—

	£	£
Museums—		
Australian...	...	79,397
Agricultural, Forestry, Mining and Geological	...	14,191
Technological	...	19,366
Botanical—Herbarium	...	11,436
Libraries—		
Public, of New South Wales	28,957	
Mitchell	43,118	
		72,075
Fisher—Sydney University	..	81,428
National Art Gallery	...	94,437
Total...		£372,330

All these institutions are open to the public free of charge, but subject to any necessary regulations.

Museums.

The Australian Museum, the oldest institution of its kind in Australia, was founded in Sydney in 1836 as a Museum of Natural History ; it contains fine specimens of the principal objects of natural history, and a valuable collection of zoological and ethnological specimens of distinctly Australian character, for which special accommodation was provided in a separate wing opened in 1910. The specimens acquired during 1912 numbered 13,418, of which 2,382 were purchased, and the remainder collected, exchanged, or donated ; the most noticeable acquisitions were articles made by the North American Indians and a model of an extinct gigantic kangaroo. A fine library is attached to the institution, containing many valuable publications, the total volumes numbering 20,000. Lectures and gallery demonstrations are given in the Museum on the third Thursday in each month, and are open to the public. On Mondays students and artists only are admitted.

In 1853 the Museum, till then managed by a committee, was incorporated under control of trustees, with a State endowment, which is now supplemented by annual Parliamentary appropriations. Following is the record of expenditure for years ended 30th June, 1912 and 1913.

	1912.	1913.
	£	£
Salaries and allowances	7,453	7,665
Purchase, collection, and carriage of specimens ...	473	596
Books and binding	480	485
Catalogues and publications	579	486
Cases, bottles, and receptacles	1,921	1,084
Miscellaneous	930	977
Total	£11,836	£11,293

A Technological Museum was instituted in Sydney at the close of 1879 under the administration of a committee of management appointed by the trustees of the Australian Museum. The whole original collection of some 9,000 specimens was destroyed in 1882 by the Garden Palace fire. Efforts were at once made to replace the lost collection, and in December, 1883, the Museum was again opened to the public. In 1890 it was transferred to the Department of Education, as an adjunct to the Technical College, and now contains a valuable series of specimens illustrative of various stages of manufacturing, and an excellent collection of natural products. Technological Museums are established also at Goulburn, Bathurst, West Maitland, Newcastle, and Albury. The exhibits in the central and branch museums exceed 111,000, acquired by purchase, gift, loan, and exchange.

The most recent acquisitions included minerals, pottery clays, and lace manufactures. Natural history exhibits included flies and mosquitoes commonly found in the neighbourhood of Sydney, and oysters from Port

Macquarie. The former was supplied by the Department of Public Health. Research work is carried on by the Curator and his staff, and particularly in respect of the pines (natural order Coniferæ) of Australia, important characteristics were discovered. During 1912 an extensive research, covering many years, in connection with the Eucalypts of Australia, was completed. The economic value of the investigations into timbers and oils is considerable, and numerous inquiries are made as to the correct methods of distillation of the oil and the species of eucalyptus best fitted for the industry.

Following are the records of attendance at museums in 1912 :—

Museum.	Visitors.			Average Attendance.		Expenditure.	
	Week-days.	Sundays.	Total.	Week-days.	Sundays.	Salaries, &c.	Purchases.
						£	£
Australian...	161,559	60,726	222,285	608	1167	7,453	4,383
Technological—							
Sydney	47,457	36,492	83,949	152	701	6,192	
Newcastle	30,253	.....	30,253	100	.....	207	
Bathurst	35,360	.....	35,363	117	.....	43	
West Maitland ...	31,637	.....	31,637	104	.....	212	
Goulburn	21,290	.....	21,290	70	.....	103	
Albury	12,150	.....	12,150	40	.....	111	

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

Classification.	Donation.		Exchange.		Purchase.		Collection.		Total.	
	1911.	1912.	1911.	1912.	1911.	1912.	1911.	1912.	1911.	1912.
TECHNOLOGICAL MUSEUM.										
Mineral	224	706	1	442	90	59	743	...	1,058	1,207
Vegetable... ...	59	99	...	...	9	100	23	41	91	240
Animal	244	11	1	...	17	62	90	19	352	92
Applied Art } Miscellaneous }	21	73	43	...	59	374	...	...	123	447
Total	548	889	45	442	175	595	856	60	1,624	1,986
AUSTRALIAN MUSEUM.										
Vertebrata ...	762	4,134	44	284	20	1,184	1,408	231	2,234	5,833
Invertebrata ...	7,407	2,944	968	910	132	544	924	735	9,431	4,833
Fossils and Minerals	137	169	7	258	17	45	11	10	172	482
Ethnological and Historical ...	111	1,088	41	524	64	410	75	14	291	2,036
Miscellaneous ...	57	19	3	6	3	199	279	10	342	234
Total	8,474	8,354	1,063	1,682	236	2,382	2,697	1,000	12,470	13,418

The Mining and Geological Museum is connected with the Department of Mines. Exhibits number 42,066, the number acquired during 1912 being 776, viz., 424 by collection and 352 otherwise. The Agricultural and Forestry Museum is an adjunct of the Department of Agriculture and contains some 7,000 exhibits.

The functions of the Mining and Geological Museum include the preparation of collections of minerals to be used as teaching aids in schools and in other institutions. During December, 1912, 17 collections, comprising 1,950 specimens, were prepared ; and many specimens received from country schools were classified.

The public have access to the "Nicholson" Museum of Antiquities, the "Macleay" Museum of Natural History, the Museum of Normal and Morbid Anatomy, attached to the Sydney University, and the National Herbarium and Botanical Museum at the Botanic Gardens. Housed in the Macleay Museum is the Aldridge collection of Broken Hill minerals, specially purchased for, and donated to, the University by Mr. Hugh Dixson.

Public Libraries.

The principal public libraries, with the number of volumes in each at the end of the years 1911 and 1912, are shown in the following statement:—

Name of Library.	Total number of volumes.	
	1911.	1912.
Public Library of New South Wales, including Mitchell Library	241,294	250,383
Sydney University (Fisher Library)	95,500	100,000
Australian Museum	18,000	20,000
Botanical Museum	5,500	6,000
Technical College and Branches	8,480	11,020
Sydney Municipal Library	27,273	28,385
Other Municipal Libraries...	33,277	31,982
Schools of Arts, Mechanics' Institutes, &c.	623,090	660,168
State Schools	145,600	320,046
Total	1,197,414	1,427,984

The Public Library of New South Wales was established, under the designation of the Free Public Library, on the 1st October, 1869, when the building and books of the Australian Subscription Library, founded in 1826, were purchased by the Government. The books thus acquired numbered about 16,000, and formed the nucleus of the present Library. In 1890 the Library was incorporated under its present designation, with a statutory endowment of £2,000 per annum for the purchase of books. The number of volumes in the Library on 31st December, 1908, had been increased to 240,743, including those in the lending branch or lent to libraries or private students in the country. During 1909 the number was decreased by the transference to the Sydney Municipal Council of 29,808 books in the lending branch, but at the end of 1910 there were 230,889 volumes. During last year the accessions included 9,089 volumes, of which 2,351 were donated, and 115 books, maps, newspapers, and periodicals received under the Copyright Act.

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 1912 included the following:—

	No.	Volumes.
Country Libraries	239	11,684
Lighthouses	67	2,406
Public School Teachers' Associations	120	4,570
Country Students	70	128

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

In 1912 The Reference Department of the Public Library contained 237,481 volumes, and there were also 12,902 volumes for country libraries under the lending system. For 1911 the figures were 229,678 and 11,616 respectively in which year the classification was as follows:—

Classification.	Reference Department.	For Country Libraries.	Total.
Natural Philosophy, Science, and the Arts	15,633	1,440	17,073
History, Chronology, Antiquities, and Mythology ...	8,357	1,382	9,739
Biography and Correspondence	6,310	1,361	7,671
Geography, Topography, Voyages and Travels, etc...	7,741	1,415	9,156
Periodical and Serial Literature...	34,749	415	35,164
Jurisprudence, Political Economy, Social Science, etc.	7,154	382	7,536
Theology, Moral and Mental Philosophy, and Education	7,040	1,356	8,396
Poetry and Drama	3,750	212	3,962
General Literature, Philology, and Collected Works..	7,398	3,627	11,025
Works of Reference	4,626	26	4,652
Duplicates	5,575	...	5,575
"Mitchell" Library	71,461	...	71,461
Classified according to the Dewey System—			
General Works	5,302	...	5,302
Philosophy	950	...	950
Religion	1,706	...	1,706
Sociology	12,117	..	12,117
Philology	515	...	515
Natural Science	4,732	...	4,732
Useful Arts	7,700	...	7,700
Fine Arts	3,000	...	3,000
Literature	6,124	...	6,124
History (including Biography and Travel) ...	7,738	...	7,738
Total...	229,678	11,616	241,294

The total cost to the Government of the library buildings has been £28,957; this includes expenditure for extensions in 1886 and 1887, and for the reconstruction of the main building, completed in 1890.

In 1899 Mr. David Scott Mitchell donated to the trustees of the Public Library a collection of 10,024 well-chosen volumes, together with 50 valuable pictures, and at his death, in 1907, bequeathed to the State the balance of a unique collection, consisting principally of books and manuscripts relating to Australasia, and comprising over 60,000 volumes, and 300 framed paintings of local historic interest, valued at £100,000. A separate building designed on modern lines is under erection. The portion completed at a cost of £37,688, and opened on 8th March, 1910, now holds the Mitchell bequests, which, being so decidedly of Australian interest, form the nucleus of an historical library. During 1912, 3,347 volumes were added to the original collections, making a total of 74,808 volumes in the library. Of the additions the volumes and pamphlets donated numbered 683.

The attendance at the Public Library during 1912 was as follows:—

	Visitors during Year.			Average Attendance.	
Branch.	Week-days.	Sunday (afternoon).	Total.	Week-days.	Sunday (afternoon).
Reference	158,915	10,191	169,106	526	195
Mitchell	14,162	416*	14,578	47	52*

* Holidays.

The following statement shows the cost of maintenance and administration of the Public Library, including the Mitchell Library, for the last three years:—

Year.	Salaries.			Books, &c., and Binding.	Miscellaneous.	Total.
	Reference.	Mitchell.	Country.			
	£	£	£	£	£	£
1910	3,997	1,580	111	2,456	848	8,992
1911	4,121	2,201	115	2,178	1,616	10,231
1912	4,398	2,431	137	1,885	1,687	10,538

Salaries in the Reference Library include expenditure in connection with the Board for International Exchanges and the preparation of Historical Records.

The Sydney Municipal Library was formed by the transfer to the City Council in 1908-9 of the lending branch of the Public Library. The volumes forming the library and their daily average issue in classes for 1911 and 1912 were as follows:—

Classification.	1911.		1912.	
	Volumes.	Average Daily Issue.	Volumes.	Average Daily Issue.
Natural Philosophy, Science, and the Arts	6,567	60·6	6,646	80·0
History, Chronology, Antiquities, and Mythology...	3,296	13·4	3,312	12·9
Biography and Correspondence	4,148	17·5	4,219	19·7
Geography, Topography, Voyages and Travels, etc.	3,560	20·4	3,552	23·8
Jurisprudence and Social Science	1,788	11·5	1,877	14·1
Moral and Mental Philosophy and Religion ...	1,721	7·4	1,777	10·7
Poetry and Drama	1,137	10·0	1,205	14·1
Fiction and Prose	2,276	112·3	2,292	115·4
Miscellaneous—General Philological and Juvenile	2,780	86·7	3,505	98·4
Total	27,273	339·8	28,385	389·1

The attendance at the newspaper-room, attached to the library, was 282,495 persons for the year 1912, or an average daily attendance of 908.

Maintenance costs during 1912 amounted to £4,653, made up as follows:—Salaries, &c., £2,558; books, periodicals, binding, and electric lighting £2,095.

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 1912 there were 433 such libraries with 660,168 volumes. Under the provisions of the Local Government Act of 1906, any shire or municipality may establish a public library, art gallery, or museum. At the end of 1912 there were, in addition to the Sydney Municipal Library, 34 municipal libraries in the State, with 31,982 volumes.

The library of the Australian Museum, though intended primarily as a scientific library for staff use, is accessible to students, and 20,000 volumes may be found on the shelves.

On 31st December, 1912, the library in connection with the Technological Museum, at the Central Technical College, contained 7,000 textbooks, and 2,600 periodicals of a technical nature, and other volumes to a total value of £5,600. At branch colleges there were 1,420 volumes, viz., Albury, 178; Bathurst, 169; Broken Hill, 210; Goulburn, 281; Granville, 53; Maitland, 238; Newcastle, 291.

The Parliamentary Library contains over 52,000 books, and large numbers of volumes are at the libraries of the Law Courts and Government Offices.

The Bush Book Club, a private foundation, is intended to provide books to people in localities not served usually by Schools of Art, &c., and in sparsely settled districts.

Private circulating libraries, the subscribers to which are charged comparatively small fees, are used extensively.

National Art Gallery of New South Wales.

The National Art Gallery contains an excellent collection of paintings and statuary, including some of the most famous works of the best modern artists, and some valuable gifts from private persons.

The collection of water colours is exceptionally fine, and it is estimated that the present value of the contents of the Gallery is at least £140,000.

During 1912, the Trustees acquired paintings, drawings, and etchings from the exhibition by British artists held in Wellington, N.Z., and artists in London were commissioned to paint pictures for the Gallery, one, an Australian artist, having been engaged to provide a picture relating to the inception of the Australian Navy.

The number of paintings, &c., in the Gallery on 31st December, 1911 and 1912, and the amount expended in purchasing works of art during 1912, are shown below :—

	1911.	1912.	Cost of purchases 1912.
	No.	No.	£
Oil Paintings	377	393	2,404
Water Colours	375	381	193
Black and White Works	523	526	172
Statuary, Casts, and Bronzes...	154	160	47
Various Art Works in Metals, Ivory, Ceramics, Glass, Mosaic, &c.	360	368	52

The attendance at the National Art Gallery during the last six years has been as follows :—

Year.	Visitors in the Year.		Average Attend	
	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

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 1912, 112 pictures were so distributed among ten country towns, and shown in technical museums and municipal buildings. At the close of 1912 the total expenditure on the National Art Gallery, inclusive of the building, amounted to £267,004, of which £109,699 had been expended on works of art. The disbursements during 1910, 1911, and 1912 were :—

	1910.	1911.	1912.
	£	£	£
Works of art	1,627	2,369	2,868
Salaries, &c.	2,199	2,312	2,416
Sundries	725	612	768
Cost to State	£4,551	£5,293	£6,052

The annual endowment for purchase of works of art is £2,000, but for some years this sum also covered portion of the expenditure for maintenance, &c. In 1912, pending the amendment of the Act, an additional grant of £1,500 was made to the Art Gallery. The Gallery has received but small support from private endowments, and, consequent upon its limited funds, is largely restricted to the collection of specimens of contemporary art. During the last twenty years more than £10,000 have been expended upon the purchase of works of Australian artists. Owing to the difficulty of obtaining suitable and representative works of notable artists, the Trustees have decided to purchase more sculpture, and are negotiating for works suitable for the exterior decoration of the building.

Schools of Arts, etc.

Schools of Arts, and Mechanics' or Working Men's Institutes, are established in nearly all centres of population throughout New South Wales. Particulars for the years 1910, 1911, and 1912 regarding these institutions, which are really libraries and recreation centres, are given below :—

Particulars.	Year.		
	1910.	1911.	1912.
Institutions	390	438	433
Membership	43,792	46,350	47,749
Books	590,799	623,440	660,168
	£	£	£
Value of library contents... ..	72,034	69,708	63,890
,, buildings	290,086	343,251	349,001
Government subsidy	11,054	11,353	11,152
Subscriptions	18,390	19,647	19,645
Other receipts	37,460	48,933	53,671
Expenditure—			
On books, &c.	11,670	11,083	11,288
,, maintenance	48,033	67,249	73,994

Other receipts in 1912 include £20,342 on account of billiards. Expenditure for maintenance includes £9,643 in this connection. The Sydney Mechanics' School of Arts is naturally the principal institute, having a membership of 2,645 and a library of 45,000 volumes. This institution was formed in 1833, essentially as a mechanics' institute, and was intended to provide opportunities for evening study for those employed during the day. In 1873 the Working Men's College was formed, but this section, devoted to the mechanic trades, was taken over by the Government in 1883 and so carried on till 1893, when the Technical College was opened. The educational work of the evening school has been continued at the institute, and classes for adults are held in literary and commercial subjects.

The Arts and Professions.

Apart from the initiatory work of instruction in art manual work and in singing, as portion of the syllabus work of the State schools, there is no organised State system of higher training for the arts, and practically all the preparation for art careers is undertaken by private schools. In the Technical Education scheme provision is made for teaching art work, modelling, and painting. At the public examinations of the University, drawing and the theory of music form the subjects of the art section, and to accord with the standard of these examinations the requisite instruction is available in the State schools. But though the State system of education makes no direct provision for higher training in this connection, it offers

encouragement indirectly by means of subsidies, such as that to the Royal Art Society of New South Wales, and by the maintenance of libraries, museums, and especially of the National Art Gallery. In connection with this institution, a private bequest enables the trustees to offer annually the Wynne Art Prize, valued at £33 for the best landscape painting of Australian scenery, or the best figure sculpture executed by an Australian artist.

During 1912 the Government of New South Wales decided to establish a Conservatorium of Arts and Music; portion of the buildings used formerly in connection with the Federal Government House was set apart for the purpose, and is now in course of remodelling. Meanwhile a Library of Music has been instituted by the Public Instruction Department, and is housed temporarily in Sydney Girls' High School; it contains many valuable works which are available for the use of recognised musical societies and organisations.

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 or Dental Board before they can proceed to practise; similarly, barristers and solicitors must be formally admitted to their profession. Similar control is contemplated in regard to hospital nurses, but other professions have not yet been regulated by statute, except in so far as restrictions are placed on employment, such as in mining industries and in connection with local government control, engineering, surveying, Shire and Municipal Clerks, etc. In these cases the Government sets standards and issues certificates of fitness.

For the medical and legal professions and in various branches of science the University provides the requisite training. The practice of medicine is restricted to persons registered by the New South Wales Medical Board under the Medical Practitioners Act of 1898 and Amendments of 1900. To become a legally qualified medical practitioner an applicant must prove to the satisfaction of the Board (*a*) that he is a doctor or bachelor of medicine of some University, or a physician or surgeon licensed or admitted as such by a college of physicians or surgeons in Great Britain or Ireland; (*b*) that he has completed a five-years' medical course of a University or equivalent college, and has received after examination a diploma, degree, or license entitling him to practise medicine; (*c*) or he is a member of the Company of Apothecaries of London, or a member or licentiate of Apothecaries' Hall, Dublin. Medical officers duly appointed in His Majesty's sea or land service are eligible for registration.

During the last ten years the registrations of medical practitioners have been on an average eighty per annum, and at 31st December, 1912, there were 1,895 registrations in force. Holders of degrees of M.D., M.B., and Ch.M., conferred by the University of Sydney, are entitled to registration and recognition in the United Kingdom in the same way as holders of similar degrees conferred by a British University are recognised in New South Wales.

To qualify before the Dental Board of New South Wales, in terms of the Dentists Act, 1900, and the Amending Act of 1909, dentists must hold a recognised certificate; or have been engaged for not less than four years in acquiring a professional knowledge of dentistry, and passed an examination; or produce a diploma in dentistry from an Australian University. Persons in actual practice, or preparing for the profession at the time of passing of the Act, were exempted from these rigid provisions.

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

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

At the end of December, 1912, there were 1,345 registrations in force.

Pharmacists are registered under the Pharmacy Board appointed under the Act of 1897. To qualify for registration, evidence must be adduced of three years' apprenticeship in the business of a pharmacist keeping open shop; or of holding a certificate of competency from a recognised College or Board; or of registration under the Sale and Use of Poisons Act; or of having passed a preliminary examination before the Board, or the usual examinations of a recognised college or university.

The number of preliminary examinations held prior to 1912 was 44, and 382 of the 783 candidates who presented themselves were successful. During 1912, 3 examinations were held, and 46 candidates were examined, 24 being successful. The number of final examinations held previous to 1912 was 28, and 154 candidates qualified out of 244 who sat. In 1912, in 3 examinations, 31 were successful, 24 having failed. The Board accepted 8 certificates of examination instead of the Preliminary examination and registered 39 indentures of apprentices.

The Board is charged with the publication, in January of each year, of a list of all registered pharmacists, corrected up to 31st December previous. At the end of 1912 the registrations in force numbered 1,100. In addition to qualified pharmacists, other dealers in poisons must be registered before the Pharmacy Board and obtain annual licenses. During 1912, 350 such poison licenses were issued, besides 62 to registered pharmacists. During the past eleven years the registrations of pharmacists have averaged 34 per annum.

Members of the nursing profession are registered and certificated by the Australasian Trained Nurses' Association, which was established in New South Wales in 1899, and has branches in the other States. For the year ended 30th June, 1913, the register of nurses in New South Wales showed as follows :—General, 1,357 ; Obstetric, 673.

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 1912 numbered 169 ; solicitors at the same date numbered 1,025, viz., 417 in the country, and 608 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.

SHIPPING.

Legislation and Supervision.

The principle of merchant shipping legislation is that the ship is subject to the law of the country in which such ship is registered. This general principle is modified by the fact that the various parts of the British Empire have power to regulate their own coasting trade, and by the further fact that as regards ships other than those registered locally, and engaged in coastal trade, these legislative powers are restricted to territorial limits, and are therefore inoperative on the high seas. Under the Commonwealth of Australia Constitution Act there is an exception in regard to "round voyages."

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, also to lighthouses, light-ships, beacons and buoys, and quarantine.

Section 98, Part IV, of the Commonwealth Constitution Act, extended this power to include 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. A Royal Commission was appointed subsequently to investigate matters incidental to the Bill. An amended Bill, embodying the results of the British-Australasian Conference held in London in 1907, was introduced in September, 1907, but did not become law. In the 1912 Session of the Federal Parliament a new Navigation Bill of 424 clauses, which had been passed by the Senate, was among the first taken by the House of Representatives. This Bill, which passed the final stages in December, 1912, is awaiting formal proclamation to come into effect. The Act is drafted on the lines of the Merchant Shipping Act, and of the local Navigation Acts of New South Wales and New Zealand.

Meanwhile the shipping trade of the State remains under the general supervision of the Navigation Department of New South Wales, administering the Navigation Act, 1901, and its amendments, on the basis of Imperial enactments; while within Port Jackson, control of shipping, and matters incidental thereto, is vested in the Sydney Harbour Trust.

The Navigation Department.

Under the Navigation Act, 1901, the jurisdiction of the Superintendent of the Department of Navigation extends to the navigable waters lying within one nautical league of the coast, and to the inland navigable waters of New South Wales. It includes all ports and harbours except the port of Sydney, which is administered by the Sydney Harbour Trust. The Super-

intendent of Navigation has general superintendence of all matters within the jurisdiction relating to the issue, suspension, and cancellation of certificates of competency and of service; the preservation of ports, harbours, havens, and navigable creeks and rivers; the licensing, appointment, and removal of pilots; the regulation of lighthouses, and superintendence of lights, and other sea, harbour, or river marks; the placing or removing of moorings; the granting to and regulation of licenses for ballast lighters; the licensing and regulation of watermen, boatmen, and boats plying for hire, and the determination of fees and rates chargeable for such services; steam and other ferry boats; harbour and river steamers; safety and prevention of accidents; unseaworthy ships; life-saving appliances, lights, fog-signals, and sailing rules; and the accommodation for seamen. The Department also administers the Wharfage and Tonnage Rates Act, 1901, in all 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) and harbour removal dues, harbour and light rates, wharfage rates, tonnage rates. In addition to these charges, regulations under the Navigation Act, 1901, stipulate the fees for swinging ships in the adjustment of compasses, and for surveys and the issue of certificates, &c. Fees for engagement and discharge of seamen are fixed by the Seamen's Act, 1898. The Customs Acts impose upon the master of every ship the duty of reporting the ship and cargo.

Pilotage Rates are 2d. per ton on entry or clearance, except in the following cases :—

Ships entering or clearing in ballast, or entering for docking or refitting, 1d. per ton.

Ships compelled to enter port for coaling, provisions, orders, &c., 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.

Wharfage.—Inward wharfage rates, at a general rate of 2s. 6d. per ton, are levied on all goods unshipped at the port of Sydney from vessels berthed at any wharf, &c., vested in the Sydney Harbour Trust Commissioners. Harbour rates, at an all-round rate of 10d. per ton, are levied on all goods ex vessels lying in the stream or berthed at any landing place not vested in the Commissioners. There are special rates—considerably lower than the all-round rate—levied on produce and cargo of small value; transhipment cargo is charged an all-round rate of 5d. per ton.

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.

Decentralisation.

Sydney is the chief trading centre in the State, and, for the majority of shipping lines, a terminal port which is equipped with extensive facilities for shipment and discharge of passengers and cargo. It is also the centre to which all the railways of the State converge. This centralisation has resulted in considerable congestion of business in Sydney, and as a preliminary to decentralisation of the growing volume of traffic, a Royal Commission of Inquiry was appointed in June, 1910, to report as to the best means of effecting this object.

The Commission's recommendations included the establishment of ports for oversea shipment at Port Stephens to the north, and Jervis Bay to the south, of Sydney, these points to be connected by the construction of cross-lines with the existing railways.

As to the shipping places along the coast of New South Wales which offer shelter for vessels of small draught, their utilisation for oversea purposes would involve large expense. As has been indicated, they are mostly anchorages with ocean jetties, or bar harbours at the mouths of the rivers. In many places the construction of breakwaters has been undertaken to afford additional shelter or to improve the entrances by preventing the ingress of sand from the ocean beaches.

Wollongong and Port Kembla are used mainly for the shipment of coal from the southern coal-fields, and in the trade connected with the smelting and other industries established in the vicinity. Wollongong is an artificial harbour, excavated out of rock, with a retaining wall to form a shipping basin. At Port Kembla, which for some years has been a coal-loading station, the works are practically completed for the purpose of forming an enclosed harbour, with an area of about 334 acres at low water. The area having a depth of 30 feet or over is 165 acres; the entrance is 900 feet wide, with a depth of 50 feet.

The trade of the Northern Rivers is hampered considerably by the unsatisfactory river entrances, the navigation of the bars being difficult and uncertain; a scheme is in progress and the preliminary work has been started in the establishment of a deep-sea port at Coff's Harbour, 240 miles north of Sydney, to provide reliable transport for the rich products of the district.

Oversea and Interstate Shipping.

The following statement shows in comparative form the number and tonnage of vessels, oversea and interstate, entered and cleared from the various ports of the State during the last ten years, and the aggregate for all ports over the same period :—

Year.	Sydney.		Newcastle.		Kembla.		Twofold Bay (Eden.)		Other Ports.		Total.	
	Vessels.	Tonnage.	Vessels.	Tonnage.	Vessels.	Tonnage.	Vessels.	Tonnage.	Vessels.	Tonnage.	Vessels.	Tonnage.
						ENTRIES.						
1903	1,993	3,348,966	674	1,034,440	25	31,124	87	27,025	174	22,093	2,953	4,463,648
1904	1,872	3,320,953	692	1,022,066	30	37,297	63	33,300	56	5,563	2,718	4,419,179
1905	1,831	3,401,013	717	1,182,267	57	74,085	34	30,772	86	9,374	2,725	4,697,511
1906	1,919	3,751,458	815	1,404,844	68	85,324	35	33,276	56	8,817	2,893	5,283,719
1907	2,163	4,273,995	909	1,657,234	76	92,320	32	31,644	58	15,760	3,238	6,070,953
1908	2,128	4,409,021	908	1,746,070	39	58,910	50	54,908	71	29,875	3,196	6,298,784
1909	2,062	4,507,187	620	1,182,031	42	72,994	71	86,468	66	21,354	2,861	5,870,034
1910	2,021	4,791,029	694	1,303,133	64	87,831	69	78,340	89	29,786	2,937	6,290,119
1911	2,181	5,246,351	701	1,357,132	64	102,866	55	63,145	126	52,641	3,127	6,822,135
1912	2,333	5,732,055	806	1,570,581	65	85,148	49	58,798	101	43,464	3,354	7,490,046
						CLEARANCES.						
1903	1,409	2,585,445	1,143	1,639,165	146	173,606	100	38,806	209	29,894	3,007	4,466,916
1904	1,527	2,896,631	1,005	1,405,112	84	111,710	69	35,871	82	10,690	2,767	4,460,014
1905	1,413	2,922,461	1,062	1,586,134	103	135,193	36	31,479	80	8,841	2,694	4,684,108
1906	1,516	3,277,907	1,115	1,762,472	140	185,793	38	37,486	74	11,373	2,883	5,275,031
1907	1,718	3,717,792	1,221	2,044,706	155	197,832	32	31,957	79	16,995	3,205	6,009,282
1908	1,592	3,642,793	1,372	2,408,946	106	154,111	49	51,235	100	46,040	3,219	6,303,125
1909	1,559	3,795,231	979	1,676,759	93	123,761	49	61,417	87	32,258	2,767	5,689,426
1910	1,676	4,299,857	1,082	1,915,312	115	146,656	54	64,619	108	45,411	3,035	6,471,855
1911	1,691	4,459,030	1,151	2,106,013	104	141,332	51	61,380	149	66,027	3,146	6,833,782
1912	1,787	4,822,889	1,293	2,395,674	107	124,531	48	58,509	111	51,402	3,346	7,453,005

Of "Other Ports," grouped together in the above table, the more important are Bellambi, and Ballina, Richmond River. Following are the figures for each of the "Other Ports," for 1912 :—

Port.	Entries.		Clearances.	
	Vessels.	Tonnage.	Vessels.	Tonnage.
Tweed River	9	1,044	9	1,044
Richmond River (Ballina) ...	40	10,977	40	10,977
Clarence River	26	6,310	27	6,152
Nambucca River	3	536	2	441
Port Stephens	3	3,301	9	7,907
Bellambi	20	21,296	24	24,881

In these shipping records the total voyages of vessels are included, but account is not taken of ships of war, cable-laying vessels, and yachts, nor of vessels trading between ports in New South Wales. The tonnage quoted is net.

Vessels are entered at the first port of call in New South Wales, and cleared at the port from which final departure is taken from the State.

The aggregate number and tonnage of interstate and oversea vessels arriving in and departing from all ports of New South Wales, with the average tonnage per vessel, at intervals of five years since 1860, are as follows :—

Year.	Entries.		Clearances.		Average Tonnage per Vessel.
	Vessels.	Tonnage.	Vessels.	Tonnage.	
1860	1,424	427,835	1,438	431,484	300
1865	1,912	635,888	2,120	690,294	329
1870	1,858	689,820	2,066	771,942	373
1875	2,376	1,109,086	2,294	1,059,101	464
1880	2,108	1,242,458	2,043	1,190,321	586
1885	2,601	2,088,307	2,583	2,044,770	797
1890	2,326	2,340,470	2,317	2,294,911	998
1895	2,390	2,851,546	2,405	2,854,705	1,190
1900	2,784	4,014,755	2,714	3,855,748	1,432
1905	2,725	4,697,511	2,694	4,684,108	1,731
1910	2,937	6,290,119	3,035	6,471,855	2,137
1911	3,127	6,822,135	3,146	6,833,782	2,177
1912	3,354	7,490,046	3,346	7,453,005	2,230

Between 1860 and 1912, the number of vessels engaged in the trade of the State has more than doubled, the entries increasing from 1,424 to 3,354. In the same period the tonnage of the vessels increased nearly eighteen times.

The average tonnage has advanced steadily, and in the last twenty years very rapidly. In 1905 the average was 1,731, representing the highest figure recorded at that date; but in each subsequent year a new record has been made, the average for 1912 being 2,230, which is more than seven times the average for 1860, and nearly 30 per cent. greater than the average of 1905. And side by side with an advance in tonnage has been an improvement in the class of accommodation provided both on passenger and on cargo steamers, special provision being made on the latter steamers for refrigerating space, to assure carriage in good condition of meat, fruit, butter, and other perishable produce.

Compared with other Australian States the shipping tonnage of New South Wales is greatest. The relative positions may be seen in the following statement of shipping entries from oversea, direct and indirect (via States), for 1912 :—

State.	Direct.		*Via* States.	
	Vessels.	Tonnage.	Vessels.	Tonnage.
New South Wales	849	1,847,943	590	2,116,174
Victoria	260	701,313	465	1,684,762
Queensland	210	345,702	204	805,662
South Australia	210	634,622	224	896,817
Western Australia	373	1,180,944	6	12,907
Tasmania	100	387,661	9	20,544
Northern Territory ...	33	65,172	41	72,880
Total	2,035	5,163,357	1,539	5,609,746

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 1912, and show the relative pre-eminence of New South Wales :—

State.	Entries.		Clearances.	
	Vessels.	Tonnage.	Vessels.	Tonnage.
New South Wales	3,354	7,490,046	3,346	7,453,005
Victoria	2,399	5,426,146	2,385	5,410,801
Queensland	1,020	2,024,328	1,040	2,033,803
South Australia	1,213	3,662,060	1,204	3,660,533
Western Australia	780	2,621,787	765	2,614,127
Tasmania	1,009	1,321,800	1,007	1,322,496
Northern Territory	74	138,052	74	138,052
Total	9,849	22,684,219	9,821	22,632,817

That Sydney is one of the chief ports of the world is evident from a comparison of its oversea and interstate shipping entries (entirely exclusive of coastal trade) with the returns of other ports, as shown by the following table. The figures quoted relate to the latest years available, viz., 1912 for Australasia, and 1911 for other ports :—

Port.	Tonnage Entered.	Port.	Tonnage Entered.
Sydney	*5,732,055*	Aden	3,594,888
Melbourne	5,299,896	Singapore	7,737,785
Brisbane	1,832,128	Penang	3,877,981
Port Adelaide ...	3,175,796	Hong Kong ...	11,138,527
Fremantle	1,977,306	Cape Town... ...	2,195,902
Hobart	832,764	Durban	3,078,745
Auckland	820,230	Montreal	1,702,690
London	11,973,249	Halifax	1,474,372
Liverpool	7,887,719	Victoria (B.C.) ...	1,874,102
Cardiff	5,526,426	Hamburg	11,830,949
Tyne Ports	7,343,225	Marseilles	8,051,321
Hull	3,534,964	Havre	3,582,065
Southampton ...	4,466,314	Antwerp	13,233,677
Glasgow	2,146,512	Rotterdam	10,624,499
Leith	1,417,534	Copenhagen ...	3,278,674
Calcutta	2,093,771	New York	13,428,950
Bombay	2,083,208	Boston	2,836,611
Colombo	7,074,152	Shanghai	4,183,528
Gibraltar	5,903,529	Monte Video ...	8,244,375
Malta	4,119,221	Rio de Janeiro ...	5,212,713

The total shipping tonnage—oversea and coastwise—shows Sydney even to greater advantage, at least as far as Australian ports are concerned.

Appended are the figures, including coastal, for the principal ports of Australasia and the United Kingdom, for the year 1911 :—

Port.	Tonnage.	Port.	Tonnage.
Australia—		*England—*	
Sydney	7,769,040	London	19,662,664
Melbourne	5,928,065	Liverpool	14,612,751
Newcastle	3,807,094	Cardiff	10,738,059
Port Adelaide ...	3,104,641*	Southampton ...	6,841,982
Brisbane	2,452,782	Hull	5,165,763
Fremantle	2,038,422	Plymouth	4,475,991
Townsville	1,222,603		
Albany	1,164,389	*Scotland—*	
Hobart	862,746	Glasgow	5,695,542
		Leith	2,350,805
New Zealand—			
Wellington	2,995,826	*Ireland—*	
Lyttelton	2,137,051	Cork	4,230,153
Auckland	1,822,824	Belfast	3,105,624
Dunedin	1,084,269	Dublin	2,641,944

* Exclusive of Coastal Shipping—not available

The rate of progress of the shipping trade of Sydney has been uniform, the increase from the year 1860 to 1890 being at an average rate of about 5·6 per cent. per annum, and from 1890 onwards at the rate of 5·7 per cent. per annum. The vessels registered as entered at Sydney considerably exceed in tonnage those cleared. This is caused by vessels, leaving Sydney for Newcastle for the purpose of shipping coal, being reckoned as departures from Newcastle, and not from Sydney. For this reason the clearances of Newcastle uniformly exceed the arrivals, as will be noticed in the following statement, which shows the shipping entered from and cleared to countries outside New South Wales at both Sydney and Newcastle for quinquennial periods from 1860 to 1910, and for 1911 and 1912 :—

Year.	Sydney.		Newcastle.	
	Entered.	Cleared.	Entered.	Cleared.
	tons.	tons.	tons.	tons
1860	292,213	275,630	111,274	134,480
1865	423,570	421,049	189,620	248,769
1870	385,616	364,758	283,091	383,242
1875	590,700	468,423	510,902	573,626
1880	827,738	641,996	400,598	516,480
1885	1,608,169	1,283,888	452,946	722,865
1890	1,644,589	1,356,632	625,398	842,180
1895	2,027,951	1,669,654	727,834	1,048,400
1900	2,716,651	2,109,739	1,160,758	1,523,976
1905	3,401,013	2,922,461	1,182,267	1,586,134
1910	4,791,029	4,299,857	1,303,133	1,915,312
1911	5,246,351	4,459,030	1,357,132	2,106,013
1912	5,732,055	4,822,889	1,570,581	2,395,674

Nationalities of Vessels.

The trade of the State of New South Wales is carried, to a very great extent, under the British flag, the deep-sea trade with the mother country and British possessions being controlled by shipowners of the United Kingdom, and the interstate trade chiefly by local shipowners. Foreign-owned shipping has become increasingly important in the last thirty years, and the greater portion of the direct trade transacted with foreign ports is now carried in non-British vessels. In the Australian trade the steamers of the Messageries Maritimes have been engaged since 1883, those of two German lines commenced later, and more recently the vessels of American, Japanese, and Dutch companies. From the table given below, distinguishing British and foreign shipping during the last fifty-two years, it will be seen that the British tonnage entered and cleared in 1860 was 689,251, or 80·2 per cent. of the total of 859,319 tons; while in 1880 the proportion was as high as 92·9, British vessels representing 2,259,924 tons out of a total of 2,432,779. In 1912, however, the British shipping had fallen to 80·2 per cent., the foreign tonnage being 19·8 per cent. :—

Year.	Tonnage.			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

Of the tonnage included as British, a large proportion is owned or registered in Australia and New Zealand.

In 1870, out of 1,333,410 tons of shipping entered and cleared under the British flag, 964,718 tons, or 72·3 per cent., belonged to British possessions, the great bulk being Australasian. In 1880, out of 2,259,924 tons of British shipping entered and cleared, 1,499,236 tons, or 66·3 per cent., belonged to British colonies. In 1890, 60·9 per cent. of British shipping was owned and registered in Australasia. In 1900 the shipping of British nationality entered and cleared this State amounted to 6,702,106 tons (of which 3,590,284 tons, or 53·6 per cent., were Australasian) out of a total of 7,870,503. In 1901 the total tonnage of vessels trading with this State was 8,407,301 and of these the vessels owned in the Australian Commonwealth represented 3,348,502 tons, or 39·8 per cent. of the total; while in 1912, less than 33 per cent. of the total was Australian. The proportion of

shipping belonging to the United Kingdom and other British Possessions has been fairly constant at about 47 per cent. during the last decennium, though it has shown a tendency to increase during the last three years.

The tonnage of the foreign vessels trading with New South Wales exhibits an advance during the last twenty years, increasing from 13 per cent. of the total to nearly 20 per cent. For the year 1912, the total tonnage of the principal nationalities is given below. Germany stands first with 10·31 per cent. of the total, then Norway with 2·83 per cent., and France with 2·07 per cent. The only other nation whose carrying trade with the State is important is Japan with 1·92 per cent.

The statement below shows the number and tonnage of shipping of the principal nationalities that entered and cleared the ports of New South Wales in 1910, 1911, and 1912, as well as the tonnage proportions per cent :—

Nationality.	Entries and Clearances.						Tonnage—Percentage of each Nationality.		
	1910.		1911.		1912.				
	Vessels.	Tonnage.	Vessels.	Tonnage.	Vessels.	Tonnage.	1910.	1911.	1912.
British—									
Australian	2,934	4,463,079	3,011	4,645,195	3,127	4,892,143	34·67	34·02	32·74
New Zealand ..	581	1,004,543	665	1,080,498	779	1,344,279	7·87	7·91	9·00
United Kingdom ..	1,524	5,229,381	1,519	5,475,280	1,539	5,709,379	40·98	40·09	38·21
Other British ..	19	26,037	32	38,871	31	37,897	·20	·29	·25
Total	5,058	10,723,040	5,227	11,239,844	5,476	11,983,698	84·02	82·31	80·20
Foreign—									
France	144	282,551	152	311,237	146	310,001	2·21	2·28	2·07
Germany	335	950,100	401	1,193,782	508	1,540,352	7·44	8·74	10·31
Norway	189	308,603	208	369,840	245	422,747	2·42	2·70	2·83
Sweden	28	72,976	28	70,772	23	57,662	·57	·52	·39
Netherlands ..	48	91,850	50	97,028	50	91,201	·72	·71	·61
Italy	38	70,079	32	49,415	27	42,462	·55	·36	·28
Japan	54	160,413	74	218,036	94	286,774	1·26	1·60	1·92
United States of America ..	47	46,631	76	70,527	61	95,279	·37	·52	·64
Other Nationalities	31	55,731	25	35,386	70	112,875	·44	·26	·75
Total	914	2,038,934	1,046	2,416,073	1,224	2,959,353	15·98	17·69	19·80
Grand Total ..	5,972	12,761,974	6,273	13,655,917	6,700	14,943,051	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 it is impossible to obtain :—

Country.	Entered from and cleared for various Countries.					
	1890.		1900.		1912.	
	Vessels.	Tonnage.	Vessels.	Tonnage.	Vessels.	Tonnage.
British Empire—						
Australian States	2,974	2,544,905	3,082	3,861,154	3,773	6,998,135
United Kingdom	318	651,133	341	954,232	476	2,293,848
New Zealand	460	332,793	540	598,710	677	1,439,487
India and Ceylon	33	61,820	57	138,993	61	191,185
Hong Kong	64	92,523	68	121,933	31	49,283
Canada	4	5,103	41	76,477	42	160,835
Union of South Africa—						
Cape Colony	12	18,744	152	240,755	32	67,922
Natal	...	...	40	60,701		
Fiji	66	68,003	65	64,125	71	151,631
Straits Settlements	24	33,994	19	31,212	61	154,967
Papua	...	.....	14	11,448	22	18,088
Ocean Island	...	.....	...	.....	30	69,601
Other British Possessions ...	13	9,079	46	46,653	23	14,930
Total, British	3,968	3,818,097	4,465	6,206,393	5,299	11,609,912
Foreign Countries—						
France	25	57,096	44	100,793	40	123,792
Germany	69	133,368	70	234,817	219	743,632
Belgium	10	14,426	13	28,129	19	58,563
United States of America ...	154	222,483	157	303,187	218	565,960
China	8	10,365	19	41,161	1	3,905
Japan	4	5,150	34	83,179	98	248,240
New Caledonia	100	97,823	118	143,867	70	139,804
Java	20	26,837	45	89,129	59	142,542
Philippine Islands	14	19,323	31	44,825	27	83,200
Hawaiian Islands	...	...	94	107,248	20	49,493
Peru	15	17,676	28	37,411	51	82,812
Chile	100	115,222	211	295,829	309	683,147
Other Foreign Countries ...	156	97,515	169	154,535	270	408,049
Total, Foreign	675	817,284	1,033	1,664,110	1,401	3,333,139
All Tonnage	4,643	4,635,381	5,498	7,870,503	6,700	14,943,051

Out of a total tonnage amounting to 14,943,051 in 1912, vessels from other Australian States provided 6,998,135, or 46·8 per cent. The United Kingdom furnished the next largest tonnage with 2,293,848 tons, or 15·4 per cent., followed by New Zealand with 1,439,487 tons, equal to 9·6 per cent. Germany is first among foreign countries with 743,632 tons, or 5·0 per cent.; Chile following with 683,147 tons, or 4·6 per cent.; and United States of America with 565,960 tons, or 3·8 per cent. of the total.

During the period 1890–1912, the tonnage of the United Kingdom increased by 1,642,715 tons, or 252 per cent., while the tonnage of ships trading with British dominions increased by 7,791,815, or 204 per cent.; and with Germany by 610,264 tons, or 458 per cent. Consequent on the discontinuance of the direct line of mail steamers between San Francisco and Sydney, there was a decrease in the tonnage of the United States between the years 1907 and 1911. In 1912, however, there was a

decided increase, and as the opening of the Panama Canal will provide a direct sea-route to the east coast of America, further increases may be expected.

The growth of trade with Eastern Asia since 1900 is apparent from the large increase in the tonnage of vessels plying between this State and Japan, Java, and the Philippine Islands. A line of Dutch steamers to Java was established in 1907.

The tonnage for Chile shows a marvellous increase. Vessels from Chile and other South American countries arrive usually in ballast to load coal, which is the chief item of export from New South Wales to South America.

The great increase in German tonnage is due principally to the fact that Germans are large buyers of wool at the Sydney sales, and the wool purchased is sent by German steamers, to Germany direct, instead of London for transhipment.

The tables given above do not disclose the full extent of the shipping communication between New South Wales and other countries, since the records, relating only to terminal ports, entirely disregard the business of intermediate ports of call, which, being on the direct route of so many shipping lines, are visited regularly by vessels both on their outward and inward journeys. Some idea of the extent of the State's shipping facilities may be gathered from the lists given elsewhere in this chapter, of places having direct and indirect communication with New South Wales; and in the chapter relating to Commerce, the value of the trade of New South Wales with various countries is classified according to continents.

Steam and Sailing Vessels.

Records prior to the year 1876 do not distinguish steamers from sailing vessels, but the tendency to supersede sailing vessels by steamers has been abundantly apparent in the years which have elapsed since. In 1876, about which time the change was making itself apparent, 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 1912 though higher than years 1910 and 1911 was, with these exceptions, lower than in any year since 1876. The tonnage was 956,953, or 6·4 per cent. of the total shipping, as compared with steam tonnage, 13,986,098, or 93·6 per cent. The steam tonnage in 1912 was fourteen times as great as in 1876. The progress of the tonnage of each class will be seen from the following table :—

Year.	Steam.		Sailing.		Proportion 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

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 1912 :—

Nationality.	Entries.				Clearances.			
	With Cargo.		In Ballast.		With Cargo.		In Ballast.	
	Steam.	Sailing.	Steam.	Sailing.	Steam.	Sailing.	Steam.	Sailing.
British—								
Australian	1,186	24	352	8	1,511	31	12	3
Other	897	53	170	52	1,032	108	36	1
Foreign	357	43	56	156	381	200	29	2
Total	2,440	120	578	216	2,924	339	77	6

The majority of sailing vessels entered and cleared are foreign-owned, but the numbers, though the highest since 1909, are decreasing in proportion to the decline of sailing vessels among the world's shipping. Such sailing vessels as come oversea to the port of Sydney are attracted by the chances of securing wheat cargoes, and the increasing equipment of sailing vessels with auxiliary engines, by facilitating regular timetables, may result in greater employment for sailing vessels in this particular trade.

Vessels in Ballast.

The advantage offered by the New South Wales trade to shipowners is illustrated by the rather peculiar feature of the large amount of tonnage entries in ballast, and the small number of clearances without cargo. Many vessels arriving in ballast come from ports of neighbouring States, where they have delivered a general cargo, and, having been unable to obtain full return freight, have cleared for Newcastle, in this State, to load coal. The largest amount of tonnage entered in ballast in any one year since 1876 was in 1907, when it reached 1,980,322 tons. In 1912 the tonnage entered in ballast amounted to 1,365,014 tons. The tonnage entered and cleared in ballast at intervals since 1876, is shown below :—

Year.	Steam (Ballast).		Sailing (Ballast).		Proportion of Tonnage in Ballast to Total Tonnage.	
	Entered.	Cleared.	Entered.	Cleared.	Entered.	Cleared.
	tons.	tons.	tons.	tons.	per cent.	per cent.
1876	16,709	4,022	246,244	13,834	24·47	1·70
1880	73,006	3,015	144,757	13,204	17·53	1·36
1885	146,501	11,181	198,865	42,200	16·54	2·61
1890	309,780	3,767	228,699	18,620	23·01	·98
1895	375,589	26,802	466,401	6,630	29·53	1·17
1900	791,803	133,159	505,030	1,644	32·30	3·50
1905	882,539	127,268	466,774	16,956	28·72	3·08
1910	997,188	201,614	269,241	8,635	20·13	3·25
1911	891,978	110,474	275,779	4,690	16·12	1·68
1912	1,013,651	175,565	351,363	5,566	18·22	2·43

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 is for the figure to stand at about one-quarter of the total tonnage entered. The reason for so small a proportion of shipping clearing New South Wales in ballast is not difficult to discover, for the export trade of the State is extending so rapidly that steamers have been constructed specially for its requirements.

Coast Trade.

Particulars of the Coast-trade shipping of New South Wales for 1912 are contained in the following statement :—

Port.	Entries.			Clearances.		
	Vessels.	Tonnage.	Crews.	Vessels.	Tonnage.	Crews.
Tweed River	116	16,390	1,342	116	16,440	1,343
Byron Bay	148	75,475	5,516	148	75,475	5,516
Richmond River	322	109,321	6,792	323	109,319	6,800
Clarence River	236	84,454	5,707	234	83,576	5,693
Woolgoolga	112	26,845	1,814	112	26,845	1,814
Coff's Harbour	407	124,840	8,194	407	124,840	8,194
Bellinger River	221	25,386	2,197	222	25,471	2,203
Nambucca River	136	16,500	1,527	138	16,115	1,497
Macleay River	165	38,237	3,090	165	38,237	3,090
Port Macquarie	180	29,384	2,408	180	29,384	2,408
Camden Haven	138	16,999	1,625	138	16,999	1,625
Manning River	243	38,238	3,137	243	38,238	3,137
Port Forster (Cape Hawke) ...	215	20,383	2,019	215	20,383	2,019
Port Stephens	588	62,333	4,941	588	62,333	4,941
Lake Macquarie	88	6,685	843	90	6,825	853
Wollongong	613	145,505	10,031	613	145,505	10,031
Shellharbour	40	3,596	437	40	3,596	437
Kiama	252	53,033	3,830	252	53,033	3,830
Eden	183	124,059	5,716	182	123,603	5,683
Bateman's Bay	72	19,454	1,475	72	19,454	1,475
Moruya	75	9,381	1,057	75	9,381	1,057
Narooma	80	8,115	1,100*	80	8,115	1,100*
Shoalhaven	138	9,843	1,388	137	9,884	1,394
Total	4,768	1,064,456	76,186	4,770	1,063,051	76,140

* Estimated.

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, of course, there is some traffic apart from the vessels trading between the river ports and Sydney, but the extent of this traffic is not recorded. On the Northern rivers the steamer trade, mostly engaged in transporting timber, and cream, is hampered by the growth of water hyacinth, so much so that a Bill to deal with the water hyacinth as a pest has been brought before the Legislative Assembly of the State.

On the inland rivers there is considerable traffic after a season of good rainfalls—*e.g.*, wool from Western New South Wales is carried down the Darling River.

The Murray River is navigable for some 150 miles above Albury, or 1,590 miles from its mouth. Its tributaries, the Kyalite or Edward River and the Wakool River, are navigable for some 400 miles, as far as Deniliquin. The Murrumbidgee and the Lachlan Rivers combined provide some 900 miles of navigable waterway. The Darling is navigable in time of freshets as far as Walgett, 1,758 miles from its confluence with the Murray. Altogether, the Murray River system provides some 4,200 miles of waterway more or less navigable. The question of locking these waterways, especially the Darling, to make them permanently usable, has been mooted. The volume of traffic on these rivers is not now recorded.

Crews.

In 1902, the crews of vessels entering New South Wales ports averaged 42 per vessel; in 1912, the average was 57. The following statement shows the aggregate crews of vessels, oversea and interstate, entered and cleared New South Wales ports, for 1902, and for the six years, 1907–1912 :—

Nationality.	1902.	1907.	1908.	1909.	1910.	1911.	1912.
Entries :							
British—							
Australian	49,285	60,189	62,783	59,197	61,387	65,351	69,960
United Kingdom ...	41,214	54,603	58,292	54,739	61,199	66,100	69,963
Other Possessions...	10,298	12,270	15,365	16,128	16,336	17,825	21,559
Total British ...	100,797	127,062	136,440	130,064	138,922	149,276	161,482
Foreign	20,680	24,637	23,502	24,217	23,698	26,876	31,537
Total Crews ...	121,477	151,699	159,942	154,281	162,620	176,152	193,019
Clearances :							
British—							
Australian	48,530	59,693	61,943	57,356	62,898	65,827	69,468
United Kingdom ...	41,286	55,980	58,579	53,349	62,423	65,195	68,538
Other Possessions...	9,608	12,055	14,534	15,932	16,287	17,291	21,365
Total British ...	99,424	127,728	135,056	126,637	141,608	148,313	159,371
Foreign	20,496	24,370	23,723	23,890	23,788	26,864	31,176
Total Crews ...	119,920	152,098	158,779	150,527	165,396	175,177	190,547

The crews of shipping on the New South Wales register at December, 1912, numbered 6,752, viz., 4,967 on steamers, 373 on motor vessels, and 1,412 on sailing vessels. On the shipping added to the registers during 1912, the crews were 944, viz., steam, 832; motor, 61; sailing, 51.

Certificates and Licenses.

Department of Navigation.

During 1912, the Department of Navigation issued 352 certificates to masters and officers of vessels. During the ten years, 1903–12, the annual average of certificates issued was 301. Following are details regarding the certificates issued during 1912 :—

Master—Extra	6	Engineer —1st	30
Foreign-going	18	—2nd	32
Coast Trade	10	—3rd	76
Harbours and Rivers ..	45	Pilotage	86
Mate—Foreign-going —1st ...	22		
—2nd ...	20	Total	352
Coast Trade —1st ...	6		
—2nd ...	1		

The qualifications of candidates, as to age and service, for the master's or mate's certificate, are—

Certificate.	Foreign-going.	Coast trade.
Master—	years.	years.
Minimum age	21	20
„ sea service	6	5
Mate—		
Minimum age	19	19
„ sea service	5	4

Vessels certificated at 31st December, 1912, numbered 360, distributed among coastal ports as follows :—

Port.	Vessels.	Tonnage.	Passenger capacity.	Port.	Vessels.	Tonnage.	Passenger capacity.
Sea-going Steamers				Harbour and River Steamers (*contd.*)–			
Sydney	188	321,130	13,717	Port Stephens ...	3	79	225
				Richmond River	14	763	2,501
Harbour and River Steamers—				Tweed River ...	3	150	479
Sydney	71	11,326	39,934	Total	126	13,996	49,224
Newcastle ...	15	745	3,206				
Camden Haven ..	1	84	12	Sailing Vessels—			
Clarence River ...	8	390	1,466	Sydney	46	9,627	...
Hawkesbury River	2	80	396	SUMMARY.			
Lake Macquarie..	2	89	459	Steamers	314	335,126	62,941
Macleay River ...	3	166	356	Sailing Vessels ...	46	9,627	...
Manning River ..	2	36	110				
Port Macquarie...	2	88	80	Total	360	344,753	62,941

All vessels, steam or sailing, passenger or cargo, must be certificated, and the certificates are renewable at maximum intervals of twelve months. Watermen licensed by the Department of Navigation for 1912 numbered 102; viz., 46 at Newcastle; 15 at Clarence River; 9 at Hawkesbury River; 7 at George's River; 8 at Tweed River; 6 at Port Stephens; 3 each at Botany Bay and Richmond River; 2 at Lake Macquarie; and 1 each at Bermagui, Merimbula, and Port Hacking.

Sydney Harbour Trust.

During 1912 33 watermen were licensed by the Sydney Harbour Trust to ply on Port Jackson, while the shipping licensed by the Trust included the following :—

License.	Vessels.	Tonnage.	License.	Vessels.	Tonnage.
Lighters	381	19,352	Water Boats	13	671
Ferry Steamers ...	65	7,299	Hulks	18	9,261
Tugs	52	1,473	Punts	13	249
Launches—Steam ...	13	182			
Oil	83	597			

STEAMSHIP SUBSIDIES.

At the Imperial Conference held in London in 1911, various resolutions related to Merchant Shipping, and to the advisableness of supporting, in the interests both of the United Kingdom and of the British Dominions beyond the seas, efforts in favour of British manufactured goods and British shipping. The majority of steamship lines trading to New South Wales have the benefit of mail contracts with their Governments, but in addition many of the foreign lines are assisted by subventions and contributions from national exchequers, *e.g.*, the Norddeutscher Lloyd receives an annual subsidy for the mail service between Australia and Germany. The French and Japanese Governments also subsidise steamers trading to Australia.

Of the British lines the Peninsular and Oriental Steam Navigation Company is in receipt of a subsidy from the Imperial Government for the conveyance of mails to East India, China, and Australia. The Commonwealth Government

has made a contract with the Orient Steam Navigation Company, Limited, for ten years from 1st February, 1910, by which the Commonwealth has agreed to pay a subsidy of £170,000 per annum for a fortnightly service between Australia and the United Kingdom, provided that each mailship is at least 11,000 tons gross registered tonnage, and capable of steaming at least 17 knots per hour. Space for certain cargo is to be provided, and each steamer fitted with wireless telegraphy installation. The flag of the Commonwealth of Australia is to be flown, only white labour is to be employed on the vessels, and the rates of freight payable on perishable produce are stipulated in the contract.

An annual subsidy of £2,000 is given to Burns, Philp, & Co. for the maintenance of a monthly service with Java ports and Singapore. For maintaining the Pacific Islands service this Company is subsidised by the Commonwealth to the extent of £19,850 per annum.

For granting preferential cargo space and freight rates, and making Shanghai a regular port of call each month for their steamers, the Eastern and Australian Steamship Company are subsidised to the extent of £2,925 per annum.

Among the companies engaged in the Australian shipping trade are several subsidised lines of foreign steamers, whose vessels are, under agreement with their Governments, available for service in case of war. Some of these vessels are manned by trained naval reserve men.

Routes.

Practically the whole Coastal trade centralises in Sydney, and from Sydney vessels trade to all the rivers and ports north and south.

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. To South Australia and Western Australia there is also indirect traffic *via* Victoria.

Oversea the New South Wales trade included during 1912 direct shipping to the following places within the British Empire :—

United Kingdom.*	New Zealand.*
Canada.*	Ocean Island.
Fiji.	South African Union.*
India.*	South Sea Islands (Brit.)
Mauritius.	Straits Settlements.*

To the countries marked * there was also considerable indirect shipping trade, as also to Hong Kong and Papua, to which places Sydney shipping goes *via* other Australian States.

To foreign ports the greater part of the trade goes direct :—

Africa—Portuguese East.	Japan.*
Argentine Republic.	Mexico.
Belgium.*	Netherlands.*
Brazil.	New Caledonia.
Chile.	Peru.
Dutch East Indies.*	Philippine Islands.*
Ecuador.	South Sea Islands.
France.*	Sweden.*
Germany.*	United States of America.*
Hawaiian Islands.	

The countries marked * also have the benefit of indirect trade, as also have Austria-Hungary, Borneo, China, Java, &c.

In the New South Wales shipping trade the greater part of the business is conducted by regular liners. Those lines trading with ports outside Australia are generally owned and controlled by companies registered outside the Commonwealth. Interstate and coastal companies are for the most part

Australian-owned. In addition to the regular lines a considerable amount of cargo is carried in tramp steamers, and a smaller proportion in sailing vessels.

During 1912 no new lines were opened between Sydney and oversea ports, but the Union Steamship Company's Wellington (New Zealand)–San Francisco service was in December extended to Sydney, and in May, 1912, the Oceanic Steamship Company's Sydney–San Francisco service, which had lapsed for several years, was resumed, the vessels being refitted with oil-burning engines. The establishment of a direct steamship service from Australian ports to Hull (England) is proposed.

The opening of the Panama Canal will involve the re-arrangement of ocean routes and itineraries, and will lessen the journey from New York and East Coast ports to Sydney—*e.g.*, New York–Sydney *via* Cape of Good Hope, 13,306 miles; *via* Panama, 9,691 miles. It also supplies an alternative route between New South Wales and English ports of approximately the same distance as the Suez route. Following is a comparison of distances between Sydney and Plymouth (England) by various routes :—

Sydney–Plymouth, *via*—	miles.
Auckland, Tahiti, Panama	12,560
Cape of Good Hope	12,340
Wellington, Rapa, Panama	12,290
Suez Canal	11,200

Thus in the English-Australian trade zone, these distances indicate that the possible freight for the Panama Canal must be mainly marginal, the extent of diversion of such traffic being dependent primarily on the canal toll rates. In the Eastern American-Australasian trade the saving of nearly 4,000 nautical miles, as from New York *via* Panama, and when the three-port service to Sydney, Melbourne, and Adelaide is completed, the fact that the return journey *via* Panama would be 1,700 miles shorter than *via* Cape of Good Hope, combined with the availability of New South Wales coal for coal-using ships, will incline this trade to the Panama Canal.

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 last two years as compared with 1905, and shows that the increases have affected all the principal articles of export:—

Article.	Freight rate.		
	1905.	1911.	1912.
Wool (greasy) ... ... lb.	¼d. to ½d.	⅝d. to 1 1/16d.	1 1/16d. to ⅝d.
Wheat ... ... ton	16/3 to 23/9	17/6 to 30/-	10/- to 35/-
Frozen meat ... ... lb.	½d.	⅝d. to 1 1/16d.	15/16d. to 1 1/16d.
Preserved meat ... ... 40 cub. ft.	22/6 to 25/-	30/-	30/-
Rabbits ... ... ,,	25/- to 40/-	50/-	50/-
Butter ... ... 56 lb.	1/9 to 1/10	2/- to 2/6	2/- to 2/6
Tallow ... ... ton	22/6 to 35/-	40/- to 42/6	42/6
Leather ... ... ,,	25/- to 40/-	60/-	60/-
Hides ... ... ,,	27/6 to 32/6	40/- to 52/6	40/- to 52/6
Timber ... ... 100 sup. ft.	4/- to 5/-	6/-	6/-
Copra ... ... ton	20/- to 37/6	40/-	40/-
Measurement goods ... 40 cub. ft.	25/- to 45/-	25/- to 30/-	35/-

During 1912 the rates remained firm throughout, and on account of the bounteous seasons the supply of cargo was ample to fill the space available. Cargo is carried by sailing vessels at a cheaper rate, but this class of carrier is being rapidly replaced by large modern steamers designed specially for the Australian trade.

To European ports, *e.g.*, in France, Germany, and Belgium, the freights for products such as wool (greasy) are practically the same as to London, though the goods are transhipped at London for the European ports.

Freights to the East Coast of the United States of America by various routes are typified by the rates for wool (greasy) thus :—

Route.	Freight rate.		
	1905.	1911.	1912.
Via London or Liverpool	½d. to ⅝d.	11/16d. to 1 3/16d.	¾d. to 1 3/16d.
„ San Francisco	¾d.	¾d.	¾d.
To Boston, direct...	.....	¾d. to 1 3/16d.	¾d. to 1 3/16d.

The steamer rate for wool (greasy) from Sydney to Japan is ½d. per lb.

In connection with the question of freights, it is of interest to note that associated lines have been able to affect freights to such an extent that, as given in evidence before the Imperial Conference of 1911, in the case of wool the freight rate from South Africa is practically the same as from Australasia, double the distance.

For sheepskins, another substantial export item both of Australia and of South Africa, the position is similar; but for scoured wools the Australasian rates are less by some 5 per cent. than the South African rates.

Discrimination between producing countries is evident in the rates for specified goods from the United Kingdom to South Africa and Australia :—

Bicycles—United Kingdom to South Africa, 42s. 6d.
„ „ Australia, 37s.
Motor cars—Freight to Australian ports is less by 5s. 6d. than to Cape Town.
Pianos— „ „ „ 8s. „ „
Agricultural implements—United Kingdom to Cape Town, 30s.
„ „ Australia, 37s.
Fares—United Kingdom to South Africa, £16 16s. (3rd class).
„ Melbourne, £17. „

Coastal and Harbour Lights.

Lighthouses and Signal Stations.

The transfer to the Commonwealth of the control of lighthouses on the Australian coast has been in contemplation for some time, and the necessary legislation has been introduced in the Federal Parliament. Commander Brewis, R.N., was appointed in 1911 to advise the Commonwealth Government regarding the lighthouse services of the States and their requirements, and to collect all the information necessary for the preparation of a Federal scheme of administration. Reports have been furnished on the lighting of the various sections of the coast-line of Australia embodying recommendations regarding existing lights and additional lights. Perhaps the most important proposal is the attachment to the various sections of the coast, of vessels specially fitted, to act as store supply ships to the lighthouses, also as relief ships for vessels in distress, the equipment to include wireless telegraphy, derricks, &c., and workshops for minor lighthouse repairs.

The coast of New South Wales, which is about 700 miles in length, has been, under State control, well provided with lighthouses and signal stations, the number of lighthouses at the end of 1912 being 27, averaging one light to 26 miles of coast line :—

Location of Lighthouse.	South Latitude.	Description of Light.	Colour of Light.	Distance visible (See note).
	° ′			Nautical miles.
M. Green Cape	37 16	Revolving—Flash 50 sec.	White	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).	22
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	7
Kiama	34 40	,, ...	Green (gas) ...	9
Wollongong	34 26	,, ...	White (gas)‡ ...	10
Port Jackson, Sydney—				
M. Macquarie (Outer South Head).	33 51	Revolving—Flash every min.	White (Incandescent Kerosene Vapour).	26
Hornby (Inner South Head).	33 50	Fixed	White (gas) ...	15
Broken Bay (Barrenjoey)	33 35	,, ...	Red	15
M. Norah Head	33 17	Flashing—Flash $\frac{1}{5}$ sec. duration, eclipse $4\frac{4}{5}$ sec.	White	18
Port Hunter, Newcastle—				
M. Nobbys Head (Summit).	32 55	Fixed	,, (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. 17 R. 12
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)	23
,, (same Tower) ...		Fixed	Green§	3
Forster, Cape Hawke (anchorage).	32 11	Fixed	Green (acetylene gas).	5
Crowdy Head (Summit)	31 51	,, ...	White and Red†	12
Tacking Point	31 29	,, ...	White	12
M. Smoky Cape	30 56	Group Flashing—Flash 2 sec., eclipse 2 sec., flash 2 sec., eclipse 2 sec., flash 2 sec., eclipse 20 sec. triple flash every 30 sec.	,, ...	28
Monument Rock, Trial Bay.	30 53	Fixed	White	6
			Red	3
Coff's Harbour Jetty ...	30 18	Fixed	Red	5

Location of Lighthouse.	South Latitude.	Description of Light.	Colour of Light.	Distance visible (See note).
	° ′			Nautical miles.
M. South Solitary Island (Summit).	30 12	Revolving—Flash every ½ min.	White (Incandescent petroleum)	20
Clarence River	29 25	Fixed	White	12
Richmond River (2) ...	28 51	{ ,, ...	,, ...	12
		{ ,, ...	,, ...	10
M. Cape Byron	28 37	Flashing—Flash ¼ sec. duration, eclipse 4¾ sec.	,, ...	26
,, (same Tower) ...		Fixed	Red ‖	...
Tweed River (Fingal Head)	28 11	Fixed	White	12

* The light shows white to seaward, and over Entrance Shoal, red within the shoal, and up the Channe 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.
Distance visible.—The distance is calculated visible to an observer whose eye is elevated 15 feet from the sea level.

The lighthouses marked M above are equipped with Morse signalling lamps, and messages may be sent to them according to the rules laid down in the British Sign Manual from vessels passing during night-time. At Newcastle and at South Head (Port Jackson) the Morse signalling equipments are at the signal stations adjacent to the lighthouses.

Lighted beacons and leading lights are placed for the safety of harbour navigation in the ports of Sydney, Newcastle, Ulladulla, Clarence River, Botany Bay, Wollongong, and Kiama. The Smoky Cape group-flashing light (visible 28 miles at sea), the Macquarie revolving light, on the South Head of Port Jackson, and the Cape Byron group-flashing light, each visible 26 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 23 miles; and at Montagu Island, visible 22 miles. An annual inspection is made of all lighthouses to ensure their satisfactory maintenance.

Harbour Lights.

In Port Jackson the question of efficient lighting has received considerable attention during the last three years. A conference of ship-masters (representing oversea, interstate, and coastal shipping companies) with the Harbour Trust Commissioners met in July, 1909, with the result that leading lights were erected at the entrance to the port, with occulting lights to mark the channels. Most of the lights are provided by acetylene installations. The harbour lights include two leading lights in the Eastern channel, and fourteen lights at points up to Goat Island, where also are two leading lights. On Shark Island a lighthouse, built in sections, of reinforced concrete, has been completed, and a new light has been placed on Fort Denison. Fog-bells are placed on the more prominent positions along ferry routes.

In Port Hunter, leading lights (two each) are placed off Stockton, and in the fairway; there is also a leading light on the South Breakwater. Lights are placed at five other points, and there are also two fog-bells.

For Ulladulla harbour, Kiama breakwater, and Wollongong, there are two leading lights each, and for navigation of the Clarence River leading lights are exhibited at Maclean, Lawrence, Elizabeth Island, and Ulmarra. Also at Sugarloaf Point (Seal Rocks) there is, in addition to the dioptric light, a catadioptric, fixed, green light visible at three miles; and at Cape Byron there is a fixed red light (dioptric) showing over Juan and Julia rocks.

Pilot and Rocket Stations.

Pilotage on the coast of New South Wales is a State service, the pilots being salaried officers appointed by the Government. Their services must be engaged for all vessels not specifically exempted, and certificates of exemption from pilotage for the various ports of the State are granted, after examination, only to British subjects, and are usable only in respect of British ships registered in Australia or in New Zealand, and engaged in trade in Australasia and the South Sea Islands, or in whaling.

The following statement shows the pilot stations along the coast from north to south, the pilot staff at December, 1912, and the number of vessels piloted in and out of port during each of the last five years. All the stations except Camden Haven, Lake Macquarie, and Moruya River, are also rocket stations; Port Jackson and Macleay River have two stations each, Port Hunter four, and each of the other ports one :—

Port and Pilot Station.	Pilots.	Crew.	Vessels Piloted In and Out.				
			1908.	1909.	1910.	1911.	1912.
Tweed River	1	2	5	4	18	32	9
Richmond River—Ballina	1	5	5	...	17	3	...
Clarence River—Yamba	1	5	7	13	13	10	22
Bellinger River	1	2	18	13	4	4	18
Nambucca River	1	2	8	15	7	2	20
Macleay River	1	4	6	8	11	...	13
Port Macquarie	1	3	8	6	1	7	16
Camden Haven	1	2	6	4	4	14	...
Manning River—Harrington	1	4	1	10	6	7	26
Port Forster—Cape Hawke	1	2	4	15	11	8	15
Port Hunter—Newcastle	11	23	1,562	1,008	1,042	1,113	1,231
Port Jackson—Sydney	8	23	1,700	1,540	1,731	1,844	1,939
Port Kembla—Wollongong	1	2	4	9	11	12	...
Kiama	1	...	...	...	...	...	...
Shoalhaven River—Crookhaven ...	1	3	3	7	4	4	21
Moruya	1	2	11	4	7	10	8
Twofold Bay—Eden	1	3	7	16	19	34	26

The number of pilotage certificates is shown elsewhere.

The pilot vessel at Port Jackson is the Government steamer "Captain Cook," a main-deck vessel 156 ft. x 25 ft. x 13 ft., having a gross tonnage of 396, under-deck 376, net 172, and nominal horse-power 86. At Port Hunter the pilot vessel is the Government steamer "Ajax," an awning-deck vessel 129 ft. x 21 ft. x 12 ft. to main deck, and 19 ft. to awning deck, having a gross tonnage 344, net 189, and nominal horse-power 72. The Government has lately purchased the tug "Alexandra" for pilot service at Clarence River. At each of the northern stations there are subsidised tugs for the use of pilots.

Safety Equipment for Vessels.

Regulations for safety under the Navigation Act make the following stipulations of equipment to be carried :—

Sea-going Vessels.

Sufficient boat and raft accommodation and life-belts 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 six.

Blue lights (12), deck flare lights (2), rocket distress signals (24), rockets (12).

Harbour and River Steamers.

Sufficient buoyant apparatus, flotation seats, rafts or life-belts to accommodate all persons on board.

At least four life-buoys.

Approved signals of distress.

Under the Federal Navigation Act, awaiting a date of proclamation, a lifebelt must be provided for each passenger, even on ferry boats.

CHARTS AND COASTAL SURVEYS.

The British Admiralty have two surveying ships employed—H.M.S. "Fantome," constantly, and H.M.S. "Sealark," occasionally—on the Australian Coast, and during recent years they have been engaged principally on the northern and north-western portions of the continent. The importance of the Torres Strait route from Australia to Eastern Asiatic and Indian ports, and the opening up of the Northern Territory of Australia by the Commonwealth Government, have rendered such surveys necessary, so that the shores of the Arafura and Timor Seas will shortly be as well charted as the more settled and better known southern and eastern shores of Australia.

The importance of a properly equipped and organised Hydrographic Department has not yet been fully realised by the Australian States, and with the exception of the work done on the New South Wales coast, comparatively little is known of the set of the ocean currents, with their seasonal or other variations, the meteorological influence on tidal flow, or the changes in temperature, density, velocity, or direction of the many currents on the Australian littoral. That these currents are subject to change at various seasons of the year, as well as to secular changes, is undoubted, and a knowledge of them is of primary importance to this island continent in connection with its mercantile marine. The effect of these changes is also of the greatest importance to the fishing industry, as without a knowledge of the currents which are the means by which fish and their food are transported from place to place, all investigations of fish-life are futile.

In the other Australian States, harbours and river entrances are surveyed by State officers, as in New South Wales, but nothing is done in the way of investigating ocean-currents beyond the immediate vicinity of the entrances. In New South Wales some work of this description has been undertaken, and a considerable amount of useful material has been collected; the observations can be regarded only as items in a series, and their full value will not be apparent until that series is complete.

H.M.S. "Dart," manned by boys from the training ship "Sobraon," was used for about two years on this service, under the direction of the Hydrographic Officer. Some temperature and density sections of the ocean and littoral currents at various places on the coast from Byron Bay to Green Cape were obtained, which will be useful for future investigations, as laying the foundations for more complete knowledge of the coast of New South Wales.

During 1912, it was found necessary to lay down measured distances 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, were set up at Maroubra Bay, and another set near Cape Solander, Botany Bay, 4 nautical miles to the southward. By keeping a due magnetic north course, and noting the times of transit for each set of obelisks, distances of 5, 4, or 1 miles may be accurately timed, and by timing and running the same distances, steering due magnetic south, the effect of current and wind may be eliminated. The obelisks are conspicuous, easily picked up, and the transits well marked, at distances of from 1 to 3 miles off shore.

Dredging.

The dredging service is controlled by the Department of Public Works for the ports and rivers other than Port Jackson, where the Sydney Harbour Trust is in control.

The following statement summarises the operations of the Dredge service for the year 1912–13, in the effort to prevent the shoaling of entrances, and to deepen existing channels wherever necessary :—

Class of Dredge.	Number of Dredges.	Tons Dredged.	Hours Dredging.	Expenditure.				
				Dredging only.			Dredging and Towing.	
				Total.	Per Ton.	Per Hour	Total.	Per Ton.
Harbours and Rivers—				£	pence.	£ s. d.	£	pence.
Ladder	6	1,389,535	8,501	23,171	4·00	2 14 0	34,856	6·02
Sand-pump	12	3,027,871	9,635	56,325	4·46	5 16 11	59,495	4·72
Combined Grab and Sand-pump	8	758,911	12,159	18,623	5·89	1 10 8	18,911	5·98
Grab	11	175,873	12,756	10,962	14·96	0 17 2	13,093	17·87
Total	37	5,352,190	43,051	109,081	4·89	2 10 8	126,355	5·67
Sydney Harbour Trust—								
Sand-pump and Grab	9	1,875,925	11,989	22,721	2·91	1 17 11	28,697	3·65

In the towing of dredged material from harbours and rivers seventeen tugs were engaged for the year 1912. For the Sydney Harbour Trust, five tugs were engaged in towing during the year, in addition to one tug engaged on special service. The following statement shows the expenditure on dredging and towing services at each port for the last three years :—

Locality.	Cost of Dredging and Towing.		
	1910.	1911.	1912.
	£	£	£
Tweed River	7,603	7,062	7,015
Richmond River	9,841	16,106	12,823
Clarence River	9,605	8,440	10,509
Coff's Harbour	.....	.....	582
Bellinger River	2,372	2,874	4,511
Nambucca River	2,950	5,755	5,152
Macleay River	6,648	2,358	3,054
Port Macquarie	3,255	2,245	4,003
Camden Haven	2,964	2,693	2,006
Manning River	4,717	15,098	11,633
Port Forster (Cape Hawke)	2,462	2,953	2,315
Port Stephens	3,598	2,770	1,283
Hunter River	2,682	.....	835
Paterson (Port Hunter)	1,048	.....	.....
Newcastle Harbour	37,639	41,072	46,424
Lake Macquarie	827	1,709	.....
Tuggerah Lakes	363	.....	.....
Hawkesbury River and Brisbane Water ...	1,925	4,970	2,679
Parramatta River	.....	.....	1,155
Cook's River and George's River	2,648	3,439	3,502
Port Hacking	30	1,209	755
Wollongong	810	51	510
Port Kembla	537	.....	.....
Shoalhaven and Crookhaven	.....	709	2,131
Bateman's Bay	.....	.....	1,602
Moruya River	2,481	.....	1,020
Wagonga Inlet	.....	1,893	856
Twofold Bay	.....	2,915	.....
Total ... ... £	107,005	126,321	126,355
Port Jackson (Sydney Harbour Trust) £	22,893	24,470	28,697

Docks and Slips.

Naturally, 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, also is concentrated at these ports. At Sydney there are four graving docks, five floating docks, and five patent slips; at Newcastle there are now three patent slips, and an Act was passed in October, 1913, sanctioning the construction of a floating dock designed to lift vessels having a displacement of 8,500 tons. The estimated cost of this venture is £110,000. Other docking and building yards are established along the coast to meet the necessities of the smaller vessels engaged in coastal trade.

Particulars as to dock accommodation at Sydney and at Newcastle at the end of 1912, 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—		ft.	ft.	ft.	tons.
Government—					
Sutherland	Cockatoo Island.	From outer caisson, 638			
Fitzroy		,, inner ,, 608	84	32	.....
		,, outer ,, 506			
		,, inner ,, 482	59	21½	.....
Private—					
Mort's	Mort's Bay, Balmain.	640	69 at cope, 60 at entrance, 59 on floor.	18 high water 13½ low ,,	.....
Woolwich ...	Parramatta River.	720 at present; but in course of extension to 780.	100 at cope, 83 at entrance, 75 on floor.	28 high water 23 low ,,	.....
Floating Docks—					
Private—					
Ward's	WaterviewBay	163	42	11½	400
Drake's ...	White Bay, Balmain.	150	60	7½	300
Woolwich Pontoon Dock.	Woolwich, Parramatta	195	56 between altars.	12	1,400
Jubilee ...	Johnson's Bay.	317	55; 44 at entrance.	15	1,200
Small ...		100	23	7½	120
Patent Slips—					
Government ...	Cockatoo Island.	105	Arms, 30 ... Cradle, 20 ...	9	300
Government Boat-shed.	Dawes' Point	82	Arms, 17 ... Cradle, 10 ...	6	100
Private—					
Mort's No. 1	Mort's Bay, Balmain.	270	30	11 ft. forwd. 17 ft. aft.	1,500
,, No. 2		200	25	8 ft. forwd. 14 ft. aft.	800
,, No. 3		58	15	5½ ft. forwd. 10 ft. aft.	40
NEWCASTLE HARBOUR—(PORT HUNTER).					
Patent Slips—		ft.	ft.	ft.	tons.
Private—					
O'Sullivan's ...	Stockton ...	220	40	9 ft. forwd. 12 ft. aft., up to 170 ft. 7 ft. forwd. if 220 ft. long.	1,000
Callen's No. 1	Stockton ...	150	30	8	100
,, No. 2		150	30	8	100

Particulars as to the Government graving docks elsewhere along the coast are as follow :—

Locality.	Length on Top.	Breadth at Gates.	Draught limits.
	ft.	ft.	ft.
Tweed River	115	42	10
Richmond River	214½	45	10
Clarence River	115	42	10
Macleay River	121	32	7
Manning River	128¾	40	6¼
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, and 30 feet moulded depth, the other is capable of taking a vessel of a similar beam and depth and 350 feet in length. During 1913 the Fitzroy Dock was transferred to the Commonwealth for naval purposes, and war vessels for the Australian Navy are being constructed there.

Transactions at Government docks for the last ten years are recorded in the following statement of vessels docked :—

Year.	Port Jackson.		Tweed River.		Richmond River.		Clarence River.		Macleay River.		Manning River.		Shoalhaven River.	
	Vessels.	Tonnage.	Vessels.	Tonnage.	Vessels.	Tonnage.	Vessels.	Tonnage.	Vessels.	Tonnage.	Vessels.		Vessels.	Tonnage.
1903	92	85,371	5	712	25	3,119	16	1,744	1	66	14	1,435	4	237
1904	71	70,429	6	1,120	8	1,400	9	740	6	480	10	580	1	50
1905	89	64,185	13	1,577	11	1,590	17	1,530	8	740	9	345	...	...
1906	85	81,403	6	809	9	1,525	7	664	5	410	12	1,152	...	...
1907	78	62,639	4	239	8	1,155	9	749	...	...	6	370	...	...
1908	80	103,026	6	492	13	1,477	9	656	6	400	10	699	3	250
1909	59	79,170	9	770	9	1,540	10	645	6	640	4	598	3	260
1910	68	102,161	11	1,002	9	1,961	13	1,058	3	348	5	298	1	100
1911	60	79,243	8	497	10	2,376	16	900	6	1,038	6	496	...	...
1912	70	95,367	12	609	4	390	14	1,338	11	633	8	525	1	120

British ships of war are docked at the Government docks in Port Jackson, while at coastal docks the majority of vessels docked are Government dredges, tugs, and punts. The private vessels docked numbered 16 for the year 1912,

Ship-Building.

The numbers and tonnage of steam and sailing vessels built in New South Wales are shown in the following statement for quinquennial periods from 1876 to 1905, and for each of the last seven years separately :—

Years.	Sailing.		Steam.*		Total.	
	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	4	336	17	567	21	903
1907	5	79	18	1,046	23	1,125
1908	3	146	16	943	19	1,089
1909	1	3	22	835	23	838
1910	2	92	18	1,067	20	1,159
1911	1	18	14	968	15	986
1912	2	145	18	1,325	20	1,470

* The figures include motor vessels. In 1912 there were 10 motor vessels, tonnage 140.

Although the Merchant Shipping Act, which controls the registration of shipping in New South Wales, does not require the registration of vessels under 15 tons burthen, few of such vessels remain unregistered. The rules of yachting clubs demand the registration of the yachts, steamers, and motor boats of the members; and, for the purpose of sale or mortgage, business is facilitated by such registration.

In the first ten years of the period for which figures are given, the rate of construction averaged sixty-three vessels per annum—sailing, thirty-three; steam, thirty. Taken on the tonnage, the construction was at the rate of 4,150 tons per annum,—sailing, 1,672; steam, 2,478. The replacement of sailing vessels by steamers, and the increasing size of the latter, were the evident tendencies of the period, in which the years 1883 and 1884 were characterised by the maximum activity in construction, both of sailing and steam vessels, fifty sailing and fifty-two steam vessels having been built in 1883, and thirty-nine sailing vessels and sixty-four steamers in 1884. But the promise, indicated by the extent of operations in this period, of a localised ship-building industry was not fulfilled, as is evident from the figures for subsequent years. Ketches and schooners were the principal types of sailing vessel constructed, and operations were restricted practically to the building of vessels with wooden frames and hull, only three vessels, with an aggregate tonnage of 712, being built of steel in the last seven 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 registrations at these ports on 31st December, 1912, classified according to tonnage :—

Tonnage.	Sydney.				Newcastle.			
	Steam.		Sailing.		Steam.		Sailing.	
	Vessels.	Tonnage.	Vessels.	Tonnage.	Vessels.	Tonnage.	Vessels.	Tonnage.
Under 50*	376	6,944	238	3,492	41	936	21	565
50 and under 100†	105	7,556	74	5,575	10	685	13	926
100 ,, 200 ...	65	9,074	20	2,842	2	217	2	244
200 ,, 300 ..	25	5,996	10	2,534	...	...	2	510
300 ,, 400 ...	18	6,159	12	4,227	...	...	4	1,393
400 ,, 500 ...	8	3,599	1	467	...	...	3	1,312
500 ,, 600 ...	11	6,127	2	1,108	2	1,136	...	...
600 ,, 1,000 ...	12	9,087	10	8,043	...	...	2	1,436
1,000 ,, 1,400 ...	7	8,254	4	4,678	...	...	...	...
1,400 ,, 1,800 ...	9	14,253	...	...	1	1,653	1	1,453
1,800 and over... ...	7	16,689	...	...	1	1,835	...	...
Total	643‡	93,738	371	32,966	57§	6,462	48	7,839

* Includes under steam, Sydney, 136 motor vessels, tonnage 1,369, and under steam, Newcastle, 3 motor vessels, tonnage 45.

† Includes under steam, Sydney, 5 motor vessels, tonnage 340.

‡ Includes 141 motor vessels, tonnage 1,709.

§ Includes 3 motor vessels, tonnage 45.

The total tonnage registered at the end of 1912 was 141,005,—steam, 98,446, motor 1,754, and sailing, 40,805. These figures are exclusive of lighters.

The aggregate numbers and tonnage of steam and sailing vessels on the register at each port at the close of each of the last seven years are shown in the following statement :—

Year.	Sydney.				Newcastle.			
	Steam.*		Sailing.		Steam.*		Sailing.	
	Vessels.	Tonnage.	Vessels.	Tonnage.	Vessels.	Tonnage.	Vessels.	Tonnage.
1906	542	70,301	435	43,740	54	6,691	46	6,771
1907	555	72,226	416	43,674	56	5,116	46	6,771
1908	582	73,022	418	45,475	55	5,071	48	7,840
1909	627	74,784	408	43,207	55	3,732	48	7,840
1910	616	77,257	399	41,707	55	2,959	48	7,840
1911	610	76,589	374	37,048	57	4,820	48	7,840
1912	643	93,738	371	32,966	57	6,462	48	7,839

* The figures include motor vessels. In 1912 there were at Sydney 141 motor vessels, tonnage 1,709, and at Newcastle, 3 motor vessels, tonnage 45.

The number of steam vessels registered at Sydney in 1912 increased by 5 per cent.; as compared with the previous year and the tonnage per vessel increased from 125 in 1911 to 146 in 1912. At Newcastle the average tonnage of steam vessels registered rose from 85 in 1911, to 113 in 1912. For sailing vessels at both ports the figures were constant.

The new tonnage registered in New South Wales during each of the last ten years is summarised in the following table. The figures for steam tonnage, 1912, is far in excess of previous years, being due to depletions in inter-state shipping having been filled by the purchase and transfer of vessels registered outside of Australia. In a similar manner the value of vessels imported, shown subsequently, is inflated.

Year.	Steam.*		Sailing.		Total.	
	Vessels.	Tonnage.	Vessels.	Tonnage.	Vessels.	Tonnage.
1903	42	6,424	28	1,742	70	8,166
1904	23	6,082	20	716	43	6,798
1905	37	3,018	11	1,103	48	4,121
1906	40	11,249	14	3,243	54	14,492
1907	35	7,664	15	3,294	50	10,958
1908	42	4,660	14	4,798	56	9,458
1909	43	6,646	5	1,783	48	8,429
1910	35	9,951	4	1,377	39	11,328
1911	36	7,502	10	1,945	46	9,447
1912	60	22,394	11	988	71	23,382

* Includes motor vessels. During the year 1912 there were registered 18 motor vessels, tonnage 288.

The number of vessels built outside New South Wales, which are included in these registrations, is as follows :—

Year.	Steam.*		Sailing.		Total.	
	Vessels.	Tonnage.	Vessels.	Tonnage.	Vessels.	Tonnage.
1903	6	4,396	2	739	8	5,135
1904	6	5,411	...	...	6	5,411
1905	7	1,511	6	827	13	2,338
1906	6	10,261	4	2,831	10	13,092
1907	9	6,487	7	3,144	16	9,631
1908	13	3,392	10	4,648	23	8,040
1909	7	5,525	4	1,780	11	7,305
1910	12	8,741	2	1,285	14	10,026
1911	10	6,085	7	1,813	17	7,898
1912	30	20,753	7	683	37	21,436

* Includes motor vessels. During the year 1912 there was 1 motor vessel, tonnage 30.

Side by side with this statement of the origin of vessels registered, it is of interest to record the number and value of vessels built abroad and imported, duty free, into New South Wales for the local trade, in the last eight years :—

Year.	From United Kingdom.		From Other Countries.		Total.	
	Vessels.	Aggregate Value.	Vessels.	Aggregate Value.	Vessels.	Aggregate Value.
		£		£		£
1905	4	36,000	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

Changes on the register by sales are summarised as follows, for the last ten years. Sales to foreign buyers, of course, result in removal of the vessels from the registers :—

Year.	To British Buyers.				To Foreign Buyers.			
	Steam.*		Sailing.		Steam.*		Sailing.	
	Vessels.	Tonnage.	Vessels.	Tonnage.	Vessels.	Tonnage.	Vessels.	Tonnage.
1903	39	3,849	37	3,192	...	...	6	1,167
1904	56	8,180	26	3,574	2	1,850	2	90
1905	43	4,100	37	2,898	4	2,468	1	54
1906	47	3,159	32	3,059	...	...	52	1,287
1907	38	3,161	29	2,269	2	1,849	21	443
1908	68	5,964	23	3,745	...	...	1	13
1909	36	4,137	32	3,749	...	...	2	1,939
1910	54	5,146	31	5,650	2	1,530	...	...
1911	57	5,072	31	2,466	2	50	3	57
1912	59	9,148	39	4,098	2	7	4	138

* Includes motor vessels. During the year 1912, 11 motor vessels, tonnage 221, were sold to British buyers, and 2 motor vessels, tonnage 7, were sold to foreigners.

Harbour Removals.

In addition to piloting vessels in and out of ports, pilots are required to superintend removals of vessels, except such as are exempted within Port Jackson and Port Hunter. Following are the records of harbour removals for the last ten years :—

Year.	Port Jackson.		Port Hunter.	
	Vessels.	Tonnage.	Vessels.	Tonnage.
1903	900	1,920,420	601	1,042,106
1904	854	1,747,717	423	700,796
1905	676	1,682,809	565	1,066,047
1906	814	1,992,845	634	1,256,393
1907	1,178	2,704,323	710	1,448,843
1908	783	2,030,751	641	1,364,667
1909	698	1,795,286	389	786,733
1910	913	2,661,064	415	903,764
1911	991	3,009,123	426	960,718
1912	941	2,981,329	516	1,200,765

Tugs.

To assure an efficient and ready service in towing vessels in and out of port, as required, the Department of Navigation subsidises one tug at each of nine stations for the ten ports named below; for the Nambucca and Macleay rivers there is a joint service by one tug. The tonnage of the tugs ranges from 32 at Port Forster (Cape Hawke), to 59 at Richmond River; the special sanction of the Department must be given before the tugs may be removed from their stations. The masters must be in readiness to take all vessels out of port, and must render assistance promptly in case of any vessels in danger; they are required also to convey pilots to vessels signalling for the services of a pilot. The maximum towing rate is fixed at 4d. per registered ton, with a minimum fee of £1 10s., and the annual subsidy varies for each station.

The following statement shows the vessels towed in and out of each port and the amount of the subsidy for each of the last ten years :—

Year.	Tweed and Brunswick Rivers.*		Richmond River.			Clarence River.			Bellinger River.			Nambucca River†.		Macleay River.†	
	In.	Out.	In.	Out.	Subsidy.	In.	Out.	Subsidy.	In.	Out.	Subsidy.	In.	Out.	In.	Out.
					£			£			£				
1903	113	104	18	19	1,770	28	30	900	75	104	1,008	120	135	7	13
1904	89	90	8	23	1,717	13	13	900	104	114	1,008	58	79	6	7
1905	84	94	1	18	1,360	10	9	900	92	139	1,008	70	107	...	1
1906	65	81	6	15	1,560	13	15	900	91	136	1,008	50	87	6	1
1907	61	79	4	8	1,560	13	13	900	154	177	1,008	48	114	3	5
1908	88	93	3	5	1,560	13	13	900	156	197	1,008	163	113	5	8
1909	82	93	...	4	1,560	13	12	900	140	194	1,008	76	129	5	4
1910	78	100	1	7	1,560	9	8	‡	126	212	1,008	57	113	3	3
1911	84	82	6	24	1,560	10	9	‡	118	200	912	64	132	...	...
1912	97	103	...	...	1,560	3	3	‡	128	202	912	52	97	...	...

Year.	Port Macquarie.			Camden Haven.			Manning River.			Port Forster, Cape Hawke.			Total.§		
	In.	Out.	Subsidy.	In.	Out.	Subsidy.	In.	Out.	Subsidy.	In.	Out.	Subsidy.	In.	Out.	Subsidy.
			£			£			£			£			£
1903	137	139	420	135	241	600	238	224	400	113	221	400	1,030	1,274	7,907
1904	108	114	420	148	206	600	204	209	400	83	168	400	829	1,046	7,754
1905	84	96	420	203	205	600	280	280	500	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

* 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 throughout the decade was £960 per annum.

‡ The tug was purchased by the Government, and the service is conducted by the Department of Navigation.

§ Includes Wollongong for the two years 1903–4.

In the years 1903–4, during which a Government subsidy was paid, the number of vessels towed in and out of Wollongong were :—46 in, 44 out, subsidy £600, in the year 1903, and 8 in, 23 out, subsidy £500, in 1904.

QUARANTINE.

Since 1st July, 1909, the administration of all matters relating to seaboard quarantine, till then controlled in New South Wales by the Government of the State, has been under control of the Federal Minister for Trade and Customs. The Commonwealth Quarantine Act, 1908, defines the vessels which shall be subject to quarantine, and provides for the exclusion, detention, observation, segregation, isolation, protection, and disinfection of vessels, persons, goods, animals, or plants, so as to prevent the introduction or spread of diseases or pests into the Commonwealth. Particulars

of vessels examined by the Government Port Health Officers at Sydney and Newcastle, during the last ten years, are shown in the following table :—

Year.	Vessels.		Persons.		
	Examined.	Detained for special action.	Passengers.	Crews.	Total.
1903	804	144	17,449	44,542	61,991
1904	762	153	8,602	34,723	43,325
1905	655	159	8,700	29,737	38,437
1906	871	141	12,016	42,376	54,392
1907	969	160	9,656	39,298	48,954
1908	740	44	7,300	31,477	38,777
1909	628	67	8,227	29,075	37,302
1910	655	71	11,313	30,328	41,641
1911	737	196	25,160	38,755	63,915
1912	689	*878	23,668	37,719	61,387

* Represents vessels fumigated.

Vessels arriving in Australian ports from oversea are examined at the first port of call, and also, in the case of vessels from places north of Australia, at the last port of call, and pratique is given ordinarily for the whole of the Commonwealth. The quarantine station at North Head, Port Jackson, as maintained by the State Government, was transferred to the Commonwealth for the purpose of human quarantine.

Stock quarantine is undertaken at Athol Bay, Port Jackson, where 72 horses, 12 head of cattle, and 61 dogs were detained during the year ended 30th June, 1913.

Administration of the Federal Act, in relation to animals and plants from oversea, is undertaken by the Department of Agriculture of New South Wales.

Quarantinable diseases under the Commonwealth Act include small pox, plague, cholera, yellow fever, typhus fever, leprosy, and such other diseases as may be declared, and quarantine includes all measures inspired by medical science for the purpose of preventing the introduction of communicable disease to, or its spread from, specific localities.

The Commonwealth Government, in 1909, became a party to the Paris Convention of 1903, to which the United States of America, and the chief States of Europe are signatories, but in 1911, this adherence was qualified by certain conditions intended to secure to Australia even greater protection than the terms of the Convention assure. The most important article of the Convention stipulates that every signatory country shall provide at least one port on each of its seaboards with an organisation and equipment sufficient for the reception of a ship whatever its health conditions may be. The necessary organisation and equipment include—

(1) A properly organised port medical service, and permanent medical supervision of the health conditions of the crews and of the population of the port.

(2) Suitable accommodation for isolation and observation.

(3) Bacteriological laboratories to facilitate diagnosis of quarantinable disease.

(4) Water supply and sanitary systems.

The Paris Convention relates particularly to plague, cholera, and yellow fever; but as indicated above, the Commonwealth legislation has a somewhat wider scope.

The accepted standard of quarantine accommodation for isolation is one bed per 1,000 of population, which would mean approximately 1,800 beds for New South Wales. As the chief terminal port in Australia, the necessity for extensive accommodation at Sydney is very evident.

The present accommodation of the Quarantine Station at Sydney is practically 700 beds; while the estimate of requirements under Federal control was 1,130 beds, viz., 100 for first-class passengers, 250 for second-class passengers, 750 for steerage passengers and crew, and 30 for observation cases. Other projected extensions included the following works :—

Administrative offices.
Officers' quarters.
Reclamations, &c., to provide luggage sheds, disinfection block, laundry, and power-house.
Personal disinfection and bathing blocks.
Modern isolation and observation blocks.
Dining and kitchen blocks for steerage passengers.
Dormitory block for steerage passengers.
Dormitory and living block for second saloon passengers.
Cable tramway from jetty to storeroom.
Tramway system connecting main buildings.
Electric light installation.
Crematorium.

Before incurring the heavy expense attendant on these additions, the Director of Quarantine visited other countries, with the result that the outlay was justified.

Vigorous progress has been made with the works, and the Quarantine should soon be fully equipped.

Shipwrecks.

Casualties.

Wrecks and shipping casualties occurring to British merchant shipping on or near the coast of the State are subjects of investigation by Courts of Marine Inquiry, of which some account is given in the Chapter of this Year Book relating to Law Courts. The following statement shows such wrecks and casualties reported in each of the last ten years :—

Year.	British Vessels.			Total Tonnage.	Value of Vessels and Cargoes.	Crews and Passengers.	Lives Lost.
	Steam.	Sailing.	Total.				
					£		
1903	7	3	10	4,420	69,566	182	13
1904	5	7	12	5,509	52,862	286	36
1905	4	4	8	974	22,672	52	8
1906	4	...	4	89	4,063	22	3
1907	4	1	5	716	17,945	55	...
1908	9	3	12	5,898	139,082	209	10
1909	4	...	4	520	18,750	60	1
1910	6	...	6	3,291	111,765	191	2
1911	7	2	9	2,546	50,600	112	41
*1912	8	2	10	1,093	38,066	142	36

* Figures for this year include one steam vessel of 41 tons, trading on the Murray River.

One ship is included twice in the list of wrecks for 1912, having been stranded at Tweed River Bar on 2nd June, and wrecked at Tweed Heads on 28th November.

The majority of the vessels reported are small coasters under 200 tons, *i.e.*, out of 80 vessels wrecked in the ten years, only twelve were of 500 tons and over. As regards foreign shipping, inquiries as to vessels lost are made by foreign consuls. Following is the record for the last nine years :—

Year.	Foreign Vessels.			Total Tonnage.	Crews and Passengers.	Lives Lost.
	Steam.	Sailing.	Total.			
1904	...	1	1	2,413	32	...
1905	...	1	1	1,299	14	...
1906	1	2	3	6,367	62	...
1907	1	2	3	2,293	47	7
1908	1	1	2	3,605	40	..
1909	...	1	1	1,364	22	17
1910	...	...	...	...	...	...
1911	...	1	1	1,543	20	...
1912	...	...	...	...	...	...

Particulars as to value of vessels (which were all, except one, over 500 tons burden) and cargo lost are not obtainable for each year. During the years 1910 and 1912 there were no inquiries on wrecks.

The particulars 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 means aid may be summoned to vessels in distress.

The Royal Shipwreck Relief and Humane Society of New South Wales is maintained by public subscriptions, unsubsidised by the State, to afford relief in cases of distress to dependents of New South Wales seamen who have lost their lives or sustained injury in the discharge of their duties, to relieve crews of vessels and necessitous passengers wrecked in New South Wales waters, and to encourage acts of bravery by granting awards for meritorious deeds in saving human life. The relief granted on account of maritime disasters during the year ended 30th June, 1913, amounted to £1,286, in addition to £72 expended on account of awards. The revenue of the Society for the year included £1,589 derived from public subscriptions and legacies.

Under the auspices of the religious denominations, several missions are interested in the welfare of seamen, such as the Sydney Mission to Seamen, the Catholic Mission, and the Central Methodist Mission, each of which maintains an institute in Sydney for the use of seafaring men while in the port.

Government Shipping Offices.

Government Shipping Offices are maintained at Sydney and Newcastle to deal with matters relating to the engagement and discharge of seamen of British vessels. Following are the records for the last five years of transactions at each of these shipping offices :—

Year.	Engagements registered.			Discharges registered.			Licenses to ship.		
	Sydney.	Newcastle.	Total.	Sydney.	Newcastle.	Total.	Sydney.	Newcastle.	Total.
1908	22,845	3,995	26,840	22,829	2,875	25,704	3,726	746	4,472
1909	19,420	2,447	21,867	21,020	2,166	23,186	2,989	436	3,425
1910	22,791	2,989	25,780	20,939	2,014	22,953	3,405	732	4,137
1911	25,293	2,653	27,946	24,971	1,898	26,869	4,143	715	4,858
1912	30,332	3,619	33,951	31,051	2,885	33,936	3,112	667	3,779

For 1912, seamen reported as deserters from British vessels trading on foreign voyages numbered 1,291, viz., 924 at Sydney, and 367 at Newcastle. The wages paid to seamen through the shipping offices amounted to £133,218, of which £115,656 was paid at Sydney. Wages issued in advance notes amounted to £3,597, of which the greater part, £2,759, was recorded for Newcastle.

Masters of Foreign vessels engage and discharge seamen at the offices of the Consuls representing the countries to which the vessels belong, and no particulars are available in regard to these transactions.

Ferry Services.

Linking up the highways in every direction are ferry services provided free by the State. At the end of 1912, there were 129 of these ferries, of which 14 were classed as national works, 112 were controlled by municipalities and shires, and 3 were in the unincorporated Western Division. These services are not to be regarded in any way as coming under the classification of shipping, being merely a necessary connection between roadways broken by rivers.

Sydney Harbour Ferries.

In Sydney Harbour extensive ferry services are provided by various private companies, which, unlike the river ferries noted above, are not considered in the light of necessary links in the system of road communication, and the companies therefore are permitted to charge fares for these services. The total number of passengers carried on the Sydney Harbour ferries during 1912 was 32,500,000.

Fares from Sydney.

The passenger fares current in December, 1912, between Sydney and Australasian ports were as follows :—

Ports.	Single Fares. First Class.	Single Fares. Second Class.
New South Wales—	£ s. d.	£ s. d.
Ballina	1 15 0	0 17 6
Bateman's Bay ...	1 7 0	...
Bellinger River ...	1 12 6	0 17 6
Bermagui	1 7 6	0 13 9
Berry	0 8 3	...
Bomaderry	0 8 3	...
Booral	0 13 0	...
Bulahdelah	0 14 6	...
Byron Bay	1 17 6	1 0 0
		—£1 10s.
Camden Haven ...	0 15 0	...
Cape Hawke ...	0 15 0	...
Clarence River—		
Maclean	1 15 0	1 0 0
Grafton	1 17 6	1 7 6
Coff's Harbour ...	1 15 0	1 0 0
Coraki	1 17 6	1 0 0
Eden	1 13 0	0 15 0
Hastings River ...	1 7 6	...
Kiama	0 6 6	...
Lismore	1 17 6	1 2 6
Macleay River ...	1 12 6	0 17 6
Manning River ...	1 2 6	0 17 6
Merimbula	1 13 0	0 16 6
Moruya	0 19 3	...
Nambucca River ...	1 12 6	...
Narooma	1 5 0	...
Nelligen (Clyde R.)...	1 2 0	...
Newcastle	0 6 0	0 3 6
Nowra	0 8 3	...
Port Macquarie ...	1 7 6	...
Port Stephens ...	0 11 0	...
Tathra	1 13 0	0 16 6
Trial Bay	1 12 6	0 17 6
Tweed River ...	1 10 0	...
Ulladulla	0 16 6	...
Wagonga	1 5 0	...
Wilson River ...	1 7 6	...
Wollongong ...	0 4 6	...
Lord Howe Island ...	3 0 0	
Victoria—		
Melbourne	£2 2s.— £2 12s. 6d.	1 11 6

Ports.	Single Fares. First Class.	Single Fares. Second Class.
Queensland—	£ s. d.	£ s. d.
Brisbane	3 3 0	1 11 6
Bowen	8 8 0	5 15 6
Burketown ...	17 10 0	...
Bundaberg ...	4 4 0	2 4 9
Cairns	9 19 6	6 16 6
Cardwell	9 19 6	6 16 6
Cooktown	11 0 6	7 17 6
Innisfail	9 19 6	6 16 6
Gladstone	5 5 0	2 17 9
Lucinda	9 14 3	6 11 3
Mackay	7 17 6	5 5 0
Maryborough ...	3 18 9	2 4 9
Mourilyan Harbour	9 19 6	6 16 6
Normanton ...	15 10 0	...
Port Douglas ...	10 15 3	7 7 0
Rockhampton ...	5 10 3	3 3 0
Townsville ...	8 18 6	6 0 9
Thursday Island ...	14 0 0	...
South Australia—		
Adelaide	£3 19s.— £4 15s.	3 3 0
Northern Territory—		
Darwin	18 0 0	12 0 0
Western Australia—		
Albany	£9 9s.— £10 10s.	7 7 0
Fremantle ...	£9 9s.— £10 10s.	7 7 0 Steerage. £6 6s.—
Geraldton... ...	£11 11s.— £12 10s.	...
Tasmania—		
Hobart	2 15 0	1 13 0
Launceston ...	2 15 0	1 13 0
New Zealand—		
Auckland	7 7 0	4 4 0
Gisborne	8 8 0	4 15 0
Napier—		
Via Auckland ...	9 0 0	5 0 0
Via Wellington...	8 2 6	4 10 0
Wellington ...	7 7 0	4 4 0
Lyttelton	8 2 6	4 10 0
Dunedin	9 0 0	5 0 0
Bluff	9 10 0	5 10 0

Between Sydney and foreign ports the fares were as follows:—

Ports.	Single Fares. First Class.	Second Class.	Third Class.
	£ s. d.	£ s. d.	£ s. d.
Antwerp	66 0 0	38 10 0	£17—£21
Bremen			
Toulon	£67 2s.—£78 2s.	£39 12s.—£44	£15—£19
Brindisi	£67 2s.—£78 2s.	£44—£48 8s.	.....
Genoa	£61 12s.—£78 2s.	£36 6s.—£44	£15—£19
London	£66—£82 10s.	£38 10s.—£46 4s.	£15—£21
Marseilles	£61 12s.—£78 2s.	£36 6s.—£44	.....
Naples	£61 12s.—£78 2s.	£36 6s.—£44	£15—£19
Southampton	66 0 0	38 10 0	£15—£19
Venice	83 10 0	.....	.....
Aden	£62 14s.—£73 14s.	£37 8s.—£41 16s.	.....
Bombay	38 10 0	30 16 0	£12 5s.—£14 5s.
Calcutta	38 10 0	30 16 0	£12 5s.—£14 5s.
Colombo	35 4 0	28 12 0	£8 5s.—£10 5s.
Hong Kong	£30—£40	£19 10s.—£26	15 0 0
Manila	£28 10s.—£38	£18 15s.—£25	£14 10s.—£15
Madras	38 10 0	30 16 0	.....
Penang	45 2 0	35 4 0	15 15 0
Port Moresby	12 0 0	.....	8 0 0
Sourabaya	30 0 0	.....	15 0 0
Samarang	31 0 0	.....	15 10 0
Batavia	32 0 0	.....	16 0 0
Maccassar	28 0 0	.....	.....
Shanghai	44 0 0	28 10 0	16 16 0
Singapore, *via* Brisbane	35 0 0	.....	17 10 0
Singapore, *via* Fremantle ...	28 0 0	.....	18 5 0
Mauritius	£35 13s.—£50 13s.	.....	18 7 6 20 9 6
Port Said	£62 14s.—£73 14s.	.....	£15—£19
Yokohama	47 0 0	30 0 0	18 0 0
Norfolk Island	6 0 0	.....	4 0 0
Aneityum	10 0 0	.....	5 0 0
Fiji (Suva and Levuka)	10 10 0	.....	6 7 6
Honolulu	30 0 0	20 0 0	12 10 0
Noumea	10 0 0	7 0 0	4 0 0
Samoa Islands	15 15 0	.....	9 10 0
San Francisco	£40—£43 10s.	£25—£27 10s.	£16—£18 1s. 8d.
Tonga Islands (Nukualofa) ...	17 17 6	.....	11 10 0
Vancouver...	40 0 0	25 0 0	16 0 0
Cape Town	£30—£37	.....	£11 11s.—£17 17s.
Natal	£22—£37	.....	£11 11s.—£17 17s.
Monte Video	50 0 0	30 0 0	17 17 0

Distances from Sydney.

The distances by water between Sydney and some of the principal ports of the world are as follows:—

Sydney to—	Miles.	Sydney to—	Miles.
Adelaide	1,084	London, *via* Cape of Good Hope...	13,379
Auckland	1,277	Marseilles	10,113
Brisbane	500	Melbourne...	576
Capetown	6,774	New York, *via* San Francisco ...	10,567
Fremantle	2,460	Port Darwin	2,540
Hobart	628	San Francisco	6,447
Hong Kong	5,888	Singapore	4,230
Honolulu	4,656	Suva	1,770
London, *via* Vancouver ...	12,925	Vancouver...	6,985
London, *via* Suez direct ...	11,603	Wellington	1,239
London, *via* Cape Horn ...	12,051		

Industrial Organisations.

The following organisations of employees in connection with shipping have been registered under the Commonwealth Conciliation and Arbitration Acts :—

Merchant Service Guild of Australasia.
Federated Stewards and Cooks' Union of Australasia.
Australian Institute of Marine Engineers.
Federated Seamen's Union of Australia.
Waterside Workers' Federation of Australia.
Marine Cooks, Bakers, and Butchers' Association of Australia.
Federated Marine Stewards and Pantrymen's Association of Australasia.

The Commonwealth Steamship Owners' Association is an organisation of employers. All these organisations, except the Waterside Workers' Federation of Australia, are bound as to hours, wages, and conditions of employment, by awards of the Court, which are operative for five years from date of promulgation.

Between the Waterside Workers' Federation of Australia and the Commonwealth Steamship Owners' Association an agreement was registered in the Commonwealth Court as to rates of pay and conditions of work in the Port of Sydney.

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 in April, 1912, 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.	Officers.			
		Chief.	Second.	Third.	Fourth or Fifth.
Passenger vessels—	£	£	£	£	£
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—					
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 are fixed as follows, per month :—

Gross Registered Tonnage.	Master.	Officers.			
		Chief.	Second.	Third.	Fourth or Fifth.
Passenger vessels—	£	£	£	£	£
Up to 125 tons	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—					
Up to 125 tons	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 are, after three months' continuous service, entitled to one month's notice or one month's pay on discharge, except in the case of dismissal for misconduct or transfer from one ship of the employer to another.

For engineers, the minimum monthly rates were, by judgment given in May, 1909, fixed as follows :—

Class of Vessel.	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.

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 being 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.

The award relating to marine cooks, bakers, and butchers dates from 31st December, 1908, the minimum wages per month being :—

	£ s.		£ s.
Passenger vessels—		Sculleryman	5 10
Chief cook	13 10	Galley boy	3 0
Second cook	8 10		
Third cook	6 10		
Ship's cook	7 10	Cargo and collier vessels—	
Baker	9 10	Chief cook	10 0
Butcher	7 0	Assistant cook	3 0

For passenger vessels trading within the limits of a single State the rates are as follows :—Chief cook £12, second cook £7, third cook and butcher £5 per month, respectively.

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 governed by 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.

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), 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.

COMMERCE.

UNDER the Commonwealth of Australia Constitution Act, 1900, power to make laws with respect "to trade and commerce with other countries and among the States," was vested in the Federal Parliament, and, accordingly, control of the Customs and Excise Department, till then maintained by the State, was transferred 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 the same were 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 at the date of export.

LEGISLATION.

The legislation passed by the Commonwealth Government with respect to trade and commerce includes the following Acts:—

Customs, 1901, 1910 (Nos. 9 and 36).
Customs Tariff, 1902, 1906 (Nos. 14 and 17), 1908 (Nos. 7 and 13), 1910, 1911.
Sea Carriage of Goods, 1904 [Bills of Lading].
Secret Commissions, 1905.
Commerce (Trade Descriptions), 1905 [Merchandise Marks].
Australian Industries Preservation, 1906, 1907, 1909, 1910 [Trusts and Dumping].
Excise Tariff, 1913.
Sugar Bounty Act, 1913.

CUSTOMS AND TARIFFS.

The first Customs Act provided for the necessary machinery to administer in matters relating to Customs, and also prescribed the manner in which duties were to be computed and paid. The Customs Act, No. 9 of 1910, related to interstate accounts and to dutiable goods passing between the States. Act No. 36 of 1910 assures to the Customs Department control over all goods designed 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, but not affecting the right of Western Australia under the Constitution Act to impose a local duty on goods imported from other States. Preferential rates of duty apply to certain goods imported from and being produced within the Union of South Africa.

Sea Carriage of Goods.

The Sea Carriage of Goods Act nullifies any clause in a Bill of Lading or similar document, covenanting or agreeing—(*a*) that the owner, charterer, master, or agent of any ship, or the ship itself, is relieved from liability for loss or damage to goods arising from the harmful or improper condition of the ship's hold or any other part of the ship in which the goods are carried, or arising from negligence, fault, or failure in the proper loading, stowage, custody, care, or delivery of goods received . . . to be carried in or by the ship; (*b*) to lessen any obligations of owner or charterer to exercise due diligence, and to properly man, equip, and supply the ship, to make and keep it seaworthy, and to make and keep the hold, refrigerating and cool chambers and all other parts of the ship in which goods are carried, fit and safe for their reception, carriage, and preservation; (*c*) or to lessen the obligations of master, officers, agents, and servants of any ship carefully to handle and stow goods, and to care for, preserve, and properly deliver them.

Secret Commissions.

The Secret Commissions Act in regard to agencies and contracts, prohibits any gift or consideration as an inducement or reward, in matters affecting the principal's affairs or business.

Trade Descriptions and Supervision of Exports.

Regulations under the Commerce (Trade Descriptions) Act, 1905, prohibit the importation of specified goods unless there is applied to such goods a trade description, *e.g.*:—

Articles used for food or drink by man, or used in the manufacture or preparation of articles used for food or drink by man.

Medicines or medicinal preparations for internal or external use.

Manures.

Apparel (including boots and shoes), and the materials from which apparel is manufactured.

Jewellery.

Agricultural seeds and plants.

With regard to exports, the undermentioned goods are prohibited from being exported unless there is a trade description applying to such goods:—

Butter.
Cheese.
Fruit.
„ preserved (including dried).
Honey.
Jam.
Leather.
Maize.
Margarine.
Meat—
Canned.
Extract or essence.
Other (except rabbits and hares).
Milk—
Concentrated.
Condensed.
Condensed skimmed.
Dried.
Plants.
Potatoes.
Rabbits and hares.
Seeds.

A high standard of the quality of exports 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, and butter and cheese are graded also, whilst carcase meat, rabbits, and hares are classified and marked.

Special instructions regarding the supervision and inspection of meat for export are issued, under the Commerce Act, to meat inspectors, and standard requirements are set for abattoirs and premises where meat is preserved (corned or canned) for export.

There are now employed in the frozen meat trade between Australia and the United Kingdom and European countries at least 59 steamers with a carrying capacity aggregating 2,520,200 carcases. All of these vessels visit the State of New South Wales.

Local Industries.

Preservation and Encouragement.

The enactments relating to the preservation of Australian industries extend also to the repression of destructive monopolies, so that it is an offence for any person or corporation to make or engage or continue in any combination "to restrain trade or commerce to the detriment of the public, or to destroy or injure by means of unfair competition any Australian industry, the preservation of which is advantageous to the Commonwealth, having due regard to the interests of the producers, workers, or consumers." Monopoly of, or attempt or conspiracy to monopolise, any part of the trade of the Commonwealth, so as to control to the detriment of the public the supply or price of any service, merchandise, or commodity, is an offence, as is also the payment of rebates or the refusal to sell so as to promote exclusive dealing.

Bounties on Exports.

With the object of encouraging local industries, general and specific legislation has been passed by the Commonwealth Parliament. The Bounties Act, 1907, provides for the payment of bounties on exports of combed wool or wool tops, also on dried fruits (currants and raisins excepted). The bounty on wool tops for the three years from 1st July, 1909, was 1½d. per lb., and subsequently and up to July, 1916, 1d. per lb. for the first million lbs. by one manufacturer, and ¾d. per lb. in excess of this amount. The bounty paid for wool tops for the year 1912-13 amounted to £13,061, the whole of the production coming from Botany, New South Wales.

Customs and Excise Revenue.

Between 1st January, 1901, when the Department of Customs and Excise was transferred to the control of the Commonwealth, and 8th October, 1901, when the first uniform Federal tariff was introduced in the Federal Parliament, the State tariff, which had been on a freetrade basis, was administered by the Commonwealth. On 8th August, 1907, a new tariff superseded that of 1901, the duties in many cases being increased considerably. Duties of Customs and Excise are now collected under the Customs Act, 1901–10 (No. 36 of 1910), the Customs Tariff, 1908–1911, the Excise Tariff (No. 8 of 1908), the Excise Tariff (Starch) Act (No. 14 of 1908), and the Excise (Sugar) Acts No. 17 of 1910, and No. 6 of 1913.

The following statement shows the gross amounts collected in New South Wales under each division of the tariff during 1912, and also shows the drawbacks, refunds, and the net revenue:—

Division.	Article.	Gross Collections.	Drawbacks Paid.	Refunds.	Net Revenue.
		£	£	£	£
I.	Ale, Spirits, and Beverages	1,242,494	22	466	1,242,006
II.	Tobacco and Manufactures thereof	691,943	..	104,009	587,934
III.	Sugar	263,005	2,150	233	265,622
IV.	Agricultural Products and Groceries	483,269	9,583	3,553	470,133
V.	Textiles, Felts, and Furs, and Manufactures thereof, and Attire	998,817	13,201	4,909	980,707
VI.	Metals and Machinery	672,168	10,239	8,069	653,860
VII	Oils, Paints, and Varnishes	132,336	4,423	599	127,314
VIII.	Earthenware, Cement, China, Glass, and Stone	166,626	1,467	1,510	163,649
IX.	Drugs and Chemicals	54,327	2,343	195	51,789
X.	Wood, Wicker, and Cane	223,755	1,449	1,694	220,612
XI.	Jewellery and Fancy Goods	147,684	3,952	991	142,741
XII.	Leather and Rubber	174,512	5,373	1,920	167,219
XIII.	Paper and Stationery	103,948	1,513	949	101,486
XIV.	Vehicles	119,077	1,100	3,000	114,977
XV.	Musical Instruments	87,242	470	329	86,443
XVI.	Miscellaneous	144,174	3,758	5,082	135,334
	Total, Customs Duties £	5,710,377	61,043	137,508	5,511,826
	Excise—				
	Beer, viz. :—Ale, Porter, and other Beer	256,007	234	70	255,703
	Spirits	164,602	68	185	164,349
	Sugar	162,023	133	64	161,826
	Tobacco	196,299	1	1	196,293
	Cigars	1,019	..	5	1,018
	Cigarettes	348,183	..	1	348,182
	Total, Excise Duties £	1,128,133	436	326	1,127,371
	Miscellaneous Receipts—				
	Customs	21,059	..	10	21,049
	Excise	2,115	..	17	2,098
	Total, Customs and Excise Duties £	6,861,684	61,479	137,861	6,662,344

The amounts collected in New South Wales from customs and excise, and the proportion per head of population during the last seventeen years, have been as follows:—

Year.	Net Amount collected from—		Total.	Per Head of Population.		Total.
	Customs.	Excise.		Customs.	Excise.	
	£	£	£	£ s. d.	£ s. d.	£ s. d.
1896	1,367,431	269,329	1,636,760	1 1 6	0 4 3	1 5 9
1897	1,239,084	279,909	1,518,993	0 19 2	0 4 4	1 3 6
1898	1,250,290	300,471	1,550,761	0 19 0	0 4 7	1 3 7
1899	1,335,194	323,925	1,659,119	1 0 0	0 4 10	1 4 10
1900	1,421,763	355,918	1,777,681	1 1 0	0 5 3	1 6 3
1901	1,871,248	401,546	2,272,794	1 7 4	0 5 10	1 13 2
1902	2,698,682	595,590	3,294,272	1 18 10	0 8 7	2 7 5
1903	2,761,757	619,296	3,381,053	1 19 3	0 8 10	2 8 1
1904	2,465,738	626,160	3,091,898	1 14 6	0 8 9	2 3 3
1905	2,451,564	658,010	3,109,574	1 13 8	0 9 0	2 2 8
1906	2,654,366	685,160	3,339,526	1 15 9	0 9 3	2 5 0
1907	3,367,286	808,827	4,176,113	2 4 4	0 10 8	2 15 0
1908	3,475,773	819,036	4,294,809	2 5 0	0 10 7	2 15 7
1909	3,642,297	744,138	4,386,435	2 6 2	0 9 5	2 15 7
1910	4,097,870	901,522	4,999,392	2 10 9	0 11 2	3 1 11
1911	4,600,628	1,082,546	5,683,174	2 15 3	0 13 0	3 8 3
1912	5,532,875	1,129,469	6,662,344	3 3 8	0 13 0	3 16 8

It will be seen that the customs revenue for the last three years shows a considerable increase over that received for the year 1909, both in the aggregate and per head of population.

While the general prosperity of the State would account for increases in the quantities of dutiable goods imported in late years, the fact should be remembered that in 1910 the system ceased by which, with the aid of inter-state debits and credits, accurate accounts for each State were compiled by the Commonwealth authorities to show the actual revenue received for goods imported by each State for its own home consumption.

As Sydney is a distributing centre for the whole of Australia, it follows that the customs revenue received at this port during the three years 1910–12 was large, and the figures for the State of New South Wales consequently include customs receipts for goods which were, in the course of trade, transferred to other States, and consumed therein.

The aggregate contributions to customs and excise per head of population have almost trebled under the Federal tariff.

The following statement shows the quantities of spirits, beer, and tobacco on which excise duty was paid in New South Wales during 1911 and 1912 :—

Article.	Rate of Excise Duty.	Quantity on which Excise Duty was Paid. 1911.	1912.
Spirits—	Per proof gal.	Gal.	Gal.
Brandy (pure Australian standard brandy)	10s.	47,814	51,008
Brandy (blended wine brandy, &c.)	11s.	7,587	6,793
Gin (distilled from barley, malt, grain, or grape wine)	12s.	1,968	865
Whisky (Australian standard malt whisky)	10s.	18,074	25,434
Whisky (Australian blended whisky)	12s.	137	135
Rum (Australian standard rum)	12s.	86,595	142,478
Rum (spirits, n.e.i.)	13s.	13,703	2,325
Spirits, n.e.i.	13s.	21,009	22,046
Spirits for industrial or scientific purposes	13s.	25,158	30,080
Do fortifying wine or making vinegar... ...	6d.	40,960	44,200
Total, spirits	...	263,005	325,364
	Per gal.		
Beer, n.e.i.	3d.	17,690,560	19,939,520
Beer, brewed from malt and hops	2d.	622,320	827,760
Total, beer	...	18,312,880	20,767,280
	Per lb.	lb.	lb.
Tobacco—Manufactured, n.e.i.	1s.	3,798,340	3,842,000
Tobacco—Hand-made	9d.	100,000	112,000
Total, tobacco	...	3,898,340	3,954,000
	Per lb.		
Cigars—Hand-made	3d.	79,440	81,520
Total, cigars	...	79,440	81,520
	Per lb.		
Cigarettes	3s.	1,871,327	2,310,033
Cigarettes—Hand-made	2s. 9d.	15,193	12,189
Total, cigarettes	...	1,886,520	2,322,222

The following table shows the oversea trade at each port and customs station in New South Wales, with gross collections thereat, for the year1912:—

Port or Station.	Oversea Trade. Imports.	Exports.	Total.	Gross Revenue Collected. Customs.	Excise.	Total.
	£	£	£	£	£	£
Sydney	31,237,538	31,291,356	62,528,894	5,539,058	1,086,797	6,625,855
Newcastle	1,000,775	1,647,007	2,647,782	160,416	32,213	192,629
Clarence River ...	.....	16,812	16,812	.....	.....	.....
Condong	.....	.....	.....	.....	19	19
Morpeth	.....	.....	.....	6,849	96	6,945
Port Kembla ...	.....	2,886	2,886	.....	.....	.....
Port Stephens ...	.....	468	468	.....	.....	.....
Albury	16,943	.....	16,943	5,230	1,137	6,367
Allandale	.....	.....	.....	.....	220	220
Broadwater ...	.....	.....	.....	.....	47	47
Broken Hill ...	48,374	.....	48,374	19,598	9,386	28,984
Corowa	.....	.....	.....	.....	222	228
Harwood	.....	.....	.....	.....	28	22
Wilcannia	.....	.....	.....	236	137	373
New South Wales £	32,303,630	32,958,529	65,262,159	5,731,387	1,130,302	6,861,689*

*This figure varies slightly from figures quoted elsewhere, the discrepancy being accountable to the closing of the Federal Treasury books before 31st December each year.

Imports and Exports.

The average annual values of imports and exports over the quinquennial periods between 1885 and 1904 are here quoted, as are the actual annual values between 1905 and 1912.

Period.	Imports (Average Annual Value).	Exports (Average Annual Value).	Per head of Population.		
			Imports.	Exports.	Total Oversea Trade.
	£	£	£ s. d.	£ s. d.	£ s. d.
1885-89	13,514,534	10,624,323	13 10 2	10 12 6	24 2 8
1890-94	11,689,109	13,138,884	9 19 9	11 4 7	21 4 4
1895-99	12,233,446	16,985,808	9 9 5	13 3 0	22 12 5
1900-04	15,418,701	18,879,740	11 0 5	13 9 11	24 10 4
1905	14,485,123	24,518,534	9 19 1	16 17 0	26 16 1
1906	17,603,503	30,986,888	11 17 2	20 17 6	32 14 8
1907	20,860,391	32,894,073	13 14 10	21 13 5	35 8 3
1908	19,828,486	26,880,709	12 16 7	17 7 10	30 4 5
1909	20,888,019	26,044,789	13 4 10	16 10 3	29 15 1
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	32,303,630	32,958,529	18 11 7	18 19 1	37 10 8

From 1904 onwards the annual increases in the volume of trade have been considerable, with the exception of 1908 and 1909, and the figures for 1912 show a record of £65,262,159, or £37 10s. 8d., per head of population.

The value of the exports from year to year forms a sure index of the progress of a country like New South Wales, 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; there was a decrease in value in 1908 and 1909 caused by the decline in the prices of pastoral and mineral products. In 1910 and 1911, the values were almost equal to that of 1907. The question of imports bears a close connection with State financing, 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 1911 was greater by more than £4,000,000 than in 1910, which was previously the highest for the whole period. For 1912, however, the imports exceeded those of the previous year by £5,000,000.

Distribution of Trade.

The table following shows the distribution of the oversea trade of New South Wales, viz., values of imports from and exports to the various countries, and also the values of imports according to country of origin. It is not possible to trace exports to their ultimate destination.

The outstanding feature of the table is the extent of the trade with the United Kingdom. Its relative magnitude is demonstrated in the figures showing the proportion which the trade of each of the countries named bears to the total oversea trade of New South Wales for the year 1912 :—

Country.	Values of				Proportion to Total.		
	Imports according to Country—		Exports.	Total Trade.	Imports according to Country—		Exports.
	Of Origin.	Whence Imported.			Of Origin.	Whence Imported.	
	£	£	£	£.	%	%	%
Europe—							
United Kingdom	15,342,225	18,093,957	10,316,918	28,410,875	47·49	56·01	31·30
Austria	171,715	39,664	205,464	245,128	·53	·12	·62
Belgium	365,666	971,016	3,056,072	4,027,088	1·13	3·01	9.27
France	860,627	207,955	4,033,115	4,241,070	2·66	·64	12·24
Germany	2,850,139	1,908,282	4,262,038	6,170,320	8·82	5·91	12·93
Italy	271,754	190,128	325,704	515,832	·84	·59	·99
Netherlands	156,746	102,642	63,005	165,647	·49	·32	·19
Norway	249,637	205,464	19	205,483	·77	·64	...
Portugal	41,603	3,689	1,448	5,137	·13	·01	·01
Russia	33,225	8	52,841	52,849	·10	...	·16
Spain	40,913	6,325	1,756	8,081	·13	·02	·01
Sweden	266,859	194,584	6,712	201,296	·83	·60	·02
Switzerland	482,786	1,678	11,955	13,633	1·50	...	·04
Turkey	15,202	...	...	...	·05	...	...
Rest of Europe	22,021	3,121	1,051	4,172	·07	·01	...
Total	21,171,118	21,928,513	22,338,098	44,266,611	65·54	67·88	67·78
Asia—							
Burmah	89,675	122,654	10,142	132,796	·28	·38	·03
Ceylon	389,253	403,781	2,443,586	2,847,367	1·21	1·25	7·41
Hong Kong	2,846	170,424	572,487	742,911	·01	·53	1·74
India	830,659	719,113	450,449	1,169,562	2·57	2·22	1·37
Straits Settlements	54,586	203,621	401,481	605,102	·17	·63	1·22
Arabia	20,286	2,675	...	2,675	·06	·01	...
Asia Minor	8,020	21,986	...	21,986	·02	·07	...
China	209,215	35,276	104,181	139,457	·65	·11	·32
Japan	479,144	476,528	966,798	1,443,326	1·48	1·48	2·93
Java	682,897	684,054	237,177	921,231	2·11	2·11	·72
Philippine Islands	43,613	44,384	221,874	266,258	·14	·14	67
Rest of Asia	176,776	20,154	84,380	104,534	·55	·06	·26
Total	2,986,970	2,904,650	5,492,555	8,397,205	9·25	8·99	16·67
Africa—							
Union of South Africa	339,994	179,708	219,751	399,459	1·05	·56	·67
Egypt	8,551	8,886	12,188	21,074	·03	·02	·03
Portuguese East Africa ...	...	...	27,881	27,881	...	...	·08
Rest of Africa	7,142	36	1,690	1,726	·02	...	·01
Total	355,687	188,630	261,510	450,140	1·10	·58	·79
America, Northern—							
Canada	386,485	633,007	153,814	786,821	1·19	1·96	·47
United States of America ...	4,833,042	3,887,165	1,553,990	5,441,155	14·96	12·03	4·71
Rest of North America ...	2,135	...	...	...	·01	...	...
Total	5,221,662	4,520,172	1,707,804	6,227,976	16·16	13·99	5·18
America, Central and Southern—							
British West Indies	32,352	...	...	...	·10	...	...
Brazil	23,060	562	7,756	8,318	·07	...	·02
Chile	21,752	21,451	464,378	485,829	·07	·07	1·42
Cuba	32,270	...	...	...	·10	...	...
Mexico	392	...	10,868	10,868	...	...	·03
Peru	1,699	...	56,168	56,168	·01	...	·17
West Indies	893	...	...	...	...	...	...
Rest of Central and Southern America	23,336	...	18,003	18,003	·07	...	·05
Total	135,754	22,013	557,173	579,186	·42	·07	1·69
Australasia—							
Australian States	27,239	...	...	...	·08	...	·33
New Zealand	1,839,004	2,182,029	1,333,065	3,515,094	5·69	6·76	4·04
Papua	69,630	71,647	106,536	178,183	·22	·22	...
Total ... ... £	1,935,873	2,253,676	1,439,601	3,693,277	5·99	6·98	4·37

Country.	Values of				Proportion to Total.		
	Imports according to Country—		Exports.	Total Trade.	Imports according to Country—		Exports.
	Of Origin.	Where Imported.			Of Origin.	Whence Imported.	
Polynesia—	£	£	£	£	%	%	%
Fiji	215,062	250,101	357,323	607,424	·67	·77	1·08
Ocean Island	29,752	29,834	19,582	49,416	·09	·09	·06
Hawaii	78	174	76,715	76,889	...	...	·23
Marshall Islands	...	68	35,768	35,836	...	...	·11
New Britain (Neu Pommern) ...	59	287	60,770	61,057	...	...	·18
New Caledonia	26,986	31,404	141,782	173,186	·08	·10	·43
New Hebrides	23,175	22,073	90,784	112,857	·07	·07	·28
South Sea Islands	198,169	146,151	277,878	424,029	·62	·46	·84
Rest of Polynesia	3,285	5,884	101,186	107,070	·01	·02	·31
Total	496,566	485,976	1,161,788	1,647,764	1·54	1·51	3·52
Grand Total ...	£ 32,303,630	32,303,630	32,958,529	65,262,159	100·00	100·00	100·00

Of the foreign countries the United States of America supply the greatest proportion of imports to New South Wales, and formerly provided the largest foreign market for the exports of this State, but the steadily increasing direct shipments of wool to the Continent of Europe have rendered Germany, France, and Belgium far better export markets, while for the year 1912, the export of gold specie to Ceylon, £2,385,000, places this island ahead of the United States. The import trade with America, however, is still greater than that transacted direct with the principal Continental countries, although the imports of German origin hold third place in order of magnitude.

The direct trade between this State and Belgium began in 1881, being attributable to a large extent, to the International Exhibition held in Sydney during 1879–80. In point of value the Belgian trade is larger than that of any foreign country, Germany, the United States of America, and France excepted; but the port of Antwerp, which receives the bulk of the trade, is the distributing centre for a great part of the wool destined for French, German, and other Continental markets, and it is not possible to say how much of the goods shipped to Belgium are for local requirements.

Trade with Germany, steadily maintained since 1879, has attained considerable dimensions, exceeding that with any other foreign country.

Trade with France has risen to importance since 1881, but has been accompanied by a corresponding falling-off in the trade with New Caledonia, the chief dependency of France in the South Pacific, and an important market of this State, which has been disturbed by the establishment of regular communication between France and her dependency, and by increases in the French tariff during recent years.

Regular communication with Java and other islands of the East Indies is effected by steamers of British, German, and Dutch lines, and there has been a considerable increase in the direct trade with New South Wales.

The other foreign countries whose trade with New South Wales is of importance, are China and Japan. The imports and exports of Hong Kong, however, belong in reality to the Chinese Empire generally, and the diminution which has taken place in the China trade since 1881 is to be attributed largely to transferrence of part of the trade from the ports of the Chinese Empire to Hong Kong; but, if allowance is made for this transferrence, it will be found that the actual loss of trade is considerable.

The war with China gave Japan a new importance, which was enhanced by the Russo-Japanese conflict, so that in the future Japan may be expected to offer a large market for many of the products of New South Wales.

The table given above shows that, between the imports according to country of origin and country whence shipped, there were appreciable differences in the cases of the United Kingdom, Belgium, France, Germany, Switzerland, China, the Union of South Africa, and the United States of America, and smaller differences in the cases of other countries. Approximately 56 per cent. of the total imports were shipped from the United Kingdom, 15 per cent. from British possessions, and 29 per cent. from foreign countries ; but, according to the country of origin, the proportion of British goods imported was 61 per cent., and of foreign goods 39 per cent.

The British Empire and Foreign Countries.

The distribution of the oversea trade of New South Wales for 1912, as between British and Foreign Countries, is summarised in the following statement :—

	Imports by Country—		Exports.	Total Trade.
	Of Origin.	Whence Shipped.		
Europe—	£	£	£	£
British	15,344,998	18,094,163	10,327,280	28,421,443
Foreign	5,826,120	3,834,350	12,010,818	15,845,168
Total	21,171,118	21,928,513	22,338,098	44,266,611
Asia—				
British	1,404,367	1,622,060	3,878,524	5,500,584
Foreign	1,582,603	1,282,590	1,614,031	2,896,621
Total	2,986,970	2,904,650	5,492,555	8,397,205
Africa—				
British	305,132	179,901	228,078	407,979
Foreign	50,555	8,729	33,432	42,161
Total	355,687	188,630	261,510	450,140
America, North—				
British	386,707	633,007	153,814	786,821
Foreign	4,834,955	3,887,165	1,553,990	5,441,155
Total	5,221,662	4,520,172	1,707,804	6,227,976
America, Central and Southern—				
British	39,235	1,177	.....	1,177
Foreign	96,519	20,836	557,173	578,009
Total	135,754	22,013	557,173	579,186
Australasia—				
British	1,935,873	2,253,676	1,439,601	3,693,277
Foreign	.....	.....	.....	.....
Total	1,935,873	2,253,676	1,439,601	3,693,277
Polynesia—				
British	245,794	280,866	385,699	666,565
Foreign	250,772	205,110	776,089	981,199
Total	496,566	485,976	1,161,788	1,647,764
Totals—				
British	19,662,106	23,064,850	16,412,996	39,477,846
Foreign	12,641,524	9,238,780	16,545,533	25,784,313
Grand Total ... £	32,303,630	32,303,630	32,958,529	65,262,159
British per cent. of total ...	60·87	71·40	49·80	60·49
Foreign ,, ,, ...	39·13	28·60	50·20	39·51

The proportion of British to total trade affords satisfactory evidence of the continued cohesion of Empire trade. Of oversea imports, according to country of origin, approximately 61 per cent. are of British manufacture or production, thus leaving only 39 per cent. of foreign origin. But rather more than 71 per cent. of the imports are shipped from British countries, the difference of 10 per cent. in favour of British countries being attributable practically to the importance of Great Britain as a transhipping country. Of the exports from New South Wales, rather more than 49 per cent. are shipped to British countries, while of the total trade, 60 per cent. is British.

The indicated trade of the State is greater with the United Kingdom than with any other country. The real trade with the United Kingdom is not shown, however, because, in addition to foreign goods sent to Australia *via* London, a proportion of the exports from New South Wales to Victoria and South Australia is shipped eventually to the United Kingdom, and also some of the goods shipped to the United Kingdom are destined for transhipment 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, 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

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

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

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

Both absolutely and relatively the exports to foreign countries have increased continuously; so that the proportion of goods sent to the United Kingdom is now considerably less than to foreign countries. The opening up of direct communication with the various countries is in great degree responsible for this apparent diversion of trade, as it has obviated the necessity for much transhipment, so much so that even gold is shipped to different countries on account of the United Kingdom. The exports to British possessions show remarkable fluctuations throughout the period, mainly on account of the variations in the shipments of gold and silver to India and Ceylon.

The United Kingdom.

As the previous tables show, direct trade with the United Kingdom is not advancing relatively to the total trade, the development of facilities for communication having given an impulse to direct trade with British possessions and with foreign countries ; yet, as has been shown, nearly 56 per cent. of New South Wales imports are shipped from the United Kingdom, where 47 per cent. of the State's imports are manufactured or produced.

The total value of the produce of the United Kingdom imported into the State during 1911 was £12,675,664. In 1912 the value of these imports was £15,342,225, and a classification of the principal articles is given below :—

Article.	Value.	Article.	Value.
	£		£
Ale and beer	165,178	Iron and steel	1,352,735
Apparel and soft goods—		Jewellery	140,252
Apparel and attire, n.e.i.	843,524	Leather and leatherware	88,759
Cosies, cushions, &c.	137,136	Machines and machinery	1,127,864
Curtains and blinds	35,417	Matches and vestas	32,836
Piece goods	2,708,632	Medicines	83,092
Sewing silks, &c.	182,175	Metal manufactures	1,209,887
Arms, ammunition, and explosives	246,671	Oilmen's stores	116,409
Articles for Army and Navy	41,034	Oil, linseed	94,804
Articles for the Commonwealth	64,011	Paints and colours	187,289
Bags and baskets	42,036	Paper	306,026
Books	199,922	Perfumery	27,259
Boots and shoes	152,346	Photographic materials	37,444
Brushware	32,825	Pickles, sauces, &c.	60,902
Canvas and duck	119,824	Pipes, smoking, and accessories	36,951
Carpets and carpeting	78,905	Rails, &c., for railways	170,749
Cocoa and chocolate, &c.	61,168	Rubber and rubber manufactures	92,687
Confectionery	147,119	Rugs	46,499
Copper	104,904	Specie—	
Cordage and Twines—		Bronze	16,813
Metal	55,013	Gold	244,466
Other	58,686	Silver	133,102
Cutlery	118,862	Spirits	385,160
Drugs and chemicals	86,693	Stationery	99,250
Earthenware, &c.	89,761	Stone, marble, slate	47,359
Electrical articles and materials	250,076	Tinned plates and sheets	205,215
Fancy goods	102,085	Tobacco, &c.	35,106
Fish (all kinds)	62,437	Tools of trade	125,947
Floor cloths and linoleum	232,187	Varnishes	40,539
Furniture	94,275	Vehicles	352,059
Glass and glassware	78,072	Vessels	586,515
Hats and caps	136,942	Yarns	68,169
Instruments	145,121		

For the surplus products of New South Wales the largest market is found in the United Kingdom, which takes practically 40 per cent. of the exports to oversea countries. The value of domestic produce exported is not now recorded, owing to the Interstate records having been abolished. During 1911, however, the domestic product sent to the United Kingdom was valued at £10,954,429, the principal articles being as follows :—

Article.	Value.	Article.	Value.
	£		£
Butter	1,389,871	Meats	1,321,042
Copper	442,605	Oil—Cocoanut	150,300
Gold, bullion	426,928	Skins and hides	502,752
Silver and lead	467,899	Tallow	663,102
Tin, ingots	152,035	Wool	3,389,779
Wheat and flour	1,725,939	Zinc concentrates	19,890
Leather	224,906		

Foreign Countries.

Taken absolutely, the trade between New South Wales and foreign countries has increased rapidly year by year, but, relatively to the total trade of New South Wales, the increase has been more gradual, especially in the sixteen years 1895–1910, when the trade with foreign countries increased from 35·5 per cent., to 38·4 per cent. of the total trade. In 1911, the relative value of foreign trade fell back to 35·9 per cent. of the total, but recovered during 1912 to 39·5 :—

Period.	Oversea Trade.			Proportion.	
	With Foreign Countries.	With British Countries.	Total.	Foreign.	British.
	£	£	£	per cent.	per cent.
1880–4	15,428,593	101,233,460	116,662,053	13·22	86·78
1885–9	21,948,595	98,650,074	120,598,669	18·20	81·80
1890–4	31,801,163	92,338,766	124,139,929	25·62	74·38
1895–9	51,857,686	94,239,793	146,097,479	35·50	64·50
1900–4	63,052,777	108,439,433	171,492,210	36·77	63·23
1905–9	87,567,208	147,423,307	234,990,515	37·26	62·74
1910	21,248,967	34,025,477	55,274,444	38·44	61·56
1911	21,387,597	38,117,232	59,504,829	35·94	64·06
1912	25,784,313	39,477,846	65,262,159	39·51	60·49

The values of imports into New South Wales as shipped direct from the principal foreign countries at ten-year intervals in the forty years between 1870 and 1910, have advanced as follows :—

Country.	1870.	1880.	1890.	1900.	1910.
	£	£	£	£	£
Belgium	....	....	130,819	147,661	555,298
France and New Caledonia ..	66,119	160,348	201,791	298,593	206,228
Germany	....	47,169	639,475	1,105,664	1,288,574
Netherlands and Java	71,365	136,640	122,342	103,493	334,794
Norway	....	....	20,891	77,596	114,020
Italy	....	....	23,961	92,732	129,246
Sweden	....	....	9,852	31,801	133,824
China	258,412	358,129	241,840	190,456	38,720
Japan	....	5,419	22,040	122,041	335,320
South Sea Islands	13,024	42,789	40,214	107,488	164,530
United States of America ..	154,799	387,056	859,102	2,557,961	2,150,953
Other Foreign Countries ..	252,927	16,730	29,624	284,629	111,495
Total .. .. £	816,646	1,154,280	2,341,951	5,120,115	5,613,002

The aggregate values of foreign imports, classified according to country of origin, are shown below for each of the last three years in comparison with 1904 :—

Country.	1904.	1910.	1911.	1912.
	£	£	£	£
Arabia	9,902	10,076	12,708	20,286
Austria	34,275	123,850	153,576	171,715
Belgium	78,391	277,187	372,049	365,666
Brazil	698	22,458	21,152	23,060
Chile	9,835	7,439	20,718	21,752
China	110,446	153,088	191,083	209,215
Cuba	21,696	21,695	37,486	32,270
Denmark	7,740	7,619	10,769	14,190
France	435,484	722,391	916,918	860,627
Germany	1,005,184	1,878,057	2,429,272	2,850,139
Italy	77,002	179,387	226,029	271,754
Japan	192,360	335,388	418,978	479,144
Netherlands	79,287	125,929	143,906	156,746
Netherlands India	50,549	384,054	370,408	844,829
New Caledonia	27,561	32,094	48,943	26,986
New Hebrides	17,067	23,983	35,407	23,175
Norway	119,575	140,706	186,590	249,637
Philippine Islands	21,998	37,631	38,854	43,613
Portugal	4,644	28,524	33,801	41,603
Russia	11,318	17,430	21,875	33,225
South Sea Islands	66,412	210,877	196,872	198,169
Spain	18,669	40,490	50,928	40,913
Sweden	45,161	204,996	262,642	266,859
Switzerland	77,228	380,035	401,800	482,786
Turkey	24,321	19,557	17,130	15,202
United States of America and Alaska.	2,038,037	3,122,212	4,020,149	4,833,042
West Indies	.....	402	12,100	893
Other Foreign Countries	33,095	68,758	68,377	64,028
Total ... ... £	4,617,935	8,576,313	10,720,520	12,641,524

The outstanding features in the above comparisons are the gradual but nevertheless effective increases in the cases of the large trade of the United States and Germany. Comparatively greater, however, are the cases of Netherlands India, Switzerland, Belgium, and Austria.

The produce of Java imported into this State in 1911 amounted to £278,480, in 1912 it had more than doubled reaching the figure of £682,897.

Articles of Import.

To show clearly and concisely the class of goods imported into New South Wales, oversea imports during the last three years have been summarised as shown in the table below. The figures show direct imports only, as the interstate transfers are not available; goods of Australian produce re-imported from outside the Commonwealth, £15,044 for 1910, £20,896 for 1911, and £27,239 for 1912, have been excluded :—

Articles of Import.	1910.	1911.	1912.
Food, Drink, Narcotics, and Stimulants—	£	£	£
Animal food	300,191	304,850	355,355
Vegetable food	1,110,354	1,327,999	2,331,046
Drinks—alcoholic	664,522	808,685	884,313
,, non-alcoholic	6,701	6,800	11,853
Tobacco and other narcotics	373,364	434,557	519,871
Other stimulants and condiments	603,378	607,186	666,840
	3,058,510	3,490,077	4,769,278
Live Animals and Plants—			
Animals of all kinds	205,744	248,996	123,315
Plants	29,059	27,543	35,272
	234,803	276,539	158,587
Textile Fabrics, Dress, and Manufactured Fibrous Materials—			
Silk manufactures	375,149	431,633	421,362
Woollen manufactures	1,069,600	1,154,707	1,235,968
Cotton and flax manufactures	1,783,335	1,784,574	1,870,540
Manufactures of mixed materials	1,253,646	1,280,077	1,425,308
Dress	1,615,712	1,900,214	2,332,751
Manufactures of fibrous materials	579,794	490,912	509,917
	6,677,236	7,042,117	7,795,846
Products of Arts and Manufactures, n.e.i.—			
Books and stationery and paper	968,991	1,104,340	1,222,930
Musical instruments	204,243	279,124	308,516
Works of art and art materials	21,398	35,852	40,213
Fancy goods	426,670	590,182	614,893
Timepieces, jewellery, and plated ware ...	395,139	483,050	587,325
Surgical and scientific instruments... ...	270,942	292,806	306,231
Metal manufactures, including machinery...	3,465,054	4,509,946	5,173,151
Harness, vehicles, and equipment	562,983	762,845	889,415
Ships, boats, and equipment	397,856	208,367	598,065
Building materials	937,552	1,310,606	1,562,268
Furniture	122,535	187,178	281,068
Arms and explosives	226,102	289,543	309,438
Drugs, chemicals, and by-products ...	471,300	563,776	591,380
Glass and earthenware manufactures ...	306,205	401,876	418,196
Soap, candles, and paint	246,756	247,711	335,955
Other manufactures, n.e.i.	656,359	622,140	1,004,298
	9,680,085	11,889,342	14,243,342
Staple Animal and Vegetable Substances, including Mineral Oils—			
Animal substances	378,607	365,871	506,392
Vegetable substances...	419,836	470,223	492,401
Oils	526,727	658,341	765,514
	1,325,170	1,494,435	1,764,307
Staple Minerals and Metals, including Specie and Bullion—			
Specie and bullion	680,214	1,241,961	1,192,439
Iron and steel	1,015,954	1,119,349	1,593,983
Other metals	281,052	337,385	456,984
Coal and shale...	21,490	55	1,916
Stone, clay, and other minerals	61,949	152,411	70,462
	2,060,659	2,851,161	3,315,784
Unclassified articles	187,486	278,861	229,247
Total Imports ... £	23,223,949	27,322,532	32,276,391

In 1912 the principal articles imported from abroad were those in the class comprising the products of arts and manufactures. By far the largest item in this class was metal manufactures, including machines and machinery; then followed building materials; books, stationery, and paper; harness, vehicles, and equipment; fancy goods; ships, boats, and equipment; drugs and chemicals; and timepieces, jewellery, &c. The class next in importance comprised textile fabrics and dress, in which the most important items were dress manufactures, cotton and flax, and woollen manufactures. The class including articles of food and drink came third, the largest item being vegetable food.

British Produce.

The following table shows the imports into New South Wales from the chief British possessions at decennial periods since 1870, and in comparison the figures for 1912 :—

Country.	1870.	1880.	1890.	1900.	1910.	1912.
	£	£	£	£	£	£
Canada	1,726	17,530	18,784	114,321	356,593	633,007
Union of South Africa—						
Cape Colony	....	5	55	943	12,950	140,032
Natal	....	....	....	70	7,362	39,676
Transvaal	....	....	....	....	....	138
Ceylon	210,114	13,668	43,702	213,195	357,522	403,781
Fiji	....	54,135	99,853	60,831	161,894	250,101
Hong Kong	48,808	228,526	271,730	67,928	95,450	170,424
India	2,567	653	195,368	388,546	777,837	719,113
Mauritius	325,680	207,107	5,059	76,779	1,002	36
New Zealand	298,951	460,735	932,073	1,348,605	1,180,011	2,182,029
Straits Settlements	....	16,045	27,148	40,391	132,245	203,621
Aden	....	....	....	432	2,802	2,466
Burmah	....	....	....	2,107	71,260	122,654
Malta	....	....	....	373	746	206
Papua	....	....	....	33,474	50,411	71,647
Norfolk Island	....	....	....	1,380	770	931
Ocean Island	....	....	....	....	31,360	29,334
West Indies	....	....	....	....	....	1,177
Other British Possessions ..	60	1,665	1,626	4,384	134	20
Total .. .. .. £	887,906	1,000,069	1,595,398	2,353,759	3,240,358	4,970,893

As the table shows, imports from New Zealand, India, Ceylon, Canada, Fiji, Hong Kong, and Straits Settlements amounting in 1912 to £4,562,076, cover 92 per cent. of the total from all British possessions.

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 from British possessions, classified according to country of origin, are shown below for the last three years in comparison with 1904 :—

Country.	1904.	1910.	1911.	1912.
	£	£	£	£
Burmah	32,459	75,681	61,722	89,675
Canada	131,487	353,874	331,585	386,485
Ceylon	252,609	356,580	329,832	389,253
Fiji	53,102	136,626	373,727	215,062
Hong Kong...	7,197	1,574	1,901	2,846
India	364,109	805,697	748,730	830,659
Jamaica	9,937	40,816	3,954	.....
New Zealand	820,900	1,103,275	1,722,021	1,839,004
Ocean Island	6,986	31,292	16,919	29,752
Papua	40,012	49,923	72,001	69,630
Straits Settlements ...	33,382	51,983	62,995	54,586
Union of South Africa ...	3,227	129,899	169,274	339,994
Other British Possessions...	35,499	39,190	31,850	45,696
Total ... £	1,790,906	3,176,410	3,926,511	4,292,642

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.

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 1912, 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 exports under the three heads of "Domestic 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.

Value of Exports.

Year.	Domestic 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
Proportion of total, 1912...	93·0%		7·0%	100%

Re-export Trade.

The re-export trade of the State was of some importance until 1889, but for several years thereafter a marked decline was experienced till 1895, when an improvement was manifested. The shipping facilities of Sydney formerly attracted to the port a large amount of trade from New Zealand, Queensland,

and the South Seas, for transhipment to Europe; but the establishment of direct communication between these countries and Europe checked to some extent the expansion of the re-export trade.

Gold, consisting mainly of Queensland and New Zealand metal, coined at the Sydney branch of the Royal Mint, and shipped by the banks to London, the United States of America, and Eastern Asia forms a large proportion of the trade. There is also a large re-export of wool, chiefly the produce of Queensland, and a fairly large trade in provisions and manufactured articles of British and foreign production with New Zealand, New Caledonia, Fiji, and other islands of the Pacific.

The following statement summarises the British and foreign re-export trade for 1911-12 :—

Article.	British and Foreign Produce.	
	1911.	1912.
Food and drink, &c.—	£	£
Animal food	20,001	17,661
Vegetable food	189,224	148,542
Drinks, alcoholic	31,106	37,139
,, non-alcoholic	289	202
Tobacco, &c.	47,904	49,495
Other stimulants, &c.	35,539	33,368
Total	324,063	286,407
Live plants and animals—		
Animals	9,847	2,815
Plants	2,299	2,723
Textiles	149,930	156,483
Arts and manufactures, n.e.i.	468,927	569,421
Staple products—		
Animal substances	26,859	25,850
Vegetable substances	16,177	47,967
Oils	38,135	43,556
Minerals and metals	69,694	78,511
Specie and bullion	1,096,936	1,065,933
Unclassified articles...	20,119	17,835
Total ... ... £	2,222,986	2,297,501

As has been shown specie represents approximately 50 per cent. of the re-export trade. Following in order of importance are manufactures of metals, instruments, &c., machines and machinery, grain and pulse, piece goods, tobacco, &c., vessels, and books.

Ships' Stores.

In addition to the values of oversea exports shown already, considerable quantities of goods are sent away from New South Wales each year in the form of ships' stores. The following statement shows the aggregate values of ships' stores exported in each of the last five years, classified as Australian produce, and other produce, being really re-exports :—

Year.	Value of Ship's 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

Practically the whole Australian produce is of New South Wales origin. Following are details of the most important items in the entries for 1912 of this Australian produce :—

		Quantity.	Value. £
Bunker coal	tons	1,387,548	775,065
Meats	—	...	80,950
Butter	lb.	417,134	20,507
Flour	...centals	36,716	17,080
Potatoes	cwt.	32,896	15,936
Milk, preserved	lb.	455,380	10,950

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, 1910–12.

Article.		1910.	1911.	1912.
Stimulants—				
Ale and beer	gal.	90,085	139,606	152,464
Spirits—				
Brandy	,,	46,308	121,723	90,043
Gin and geneva	,,	42,031	40,465	35,928
Liqueurs and cordials	,,	4,110	4,368	4,117
Rum	,,	257,692	253,217	190,763
Schnapps	,,	30,424	38,294	40,199
Whisky	,,	291,562	320,882	347,907
White spirit	,,	241	109	99
Other	,,	9,936	3,245	3,268
Distilled in Commonwealth	,,	348,578	334,310	338,586
Wine—				
Sparkling	,,	3,808	9,082	10,468
Still	,,	15,586	20,876	21,906
Narcotics—				
Tobacco—				
Manufactured	lb.	62,156	285,116	186,644
Unmanufactured	,,	3,091,124	4,036,433	5,248,997
Cigars	,,	91,243	54,488	22,018
Cigarettes	,,	27,308	31,879	31,659
Sugar—				
Raw and refined*	cwt.	962,307	647,476	957,493
Glucose	,,	5,877	3,797	348
Other articles—				
Candles	lb.	189,066	38,566	30,006
Cement	cwt.	14,676	14,796	6,564
Cocoa and chocolate	lb.	166,999	58,246	138,997
Coffee and chicory	,,	143,611	129,998	141,446
Coffee essence	,,	1,418	.....	.....
Fruits, dried—				
Currants	,,	564,278	99,980	40,246
Raisins	,,	140,437	25,448	26,595
Dates	,,	533,989	99,605	109,495
Other	,,	19,584	43,740	87,753
Grain and pulse (prepared)—				
Rice	cntl.	109,646	98,103	206,848
Other	,,	.....	10	12,979
Hops	lb.	22,313	29,902	31,919
Iron, galvanised	cwt.	9,120	640	160
Matches	gross.	60,197	35,327	98,645
Milk	lb.	222,708	21,187	12,229
Salt	cwt.	57,245	130,658	55,133
Salt, rock	,,	5,729	2,690	92
Vinegar	gal.	32,798	13,718	20,008

* Including stocks in factories.

Commercial Commissioners.

In Eastern Asia.

Mr. J. B. Suttor, A.M.I.C.E., represents the State of New South Wales as Commercial Commissioner in Eastern Asia, with headquarters at Kobe, Japan. The Commissioner, who is responsible for the fostering of the trade of the State in the important markets of eastern countries, makes periodical tours of Japan, China, India, Philippine Islands, Netherlands India, and other portions of the East, closely watching for new opportunities for trade for this State as well as taking steps to ensure the maintenance of the existing trade.

Annual reports, giving in much detail the market prices, &c., for each commodity exported from New South Wales and valuable advice to shippers and the commercial community, are furnished by the Commissioner. These reports are published as Bulletins by the Immigration and Tourist Bureau, and may be obtained upon application.

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 between the United States of America, and also Canada, and New South Wales, and the advisableness of establishing a Trade Commissioner's Office on the West Coast of America. A result of these inquiries was to disclose an "almost unlimited market for all pastoral primary products, and a considerable number of agricultural primary products, for hardwood timber, coal, cocoanut oil, for some fruits in all seasons, and for all fruits in the off season in America, and for such vegetables as will stand carrying, *e.g.*, onions and potatoes.

Chambers of Commerce.

Chambers of Commerce have been formed in New South Wales at important trading centres, the principal being at Sydney and Newcastle, Parramatta, Lismore, and Grafton. The membership of the Sydney Chamber of Commerce as at June, 1913, was 970, including 79 firms and public companies, and also Country Chambers of Commerce. Amongst matters relating to the commercial interests of the State with which the Sydney Chamber dealt during 1912–13, may be mentioned the bulk handling of wheat, the universal meal hours, bills of sale and secret debentures, the Commonwealth Navigation Bill, the Commonwealth Bankruptcy Bill, the Dominions Royal Commission, the Interstate Commission, uniform food and drug standards, wool tops and insect pests, Early Closing Amendment (Chemists), proposed City Council suffrage.

The seventh congress of the Chambers of Commerce of the British Empire was held in Sydney in September, 1909, and delegates from New South Wales attended the eighth Congress held in London in 1912.

POSTS AND TELEGRAPHS.

THE control of the postal, telegraphic, and telephonic services of New South Wales became vested in the Commonwealth, under the provisions of the Commonwealth of Australia Constitution Act, and by proclamation these services were taken over on 1st March, 1901, and the Commonwealth Post and Telegraph Act, was assented to on 16th November of the same year.

The system of administration and the rates levied in each State at the date of federation continued in force until the Commonwealth Post and Telegraph Rates Act, was brought into operation on 1st November, 1902, this measure securing uniformity in all the States of the rates charged for the conveyance of newspapers and transmission of telegrams.

The postage rates on letters, letter-cards, printed papers, books, and magazines within each State were still continued until 1st May, 1911, when, by the Postal Rates Act, 1910, complete uniformity of postage rates was established, and the postage for letters within the Commonwealth or to any part of the British Empire was reduced to 1d. per ½ oz. The Postmaster-General is prepared to establish a reciprocal penny letter post with any country willing to join in such an arrangement.

At the Postal Congress held in Vienna in 1891, New South Wales entered the Universal Postal Union as from 1st October of that year.

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 also connected 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, and Fiji.

EARLY RECORDS.

No means of postal communication existed in New South Wales 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 to regulate the postage, and a proclamation was 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, but the building was small and inconvenient. 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 horseback, was 1,023,255 miles. The number of letters passing through the post office was 2,114,179, of which 617,041 were addressed to places beyond New South Wales. The number of newspapers was 2,100,989, of which 1,281,613 were inland, and 819,376 were "foreign." Book parcels and packets were not reckoned separately, but were counted as letters. The revenue of the Department for the year was £24,902, and the expenditure was £60,221. The staff numbered 223 officers, of whom fifty-six were connected with the office in Sydney. The annual report also indicates that communication with Victoria was effected three times a week.

Postal Buildings.

In 1863 it was resolved to build a new General Post Office at Sydney, and the construction of the present building 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. Modern mechanical appliances, which affect considerable economy of time and labour, have been installed to meet the increasing requirements of the Department.

A commodious building, for use primarily as a parcel post office, has been constructed on a site adjacent to the Central Railway Station, Sydney.

With the advance of settlement a number of post offices are erected in each year in various country districts. During 1912, five new post offices were erected in New South Wales at a total cost of £6,002, and additions and alterations were made to 26 offices, at a cost of £4,650.

Postal Facilities.

Postcards were introduced in 1875, and letter-cards in 1894.

In the year 1856 the first iron pillar 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 the Commonwealth has direct parcel post exchanges with 20 countries, and parcels may be sent practically to all parts of the world.

Parcels addressed to many oversea countries may be insured against loss or damage whilst in transmission through the post, and arrangements have been made with a number of countries whereby Customs duty may be paid by the sender of a parcel.

It has been proposed that the Postal Department should undertake the carriage and delivery of small parcels of perishable farm products, and a trial service has been instituted in Melbourne.

Value-payable Parcel Post.

When the Postal Department was transferred to Federal control in 1901, a system of value-payable parcel post which had been in operation in Queensland was extended to the other States. Under this system 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 1912, the number of parcels posted in New South Wales was 10,210 and the value collected was £13,053, the revenue, including postage, commission on value, registration, and money-order commission being £1,147.

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 1912 was 1,768,441.

Number of Post Offices, &c.

The following table shows for New South Wales the number of post offices, employees, income and expenditure in five-year periods from 1855 to 1912. 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 1,798 in 1912; temporary employees are included during the last three 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	1,022,330	970,808
1910	1,911	526	8,622	1,437,748	1,339,891
1911	1,948	542	9,255	1,478,091	1,567,801
1912	2,000	559	12,614	1,486,956	1,727,577

* Not recorded.

In 1855 there were only 155 post offices within the area now comprised in New South Wales and Queensland; at the close of 1912 there were within this State alone 2,000 post offices, besides 559 receiving offices.

Postal Matter Carried.

The following return, showing the letters, &c., posted and received, will give an idea of the magnitude of the work done by the Post Office in New South Wales :—

Year.	Letters, Post-cards and Registered Articles.	Newspapers.	Packets and Book Parcels.	Parcels.
1855	2,114,179	2,100,989	*...	...
1860	4,230,761	3,668,783	83,736	...
1865	6,328,353	4,689,858	249,904	...
1870	7,083,500	3,814,700	157,700	...
1875	13,846,686	6,262,600	357,000	...
1880	21,885,860	13,791,000	711,600	...
1885	39,692,200	25,567,400	3,446,800	...
1890	63,695,100	40,597,200	8,939,600	21,300
1895	69,373,708	44,902,900	11,259,200	422,800
1900	79,602,694	51,500,920	13,846,700	711,700
1905	111,958,588	44,599,104	22,083,000	994,100
1910	163,754,056	66,963,559	39,008,610	1,600,426
1911	189,656,401	71,619,194	36,283,500	1,748,822
1912	376	68,696,648	32,687,904	2,067,652

* Included with letters.

In 1855 the number of letters and newspapers, inland and foreign, was slightly over 2 millions each, whereas in 1912 the number of letters and post-cards had grown to 193 millions, and newspapers to nearly 69 millions, without reckoning nearly 35 millions of packets and parcels.

Furthur particulars of the postal matter carried during 1912 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	134,538,694	36,300,868	20,388,373	191,227,935	110
Registered articles ...	1,165,868	306,852	295,721	1,768,441	1
Newspapers	30,997,208	29,108,966	8,590,474	68,696,648	39
Packets and parcels ...	24,570,389	7,049,086	3,136,081	34,755,556	20

During 1912 the postal matter posted and received per head of population was—Letters, post-cards, and registered articles, 111 ; newpapers, 39 ; and packets and parcels, 20. The corresponding figures for 1910, the year before the penny postage was introduced, were—Letters, post cards, and registered articles, 101 ; newspapers, 41 ; packets and parcels, 25. A large percentage of circulars classified previously as packets have been sent as letters since the reduction of letter rates.

Dead Letters, &c.

The number of dead letters and other postal articles dealt with by the Post Office in New South Wales during 1912 was as follows :—

	Letters.	Post-cards.	Packets.
Returned direct to senders, or delivered	398,792	18,754	392,472
Destroyed in accordance with Act	105,323	30,982	43,606
Returned as unclaimed to other States or Countries ...	121,179	8,918	3,884
Total...	625,294	58,654	439,962

The letters, &c., which passed through the Dead Letter Office are very numerous, but from official reports it appears that much carelessness is displayed by some people in connection with their correspondence, and numbers of letters, including many containing articles of large value, are wrongly or insufficiently addressed, or not addressed in any way.

Rates of Postage.

Letters.

The charge on letters between the State and the United Kingdom, which had for a long period been at the rate of 6d. per ½ oz. *via* Italy, and 4d. by the long sea route, was reduced in 1891 to 2½d., 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 ½ oz., and arrangements were concluded with New Zealand, Canada, and the United Kingdom. Consequent on a decision of the Rome Postal Congress to allow administrations to adopt an initial weight of 20 grammes for letters, the United Kingdom adopted 1oz. 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 ½ oz., and to all other places 2½d. per ½ oz. A proposal by the Commonwealth Government to extend the penny postage to the United States of America was not accepted by the United States Administration.

Post Cards.

The charges for post cards are—Within the British Empire and to the United States of America, 1d. each; to other places, 1½d. each; and for letter-cards, within the Empire, 1d. each; to other places, 2½d. each.

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 1912 there were 824 publications registered for transmission by post as newspapers in the State of New South Wales.

Newspapers are transmitted to any place within the Commonwealth, Papua, New Zealand, and Fiji, at the rate of ½d. 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., 2½d.; every additional 2 oz., ½d.; and to all other places at the rate of 1d. for each newspaper not exceeding 4 oz. in weight, with ½d. for every additional 2 oz. or fraction thereof. Newspapers transmitted wholly by sea to the United Kingdom are charged at the rate of 1d. for every 16 oz.

Parcels.

No parcel exceeding 11 lb. in weight will be accepted for transmission by post. The inland rate for a parcel weighing 1 lb. is 6d., increasing at the rate of 3d. per lb. to 3s. for 11 lb. The charge for interstate parcels is 8d. for 1 lb., increasing at the rate of 6d. per lb. to 5s. 8d. for 11 lb.

Books.

Books up to 5 lb., for delivery within the Commonwealth, and to Papua; if printed in Australia, are charged ½d. per 8 oz., or part thereof, for books printed outside Australia the postage is ½d. 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 outside the Commonwealth, 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 inland and interstate rate for commercial papers is 1d. per 2 oz.; the rates to other places are for 2 oz., 3d.; for every additional 2 oz. up to 10 oz., ½d.; 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, 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 ½d. 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 ½d. 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 2½ per cent. commission, up to a maximum of 30s. per week.

During the year ended 30th June, 1913, an amount of £6,229 was paid as commission to licensed vendors in the State of New South Wales, the total so paid for all States of the Commonwealth being £19,231.

A practical test of automatic stamp selling machinery is being conducted with a view to extending facilities for the purchase of stamps by the public.

Mail Routes and Services.

The mail routes in New South Wales in the year 1866 were 8,231 miles in length, whilst in 1912 the routes totalled 45,424 miles represented by railway, 3,786 miles; water, 2,768 miles; and other, 38,870 miles.

The distances travelled by rail conveyances were railway 5,493,409 miles; water, 1,155,677 miles; other, 9,741,307 miles; total, 16,390,393 miles. The number of inland mail services in 1912 was 1,835 and the cost of conveyance, £268,178; the road services cost £155,122 and the railway services £113,056.

The Postmaster-General establishes new mail services in the country districts of the State when the persons interested provide half the difference between cost and revenue.

The number of mails despatched and received at the post offices of New South Wales during 1912 is shown below :—

	Despatched No.	Received No.
General Post Office, Sydney :—		
Inland	516,849	455,263
Inter-State	23,733	17,569
Foreign	9,147	5,834
Total	549,729	478,666
Other Offices	2,948,517	2,924,892
Total all Offices	3,498,246	3,403,558

The weight of New South Wales mail matter conveyed by non-contract vessels at poundage rates was—letter, 150,591 lb.; other articles, 18,397 cwt. The rates paid amounted to £14,593.

Ocean Mail Services.

Regular steam communication with England was established in 1852, by the steamers of the Peninsular and Oriental Company; the service was suspended two years later on the outbreak of the Crimean war, and was not resumed until 1856. As this service proved unsatisfactory, a line was started in 1866 to carry mails from Sydney, *via* Panama, but it was terminated two years later.

San Francisco Route.

On the completion of the railway across America in 1869, a monthly service, *via* San Francisco, was inaugurated, under contract with the New Zealand Government, in which New South Wales participated under certain conditions until the expiration of the contract in 1871. The route was re-established in 1873 by the Governments of New South Wales and New Zealand, in consequence of an alteration in the arrangements regarding the Suez service as shown below. Although the San Francisco route declined in importance as regards this State, by reason of the subsequent development of the weekly service *via* Suez, New South Wales contributed towards the maintenance of the service under various conditions, until the expiration of a contract between New Zealand and the Union Steamship Company in 1900. After that date Australian mails were despatched every three weeks at Postal Union rates, *via* San Francisco, by the American vessels of the Oceanic Steamship Company, which had a contract with the United States Government, but this service was suspended in April, 1907. After an interval of some months another service was for a short time carried on by a British firm. The Oceanic Company resumed the San Francisco to Sydney service in 1912, making monthly trips.

In January, 1909, New Zealand entered into a contract for a mail service between New Zealand and Papeete, connecting with the United States service between Papeete and San Francisco. This contract was determined in October, 1910, and a new service from New Zealand, *via* Raratonga and Papeete to San Francisco, was in 1911 extended to Sydney; by alternation with the Vancouver line fortnightly communication with America is provided, the mails from Australia being carried at poundage rates.

Vancouver Service.

In 1893, direct communication with Canada was established by the inauguration of a regular monthly service between Sydney and Vancouver, *via* Wellington, subsidised by New South Wales and New Zealand. In 1899, the route was altered and Brisbane was substituted as a port of call instead of Wellington. Since the expiration of a contract in July, 1911, the

call at Brisbane has been discontinued, and the Commonwealth has ceased to be a party to the contract for this service, though mails are despatched at Postal Union rates by the vessels sailing under a new contract, subsidised by Canada and New Zealand, and calling at Auckland, Suva, and Honolulu.

Suez Route.

After the establishment of a mail route across America, there was a considerable improvement in the service *via* Suez. The Peninsular and Oriental Company continued to carry mails under contracts negotiated by the Imperial Government—the Australian Governments contributing a share of the cost, in accordance with the weight of postal matter transmitted. For some years prior to 1874, the mails between England and Australia were conveyed under two contracts—one between England and Point de Galle, Ceylon, and one between Point de Galle and Sydney. In 1873, the Imperial Government decided to discontinue the latter contract, but offered to convey Australian mails between England and Galle, or Singapore, or San Francisco. Subsequently Victoria entered into a contract with the Peninsular and Oriental Company for a service between Galle and Melbourne, the Queensland Government conveyed mails to Singapore, *via* Torres Straits—a service which was established in 1864—and the Governments of New South Wales and New Zealand completed arrangements for a subsidised service to San Francisco. By mutual agreement, the contracting States for each mail service arranged to carry mails for the other States at poundage rates.

In 1878, the Orient Company commenced to carry mails *via* Suez, at non-contract rates until 1883, when the first contract was made with New South Wales, payment being based on the weight of letters carried.

Facilities for the transmission of mails to Europe were afforded also by the inauguration of the Messageries Maritimes line in 1882, and of the 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 existing contracts in 1888 the Imperial Government negotiated contracts 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 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., Brindisi to Adelaide 638 hours, and Adelaide to Brindisi 650 hours, the amount of subsidy being £170,000 per annum. All the mail steamers are fitted with wireless telegraphy installations, and white labour only is employed.

In addition to the weekly service thus provided by the British lines, the Messageries Maritimes and the Norddeutscher Lloyd steamships carry mails for the Commonwealth at poundage rates.

Oversea Mails.

The postal matter carried to and from New South Wales by each of the services during 1912, is shown below :—

	Orient Royal Mail.	P. & O. Co.	Canadian-Australian, *via* Vancouver.	Nord-Deutscher Lloyd's.	Messageries Maritimes.
Interstate—					
Letters and Postcards ...	467,496	466,917	59,969	1,104	137
Newspapers	518,220	426,078	56,661	...	...
Packets and Parcels ...	104,066	87,009	14,285	...	...
Oversea—					
Letters and Postcards ...	7,177,957	6,469,355	662,390	26,909	22,767
Newspapers	1,410,183	1,320,872	331,765	8,790	5,833
Packets and Parcels ...	1,068,002	1,006,208	226,266	11,362	4,022

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 1912 :—

Service.	London to Sydney.		Sydney to London.	
	Average Time.	Quickest Time.	Average Time.	Quickest Time.
Via Suez—	days.	days.	days.	days.
Per Orient Royal Mail Line	$31\frac{1}{13}$	30	$32\frac{1}{13}$	31
,, Peninsular and Oriental S. N. Co.	$31\frac{1}{13}$	31	$31\frac{8}{27}$	31
,, Norddeutscher Lloyd	...	...	$35\frac{13}{14}$	34
,, Messageries Maritimes	...	...	$35\frac{6}{11}$	34
Via Vancouver—				
Per Canadian-Australian	$38\frac{1}{2}$	38	$36\frac{3}{13}$	35

Pacific Islands Mail Service.

Between the years 1888 and 1891 the Government of New South Wales contributed towards the cost of steam communication between Sydney, New Caledonia, New Hebrides, and other islands of the Pacific. The system was revived after a lapse of several years, and in 1900 a contract for a period of ten years was made for a monthly steam service, including conveyance of mails, between Sydney, New Hebrides, Santa Crux, and Solomon Islands, for an annual subsidy of £3,600, which was increased to £4,000 on the condition of employing white labour only when the Commonwealth Government took over the contract in 1901. The subsidy was increased at various dates to provide extensions to Gilbert and Ellice Islands and to British New Guinea. Under the existing agreement which commenced in September 1910, for five years, a mail service to Papua, Solomon Islands, New Hebrides, and the Marshall, Gilbert, and Ellice Islands is provided at an annual subsidy of £19,850.

TELEGRAPHS.

The electric telegraph was first used by the public of New South Wales on 26th January, 1858, when the line from Sydney to Liverpool, 22 miles in length, was brought into operation. The network of telegraph lines now embraces all the important centres of population throughout the State. In 1912 there were 1,384 stations, exclusive of 87 railway offices, and 18,348 miles of lines open, with 32,041 miles of wire in actual use. The following table gives a view of the telegraph business transacted in New South Wales in each year since 1900 :—

Year.	Telegraph Stations.	Telegrams.			Revenue received.
		Transmitted, and delivered Inland, counted once.	In Transit.	Total.	
					£
1900	961	3,038,720	161,187	3,219,907	174,895
1901	978	3,275,197	174,118	3,449,315	186,135
1902	983	3,412,319	215,050	3,627,369	183,855
1903	987	3,395,359	243,232	3,638,591	153,018
1904	1,005	3,398,158	239,122	3,637,280	151,036
1905	1,069	3,576,045	261,917	3,837,962	156,956
1906	1,122	4,142,881	309,625	4,452,506	191,665
1907	1,278	4,548,256	346,027	4,894,283	207,525
1908	1,290	4,784,338	365,425	5,149,763	222,802
1909	1,329	4,810,302	367,660	5,177,962	215,446
1910	1,399	5,220,962	386,216	5,607,178	245,245
1911	1,406	5,505,935	357,625	5,863,560	253,398
1912	1,384*	5,917,219	447,771	6,364,990	278,665

* Excluding 87 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 1912 were classified as follows :—

Inland (counted once)	3,632,311
Interstate	1,992,273
To and from other countries (cablegrams)	292,635
In transit	447,771
Total	6,364,990

Excluding the telegrams in transit, the messages represented 3·4 per head of population.

Automatic Telegraphy.

The Wheatstone Automatic system has been introduced between the Australian capital cities directly connected by telegraph, with the result that the traffic may be handled with less delay and greater economy.

The Creed Billé system is worked in conjunction with the Wheatstone at Adelaide, South Australia, where instruments were installed to facilitate the interstate business. Automatic machinery will be introduced gradually in other parts of the Commonwealth.

Cable Services.

Eastern Extension Cables.

Cable communication between Australia and Europe was opened in 1871 by means of a submarine cable from Java to Port Darwin, and in 1872 messages were transmitted by the overland telegraph line from Darwin to Adelaide, distance 1,971 miles. Under an agreement made with New South Wales and Victoria, the Cable Company undertook to duplicate the line, the second cable being brought into use in November, 1879, and up to October, 1899, the company received from the Australian States (excepting Queensland) a subsidy of £32,400 per annum. These lines are controlled by the Eastern Extension Company. This company, under agreement with South Australia, Western Australia, and Tasmania, which New South Wales subsequently joined, provided for a reduction in the charges for cablegrams, and for the construction of a cable between Durban and Australia *via* Cocos. The line was opened for business in 1901, the Australian landing station being at Perth. By agreement with the Western Australian Government, dated January, 1899, the Eastern Extension Company was also empowered to lay a cable from Java to Roebuck Bay in Western Australia.

A cable, also constructed by the Eastern Extension Company, connecting New Zealand with New South Wales, was opened for communication on 20th February, 1878, and was subsidised for ten years. The landing places of this cable are at La Perouse, near Sydney, and at Nelson, New Zealand. In 1890 the Company laid a second cable to New Zealand without guarantee.

New Caledonia Cable.

In 1893 a cable from Gomen, New Caledonia to Bundaberg, Queensland, was opened by a French company, to whom New South Wales and Queensland each agreed to pay an annual subsidy of £2,000 for thirty years. The total amount, £4,000 per annum, is now paid by the Commonwealth.

Pacific Cable.

In 1899 it was decided by the Governments of the United Kingdom, Canada, Australia, and New Zealand to construct a cable across the Pacific Ocean, touching only British territory on its way from Australia to Canada. This line, which was completed on 31st October, 1902, connects Southport, in Queensland, with Vancouver *via* Norfolk Island, Fiji, and Fanning Island. There is also a branch from Norfolk Island to Doubtless Bay, New Zealand. The cable cost about £2,000,000, and its total length is 7,838 nautical miles. It is managed by the Pacific Cable Board, consisting of representatives from the various Governments. In 1910 the Pacific Cable Board leased a telegraph line between Bamfield, British Columbia, and Montreal, which is worked by their staff, and thus extended the Pacific

cable system from Australia across Canada to Montreal. Traffic is carried across the Atlantic by the cables of the Anglo-American Company and the Commercial Cable Company.

With a view to reducing the cable charges between Australia and the United Kingdom, a proposal to nationalise the Atlantic Cable, was made at the Imperial Conference in London in 1911. This proposal failed to receive approval, but arrangements have been made for the transmission of deferred telegrams at half rates and for week-end cable letters, as described below.

In 1911, authority was given to the Pacific Cable Board to lay a second direct cable between Australia and New Zealand. The landing places adopted for this line are Bondi Bay, near Sydney, and Muriwai Creek, on the West Coast of the North Island, New Zealand, the distance being about 1,200 miles. From the landing points connections were made with Sydney and Auckland respectively, and a new length of submarine line was laid to provide direct communication between Auckland and Doubtless Bay. This cable which was brought into operation in November, 1912, by duplicating the two southern sections of the Pacific Cable, provides accelerated service between Australia and New Zealand by avoiding the land line between Southport and Sydney.

In connection with the working of the Pacific Cable for the year ended 31st March, 1913, the amount to be made good by the Commonwealth was £10,757, as compared with £13,499 in the previous year, and £29,250 in the year following the inauguration of the cable.

Tasmanian Cable.

The cable of 180 miles, connecting Tasmania with the mainland of Australia was constructed and opened for traffic in 1869, under an agreement dated January, 1868, which gave the constructing company the exclusive right of submarine telegraphic communication between Victoria and Tasmania for twenty years. The cable was subsequently acquired by the Eastern Extension Company, and the period extended for another twenty years. At the expiration of this agreement in April, 1909, two new cables laid by the Commonwealth Government between Flinders, Victoria, and Low Head, Tasmania, were opened for traffic.

Cable Lines.

The following statement shows the particulars of the cable lines giving communication from Sydney :—

To Europe—
- via Darwin and Banjoewangie, Java (duplicate).
- via Perth, Cocos, and Durban.
- via Roebuck Bay and Banjoewangie.
- via Southport, Norfolk Island, Fiji, Fanning Island, and Canada.

To New Zealand—
- via La Perouse and Nelson (duplicate).
- via Southport, Norfolk Island, and Auckland.
- via Bondi and Muriwai Creek.

To New Caledonia—
- via Bundaberg and Gomen.

To Tasmania—
- via Flinders and Low Head (duplicate).

Cable Messages.

The following table gives a comparison of the cable business transacted in New South Wales during the last ten years, excluding messages to and from Tasmania. Messages in transit are excluded also, but the receipts from such business are included in the amount of revenue shown. It will be seen that the cable messages despatched and received have increased steadily since 1903, the former by 85 per cent., and the latter by 98 per cent.

Year.	Cable Messages.		Amount Collected.	
	Sent from New South Wales.	Received in New South Wales.	Total.	Portion due to Commonwealth Government.
			£	£
1903	78,795	74,019	144,363	7,853
1904	76,713	68,223	142,316	7,484
1905	82,519	81,548	160,298	8,167
1906	96,478	93,256	181,587	9,097
1907	106,830	103,647	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

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.; Fiji, 8d.; Fanning Island, 2s.; United Kingdom, 3s.; to Cape of Good Hope, Orange River, and Transvaal States, via Cocos, 2s. 3d.; to Vancouver, via Pacific, 2s. 4d. The rate per word for press telegrams to the United Kingdom is 7½d., and to Vancouver 3¼d. per word.

Letter Telegrams.

Letter telegrams were introduced in February, 1914. By this system 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 are—up to 40 words including address and signature, 1s., each additional word ½d. 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., except Central Africa and Northern Rhodesia. Besides British territories the Commonwealth exchanges deferred telegrams with 54 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 United Kingdom, *via* Pacific or *via* Eastern. The cable letters reaching a cable station before midnight on Saturday are forwarded for delivery on the following Tuesday. The messages must be written in plain language; the rate is 9d. per word, the minimum charge per message being 18s. Week-end cable letters are conveyed to and from the cable office by post, free of charge, or by telegraph on payment of inland telegraph rate. During the first eight months that the system was in operation the number of words sent and received was 287,347, and the Commonwealth revenue derived therefrom was £1,771.

Subsidised Press Cable Service.

As a result of an inquiry in 1909 into the press cable service, the Federal Government arranged to pay a subsidy of £6,000, extending over a period of three years from 1st October, 1910, for the transmission of press cables by the Independent Press Cable Association of Australasia, to which any newspaper in the Commonwealth may subscribe at approved rates.

Wireless Telegraphy.

The Postmaster-General holds the exclusive right to establish wireless stations in Australia, and to transmit messages, but may issue licenses to private stations for experimental purposes under prescribed conditions.

A scheme for connecting Australia and the Pacific Islands by wireless telegraphy was formulated by representatives of Australia and New Zealand, The High Commissioner for the Western Pacific, Fiji, the Admiralty, and the Pacific Cable Board, who met in conference in Melbourne in 1909. The scheme, which has been 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 scheme was not fully approved by the Imperial Government and no further concerted action was taken, but 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, with the exception of Roebourne and Wyndham, all are in operation, and are worked under the Balsilie 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
Queensland—Brisbane
Rockhampton
Cooktown
Thursday Island
Townsville
South Australia—Adelaide
Mt. Gambier.
Western Australia—Geraldton
Roebourne
Broome
Wyndham
Esperance
Tasmania—Hobart
Flinder's Island
Northern Territory—Darwin
Papua—Port Moresby.

It is intended to increase the number of stations to 32. A station was erected on Macquarie Island, south of Tasmania, to maintain communication between Australia and Dr. Mawson's Antarctic Expedition.

A large number of vessels trading with Australia have been fitted with wireless installation. In accordance with the conditions of the Commonwealth license, intercommunication between ships is compulsory, and the vessels are required to carry emergency apparatus capable of operating for six hours independently of the power supplied by the ship.

The charges for wireless telegrams are 6d. a word for the radio-telegraphic handling by coast stations, plus the land line charges for telegrams within the Commonwealth, and for messages exchanged with ships; an additional amount not exceeding 4d. per word for the ship charges. Special reduced rates apply to press messages.

Wireless telegrams may be exchanged between the Commonwealth and Papua through the media of the Thursday Island and Port Moresby stations, the charges for ordinary telegrams being 2d. per word in addition to the Commonwealth land line charges.

Radio-telegrams may be sent for transmission to vessels approaching or departing from Suva, at the rate of 10d. per word in addition to ordinary charges to Suva, and to the wireless stations at Taviuni and Labasa, Fiji, at the rate of 3d. in addition to cable rate to Suva.

The 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 8 a.m. to 2 a.m. Pending the completion of the Pennant Hills station, a private station of the Australasian Wireless Company, at the Hotel Australia, Sydney, was made available for public business on 27th August, 1910. From the time of its establishment until it was closed, the number of messages received and despatched at this station was 1,789 and 676 respectively.

The business transacted at the Sydney station from the date of opening to 30th June, 1913, was as follows:—

	Messages Transmitted.	Messages Received.	Total.
Number	1,456	1,993	3,449
Words	35,497	20,533	56,030
Coast Station Charges ...	£353	£501	£854

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 1912 being 385. 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, erected at a cost of £46,686, was brought into use in 1907.

The following table shows the growth of the service during the last ten years :—

Year.	Exchanges.	Connections (Subscribers' Lines).			Public Telephone	Total miles of wire at end of year.
		Sydney and Suburbs.	Country.	Total.		
1903	57	10,193	1,898	12,091	85*	38,161
1904	61	11,046	2,092	13,138	98*	39,535
1905	64	11,909	2,315	14,224	114*	40,793
1906	76	12,670	2,783	15,453	137*	42,085
1907	96	14,634	4,355	18,989	167*	48,972
1908	113	15,392	6,022	21,414	313	59,694
1909	132	18,239	7,443	25,682	347	69,332
1910	268	20,203	9,914	30,117	446	83,018
1911	353	22,476	12,075	34,551	722	101,240
1912	385	24,787	14,113	38,900	818	108,870

* 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 14,113 in 1912. 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 also for the erection of telephone lines under guarantee ; and, whilst maintaining the general principle that the lines be self-supporting, the Department may erect lines in the country districts where it is estimated that the deficiency will not be greater than 25 per cent. of the revenue, and will not exceed £5. In other cases, the Department is prepared to bear 25 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; in the metropolitan area, at the end of 1912, 92·7 per cent. of the lines were metallic circuits.

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 1912 the number had been increased to 818.

A charge of 1d. is made for a conversation, not exceeding 3 minutes duration, with any subscriber within the network of the exchange to which the public telephone is connected. Many of these bureaux produce large revenues, the maximum earned by a single public telephone in 1912, being £99 16s. 7d.

Telephone Calls.

Interesting information regarding the average number of calls made in each division is supplied in the following statement; for the purpose of comparison the particulars of the other States are included:—

State.	Lines connected.			Average outward calls daily, per line.		
	Metropolitan.	Suburban.	Country.	Metropolitan.	Suburban.	Country.
New South Wales	7,554	17,608	14,566	7·3	3·3	2·4
Victoria	8,303	10,379	7,875	9·1	5·3	2·0
Queensland	3,652	1,060	6,594	8·1	4·6	3·8
South Australia	4,359	1,093	1,384	8·7	5·6	1·5
Western Australia	2,656	1,537	2,836	6·9	5·5	2·8
Tasmania	1,284	94	1,391	5·5	2·6	2·9

Automatic Telephones.

A special investigation in reference to automatic telephone switching mechanism was conducted in Europe and America during 1912, by the Chief Electrical Engineer of the Postal Department, and it was decided to introduce automatic equipment in the large networks.

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 work of installing the automatic system is proceeding at several suburban exchanges; it has been estimated, when the system has been extended to cover 40,000 lines, a saving of at least £1 per instrument per annum should be effected.

Telephone Charges.

Subscribers' Rates.

Prior to 31st January, 1907, the telephone subscribers were charged, under the flat-rate system, a fixed annual rental, irrespective of the number of calls made by them; but on that date a toll system was introduced throughout the Commonwealth, under which extra payment was required for all calls in excess of 1,000 in each half-year.

The financial results under this system were not satisfactory, and in 1909 it was decided that the rates should be revised. The revised scale of charges, as shown below, was brought into effect on 1st September, 1910:—

In telephone networks having a popu'ation of—	Radius of network with main Exchange as centre.	Minimum annual charge—		
		For an exclusive service.	For each subscriber or instrument on a two-party service.	For each subscriber or instrument on a three or more party service.
	Miles.	£ s. d.	£ s. d.	£ s. d.
From 1 to 10,000	5	3 0 0	2 10 0	2 0 0
,, 10,001 to 100,000 ...	10	3 10 0	2 15 0	2 5 0
,, 100,001 upwards ...	10	4 0 0	3 0 0	2 10 0

In addition, all effective calls originated by each subscriber are charged as follows:—

Not exceeding 2,000 half-yearly, 2 calls for 1d.

All calls over 2,000 half-yearly, 3 calls for 1d.

The necessary equipment is provided and maintained by the Department.

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

In England the trunk line charges are at the following rates for conversations of 3 minutes between 7 a.m. and 7 p.m., and 6 minutes between 7 p.m. and 7 a.m.:—

Not exceeding 25 miles	3d.
,, ,, 50 ,, ...	6d.
,, ,, 75 ,, ...	9d.
,, ,, 100 ,, ...	12d.
For each additional 40 miles or fraction thereof ...	6d.

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. It was decided, however, in accordance with the recommendations of the Royal Commission on Postal Services appointed in 1908, to reorganise the accounts system of the Department on the basis of a commercial concern, in order to ascertain the exact financial results of the various branches. The initial steps were taken in 1910, but the year ended 30th June, 1913, was the first for which the information became available, and for the whole Commonwealth a total deficit of £407,102 was disclosed.

Year ended 30th June, 1913—	£	£
Total earnings		4,243,292
Total working expenses		4,263,373
Deficit		20,081
Interest on capital	376,409	
Pensions and retiring allowances	10,612	
		387,021
Total deficit for Commonwealth ...		£407,102

Particulars regarding the various branches in the State of New South Wales were as follows:—

Branch.	Earnings	Working Expenses	Net Earnings.	Interest on Capital.	Net Profit.	Net Loss.
	£	£	£	£	£	£
Postal	1,007,289	949,589	57,700	51,614	6,086	.....
Telegraph	281,696	321,041	(—) 39,345	21,727	.....	61,072
Telephone	340,548	410,655	(—) 70,107	54,442	.....	124,549
Wireless Telegraph ...	854	2,462	(—) 1,608	335	.....	1,943
Pensions and Interest on General Assets	.....	3,581	(—) 3,581	5,273	.....	8,854
Total, all branches ...	1,630,387	1,687,328	(—) 56,941	133,391	.....	190,332

The result in New South Wales for the year 1912-13 was a loss of £190,332. In connection with the telephone branch there was a loss of £124,549, the major portion being incurred in the working of the Sydney network, where the cost of operating as compared with other metropolitan areas is very high.

The results of the various divisions of the telephone branch were as follows:—

Telephone Branch.	Profit.	Loss.
	£	£
Exchanges	.....	106,870
Trunk lines	.....	18,790
Non-exchange lines...	86	.....
Sydney-Melbourne trunk line	1,025	.....
Total Net Loss	.....	124,549

In the Sydney network there are 29 exchanges, and at each a day and night service is maintained. At 30th June, 1913, there were 42,915 subscribers, and the capital value, excluding sites and buildings, was £1,026,230. The total working expenses for the year—including operating and general expenses, £129,518, and repairs and renewals, £127,706—amounted to £329,150, and the revenue was £291,313. Thus irrespective of interest on capital there was a deficit of £38,737 in the Sydney network alone. A special investigation is being made into the high cost of operation, which 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.	Western Australia.	Tasmania.	Total Commonwealth.
Branch—	£	£	£	£	£	£	£
Postal	(†) 6,086	(†) 102,880	36,750	1,167	48,688	1,229	(†)23,132
Telegraph	61,072	24,475	36,785	(†) 6,465	36,978	11,263	164,108
Telephone	124,549	55,644	18,986	(†) 1,955	13,574	10,959	221,757
Wireless Telegraph	1,943	1,593	3,563	836	2,639	1,025	11,599
Pensions and Retiring Allowances and Interest on General Assets..	8,854	12,742	4,396	1,730	4,253	795	32,770
Net Loss	190,332	(†) 8,426	100,480	(†) 4,687	104,132	25,271	407,102

(†) Denotes profit.

The Postal is the only branch which shows a profit, and the result may be considered satisfactory in view of the large area of the continent, and the relatively small and sparsely distributed population, moreover the introduction of the penny postage and the reduction of other postal rates has caused a diminution in revenue, and at the same time an increase in the volume of business. The operations of the telegraph branch involved a loss of £164,108; the only State showing a surplus was South Australia, which receives a large proportion of the revenue from cable traffic. It must be pointed out that no revenue has been credited in respect of meteorological and shipping telegrams, to the value of £79,000, which were transmitted free of charge; and considering the extent of territory, the telegraph rates are amongst the cheapest in the world.

The large deficiency in the telephone branch indicates that the rates under existing conditions are insufficient to make the service self-supporting, but the use, in past years, of obsolete material and methods of construction, have added materially to the capital cost and interest charges.

In view of the recent introduction of wireless telegraphy, the results for the year cannot be regarded as normal.

QUEENSLAND

SOUTH AUSTRALIA

NEW SOUTH WALES

VICTORIA

TASMAN SEA

SOUTH PACIFIC OCEAN

AUSTRALIA

NOTE—
Area included in Murrumbidgee Irrigation Scheme shown thus

MAP
NEW SOUTH WALES RAILWAYS
showing
COACH AND OTHER ROUTES FROM THE VARIOUS STATIONS

Scale 60 Miles to an Inch

Explanation

1914

Compiled, Drawn and Printed at the Department of Lands, Sydney, N.S.W., 1914.

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.

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, 1913, is shown below:—

	Railways.	Tramways.	Railways and Tramways.
	£	£	£
Cost of Construction and Equipment at 30th June, 1913	57,653,778	6,699,305	64,353,083
Year ended 30th June, 1913—			
Earnings	6,748,985	1,754,566	8,503,551
Working Expenses	4,644,881	1,572,190	6,217,071
Balance after Working Expenses	2,104,104	182,376	2,286,480
Interest on Capital	1,917,200	214,832	2,132,032
Surplus	186,904	(*Loss*) *32,456*	154,448

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 in the Northern system of railways on 11th April, 1857.

During the twenty years which followed the opening of the first line, railway construction progressed at a very slow rate, for in 1875 the lines in operation had reached a length of only 435 miles, an average of 21¾ miles per year; and during four years of the period, 1859, 1865, 1866, and 1874, no fresh extensions were opened. From 1876 to 1889 greater activity was manifested, 1,748 miles being constructed during the period, a yearly average of 125 miles. This rate of increase was not sustained, only 14 miles being opened in the next three years. During the year ended June, 1893, 154 miles were opened; 150 miles in the succeeding year; and 30 miles in the year

ended June, 1895. In the following year no new lines were opened; but during the year ended June, 1897, 108 miles were added, and in the course of the next twelve months, 52 miles. During the twelve years ended June, 1910, a further length of 937 miles was brought into use. In the years 1911 to 1913 the new lines opened amounted to 287 miles, the total length of line on 30th June, 1913, being 3,930 miles.

The progress in construction of the State railways of New South Wales may be traced in the table given below, the figures covering the period ending on 30th June in each year. Included in the mileage are the Campbelltown-Camden, and Yass tramways, which are worked with the railways:—

Period.	Opened during the period.	Total opened at end of period.	Period.	Opened during the period.	Total opened at end of period.
	miles.	miles.		miles.	miles.
1855–9	55	55	1890–4	330	2,501
1860–4	88	143	1895–9	205	2,706
1865–9	175	318	1900–4	575	3,281
1870–4	85	403	1905–9	342	3,623
1875–9	331	734	1910	20	3,643
1880–4	884	1,618	1911	118	3,761
1885–9	553	2,171	1912	71	3,832
			1913	98	3,930

In addition to the mileage shown above there were at 30th June, 1913, 709 miles of sidings and crossovers, extensions of a total length of 535 miles were under construction, and 636 miles of line were authorised for construction.

Extension of Railway Facilities.

The progress of the State railways can be fairly gauged by comparing the population and area of territory to each mile of line open for traffic at different periods. Thus, in 1860 there were 4,979 persons to each mile of line, but by the end of the year 1880 the work of construction had proceeded at a rate so much faster than the increase in population that the average number of persons per mile had fallen to 881, the facilities afforded by the railways being more than five times as great as in the earlier year. In 1913 the average population per mile of line was 460. 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 79 square miles in 1913. 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	1895	501	122·6
1865	2,861	2,170·4	1900	482	110·4
1870	1,471	915·6	1905	443	94·6
1875	1,360	710·2	1910	443	85·2
1880	881	365·6	1911	442	82·5
1885	548	179·2	1912	454	80·8
1890	523	142·2	1913	460	78·7

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.

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	158¾	...	8½	2,811¼
1905	3,079¼	193	...	8½	3,280¾
1910	3,393	241¼	...	8¾	3,643
1911	3,476	276	...	8¾	3,760¾
1912	3,525¾	290¾	6¼	8¾	3,831½
1913	3,589½	316¾	5¾	18	3,930

RAILWAY SYSTEMS.

The railways of the State are divided into three branches, each constituting a separate system.

Southern Lines.

The southern system has several offshoots serving the most thickly-populated districts, and places Sydney, Melbourne, and Adelaide in direct communication.

Numerous branches traverse the fertile Riverina district. From Culcairn there are two branch lines, one connecting with Corowa on the Murray River, and the other with Germanton; from The Rock a line extends to Oaklands (Clear Hills); and from Wagga Wagga a branch to Tumbarumba is under construction. From Junee a branch runs to Narrandera, where it bifurcates, one branch extending westerly to the town of Hay and the other in a southerly direction to Finley. A line is under construction from Finley to connect with the Victorian railways at Tocumwal, a distance of a little over 11 miles. From Cootamundra a southerly branch carries the line to Tumut, and another, in a north-westerly direction, through Temora to Wyalong; an extension from Wyalong to Cudgellico has been authorised. The extension from Temora to Ariah Park has been carried to Barellan, and will be continued to Griffith (Mirrool) in the Murrumbidgee Irrigation Area. From Stockinbingal, between Cootamundra and Temora, a cross-country line is under construction to connect with the western system at Forbes.

From Murrumburrah a branch has been constructed to Blayney, on the western line, thus connecting the southern and western systems of the State, and from Koorawatha, on this connecting line, a branch has been laid down to join Grenfell with the railway system, and there is a branch line from Cowra to Canowindra. From Galong a branch to Burrowa is in course of construction.

Nearer the metropolis, a branch from Goulburn to Nimmitabel brings the rich pastoral district of Monaro into direct communication with the metropolis. An extension from Nimmitabel to Bombala, a distance of 40 miles, has been authorised. 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 is a branch line from Clyde to Carlingford.

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 is being extended to Connabarabran, enters the Bathurst Plains, and connects with the metropolis the rich agricultural lands of the Bathurst, Orange, and Wellington districts.

At Blayney, as before stated, the western line is joined with the southern system by a branch line to Murrumburrah; at Orange a branch runs through Parkes to Condobolin; an extension from Condobolin to Broken Hill, a distance of 373 miles, has been authorised. From Parkes a branch extends to Forbes on the Lachlan River. At Bogan Gate a branch line has been opened to Tullamore, and its extension to Tottenham has been authorised. Further west branch lines extend from Dubbo to Coonamble, from Narromine to Peak Hill, from Nevertire to Warren, and from Nyngan to the important mining district of Cobar. A connecting line between Peak Hill and Parkes is in course of construction. From Byrock a line branches off to Brewarrina.

The western system includes also a short line from Blacktown to Windsor and Richmond.

Northern Lines.

The northern system originally commenced at Newcastle, but a connecting line crosses the Hawkesbury River by means of the far-famed Hawkesbury Bridge, thus making Sydney the centre of the whole of the railway systems of the State, and affording direct communication between the four State capital cities of Adelaide, Melbourne, Sydney, and Brisbane, a distance of 1,791 miles.

The northern system has a branch from Tamworth to Barraba, and there is a north-westerly branch from Werris Creek, *viâ* Narrabri and Moree, to Inverell, placing the Namoi and Gwydir districts in direct communication with the ports of Newcastle and Sydney. A branch from Moree to Mungindi, on the border of the State of Queensland, is under construction. There is also a branch line from Narrabri to Walgett, with a further branch at Burren Junction to Collarenebri East.

From Muswellbrook a branch is being constructed to Merriwa, a distance of 51 miles. There is a short line connecting Newcastle with the tourist district of Lake Macquarie, and another line runs from East Maitland to Morpeth.

At West Maitland the North Coast railway branches from the main northern line; the portion from West Maitland to Taree has been opened for traffic, and the construction is now proceeding in sections to meet a line from Murwillumbah, on the Tweed River, to Grafton, on the Clarence River, having a length 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 saleyards at Flemington on the main suburban line to the Abattoirs at Homebush Bay; these lines are used for goods and live-stock only.

On account of the rapid growth of the traffic it has been found necessary to provide a means of access to the wharves, independent of the Central Station. This is being done by the construction of a line from Flemington to join the Sydenham-Bankstown branch of the South Coast line at Belmore, and a line from Wardell-road, also on this branch, to Darling Island, with a new shipping depôt at Glebe Island. On the completion of this work the Central station will be entirely free of goods traffic.

From Lidcombe (Rookwood), on the Main Suburban line, a branch towards Bankstown is under construction; the first section to Regent's Park has been opened for goods traffic.

Burrinjuck Railway Line.

In addition to the lines under the control of the Railway Commissioners a 2 feet gauge railway has been constructed at a cost of £76,200 from the main southern line at Goondah to the site of the Burrinjuck Storage Reservoir, a distance of 26 miles. This line is controlled by the Department of Public Works, and is used mainly for the conveyance of material to the site of the works.

Commonwealth Railways in New South Wales.

A short railway, 5½ miles in length, is under construction from Queanbeyan, on the Cooma-Nimmitabel branch, to connect Canberra, the Federal Capital, with the State railway system. The work of construction has been undertaken on behalf of the Commonwealth Government by the Public Works Department of New South Wales, at a charge of 5 per cent. in addition to capital outlay.

Under the "Seat of Government Acceptance Act" the Commonwealth Government has the right to construct a line from Canberra to Jervis Bay; a preliminary survey of the route has been made.

Decentralisation in Railway Transit.

As previously stated, Sydney is the centre of all the railway systems of New South Wales. In consequence of the enormous increase in traffic during recent years the railway facilities have been overtaxed, and the Government has determined that decentralisation in railway transit is necessary to meet the growing requirements of the State. A Royal Commission was appointed in June, 1910, to inquire and report as to the terminal points inland and on the sea cost which should be connected by rail, and generally to advise as to the best means of giving effect to the Government's policy.

The Commissioners dealt with a large number of proposals regarding railway communication with the coast, the establishment of seaports, and the construction of cross-country lines to link up the southern, western, north-western, and northern railway systems. Their report was furnished to Parliament in May, 1911.

The Commissioners emphasised the necessity of speedy measures to relieve existing congestion. With the progress of closer settlement, the agricultural areas of the State must be furnished with improved railway communication, and the consequent increase in traffic will intensify the congestion on the main trunk lines and at the port of Sydney, unless some comprehensive scheme of decentralisation is established.

Railway transit could be facilitated by the duplication of the existing main lines, but this would lead to greater congestion at the port of Sydney, which practically carries the whole trade of the State; that is, of 310,367 square miles of territory, with 700 miles of coast-line.

As regards exports, wool, wheat, and live-stock represent the greatest volume of traffic to be considered. The wool traffic centres in Sydney, where the sales are held, and while this system continues direct shipment from any other port cannot, in the opinion of the Commissioners, be expected to any extent.

The live-stock business is largely controlled by the centre of population, which is Sydney. The stock traffic can be decentralised only in so far as it can be influenced by the frozen meat trade. At present this trade is centralised in Sydney, but there is no doubt that the opening of new ports with provision for freezing and shipment would not only decentralise but would stimulate this industry.

It is considered that decentralisation as regards wheat for export could be accomplished easily if reasonable facilities were given; and in due course other products would be influenced in a similar manner. The import trade may not lend itself so readily to transference from an existing port of distribution, but it would eventually follow in proportion to the requirements of the area served by any port for export purposes.

The Decentralisation Commissioners were instructed also to give consideration to the question of linking the railway systems of New South Wales with those of Victoria for the purpose of providing direct access from the Riverina district to Melbourne, which is claimed to be the natural port of the district. The evidence obtained locally by the Commissioners showed that the wheat produced in the Riverina is generally sent to Sydney on account of the special grain rates allowed on the New South Wales railways. Practically all the wool and fat stock go to Melbourne, whence all stores and general merchandise required in the district are obtained.

It has been argued that these connections would result in serious loss in working the extensions and a probable reduction in the revenue earned by the existing main lines, but the Decentralisation Commissioners pointed out that in ordinary circumstances the grain rates, being in favour of Sydney, would attract the wheat traffic, and although, as the general goods rates show no such difference in favour of Sydney, the shorter distances between the commercial centres of the State of Victoria and the Riverina district would conserve the general goods traffic to that State, and the New South Wales railways would derive revenue from freight of this class at present carried by teams after leaving the Victorian railways at the border.

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 Stockinbingal to Forbes and from Finley to Tocumwal are under construction, also a section from Muswellbrook to Denman, and from Canberra to Queanbeyan; authority has been granted by Parliament for the line from Condobolin to Broken Hill.

State Border Railways.

At a conference of representatives of the Government of New South Wales and Victoria an agreement was drawn up with a view to extending the Victorian railways across the border to serve large areas in the Riverina district, which are situated beyond the scope of the existing New South Wales system, and which cannot be advantageously cultivated without railway facilities. The agreement provides for the construction of two railways on the Victorian gauge, 5 feet 3 inches, from Euston and Wentworth on the Murray River, extending for at least 40 miles into Riverina territory. The lines are to be built by New South Wales, the Victorian Government to pay interest on the cost of construction, and to work the lines as portion of the railway system of that State. The two bridges across the Murray River required for connection with the Victorian railways are to be built by Victoria, one-third of the cost to be paid by New South Wales. The agreement will be submitted to the Parliaments of the respective States for ratification.

Sydney and Suburban Passenger Service.

A portion of the passenger traffic between Sydney and suburbs is conducted by the suburban railways and the 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 offshoots at Homebush (8 miles from Sydney). The South Coast railway, which has a branch from Sydenham (3 miles) to Bankstown, 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 Jackeson there is a railway from Hornsby on the main northern line to connect with the ferry service at Milson's Point; with this exception the tramways carry all the passengers from the northern suburbs to connect at various points with the ferry services which ply to and from 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 immediate 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; an English expert was engaged by the Government to make an inquiry into these matters, and his report was submitted to Parliament in October, 1912. A bridge over the harbour was recommended as the best means (for both railway and roadway purposes) of connecting Sydney with North Sydney. Further particulars regarding the proposed harbour bridge will be given in the chapter, "Roads and Bridges," of this volume.

As regards city transit, underground electric railways were advised as follows:—

A double-line loop railway to continue the existing main lines into the city and to Circular Quay, with a branch running over the Harbour bridge.

A western suburbs line in the form of a circle, commencing at the Sydney Town Hall, passing under Darling Harbour to Balmain and Leichhardt, and returning past the University to the city.

An eastern suburbs line, commencing at Wynyard Square and terminating at Bondi Junction.

It was recommended also that the King-street tramway be placed underground.

The following estimate of costs of these works is exclusive of alterations or additions to Central Station, electrical equipment, thermit welding, wiring, bonding rails, signals, and lighting:—

	£
Main-line Railways	1,175,273
Western Suburbs Line—	
Essex-street to City-road Junction	486,350
Completion of circle from Essex-street to City-road Junction, *viâ* Balmain	1,648,160
Eastern Suburbs Line—	
Wynyard-square to Darlinghurst	400,129
Royal Arcade subway	5,500
Darlinghurst to Bondi Junction	589,429
King-street Tramway	112,420
Total	£4,417,261

Two underground lines for goods traffic only were proposed—one from Circular Quay to Woolloomooloo Bay, as a branch of the city railway, and the other from the existing goods lines at Darling Harbour to Woolloomooloo Bay. The cost of these lines on the basis of single line tunnels, exclusive of electrical equipment, thermit welding, wiring, bonding rails, signals, and lighting, was estimated as shown below:—

	£
Circular Quay to Woolloomooloo	69,933
Darling Harbour to Woolloomooloo	98,809

In October, 1913, a Bill to authorise the construction of a city railway was submitted to Parliament, but was rejected by the Legislative Council. The design included an underground loop railway around the city, joining the existing railway system near Redfern Station, and comprising three up and three down tracks of a total length of 17 miles 22 chains, with six underground stations. To connect the eastern and western suburban tram services with the city railway, double lines of tramway were designed to leave the existing tram lines and pass underground at points beyond the area of traffic congestion, the total length of the connection for the eastern suburbs being 1 mile 18½ chains, and for the western suburbs 1 mile 15½ chains.

The cost of the work was estimated at £4,800,000.

Gradients of Railways.

In many cases the railways of New South Wales pass through mountainous country, and have been constructed with a large proportion of steep gradients, some of the heaviest being situated on the trunk lines.

In the southern system, the line at Roslyn, near Crookwell, reaches an altitude of 3,225 feet above sea level; in the western, at Newnes Junction, on the Blue Mountains, a height of 3,503 feet is attained; and on the northern line the highest point, 4,473 feet, is reached at Ben Lomond.

Numerous deviations have been made during recent years in order to secure easier grades and curves, with the result that considerable economy in working and expedition in traffic have been effected. Two of the most important deviations have been made on the Blue Mountains section of the main western line—one, on the western side of the range, to avoid the Zig Zag, was completed in October, 1910; and the other, on the eastern side, in connection with the duplication of the line, was opened in May, 1913.

The following statement shows the number of miles on different gradients in June, 1913:—

Gradients.	Southern System.	Western System.	Northern System.	Total.
1 in	miles.	miles.	miles.	miles.
18 to 30	3½	1¾	...	5¼
31 ,, 40	58	65¼	33	156¼
41 ,, 50	70½	50½	76	197
51 ,, 60	52½	59	56¾	168¼
61 ,, 70	53¾	55	35¾	144½
71 ,, 80	89¾	79½	126	295¼
81 ,, 90	38½	38½	40½	117½
91 ,, 100	82¼	103¾	72¼	258¼
101 ,, 150	126¾	132	120¾	379½
151 ,, 200	81½	71½	75¾	228¾
201 ,, 250	45½	30¼	31½	107¼
251 ,, 300	60¼	56½	53¾	170½
301 ,, level	565½	556¾	538½	1,660¾
Total ..	1,328¼	1,300¼	1,260½	3,889

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 £11,448—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, which is greater in Australia than in most other countries. 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 £2,097 per mile; Burren Junction to Collarenebri East, £2,434 per mile; from Dubbo to Coonamble, £2,675 per mile; and from

Byrock to Brewarrina, £2,702 per mile. The cost of construction of the various branches of the railway systems to 30th June, 1913, is set forth in the following table:—

Lines opened for Traffic.	Length.		Total Cost	Average cost per Mile.
	m.	ch.	£	£
GOODS LINES.				
Darling Harbour Branch, Sydney	1	49½	908,366	561,152
Flemington to Homebush Bay	3	28¾	68,598	20,420
*Flemington to Belmore and Wardell-road to Glebe Island.	...		650,742	...
Lidcombe (Rookwood) to Regent's Park	1	75¾	24,066	12,361
MAIN SOUTHERN LINE.				
Sydney to Granville	15	38½	2,972,670	192,017
Granville to Goulburn	122	72¾	2,733,072	22,236
Goulburn to Wagga	178	10½	1,952,400	10,960
Wagga to River Murray	79	15½	939,123	11,859
Branch Lines.				
Clyde to Carlingford	4	39¼	33,422	7,443
Campbelltown to Camden	7	66½	46,280	5,914
Yass Tramway	2	78	29,230	9,825
Goulburn to Crookwell	35	78½	160,102	4,450
Joppa Junction to Nimmitabel	151	54¼	1,529,724	10,085
Murrumburrah to Blayney, on Western Line	110	50	1,109,739	10,032
Koorawatha to Grenfell	32	24	116,026	3,592
Cowra to Canowindra	23	51	132,805	5,618
Cootamundra to Tumut	65	22½	536,140	8,213
Cootamundra to Temora	38	72	208,400	5,357
Temora to Wyalong	41	26	126,339	3,057
Temora to Barellan	61	41¾	206,210	3,352
Junee to Hay	168	43¼	1,016,565	6,032
Narrandera to Finley	100	70½	496,724	4,924
The Rock to Oaklands	77	44¼	268,851	3,467
Culcairn to Germanton	16	61	60,315	3,598
Culcairn to Corowa	48	3	228,330	4,753
MAIN WESTERN LINE.				
Granville to Penrith	20	72¼	619,358	29,630
Penrith to Bathurst	111	10⅓	3,669,969	33,024
Bathurst to Dubbo	137	67¾	1,380,314	10,013
Dubbo to Bourke	225	51¾	1,368,620	6,065
Branch Lines.				
Blacktown to Richmond	16	19½	182,458	11,233
Wallerawang to Dunedoo	134	79¾	1,202,890	8,911
Blayney to Murrumburrah (see Southern Line)				
Orange to Forbes	96	51¼	668,854	6,921
Parkes to Condobolin	62	60¼	131,584	2,097
Bogan Gate to Tullamore	37	66¼	127,059	3,359
Dubbo to Coonamble	95	79½	256,801	2,675
Narromine to Peak Hill	36	62¼	120,089	3,265
Nevertire to Warren	12	29½	41,318	3,341
Nyngan to Cobar and The Peak	85	26¾	323,770	3,794
Byrock to Brewarrina	58	42	158,158	2,702

*In course of construction.

Lines opened for Traffic.	Length.		Total Cost.	Average Cost per Mile.
MAIN NORTHERN LINE.	m.	ch.	£	£
Homebush to Waratah	95	51	3,456,600	36,143
Newcastle to Wallangarra	393	59¾	5,478,859	13,915
Branch Lines.				
Hornsby to Milson's Point	13	36¾	748,483	55,611
Fassifern to Toronto	2	55	19,664	7,317
Bullock Island	4	70¼	614,941	126,061
Morpeth	3	37¼	61,482	17,741
Werris Creek to Narrabri West	96	58	624,362	6,455
Narrabri Junction to Inverell	158	78¼	509,824	3,207
Narrabri West to Walgett	106	9	325,313	3,066
Burren Junction to Collarenebri East	42	44¼	103,586	2,434
Tamworth West to Barraba	61	50¼	255,178	4,141
NORTH COAST LINE.				
West Maitland to Taree...	115	36¾	1,626,322	14,086
Murwillumbah to Grafton	149	9	1,371,701	9,199
Casino to Kyogle	17	71¼	90,148	5,039
SOUTH COAST (ILLAWARRA) LINE.				
Sydney to Nowra...	95	27½	3,256,944	34,160
Branch Line.				
Sydenham to Bankstown	8	33½	262,397	31,168
BROKEN HILL LINE.				
Broken Hill to Tarrawingee	40	7	32,575	813
Total, All Lines	*3,930	11	45,643,860	*11,448

* Exclusive of Flemington-Glebe Island goods line.

The amount expended on rolling-stock, &c., to 30th June, 1913, was £12,009,918:—Rolling-stock, £9,859,782; machinery, 579,061; workshops, £731,039; furniture, £10,036; stores advance account, £830,000. Thus the total capital expenditure amounted to £57,653,778, or, excluding £650,742 expended on the Flemington-Glebe Island goods line, an average of £14,504 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	1,312,682	48,925,348
1880-4	9,673,643	20,080,138	1911	2,046,546	50,971,894
1885-9	9,759,029	29,839,167	1912	2,543,009	53,514,903
			1913	4,138,875	57,653,778

Of the £57,653,778 expended to 30th June, 1913, an amount of £651,939 has been provided from the Consolidated Revenue of the State, leaving a balance of £57,211,839, which has been raised by the issue of debentures and other stock. The net revenue for the year ended 30th June, 1913, after paying working xpenses, was £2,104,104, which gave a return of 3·65 per cent. upon the total capital expenditure, and 3·76 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, 1913, is shown below:—

Working Expenses.	£	Earnings.	£
Maintenance of Way, Works, and Buildings	1,024,215	Passengers	2,571,446
Locomotive Power	1,716,058	Mails, Parcels, Horses, &c. ...	368,784
Carriage and Waggon Repairs and Renewals, &c.	446,159	Total Coaching... ...	2,940,230
Traffic Expenses	1,343,707	Goods—	
Compensation	14,663	Merchandise	2,123,661
General Charges	88,312	Live Stock	624,456
Gratuities, &c.	8,931	Wool	305,278
Fire Insurance Fund	2,836	Minerals	651,980
	4,644,881	Total Goods	3,705,375
Balance, Net Earnings	2,104,104	Rents	81,170
		Miscellaneous	22,210
Total	6,748,985	Total... ...	6,748,985

The expenditure on locomotive power amounted to 36·9 per cent. of the total; traffic expenses to 28·9 per cent.; and maintenance of ways, works, and buildings to 22·1 per cent. Of the earnings 38·1 per cent. was derived from the carriage of passengers, 5·5 per cent. from mails, parcels, &c., and 54·9 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, 1913. Since the year 1887 the railway accounts have been made up to 30th June in each year:—

Year.	Gross Earnings.	Working Expenses.	Proportion of working expenses to gross earnings.	Year.	Gross Earnings.	Working Expenses.	Proportion of working expenses to gross earnings.
	£	£	per cent.		£	£	per cent.
1855	9,249	5,959	64·4	1895	2,878,204	1,642,589	57·1
1860	62,269	50,427	81·0	1900	3,163,572	1,844,520	58·3
1865	166,032	108,926	65·6	1905	3,684,016	2,216,442	60·2
1870	307,142	206,003	67·1	1910	5,485,715	3,276,409	59·7
1875	614,648	296,174	48·2	1911	6,042,205	3,691,061	61·1
1880	1,161,017	647,719	55·8	1912	6,491,473	4,169,591	64·2
1885	2,174,368	1,458,153	67·1	1913	6,748,985	4,644,881	68·8
1890	2,633,086	1,665,835	63·3				

The working expenses during the year ended 30th June, 1913, represented 68·8 per cent. of the gross earnings. In 1907 the proportion was 53·0 per cent., the lowest since the control of the railways was vested in Commissioners, but the percentage has risen steadily during the last six years, the increase being due mainly to liberal advances in the salaries and wages of the staff.

The following comparison shows, under various headings, the working expenses per £1 of gross earnings in the years ended 30th June, 1907 and 1913:—

Head of Expenditure.	Per £1 of gross earnings.	
	1907.	1913.
	s. d.	s. d.
Salaries and Wages	7 5·47	9 9·19
Materials...	2 2·40	2 9·31
Coal, Coke and Water	0 10·46	1 1·73
Compensation, Gratuities and Insurance ...	0 1·06	0 0·94
Total Working Expenses	10 7·39	13 9·17
Interest on Loans	6 9·48	5 8·18
Surplus	2 7·13	0 6·65
Total Gross Earnings	20 0	20 0

Net Earnings and Interest on Capital.

The net revenue from railways for the year ended 30th June, 1913, was £2,104,104; while the capital expended on lines open for traffic to that date was £57,653,778. The amount thus available, to meet the interest charges on the capital expended, represents a return of 3·65 per cent. The following table shows the net earnings and the interest returned on the total capital expended on railways, including the cost of construction and equipment for the year 1855 and subsequent periods:—

Year.	Net Earnings.	Interest on Capital	Year.	Net Earnings.	Interest on Capital.
	£	per cent.		£	per cent.
1855	3,290	0·63	1905	1,491,869	3·46
1860	11,842	0·83	1906	1,926,407	4·42
1865	57,106	2·07	1907	2,209,665	4·96
1870	101,139	1·81	1908	2,229,295	4·88
1875	318,474	4·39	1909	2,075,626	4·36
1880	513,298	4·35	1910	2,209,306	4·52
1885	716,215	3·37	1911	2,351,144	4·61
1890	967,251	3·17	1912	2,321,882	4·34
1895	1,310,615	3·60	1913	2,104,104	3·65
1900	1,394,052	3·63			

During the period from 1870 to 1875, when the length of new lines yearly constructed was very small, the railway profits steadily increased. During 1877 and 1878, 180 miles of railway were constructed, and the profits immediately declined. From 1880 to 1884 the railways were extended, chiefly through fertile districts, viz., Riverina and New England, and the central districts of Wellington and Dubbo; and as these were years of remarkable prosperity, the railway profits suffered little diminution from the considerable extension, which included the construction of the expensive connecting link joining the New South Wales railways with those of the State of Victoria, at the River Murray. Since 1885 the extensions on the main lines have been mainly through pastoral country, such as the continuation of the Western line to Bourke, the Northern line to Wallangarra, and the further extensions of the lines on the Goulburn district to the rich pastoral lands of Monaro and, more recently, sections of the North Coast railway. Also branch lines have been constructed tapping important agricultural, dairy-farming, pastoral, and mining districts. Owing to the general prosperity ruling throughout the State the profits since 1905 have been highly satisfactory; a decrease occurred in 1912-13, due, as previously stated, to increased cost of working.

In the discussion of the financial results of the working of the lines, it is the practice of railway authorities to compare the net returns with the nominal rate of interest payable on the railway loans or on the public debt of the State. An accurate comparison, however, can be made only by taking the average rate of interest payable on the actual sum obtained by the State for its outstanding loans, inasmuch as many loans were floated below par.

The table below shows the rate of interest returned on the capital expenditure for each of the years since 1905, with the sum by which such return falls short of or exceeds the actual rate of interest payable on the cost of construction. The rate of return on capital represents the interest on the

gross cost of the lines. The nominal amount of outstanding debentures and funded stock is less than the actual expenditure on construction and equipment, owing to the fact that some loans have been redeemed; but as the redemption has been effected by means of fresh loans charged to general services, or by payments from the general revenue, and not out of railway earnings, no allowance on this account can reasonably be claimed:—

Year.	Interest returned on Capital.	Actual rate of Interest payable on Outstanding Loans.	Average 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

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 July, 1913, in anticipation of an increase in working expenses, and further increases were made in March, 1914.

Coaching and Goods Traffic.

For the first ten years after the opening of the first railway in New South Wales the larger part of the earnings was obtained from the passenger traffic, no doubt owing to the fact that the first lines were entirely suburban. It was not until the line crossed the mountains and opened up the interior that the proportions changed, and the goods traffic became the principal source of revenue. This change began in 1867.

The following table gives the proportion of earnings from the coaching and goods traffic at intervals since 1860. The percentages shown below include earnings from miscellaneous sources and rents, and therefore differ slightly from those stated on a previous page:—

Year.	Proportion of Total Earnings.		Year.	Proportion of Total Earnings.	
	Coaching, &c.	Goods and Live Stock.		Coaching, &c.	Goods and Live Stock.
	per cent.	per cent.		per cent.	per cent.
1860	73·0	27·0	1895	35·5	64·5
1865	56·0	44·0	1900	38·8	61·2
1870	38·4	61·6	1905	39·9	60·1
1875	33·5	66·5	1910	39·9	60·1
1880	33·6	66·4	1911	40·6	59 4
1885	38·2	61·8	1912	42·7	57·3
1890	40·2	59·8	1913	45·0	55·0

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 1883, 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 last three years the percentage of earnings from coaching traffic has increased steadily and for the year 1913 the high percentage of 45·0 is shown.

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

The increase in the number of journeys per head of population has been exceedingly rapid, the average being 44·7 per head in 1913, 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 33s. 1d. as compared with 19s. 10d. in 1905.

Particulars regarding the passenger traffic on suburban and country lines during the year ended 30th June, 1913, are shown below; suburban lines include distances within 34 miles of Sydney and Newcastle:—

Description.	First Class.	Second Class.	Total.
SUBURBAN LINES.			
Ordinary Passengers ... ... No.	4,664,149	22,978,548	27,642,697
Season Ticket Holders' Journeys ... ,,	7,672,680	15,575,250	23,247,930
Workmen's Journeys ... ... ,,	.....	19,842,348	19,842,348
Total Number of Passenger Journeys ...	12,336,829	58,396,146	70,732,975
Miles Travelled ... ... Miles.	88,364,183	413,455,750	501,819,933
Average Mileage per Passenger ... ,,	7·16	7·08	7·09
Amount Received from Passengers ... £	189,008	630,411	819,419
Average Receipts per Passenger per Mile d.	·51	·37	·39
COUNTRY LINES.			
Passengers ... ... No.	2,266,016	6,491,021	8,757,037
Miles Travelled ... ... Miles.	284,110,360	406,653,978	690,764,338
Average Mileage per Passenger ... ,,	125·38	62·65	78·88
Amount Received from Passengers ... £	777,708	974,319	1,752,027
Average Receipt per Passenger per Mile d.	·66	·57	·61

Passenger Fares.

For suburban lines, that is, within 34 miles of Sydney and Newcastle, where the volume of traffic is greatest, the rates of passenger fares are lower than for equal distances outside that radius.

The issue of return tickets to passengers was practically abolished in May, 1911, except in those cases where the volume of return traffic would cause inconvenience to travellers, such as on suburban lines and for holiday excursions. The single fares were reduced, so that two single tickets were available at about the same cost as a return ticket under former systems.

The following table affords information regarding the rates on suburban and country lines, as at September, 1913:—

Distance.	Single Fares.		Periodical Tickets.				
			Workmen's Weekly.	Monthly.		Half-yearly.	
	1st Class.	2nd Class.	2nd Class.	1st Class.	2nd Class.	1st Class.	2nd Class.
			Suburban Lines.				
miles.	s. d.	s. d.	s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
1	0 2	0 1	0 6	0 9 0	0 6 0	1 19 0	1 6 0
5	0 5	0 4	1 6	0 19 3	0 13 0	4 3 0	2 15 9
10	0 9	0 6	2 2	1 7 3	0 18 0	5 17 6	3 17 6
15	1 1	0 9	2 7	1 12 0	1 1 3	6 19 3	4 12 9
20	1 6	0 11	3 0	1 16 3	1 4 3	7 16 6	5 5 6
25	1 10	1 3	3 5	1 19 3	1 6 6	8 9 6	5 14 3
30	2 2	1 5	3 10	2 1 0	1 7 3	8 18 3	5 18 6
34	2 6	1 7	4 2	2 3 0	1 8 3	9 5 0	6 1 9
			*Country Lines.**				
50	4 6	2 11	.....	2 9 3	1 11 6	10 12 9	6 16 0
100	10 9	7 1	.....	3 9 3	2 1 6	14 19 0	8 19 0
200	23 3	14 9	.....	4 19 6	2 18 9	21 0 0	12 7 9
300	35 9	22 1	.....	6 0 6	3 13 9	24 9 0	14 18 9
400	48 3	28 8	.....	7 1 6	4 8 9	27 18 0	17 19 9
500	58 0	33 5	.....	8 2 6	5 3 9	31 7 0	20 0 9

* Including suburban rates for 34 miles.

The above rates represent the maximum charges, but liberal concessions, amounting in some instances to half the ordinary charges, are made in respect to periodical tickets to school pupils, youths and females travelling to their places of business, to female members of a ticket-holder's family, &c. In respect of single journeys, special rates are quoted for parties travelling in connection with shows, conferences, athletic sports, &c, and for assisted immigrants and others. Cheaper fares are available for journeys to tourist districts and holiday resorts, excursion tickets for return journeys being issued at rates as low as 1¾d. per mile first-class and $\frac{7}{8}$d. second-class.

The rates for single fares excursion tickets and workmen's weekly tickets have been increased as from 1st March, 1914.

Aboriginal natives may travel free of charge on Government railways and tramways.

Goods Traffic.

The following figures, extending as far back as the opening of the railway lines, show how greatly the goods traffic has expanded, especially in recent years:—

Year.	Goods and Live Stock Traffic.		Per head of Population.	
	Tonnage.	Gross Earnings.	Tonnage.	Gross Earnings.
		£		£ s. d.
1855	140	156	...	0 0 1
1860	55,394	16,841	0·2	0 1 0
1865	416,707	73,048	1·2	0 3 8
1870	766,523	189,288	1·6	0 7 9
1875	1,171,354	408,707	2·2	0 14 0
1880	1,712,971	770,868	2·4	1 1 2
1885	3,273,004	1,343,464	3·5	1 9 0
1890	3,788,950	1,569,356	3·5	1 9 0
1895	4,075,093	1,855,187	3·3	1 9 11
1900	5,531,511	1,936,217	4·1	1 8 5
1905	6,724,215	2,213,105	4·7	1 10 9
1910	8,393,038	3,290,640	5·3	2 1 3
1911	10,355,565	3,585,424	6·1	2 3 9
1912	10,910,553	3,715,707	6·4	2 3 9
1913	11,666,250	3,705,375	6·6	2 1 8

The weight of goods and live-stock carried per head of population in New South Wales compares favourably with that of many countries where railways have long been established, as may be seen from the figures given in a later table.

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. The results achieved during the last two years must be regarded as very satisfactory in view of the recent general reduction in the freights.

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	1,512,616	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	2,298,078	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	2,491,387	113,103	547,036	7,114,502	663,311	11,666,250

Freight Charges.

The accompanying statement shows the receipts per ton for carrying goods one mile along the lines of the State. The information relates back to 1872, when the charge was 3·6d., and after an interval of forty years it had fallen to 0·9d. The decrease, however, is to some degree only apparent, inasmuch as it represents a more extensive development of the mineral trade than of the carriage of general merchandise; but when due allowance has been made, it will be found that the benefit to the general producer and consumer has been very substantial, especially in regard to agricultural produce and live-stock:—

1872 ...	3·6d.	1891 ...	1·9d.	1910 ...	1·0d.
1875 ...	3·1d.	1895 ...	1·6d.	1911 ...	0·9d.
1880 ...	2·3d.	1900 ...	1·5d.	1912 ...	0·9d.
1885 ...	1·9d.	1905 ...	1·2d.	1913 ...	0·9d.

The rates charged for various classes of freight, as at February, 1914, 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	10 0	18 10	33 5	43 10	50 1	56 4
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

The freight charges were increased as from 18th March, 1914.

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 six years 1908-13, show an increase of £11,692,757 or 51 per cent., as compared with the earnings during the previous six years. The number of passengers has increased by 73 per cent. and the tonnage of goods and live-stock by 42 per cent.

		Six years ended 30th June, 1907.	Six years ended 30th June, 1913.	Increase.	Percentage increase.
Earnings—					
Coaching Traffic	£	9,108,639	14,408,960	5,300,321	58
Goods and Live Stock ...	£	12,101,188	17,521,050	5,419,862	45
Coal and Coke	£	1,838,378	2,810,952	972,574	53
Total earnings ...	£	23,048,205	34,740,962	11,692,757	51
Passengers	No.	211,133,806	364,299,225	153,165,419	73
Goods and Live Stock	Tons	15,967,301	24,034,638	8,067,337	51
Coal and Coke	Tons	26,900,790	36,765,086	9,864,296	37
Total Tonnage		42,868,091	60,799,724	17,931,633	42

Rolling-Stock.

Information regarding the rolling-stock of New South Wales Railways on 30th June, 1913, appears in the following table. The figures for the previous year have been inserted for the purpose of comparison:—

Classification.	1912.	1913.	Classification.	1912.	1913.
Locomotives—			Merchandise—		
Engines	942	998	Goods, open	12,973	13,869
Tenders	762	805	Goods, covered ...	938	953
Coaching—			Meat trucks	224	347
Special & sleeping cars	80	86	Live-stock trucks ...	2,083	2,322
First-class	326	356	Brake-vans	485	488
Composite	154	180			
Second-class	684	716	Total	16,703	17,979
Brake-vans	137	156			
Horse-boxes, carriages, trucks, &c.	279	281	Departmental Stock— Loco. coal, ballast, &c., waggons ...	1,085	1,174
Total	1,660	1,775			

The following statement shows the increase in the number and capacity of each class of rolling stock since 1907:—

Description.	30th June, 1907.	30th June, 1913.	Increase.	Percentage Increase.
Engines—				
Number	656	998	342	52
Aggregate tractive power ... lb.	13,039,820	21,558,351	8,518,531	65
Tractive power per engine ... lb.	19,878	21,602	1,724	9
Coaching Stock—				
Number	1,187	1,775	588	50
Aggregate carrying capacity Persons	42,010	74,328	32,318	77
Carrying capacity per vehicle (excluding non-passenger stock) Persons	52	53	1	
Goods Stock—				
Number	12,719	19,153	6,434	51
Aggregate carrying capacity... Tons	111,452	213,250	101,798	91
Carrying capacity per vehicle (excluding brake, gas, and accident vans) ... ... Tons	9	11½	2½	28

It will be seen that the additional volume of traffic has necessitated large additions to rolling-stock; the aggregate tractive power of the engines has been increased by 65 per cent., and the carrying capacity of the coaching and goods stock by 77 per cent. and 91 per cent. respectively, during the last six years. The capital expenditure incurred during this period in providing additional stock amounted to £3,951,981 distributed as follows:—Locomotives, £1,622,414; coaching vehicles, £1,031,735; and goods vehicles, £1,297,832.

Maintenance of Permanent Way.

During the year 1912 there was a considerable shortage in the number of sleepers required for railway purposes, and during the months April-June, 1913, out-door work on the permanent way was hampered by the continuous rainfall, nevertheless a large amount of relaying and re-sleepering work was done. During the year ended 30th June, 1913, the total length of line wholly or partially renewed by relaying, re-sleepering, or re-railing was 227 miles 28 chains, and 313 miles 51 chains were re-ballasted, thus making a total of 540 miles 79 chains of line either partially or completely renewed. In this work 453,755 sleepers and 110,905 cubic yards of ballast were used.

The total weight of rails used in relaying and repairing work during the year amounted to 13,038 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 with the many deviations, duplications, and new railway lines. During 1913, track block and automatic signalling—the first in Australia—was installed between Redfern Tunnel Signal-box and Sydenham Junction.

Particulars regarding the various systems employed for the safe working of the lines are shown below.

Single Line.	Mls.	Chs.
By electric tablet	417	13
electric train staff	728	44
train staff and ticket with line clear reports ...	1,669	38
train staff and ticket without line clear reports...	763	28
train staff and one engine only	6	14
	3,584	57

Double Line.	Mls.	Chs.
By absolute block system	348	23
permissive block system	3	40
telephone	0	33
automatic signalling with track block working ...	7	26
	359	42

The Westinghouse brake is used on all the rolling stock of the Government railways.

It is interesting to note that an Australian invention for the prevention of collisions has been successfully demonstrated in England and other countries. A train proceeding through each block section of a line fitted with this apparatus receives signals by means of electrically controlled devices, and also gives corresponding signals to following trains, or in the case of a single line, to opposing trains. The principal feature of this system is that in the case of drivers disregarding danger signals the trains are automatically brought to a standstill.

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 terminating on 30th June, 1913, are shown below.

The return is compiled in a similar way to that adopted by the Board of Trade in England, and all accidents are reported which occur in the working of the railways, or on railway premises, to persons other than servants of the Department, however slight the injuries may be. In the case of employees of the Department all accidents must be reported which cause the employee to be absent for at least one whole day from his ordinary work. follows:—

Classification.	Accidents connected with the Movement of Railway Vehicles.					Accidents not connected with the Movement of Railway Vehicles.				
	1909	1910.	1911.	1912.	1913.	1909.	1910.	1911.	1912.	1913.
Passengers—										
Causes beyond their own control—										
Killed	...	...	...	...	...	...	...	...	...	...
Injured	2	8	9	21	23	1	...	3	...	2
Their own misconduct, or want of caution—										
Killed	6	5	2	7	11	...	...	...	...	...
Injured	48	88	83	113	168	38	21	32	40	49
Servants of the Department—										
Causes beyond their own control—										
Killed	'1	1	...	...	1	...	...	...	9	1
Injured	13	11	36	58	53	27	39	69	189	130
Their own misconduct, or want of caution—										
Killed	13	17	19	26	30	1	2	5	4	6
Injured	140	190	188	255	252	1,366	1,559	1,653	2,272	2,920
Trespassers and others—										
Killed	23	27	25	35	42	...	6	1	8	4
Injured	46	41	52	66	86	62	53	84	119	113
Total { Killed ...	43	50	46	68	84	1	8	6	21	11
Total { Injured ...	249	338	368	513	582	1,494	1,672	1,841	2,620	3,214

The rates per million passengers carried during the quinquennium were as follows:—

	Killed.	Injured.
Accidents connected with movement of railway vehicles—		
Causes beyond their own control	...	0·20
Their own misconduct or want of caution...	0·10	0·58
Accidents not connected with movement of railway vehicles—		
Causes beyond their own control	...	0·02
Their own misconduct or want of caution...	...	1·56
Total	0·10	2·36

Compensation Paid.

The amount of compensation paid during the twelve months ended 30th June, 1913, in connection with accidents on railways, was £14,663, of which £3,114 was paid in respect of passengers, and £11,549 with regard to 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; equipment for surgeons first-aid use is provided also at Sydney and Newcastle and at several country stations. Ambulance and first-aid classes have been established at 175 places throughout the State for the instruction of members of the Railway and Tramway Staff. The total strength of the Railway and Tramway Ambulance Corps at 30th June, 1913, was 7,014 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.
New South Wales ...	*0·10*	*2·36*	Norway	0·08	0·16
Victoria	0·09	3·37	Netherlands	0·07	0·48
South Australia	0·11	3·68	Switzerland	0·12	0·93
Germany	0·08	0·44	Russia in Europe ...	1·47	5·87
Austria	0·08	1·92	,, Asia	4·19	22·20
Hungary	0·26	1·24	United Kingdom ...	0·08	2·15
Belgium	0·09	3·00	United States	0·51	13·39
Sweden	0·18	0·25			

The above comparison is by no means convincing, 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 over 500 miles during two years of the quinquennium, and during the remaining years it was about 150 miles. In the United States the average length of journey was 33 miles; in Germany, Belgium, Sweden, Norway, Netherlands, and Switzerland 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

Riverina reaches the Melbourne market by this route. During the year 1888 a line of 3 ft. 6 in. gauge and 35 miles 54 chains in length, was laid down from Silverton and Broken Hill to the South Australian border. A short line connects the Government railway at Liverpool with the Warwick Farm Racecourse. The Seaham Coal Company's line connects the West Wallsend and Seaham Collieries with Cockle Creek; and the line of the Commonwealth Oil Corporation extends from Newnes Junction, on the Western line, to the Wolgan Valley. The following table shows the operations of all private railway lines open to the public for general traffic during the year 1912:—

Name of Private Railway.	Line. Length.	Line. Gauge.	Total Capital Expended.	Reserve Fund.	Debentures Outstanding.	Passengers Carried.	Goods Carried.	Live Stock Carried.	Train Miles Run.
	m. ch.	ft. in.	£	£	£	No.	tons.	No.	No.
Deniliquin and Moama.	45 0	5 3	162,672	14,010	20,000	15,716	17,548	339,924	36,201
Silverton	35 54	3 6	457,592	134,756	Nil.	59,348	*1,069,569	88,074	158,368
Warwick Farm ...	0 66	4 8½	5,700	...	...	32,399	Nil.	619	51
†Seaham Colliery..	6 0	4 8½	16,000	...	...	10,554	5,938	150	5,895
East Greta ...	8 0	4 8½	161,762	...	...	844,045	50,195		367,182
Hexham-Minmi ...	6 0	4 8½	‡	...	...	12,460	1,158		4,900
Commonwealth Oil Corporation.	33 0	4 8½	194,519	...	550,000	1,378	7,343		21,600
†New Red Head...	9 0	4 8½	90,000	...	...	‡	‡		‡

* Includes 799,195 tons local shunting. † Year 1911. ‡ Not available.

The Deniliquin and Moama Company possesses 4 locomotives, 6 passenger carriages, and 63 goods carriages and vans. The Silverton Company has 18 locomotives, 680 goods vehicles, and 1 passenger carriage; and passenger carriages are hired also from the South Australian Government railways as required. On the Warwick Farm line Government rolling-stock is used. The Seaham Colliery has 2 locomotives, but otherwise Government rolling-stock is used, 4 passenger carriages and 892 goods vehicles being hired during 1912. On the East Greta railway there are 15 locomotives, 32 passenger carriages, and 33 goods carriages. The Hexham-Minmi Company has 1 locomotive and 5 passenger carriages; and the Commonwealth Oil Corporation has 5 locomotives, 2 passenger carriages, 1 motor car, and 59 goods carriages and vans.

In addition to the private railway lines shown in the above table, there are several branches, connected principally with coal and other mines; a summary of them is given below:—

District.		Length. 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.			Tonnage Per Capita.
		Population.	Area.	Cost.	
	miles.	No.	sq. miles.	£	tons.
New South Wales ...	*4,072*	*445*	*76·2*	*14,671*	*7·2*
Victoria	3,666	379	24·0	12,852	3·7
Queensland	4,668	136	143·6	6,328	5·5
South Australia ...	2,201*	197	172·7	8,700	7·0
Western Australia ...	3,835	82	254·5	4,421	16·8
Tasmania	680	286	38·6	8,181	3·2
New Zealand	2,860	368	36·3	11,053	5·9
United Kingdom ...	23,441	1,948	5·2	56,950	11·4
Germany	36,658	1,807	5·7	23,178	8·8
France	25,141	1,575	8·2	30,016	4·4
Switzerland	2,929	1,293	5·4	22,728	4·5
Austria	14,013	2,057	8·2	24,101	4·8
Canada	26,727	279	139·5	12,223	12·0
United States ...	240,439	390	12·4	15,958	19·7
Argentine	17,381	413	64·3	10,361	4·7
Japan	5,355	9,626	27·6	11,000	0·5

* Including Port Augusta to Oodnadatta line.

Unification of the Railway Gauges of Australia.

It was originally intended that there should be only one gauge for all the railways of Australia, but, unfortunately for interstate communication, this intention was not carried into effect, and railway construction has proceeded without uniformity of gauge. In 1850, when the first railway was commenced, the Sydney Railroad and Tramway Company decided to adopt the 5 ft. 3 in. gauge, and an Act passed in 1852 provided that all the lines in New South Wales should be laid down to this standard. Three years later the Company altered its decision, the Act was repealed and another passed substituting the 4 ft. 8½ in. gauge for the 5 ft. 3 in.

This change was made without consulting the other Australian colonies, and in Victoria the railway companies had already placed large orders for rolling-stock for the wider gauge. The result is that the railways of New South Wales have been constructed to the 4 ft. 8½ in. gauge, and the Victorian to 5 ft. 3 in. In South Australia the 5 ft. 3 in. gauge was adopted at first, but on account of the lower cost of construction the more recent lines in that State, as well as all the lines in the Northern Territory, Queensland, and Western Australia, have been built to a gauge of 3 ft. 6 in.

In consequence of this diversity of gauge interstate railway communication is seriously hampered; in a journey from Queensland to South Australia, breaks of gauge occur at Wallangarra, where the systems of Queensland and New South Wales meet, and at Albury, on the border of New South Wales and Victoria, while there is another change of gauge between Adelaide and Port Augusta or Oodnadatta, whence it is proposed to extend the lines across the continent of Australia.

The desirability of dealing with this matter has been urged repeatedly by railway authorities and engineers, as the longer the work of conversion is delayed the greater the ultimate cost will be; moreover, the requirements of the defence scheme 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.

In a report submitted to the Federal Parliament in September, 1911, by the Consulting Engineer to the Commonwealth, it is stated that there is a consensus of opinion amongst railway engineers and managers that variations of gauge should be avoided, and that in countries such as Australia there should be one gauge, of suitable width for running heavy and long freight trains, and comfortable and swift passenger trains.

Some of the advantages which would result from unification of gauge are stated as follows:—

In the case of a shortage of rolling-stock in any State, trucks belonging to another State could be brought into use. It rarely happens that all the States, or even all districts, have similar seasons at the same time, but, during droughts, serious losses have frequently occurred owing to an insufficiency of rolling-stock to remove sheep and cattle to more favourable localities. If the resources of other States could have been utilised these losses would have been averted.

There would be increased facilities for the interchange of products, and as regards passenger traffic the discomfort and loss of time which now takes place at border stations would cease. These delays in transhipment would entail very serious consequences should occasion necessitate the transfer of troops and materials of war across the borders.

The question of fixing the standard gauge has been the subject of many diverse professional opinions. The New South Wales gauge of 4 ft. 8½ in. has been recommended by the chief railway engineers of the Commonwealth and of the five States and by the Railway War Council, and has been adopted for the Port Augusta-Kalgoorlie railway.

In December, 1912, and April, 1913, a conference of the chief engineers of the Commonwealth and State Railways met to investigate the question of the selection of a uniform gauge between the capital cities of Australia. The representatives eliminated from selection all gauges wider than 5ft. 3 in. and narrower than 4 ft. 8½ in., and finally resolved to recommend the adoption of the latter gauge as the standard for Australia. Their decision was influenced mainly by the consideration of cost. The following statement shows that the cost of converting all the lines on the mainland of Australia would be £37,164,000 for a uniform gauge of 4 ft. 8½ in. as compared with £51,659,000 for the 5 ft. 3 in. gauge:—

State.	Conversion to 4ft. 8½in. gauge.		Conversion to 5ft. 3in. gauge.	
	Track Mileage	Estimated Cost.	Track Mileage	Estimated Cost.
		£		£
New South Wales	100	120,000	6,099	19,319,000
Victoria	5,145	6,117,000	...	...
Queensland	5,350	12,578,000	5,350	14,025,000
South Australia	2,021	6,228,000	1,111	5,170,000
Western Australia	4,225	10,840,000	4,225	11,658,000
Commonwealth	645	1,281,000	645	1,487,000
Total	17,486	37,164,000	17,430	51,659,000

Regarding the conversion of the 5 ft. 3 in. and 4 ft. 8½ in. lines in New South Wales, Victoria, and South Australia only, the following estimates were submitted:—

	Estimated cost of conversion to—	
	5 ft. 3 in. gauge.	4 ft 8½ in. gauge.
	£	£
New South Wales	19,319,000	120,000
Victoria	.....	6,117,000
South Australia	.....	1,058,000
Total	19,319,000	7,295,000

As it is apparent that a scheme to convert to a uniform gauge the lines between the capitals only would not be practicable owing to the difficulties of working the branch services, the conference submitted an alternative scheme designed to meet immediate requirements. A standard gauge line to connect Brisbane with the New South Wales system at Kyogle or Murwillumbah, the conversion of the 5 ft. 3 in. lines in Victoria and South Australia, a new direct standard gauge line between Adelaide and Port Augusta, and a new line from Kalgoorlie to Fremantle, which the Western Australian Government has already agreed to construct. The cost of this scheme was estimated as follows:—

Western Australia—New line, Fremantle to Kalgoorlie	£2,777,000
South Australia—New direct line, Adelaide to Port Augusta	1,170,000
Conversion of 5 ft. 3in. gauge	1,058,000
Victoria—Conversion of 5 ft. 3 in. gauge	6,117,000
New South Wales—Moama to Deniliquin Line	120,000
Queensland and New South Wales connections, 100 miles, rough estimate without survey	900,000
Total...	£12,142,000

As regards the method to be adopted for the conversion without interruption of the traffic the consulting engineer recommends a trial of the third rail, producing what is called the mixed gauge. This system has been effectively used in Great Britain. In that country the generally-adopted gauge was 4 ft. 8½ in., but the width of the Great Western Railway was 7 ft. 0½ in. The directors of this company decided to bring their system into uniformity with the rest of the English and Scotch railways; a third rail was laid down over the Great Western Railway and other adjoining lines so that the rolling-stock of the narrow gauge could be used over the lines of the other system as well, until it was found possible to withdraw the last of the wider rolling-stock and to remove the outer rail.

The classification of the Government Railways in each State according to gauge as at 30th June, 1913, may be seen below:—

State.	Mileage with Gauge.					Total Miles.
	2 ft.	2 ft. 6 in.	3 ft. 6 in.	4 ft. 8½ in.	5 ft. 3 in.	
New South Wales	26	.....	40	3,890	.....	3,956*
Victoria	.....	122	.....	.....	3,525	3,647
Queensland	.....	.....	4,524	.....	.....	4,524
South Australia	.....	.....	1,590†	.....	723	2,313
Western Australia	.....	.....	2,854	.....	.....	2,854
Tasmania	24	.....	483	.....	.....	507
Total Commonwealth ...	50	122	9,491	3,890	4,248	17,801

* Includes Burrinjuck line, 26 miles. † Includes Commonwealth lines, Darwin to Pine Creek 145 miles, and Port Augusta to Oodnadatta 478 miles.

Transcontinental Railways.

It is the intention of the Federal Government to construct transcontinental railway lines to bring the States of the continent of Australia into direct communication. The construction of a line from Port Augusta in South Australia to Kalgoorlie in Western Australia is now in progress, the gauge of 4 ft. 8½ in. having been adopted. The length will be 1,100

miles, which will make the distance by rail from Sydney to Fremantle (Western Australia), 2,809 miles, divided up as follows:—Sydney to Melbourne, 582½ miles; Melbourne to Adelaide, 482½; Adelaide to Port Augusta, 259; Port Augusta to Kalgoorlie, 1,100; Kalgoorlie to Fremantle, 385; total, 2,809 miles. The cost of construction and equipment is estimated at £4,045,000, or if internal combustion engines are used, £3,839,000. This line is required to facilitate the transport of troops, &c., in time of war, and will considerably accelerate the transit of European mails. At the present time mail matter is forwarded to Adelaide from Sydney by rail, and thence sent by steamer to Fremantle, taking six days, whereas the through railway journey should occupy only four days.

Under the provisions of the Northern Territory Acceptance Act the South Australian Government transferred to the Commonwealth on 1st January, 1911, the line from Port Augusta to Oodnadatta, as well as the Northern Territory railway, from Palmerston to Pine Creek. The Commonwealth has agreed to construct a line across the continent to connect these systems. These lines are now controlled by the South Australian Railways Commissioner on behalf of the Federal Government.

The War Railway Council.

Acting on the advice tendered by Lord Kitchener in his Report on the Defence of Australia, the Commonwealth War Railway Council has been formed for the administration of the railways for the requirements of defence. A council consisting of the Minister for Defence, staff officers of the military and naval forces, the State Railway Commissioners, and the railway and military consulting engineers of the Commonwealth met in February, 1911. The resolutions passed included the following recommendations:—

Definite military constitution for members of the War Railway Council formed of eleven members:—The Quartermaster-General or other staff officer at headquarters, as president, the senior officer of the Engineer and Railway Staff Corps of the Commonwealth system, and of each State railway system, the Consulting Military Engineer, and representatives of the naval and military forces; a military officer detailed by the Military Board to act as secretary.

The creation of an Engineer and Railway Staff Corps composed of Commonwealth and State railway officials with honorary military rank; the establishment at the commencement to consist of eleven Railway Commissioners and general managers from the six States, and thirty-seven members of the maintenance, traffic, locomotive, and electrical branches of the State railway staffs.

The duties of the Council to be—(1) Generally, to furnish advice on such railway matters as are referred to it by the Minister for Defence, and in particular (2) to determine the method of supplying information to and obtaining it from the various railway departments; (3) to suggest regulations and instructions for carrying out movements of troops; (4) to suggest method of organising railway staff officers in time of war as intermediaries between the various railway authorities and the troops; (5) to consider the question of extra sidings, loading platforms, &c., and proposals towards unification of gauges; (6) to suggest the organisation and system of training of railway troops, when the development of Universal Training supplies sufficient *personnel,* whose ordinary employment is railway work; and (7) in time of war to advise on questions of mobilisation.

The procedure of the Council and the control of the railways in time of war were also discussed, and the Council affirmed the desirableness, as regards the main lines of communication, of a uniform gauge for the railways of Australia, and recommended a uniform 4 ft. 8½ in. gauge, linking up the capitals of each State; and a gauge of 4 ft. 8½ in. on the transcontinental line from Kalgoorlie to Port Augusta; and that the cost of conversion be shared upon a basis to be determined between the Commonwealth and the States.

TRAMWAYS.

With the exception of 4 miles privately owned, the tramways of New South Wales are the property of the State Government. The standard gauge of 4 ft. 8½ in. has been adopted for all lines. The electric system was introduced into Sydney at the close of 1899, and the steam tramways in the metropolitan district have been converted. Of the 207¾ miles of line open at 30th June, 1913, there were 141½ miles under the electric system and 66¼ miles worked by steam:—

Line.	Length of Line.	Length of Single Track.
	mls. ch.	mls. ch.
Electric—		
City and Suburban	104 50	189 37
North Sydney	18 26	32 13
Ashfield to Mortlake and Cabarita	8 38	9 16
Manly to Spit and Narrabeen	10 2	11 69
	141 36	242 55
Steam—		
Arncliffe to Bexley	2 50	2 50
Kogarah to Sans Souci	5 45	5 45
Parramatta to Castle Hill	6 55	6 55
Sutherland to Cronulla	7 32	7 32
Newcastle City and Suburban	29 41	37 70
East to West Maitland	4 47	4 47
Broken Hill	10 4	11 35
	66 34	76 14
Total	207 70	318 69
Sidings, loops, and Crossovers	.....	44 16

During the year ended 30th June, 1913, the length of line opened for traffic was 12 miles 14 chains; 1 mile 4 chains were under construction at the end of the year, and 2 miles 66 chains were authorised for construction.

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 of an average length of about 1¾ miles.

Rolling-stock.

The tramway rolling-stock, on 30th June, 1913, consisted of 20 steam motors, 70 steam cars, 1,182 motor cars, and 38 trail cars for electric lines, and 95 service vehicles, making a total of 1,405. The tram mileage during the year was 26,954,767, being an increase of 2,592,548 miles on that of the preceding year.

Cost of Construction.

The capital cost of the State tramways as to 30th June, 1913, amounted to £6,699,305 or £32,228 per mile open; the cost of construction was £3,513,784 or £16,904 per mile, and the expenditure on rolling stock, workshops, machinery, &c., amounted to £3,185,521.

Working of Tramways.

The following statement shows the working of the various tramways in sections for the year ended 30th June, 1913. Only two sections returned a profit during the period; the total loss on all lines, after allowing for interest on capital, amounted to £32,456:—

Line.	Cost of Construction and Equipment.	Passenger carried.	Gross Revenue.	Working Expenses.	Net Earnings	Interest on Capital.	Profit + Loss −
Electric—	£	No.	£	£	£	£	£
City and Suburban	5,233,774	248,720,735	1,458,088	1,284,674	173,414	165,335	+8,079
North Sydney	566,439	20,905,010	117,747	106,217	11,530	19,376	−7,846
Ashfield to Mortlake & Cabarita	133,657	3,764,031	17,677	21,744	−4,067	4,572	−8,639
Manly to The Spit and Narrabeen.	228,193	2,587,858	23,174	21,337	1,837	7,163	−5,326
Steam—							
Arncliffe to Bexley	19,424	429,940	2,278	3,908	−1,630	678	−2,308
Kogarah to Sans Souci ..	19,190	719,549	6,021	9,660	−3,639	662	−4,301
Parramatta to Castle Hill ..	36,714	840,159	6,732	7,031	−299	1,281	−1,580
Sutherland to Cronulla ..	46,925	580,519	10,423	7,023	3,400	1,581	+1,819
Newcastle City and Suburban	295,246	11,836,184	84,411	79,539	4,872	10,081	−5,209
East to West Maitland ..	38,125	873,477	5,464	6,683	−1,219	1,329	−2,548
Broken Hill	81,618	3,197,990	22,551	24,374	−1,823	2,774	−4,597
Total, All Lines.. ..	6,699,305	294,455,452	1,754,566	1,572,190	182,376	214,832	−32,456

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, 1913, amounted to 2·72 per cent. on cost of construction and equipment, as compared with 3·49 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.
	Miles.	£	£	£	£
1879	1½	22,061	4,416	2,278	2,138
1880	4½	60,218	18,980	13,444	5,536
1885	35	748,506	227,144	207,898	19,246
1890	39½	933,614	268,962	224,073	44,889
1895	61	1,428,518	282,316	231,993	51,323
1900	71½	1,924,720	409,724	341,127	68,597
1905	125¾	3,037,922	813,569	685,682	127,887
1906	126	3,669,096	851,483	665,083	186,400
1907	128½	3,669,524	908,701	727,947	180,754
1908	132½	3,732,991	1,011,994	809,065	202,929
1909	151½	4,252,731	1,097,565	875,560	222,005
1910	165¾	4,668,797	1,185,568	983,587	201,981
1911	189¼	5,121,586	1,365,631	1,143,949	221,682
1912	195¼	5,664,324	1,581,393	1,331,413	249,980
1913	207¾	6,699,305	1,754,566	1,572,190	182,376

During the year ended 30th June, 1913, the percentage of working expenses to the total receipts was 89·6 as compared with 83·3 in 1900; the net earnings amounted to £182,376, which is equal to a net return per average mile open of £897, as compared with £1,005 per mile open in 1900 and £1,298 in 1912.

Comparison of 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 71¼ miles to 207¾ miles; the number of passengers from 66,244,334 to 294,455,452; and the tram mileage from 4,355,024 miles to 26,954,767 miles. With the extension of the tramway system the earnings per tram miles decreased from 2s. 3d. in 1900 to 11¾d. in 1904, but have since risen to 1s. 3½d.; the working cost per tram mile dropped from 1s. 10d. in 1900 to 9d. in 1906, but increased steadily in each succeeding year to 1s. 2d. in 1913:—

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	71¼	66,244,334	4,355,024	2 3	1 10
1901	79¼	93,703,685	6,835,926	1 7½	1 4½
1902	104	108,135,111	9,344,154	1 4¼	1 2
1903	124½	130,405,402	13,695,630	1 1¼	0 11½
1904	125¾	137,843,513	16,387,019	0 11¾	0 9¾
1905	125¾	139,669,459	16,413,762	1 0	0 10
1906	126	145,262,779	16,309,907	1 0½	0 9
1907	128¾	155,017,982	16,620,434	1 1	0 10½
1908	132¾	172,020,932	17,521,410	1 1¾	0 11
1909	151¼	186,318,738	18,853,621	1 2	0 11½
1910	165¾	201,151,021	20,579,386	1 1¾	0 11½
1911	189¾	230,275,938	22,541,429	1 2½	1 0½
1912	195½	266,789,546	24,362,219	1 3½	1 1
1913	207¾	294,455,452	26,954,767	1 3½	1 2

The extension of the City and North Sydney tramways since 1905 may be seen in the following statement, also the enormous increase in the passenger traffic. All lines which communicate directly with the city of Sydney are included in the category "City and Suburban"; the Ashfield, Kogarah, and Arncliffe 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	73¼	120,973,934	14,413,273	11¾	9,128,575	1,074,743
1906	73¾	125,756,680	14,246,845	11¾	9,641,474	1,118,633
1907	75¼	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	94¼	173,897,034	17,743,868	16¾	13,677,491	1,651,153
1911	97¼	197,871,083	19,107,419	16¾	15,896,835	1,929,450
1912	98	227,668,638	20,293,800	18¼	18,740,463	2,231,498
1913	104½	248,720,735	22,338,080	18¼	20,905,010	2,414,919

Carriage of Goods by Tramways.

An Act was passed 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.				
	1909.	1910.	1911.	1912.	1913.	1909.	1910.	1911.	1912.	1913.
Passengers—										
Causes beyond their own control—										
Killed...	...	...	...	...	...	...	...	...	...	...
Injured	64	133	149	163	229	...	...	2	2	4
Their own misconduct, or want of caution—										
Killed...	6	6	11	11	9	...	...	...	...	...
Injured	206	214	276	382	406	10	6	7	9	16
Servants of the Department—										
Causes beyond their own control—										
Killed...	...	...	1	...	...	...	...	...	...	...
Injured	20	25	48	55	66	21	7	23	36	48
Their own misconduct, or want of caution—										
Killed...	1	...	1	1	1	...	1	...	...	1
Injured	167	158	164	202	199	360	331	382	496	608
Others—										
Killed...	12	18	18	16	28	...	1	1	1	...
Injured	183	214	324	336	373	5	2	9	5	8
Total { Killed...	19	24	31	28	38	...	2	1	1	1
Total { Injured	640	744	961	1138	1273	396	346	423	548	684

As the tramways usually traverse crowded streets, the number of accidents must be considered very small.

The number of passengers carried on the tramways during the year ended 30th June, 1913, was 294,455,452, which would give the rate of fatal accidents to passengers as 0·03 per million. All the fatal accidents in the last five years were ascribed entirely to misconduct or want of caution on the part of passengers.

Compensation Paid.

The amount of compensation paid during the twelve months ended 30th June, 1913, in respect of accidents on the tramways was £25,819, as compared with £21,177 for the preceding year.

Private Tramways.

There are two tramways under private control within the State. One of these branches from the Illawarra line at Rockdale, in the Metropolitan area, and runs to Brighton-le-Sands, a distance of 1 mile 20 chains. The line was constructed in 1885, and the original motive power was steam, subsequently converted into electric. The other, a steam tramway, passes through the township of Parramatta, commencing at the Park and continuing as far as the Newington Wharf at Duck River, a distance of 2 miles 66 chains, where it connects with the Parramatta River steamers conveying passengers and goods to and from Sydney. The line was opened in 1883.

Both private tramways have been constructed to the standard gauge of 4 ft. 8½ in.

RAILWAYS AND TRAMWAYS—EMPLOYMENT AND WAGES.

The account of wages paid, together with the staff employed on the Government railways and tramways in June, 1913, is shown in the following statement, in comparison with the previous year:—

Particulars.	Year ended 30th June, 1912.			Year ended 30th June, 1913.		
	Railways.	Tramways.	Total.	Railways.	Tramways.	Total.
	No.	No.	No.	No.	No.	No.
Persons employed—						
Salaried staff ...	2,977	450	3,427	3,180	551	3,731
Wages ,, ...	25,984	8,194	34,178	28,566	9,025	37,591
Total ...	28,961	8,644	37,605	31,746	9,576	41,322
Wages paid—	£	£	£	£	£	£
Maintenance Branch	1,236,567	197,852	1,434,419	1,659,601	229,200	1,888,801
Locomotive ,,	1,288,541	.....	1,288,541	1,511,283	.....	1,511,283
Electric ,,	.....	302,126	302,126	.....	383,848	383,848
Traffic ,,	606,257	527,463	1,133,720	726,662	630,877	1,357,539
Total ...	3,131,365	1,027,441	4,158,806	3,897,546	1,243,925	5,141,471

The average number of men employed during the year ended 30th June, 1913, was 39,831, and exceeded that of the previous year by 5,336; the amount of wages paid increased by £982,665, and the amount per employee from £120 11s. to £129 2s.

A scheme to provide Superannuation allowances for the officers of the railway and tramway service was introduced in 1910; particulars will be found in the chapter, "Social Condition," 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 splendid 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. A monthly newspaper is published in connection with the Institute.

LAW COURTS.

THE legal processes within the State may be grouped as coming within the original jurisdiction of the Lower or Magistrates' Courts, or the Higher Courts presided over by appointed Judges. In regard to appellate jurisdiction, details are given separately.

ORIGINAL JURISDICTION—LOWER COURTS.

The Lower or Magistrates' Courts comprise the Courts of Petty Sessions, including the Small Debts Courts, the Licensing Courts, and the Children's Courts, presided over by Special Magistrates, or, in country districts, by Justices of the Peace constituting such Courts.

All persons arrested, with or without warrant, and charged with offences at the various Police Stations, must be brought before the Magistrates' Courts—at which Courts also appear all persons summoned—to answer charges, indictable or summary, or complaints of any nature, and are by such Courts either dealt with summarily, or committed to take their trial at a higher tribunal—the Court of Quarter Sessions or the Supreme Court in its criminal jurisdiction. Persons may also be committed to take their trial at such higher Courts by a Coroner or by a Judge.

Certain indictable offences (larceny, stealing from the person, embezzlement, &c.) are punishable summarily by Magistrates—by consent of the accused person—if the subject matter of the charge, or value of the property involved, does not amount to £20. Persons convicted by the Magistrates under such circumstances are liable to imprisonment for six months, or to a fine of £20. The period of imprisonment that may be awarded by Magistrates for purely summary offences is fixed in each case by the Statute creating the offence; in some cases sentences up to two years may be imposed. Most summary offences are punishable by fine, and the imprisonment awarded in default of payment ranges from not exceeding seven days, where the amount of fine and costs does not exceed 10s., to not exceeding twelve months, where the amount ordered to be paid exceeds £100.

Where by any conviction or order of Magistrates, a person is ordered to be imprisoned, and such person is then undergoing imprisonment for another offence, the Magistrate issuing the warrant of commitment may order that the imprisonment for the subsequent offence shall commence at the termination of the imprisonment the person is then undergoing. 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 (Amending) Act, 1905, 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, and Broken Hill districts, and in the country districts by Police Magistrates, also Justices of the Peace, the latter being honorary officers.

The total number of offences charged at all Courts of Petty Sessions has varied but slightly from year to year during the last five years, as the following table shows :—

	1908.	1909.	1910.	1911.	1912.
Children's Courts	2,090	2,445	2,020	2,405	2,869
Courts of Petty Sessions ...	71,074	69,873	71,940	72,709	87,082
All Magistrates' Courts ...	73,164	72,318	73,960	75,114	89,951

The following table summarises the operations of these Courts for 1912 :—

Procedure.	Charged before Magistrates.	Treated summarily.			Committed to higher Courts.
		Convicted.	Withdrawn or Discharged.	Total.	
By arrest...	54,715	49,675	3,661	53,336	1,379
By summons	35,236	27,936	7,189	35,125	111
Total	89,951	77,611	10,850	88,461	1,490

The cases (1,490) committed to higher Courts represent 1·7 per cent. of the total charges ; the remainder, representing 98·3 per cent., were summarily treated, convictions resulting from 86·3 per cent. of the charges. A division of accused persons, according to sexes, shows that the charges against women number 8,240, being only 9·2 per cent. of the total.

Sex	Charged before Magistrates.	Treated summarily.			Committed to higher Courts.
		Convicted.	Withdrawn or Discharged.	Total.	
Males	81,711	70,637	9,670	80,307	1,404
Females	8,240	6,974	1,180	8,154	86
Total	89,951	77,611	10,850	88,461	1,490

Reduced to a population basis the figures of the preceding table show the following result :—

Sex.	Per 1,000 of mean Population.				
	Charged before Magistrates.	Treated summarily.			Committed to higher Courts.
		Convicted.	Withdrawn or Discharged.	Total.	
Males	89·49	77·36	10·59	87·95	1·54
Females	9·98	8·45	1·43	9·88	·10
Total	51·74	44·64	6·24	50·88	·86

The disparity between the proportion of male and female offenders is evident, viz., 89·5 and 10·0 respectively per 1,000 of general population.

Stipendiary Magistrates are maintained in the metropolitan district, and in Parramatta, Newcastle, and Broken Hill, and a great proportion of the charges are treated summarily. The following table shows the proportion of summary convictions by Magistrates, of acquittals and discharges, and the committals to higher Courts at decennial intervals since 1870 :—

Year.	Summary Convictions.	Acquittals and Discharges.	Committals to higher Courts.
	per cent.	per cent.	per cent.
1870	69·0	24·7	6·3
1880	76·9	18·4	4·7
1890	80·4	16·0	3·6
1900	83·1	14·9	2·0
1910	86·1	12·3	1·6
1911	86·6	11·8	1·6
1912	86·3	12·0	1·7

Investigation into the nature of the offences for which summary convictions were effected during 1912 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 weight as compared with the general population, during each of the last seven years :—

Year.	Against the Person.	Against Property.	Against Good Order.	Other Offences.	Total.
	NUMBER OF SUMMARY CONVICTIONS.				
1906	1,500	3,469	37,294	12,546	54,809
1907	1,587	3,209	40,522	12,785	58,103
1908	1,494	3,282	40,268	12,586	57,630
1909	1,370	3,391	38,578	12,428	55,767
1910	1,598	3,619	42,959	15,495	63,671
1911	1,664	3,404	44,185	15,805	65,058
1912	1,918	3,981	49,727	21,985	77,611
	PER 1,000 OF MEAN POPULATION.				
1906	1·01	2·34	25·12	8·45	36·92
1907	1·05	2·11	26·70	8·42	38·28
1908	·97	2·12	26·05	8·14	37·28
1909	·87	2·15	24·46	7·88	35·36
1910	·99	2·24	26·58	9·59	39·40
1911	1·00	2·05	26·54	9·50	39·09
1912	1·10	2·29	28·60	12·65	44·64

"Other" offences, which comprise infringements of the provisions of various Acts and regulations, show a large increase in 1912 as compared with previous years. The reason is that convictions of trainees to the number of 2,580, for offences against the new Commonwealth Defence Act, appear for the first time. In addition there were offences against recently enacted by-laws of the Sydney Corporation, and a largely increased number of offences against local government regulations and ordinances, against traffic regulations, and against regulations under the Health Act. In most instances these offences are committed in ignorance of the law and, being slight, are met by small, and in many cases nominal, penalties.

The following table gives a comparison of summary convictions of males and females during the years 1906 and 1912, excluding cases treated in Children's Courts :—

Offences.	Summary Convictions.					
	1906.			1912.		
	Males.	Females.	Total.	Males.	Females.	Total.
Against the person	1,265	172	1,437	1,692	143	1,835
Against property	2,323	377	2,700	2,727	354	3,081
Against good order	29,615	7,206	36,821	44,199	5,227	49,426
Other offences	11,378	779	12,157	20,038	1,191	21,229
Total	44,581	8,534	53,115	68,656	6,915	75,571

A survey of these rates shows that the increase of offences, as evidenced by convictions, for the two years resulted primarily from a considerable increase in offences of men against good order, though in cases of both men and women other offences, excluding offences against person or property, are an appreciable factor. The reduction in more serious offences of women is noticeable, and closer study would probably reveal a prominent causative influence in effecting such decreases in present methods of prison treatment, *e.g.*, the application of the principle of indeterminate sentences.

For each of the last seven years the total number of summary convictions at both Courts of Petty Sessions and Children's Courts and the proportion per 1,000 of population were as follows :—

Year.	Summary Convictions.			Per 1,000 of mean Population.		
	Males.	Females.	Total.	Males.	Females.	Total.
1906	46,211	8,598	54,809	59·80	12·08	36·92
1907	49,894	8,209	58,103	63·20	11·27	38·28
1908	49,727	7,903	57,630	62·01	10·63	37·28
1909	49,422	6,345	55,767	60·40	8·48	35·36
1910	57,842	5,829	63,671	68·85	7·51	39·40
1911	59,357	5,701	65,058	68·36	7·16	39·09
1912	70,637	6,974	77,611	77·36	8·45	44·64

Summary convictions in 1912 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	1,245	372	187	96	18	1,918
Against property	1,487	770	766	707	251	3,981
Against good order	28,094	19,969	1,072	215	377	49,727
Other offences	18,104	855	599	122	2,305	21,985
Total	48,930	21,966	2,624	1,140	2,951	77,611

Sentences of imprisonment in default are usually commuted by subsequent payment of fine ; the extent to which this practice operates has been shown in connection with the prison services. Per 100 cases, fines were paid in 63 : imprisonment in lieu of fine, 28 : peremptory imprisonment, 3 ; bound over, &c., 2 ; and other punishments, 4.

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 also against children. They also possess the authority of a Court of Petty Sessions or Justice under the Children's Protection Act, 1902, and the Infant Protection Act, 1904.

The 1912 Defence Act (Amendment) empowers Children's Courts to deal with cases under the compulsory service section of the Principal Act and to fine offenders or commit them to the custody of any prescribed authority for the time they may have imprisoned them. The power to imprison offenders is not now held by the Court.

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 juvenile offenders and for the supervision of the children engaged in street trading.

Information as to the number of children granted licenses under the Neglected Children Act for street trading, also children permitted under the Children's Protection Act to take part in public exhibitions, at theatres, &c., will be found in the Part of this Year Book relating to Social Condition.

During the year 1912 the cases taken in Children's Courts numbered 2,869. In addition to these cases, there were 1,876 applications for orders, such as the disposal of neglected and uncontrollable children, and the maintenance of children, and 942 cases of non-compliance with orders were dealt with.

The following table shows a classification of cases taken at Children's Courts during 1912; 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.	M.	F.	M.	F.	Total.
Against the person ..	65	18	65	16	61	...	191	34	225
Against property ...	868	32	347	20	3	...	1,218	52	1,270
Against good order ...	299	2	42	6	...	...	341	8	349
Other offences... ...	749	7	264	4	...	1	1,013	12	1,025
Total ...	1,981	59	718	46	64	1	2,763	106	2,869

The figures shown above and other particulars of Children's Courts are included in the aggregate tables relating to Courts of Petty Sessions.

The figures following show the number of convictions recorded in each class during the period 1906–12:—

Offences.	Convictions.						
	1906.	1907.	1908.	1909.	1910.	1911.	1912.
Against the person ...	63	75	85	78	77	73	83
Against property ...	769	817	696	757	747	814	900
Against good order ...	473	579	426	296	302	465	301
Other offences	389	600	223	243	313	416	756
Total ...	1,694	2,071	1,430	1,374	1,439	1,768	2,040

The figures for 1912 include 377 convictions under the Commonwealth Defence Act.

Small Debts Courts.

The total number of small debts cases dealt with by the Small Debts Courts during 1912 was 39,833; in only 284 cases was the amount involved in excess of £30. Verdicts were entered for plaintiff in 14,683 cases for a total amount of £93,592; included in these figures were 144 cases exceeding £30, for a gross amount of £5,408. The verdicts for defendants, including non-suits, numbered 726, while 17,122 cases were withdrawn or struck out. The cases pending at the end of the year numbered 7,302. Garnishee cases taken numbered 1,060; in these cases the Court may order that all debts due by a garnishee to the defendant may be attached to meet a judgment debt, and further direct that the garnishee pay so much of the amount owing as will satisfy the judgment debt. In respect of wages or salary, garnishee orders may only be made for so much as exceeds £2 per week.

Oral examinations of judgment debtors as to debts due to them ordered on the application of a judgment creditor numbered 449 in 1912; interpleader cases, as to claims made to goods held under a writ of execution, by a person not party to the suit, numbered 53.

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 September, 1907, it was 3,023; and in 1912, 2,723, the decrease being 300, or 10 per cent. since the first local option vote was taken in 1907.

The Liquor Act, 1912, regulates the sale of intoxicating liquor, and facilitates the exercise of the principle of local option. In addition to stringent regulations regarding the licensing and management of hotels, the registration of clubs in which liquor is sold is compulsory. Registration is granted only to properly-conducted associations, established for a lawful purpose, on suitable premises.

Local Option.

The local option vote is taken triennially in terms of the Act of 1912 at each general election of the State Parliament. Publicans' or Colonial wine licenses in any electorate may not exceed the number existent at 1st January, 1906, except an increase be granted on account of growth of population. Clubs may not exceed the number formed before November, 1905, and registered before March, 1906.

Following are the propositions submitted to electors at each general election in this connection—

(*a*) That the number of existing licenses be continued;
(*b*) That the number of existing licenses be reduced;
(*c*) That no licenses be granted in the electorate;
or where resolution (*c*) has been previously carried—
(*d*) That licenses be restored.

To carry resolution (*c*) or (*d*) the votes in favour must represent three-fifths of the total votes polled, and 30 per cent. of the electors on the roll. Where resolution (*c*) is not carried the votes are added to those given for resolution (*b*).

In electorates where a majority of electors vote for reduction, licenses may be reduced by one-fourth. Where the "no license" resolution is carried, licenses in the electorate cease to operate within three years, except in cases of special extension.

Particulars of the local option vote taken at the last three elections are shown in the following statement:—

Year.	Electorates in which Electors carried.		Votes recorded for—		
	Continuance.	Reduction.	Continuance.	Reduction.	No-license.
1907	25	65	209,384	75,706	178,580
1910	76	14	324,973	38,856	212,889
1913*	74	15	376,733	44,368	241,402

* Owing to informalities at the election, the figures for one electorate have not yet been published.

The proposition that no licenses be granted has not been carried in any electorate. In 1907 the proportion of votes recorded for continuance was 45·16 per cent.; for reduction, 16·33 per cent.; and for no-license, 38·51 per cent. In 1910, the percentages were:—Continuance, 56·35; reduction, 6·74; and no-license, 36·91. For the eighty-nine electorates for which complete returns have been received in regard to the election of the year 1913 the figures are:—Continuance, 56·86; reduction, 6·70; no-license, 36·44.

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.

On 10th September, 1907, when the first local option vote was taken, there were 3,023 hotels in existence—of this number 293 were ordered to be closed at dates varying from 10th September, 1908, to 31st December, 1913. At the second local option vote on 14th October 1910, there were 2,869 hotels, and as a result of the vote 28 were ordered to be closed. At the date of the last election (6th December, 1913) there were in existence 2,719 hotel licenses, a number of which will be closed in accordance with the local option vote.

Licenses.

Hotel Licenses.

The following table gives particulars respecting the number of hotels in the State, and the average number of residents to each:—

Year.	Licenses Issued.	Average number of Residents to each Hotel.	Year.	Licenses Issued.	Average number of Residents to each Hotel.
	No.			No.	
1900	3,163	428	1907	3,022	502
1901	3,151	434	1908	2,980	519
1902	3,132	443	1909	2,923	540
1903	3,128	450	1910	2,865	564
1904	3,098	461	1911	2,775	600
1905	3,063	475	1912	2,723	638
1906	3,055	486			

The annual fee for a Publican's license is regulated by the annual assessed value of the hotel. During the year 1912, an amount of £77,026 was collected on account of such licenses.

Additional Bar Licenses.

With reference to hotel licenses it may be stated that the Liquor Act provides for the issue of "Additional Bar" licenses to holders of publicans' licenses, when liquor is to be sold in more than one room in the licensed premises. During the year 1912 there were 124 of these licenses granted, the total amount of license fees collected being £2,423.

Railway Refreshment Room Licenses.

In addition to those shown above, 26 liquor licenses were issued to Railway Refreshment Rooms, the annual fee for each license being £30, the total fees being £780. These licenses are issued under Executive authority and are not granted by Magistrates.

Booth or Stand Licenses.

The holder of a Publican's license may obtain a booth or stand license to cover a period not exceeding seven days. Such license entitles the publican to sell liquor at a race meeting or some other place of public amusement. During 1912 there were 1,940 licenses issued, the total fees received being £3,880.

Packet Licenses.

These licenses are held by Masters of steamers engaged in the coastal trade of the State. In 1912 there were 22 Packet licenses in force, for which an amount of £178 was collected as fees.

Wine Licenses.

The Colonial Wine, Cider, and Perry licenses current during 1912 numbered 509, for which an amount of £1,527 was received as license fees. There has of late years been a considerable decrease in the number of wine licenses, as may be seen from the statement, that in 1904 these licenses numbered 695, in 1907 there were 622, and last year 509.

The licenses are held chiefly by grocers, restaurant and oyster saloon keepers, wine shops and fruit shops. The quantity of wine, cider, or perry sold by licensees at one time must not exceed 2 gallons.

Spirit Merchants' Licenses.

Spirit Merchant licenses are held principally by merchants, wholesale wine merchants and grocers. The licenses do not come under the operation of the Local Option vote. Licensees are not allowed to sell a quantity less than 2 gallons of liquor of the same kind at the one time. In 1912 there were 186 Spirit Merchant licenses, for which the license fees amounted to £4,720.

Brewers' Licenses.

Brewers' licenses are not affected by the Local Option vote. In 1912 there were 32 of these licenses, the total fees being £660. Full particulars regarding Breweries may be found in the chapter of the Year Book dealing with Manufacturing Industry.

Club Licenses.

The registration of Clubs at which liquor is sold has had a beneficial effect on the community. In 1912 the Clubs registered numbered 76, for which license fees amounting to £869 were collected. The annual license fee is £5 for the first forty members and £1 for each additional forty. The Clubs might be classified as follows,—recreation and social, social and literary, golf, social and sporting, rowing and bowling, residential and yachting, bicycle, gun, lawn tennis, cricket, automobile.

Billiard and Bagatelle Licenses.

These licenses are generally held by hotel keepers. The license fee is £10 per annum, and during 1912 there were 902 in force, the total fees collected being £8,745.

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 317 of the former and 1,589 of the latter current in 1912, the license fees received being £6,642. General licenses are available for all parts of the State, while district licenses only cover the Police district for which they are issued—but district licenses are not issued for the Metropolitan District. Sales by auction are illegal after sunset or before sunrise.

Pawnbrokers' Licenses.

In 1912 there were 97 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 1912 was £2,284.

Licenses in Force—Comparative Table.

A table showing the principal licenses in force in 1901, and those current in the years 1908–1912, is given hereunder:—

License.	1901.	1908.	1909.	1910.	1911.	1912.
Publicans'	3,151	2,980	2,923	2,865	2,775	2,723
Additional Bar	...	127	118	115	118	124
Railway Refreshment	22	23	24	24	29	26
Booth or Stand	1,787	1,662	1,612	1,765	1,829	1,940
Packet	20	28	26	23	24	22
Colonial Wine, Cider, and Perry	675	595	583	564	532	509
Spirit Merchants'...	225	189	203	195	198	186
Brewers'	53	38	37	37	29	32
Club	...	76	76	76	76	76
Billiard and Bagatelle	678	758	787	856	859	902
Auctioneers'—General	199	254	282	305	298	317
District	970	1,339	1,328	1,405	1,443	1,589
Pawnbrokers'	61	92	92	92	105	97

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. It is obligatory upon a person keeping a dog to register the same annually. The fee is two shillings and sixpence, with a reduction to one shilling and three pence for half year. During 1912 there were 131,488 dogs registered in New South Wales, the fees collected amounting to £16,417. In the same year 3,105 stray dogs were destroyed by the Metropolitan police, the expenditure being £388.

Coroners' Courts.

Under the Coroners Act, 1912, every stipendiary or police magistrate has by virtue of his office 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.

Coronial inquiries must be held in all cases of violent or unnatural death, and at the discretion of the Coroner in cases of destruction or damage to property by fire, and on the evidence the Coroner is empowered to commit for trial persons judged guilty of manslaughter, murder, or arson.

The transactions of Coroners' Courts resulted in 33 persons being committed for trial to higher Courts, viz.:—28 men and 5 women, the offences charged being for murder, 14 males and 2 females; manslaughter, 11 males and 3 females; arson, 3 males.

Inquests upon Deaths.

Under the Coroner's Court Act, 1904, a Coroner is empowered to hold an inquisition, sitting alone; but upon request of a relative, of the secretary of any society of which the deceased was a member, or on the order of the Minister of Justice, a jury of six is called. The number of deaths during 1912, the causes of which were investigated by Coroners or Magistrates, was 1,189 of males and 330 of females, giving a total of 1,519 inquests and magisterial inquiries. Of the 1,519 deaths, the verdicts of the courts were that 1,178 were caused by violence, and of these cases 195 males and 72 females were found to have committed suicide.

Inquests upon Fires.

During 1912 inquiries were held into the origin of 112 fires; accident was ascribed as the cause in 5 cases, arson in 24; in 83 instances there was insufficient evidence.

District Courts, &c.

District Courts are held for the trial of civil causes where the property involved or the amount claimed does not exceed £400, and in cases where a title to land not exceeding £200 in value is in question. These Courts are presided over by Judges, who also perform the duties of Chairmen of Quarter Sessions for the trial of prisoners, except those charged with capital crimes. District Courts are held during ten months of the year in the metropolis, and twice a year in all important country towns. The Judge is not usually assisted by a jury; but in cases where the amount in dispute exceeds £20, either of the parties, by giving notice to the Registrar of the Court, may have a jury consisting of four or twelve men. On questions of law, and in respect of admission or rejection of evidence, appeal lies to the Supreme Court. At the end of 1912 there were 71 District Courts in the State.

Particulars of suits brought in District Courts during the last eight years are given in the following table:—

Year.	Total Causes commenced.	Causes tried.		Causes discontinued.	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).						
	No.	No.	No.	No.	No.	No.	No.	£	£
1904*	4,042	833	198	1,201	1,014	1	795	103,007	8,944
1905*	3,687	763	186	995	999	2	742	100,362	9,227
1906	3,277	489	191	1,014	972	2	609	123,510	8,708
1907	2,971	388	156	852	903	2	670	134,991	9,470
1908	3,565	371	194	898	1,239	3	860	166,689	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

* Year ended on 1st March.

Of the 689 causes heard during 1912, only 57 were tried by jury, and in 1 case the jury disagreed. During the same period there were 5 appeals from judgments given in District Courts, of which 3 were affirmed, 1 reversed, and 1 not proceeded with. There were also 8 motions for new trials, of which 5 were granted. The amount of judgment for the plaintiff during the year was £83,226.

The several District Court Judges under the District Courts Acts, numbering nine, and three Judges attached to the Metropolitan District, are also the Chairmen of Courts of Quarter Sessions and Judges of the Court of Review within their respective districts, as well as Judges of the Court of Marine Inquiry.

Industrial Arbitration.

The Court of Industrial Arbitration is a superior court, and a court of record, having jurisdiction and powers conferred on it by the Industrial Arbitration Act, 1912, and those conferred in the Industrial Court by the Clerical Workers Act, 1910.

The Court or an Industrial Board exercising the jurisdiction conferred by 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 for the year ended 30th June, 1913, show that 211 Boards were constituted and 13 dissolved under the Act of 1912. Prosecutions for strikes or lock-outs numbered 420, and for breaches of awards, 17. There were 32 proceedings on appeal from the Industrial Registrar and Industrial Magistrates. The expenditure for Boards, representing fees and travelling expenses, amounted to £13,635. 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 breaches of award numbered 1,116. There were 630 cases of failure to keep time and pay sheets of employees.

Industrial Registrar.

The applications for registration of Unions numbered 27. The records of the Industrial Registrar's Office show that 674 indentures of apprenticeship were lodged, and industrial agreements registered numbered 44.

Investigation Office.

At the Investigation Office 3,684 complaints were received during the year 1912–13. There were 1,931 prosecutions, and the fines inflicted amounted to £1,572, and costs, £1,159. The amount of arrears paid to employees was £4,839.

Chief Inspector of Factories Office.

The prosecutions under the Factories and Shops Act numbered 99; Early Closing Act, 194; and Minimum Wage Act, 6.

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, under any Imperial Act in force in England on 1st March, 1829, and applicable to New South Wales, or under any Imperial Act adopted and directed to be

applied in New South Wales, pertained to the jurisdiction of His Majesty's Courts at Westminster, or the respective Judges thereof in the administration of justice. Further, every power, jurisdiction, or authority vesting in the Court, or the Judges collectively, may be exercised lawfully by two or more Judges of the Court.

The Chief Justice and three Puisne Judges are engaged ordinarily in matters of Common Law, including the Criminal and Civil jurisdictions; and under the Supreme Court and Circuit Courts Act, 1900, the Judges then holding special jurisdictions were confirmed on their commissions as follows:—

The Chief Judge in Equity.

The Judge exercising the Matrimonial Jurisdiction of the Court.

The Judge in Bankruptcy.

The Probate Judge.

The number of Puisne Judges was limited to six until the limitation was repealed by amending legislation, which came into operation on 1st July, 1912, and provided that when the number amounts to seven, additional Judges may be appointed when resolutions are passed in both Houses of Parliament that the state of business requires such additional appointments.

Puisne Judges are maintained to the required number by appointment to any vacancy of a barrister qualified by at least five years' standing, and the commission of every appointed Judge is in force during his good behaviour, and revocable only upon address of both Houses of the Legislature.

Appointment may be made of any Judge of the District Court as Acting Judge, or of any barrister or solicitor of at least seven years' standing; and Judges may be authorised to exercise special jurisdiction, having while so engaged co-ordinate jurisdiction with all the power and authority of the particular commission.

The emoluments of office are a salary of £2,600 per annum for each Puisne Judge, and £3,500 per annum for the Chief Justice; and 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 pertaining 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 particular jurisdictions, and during vacation, to prevent possible delay and consequent mischief, every Judge is empowered to make such orders and grant such writs as are ordinarily only made or granted 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 such 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, and the finding of a Judge ranks as the finding of a jury. Issues under the Real Property Act may also 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, on rules made, 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.

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. The British Government appointed the Chief Justice of South Australia to a seat on the Judicial Committee of the Privy Council, so as to secure in the deliberations of the Committee sound advice as to the laws, especially in relation to land, of the States.

Admiralty Court.

On 1st July, 1911, the Vice-Admiralty Court, constituted by the Chief Justice as Judge-Commissary with a Puisne Judge in association, ceased to exist as such; but in its stead, the Supreme Court of the State was erected into a Colonial Court of Admiralty, with power to hear and determine matters previously determined by the Vice-Admiralty Court. During 1912, 6 causes were taken in the Admiralty Court—2 for towage service, 1 for wages and disbursements, 1 for necessaries, 1 for loss by collision, and 1 for salvage. In one case a verdict was given for defendant, and the remaining 5 cases were settled or not proceeded with.

Sheriff's Office.

The transactions of the Sheriff's Office during 1912 included the issue for service of 1,240 writs of summons in the Supreme Court, as against 950 for 1911; the money value involved is not recorded. Other writs issued include 335 writs of *fieri-facias*, involving amounts aggregating £39,898, and other writs, including fines and estreats aggregating £7,693 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, and 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 merchants, engineers, actuaries, or any other persons, has power to decide legal titles, to award damages, or grant specific performance; and exercises all the powers of the Common Law Jurisdiction of the Supreme Court. The Court may also 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. At 31st December, 1912, the Master in Lunacy held Trust Funds amounting to £235,927. 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.
1903	163	91	117	175	135	806
1904	211	98	89	176	174	1,245
1905	180	88	60	192	164	1,050
1906	149	86	64	183	127	1,030
1907	172	88	71	195	147	1,072
1908	191	124	65	151	135	1,047
1909	210	121	66	153	168	1,016
1910	181	117	87	166	120	949
1911	157	78	100	149	123	871
1912	171	92	92	152	133	816

The amount of Trust Funds invested under Equity Jurisdiction in 1912 was £697,615, the investments being made at interest rates ranging from 1 to 6 per cent.

Probate Jurisdiction.

Under the Wills, Probate and Administration Act, 1898, the Supreme Court in its Probate Jurisdiction absorbed the powers previously vested in the Primary Judge in Equity; and under the Administration Amending Act, 1906, formal duties in the granting of probates and letters of administration are delegated to the Registrar of Probates, who is also the Prothonotary and Ecclesiastical Clerk. In estates of less value than £300 the intervention of a solicitor is unnecessary, and in 1912 probate or letters of administration were granted for 450 such estates valued at £60,041.

The number of probates and letters of administration granted by the Supreme Court in its testamentary jurisdiction for the last ten years is shown in the following table :—

Year.	Probates granted.		Letters of Administration.		Total.	
	Number of Estates.	Value of Estates.	Number of Estates.	Value of Estates.	Number of Estates	Value of Estates.
		£		£		£
1903	1,787	6,345,098	980	834,784	2,767	7,179,882
1904	1,854	5,536,494	996	619,469	2,850	6,155,963
1905	1,842	6,999,863	962	714,553	2,804	7,714,416
1906	1,927	6,697,600	925	831,837	2,852	7,529,437
1907	2,045	6,835,381	1,039	728,118	3,084	7,563,499
1908	2,114	7,054,170	980	784,402	3,094	7,838,572
1909	2,104	10,295,793	1,081	846,275	3,185	11,142,068
1910	2,261	7,649,944	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

The figures here shown 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. The large accretion to the value of estates during 1909 and 1911 is due to the probate in one exceptionally large estate in each year.

Intestate Estates.

Under the Wills, Probate, and Administration Act, 1898, the Registrar of Probates, as Curator of Intestate Estates, under the jurisdiction of the Supreme Court, is empowered to apply for orders to administer estates of intestates, or of persons who have appointed the Curator as executor, or where no executor is appointed. Moneys unclaimed after six years are paid into the Consolidated Revenue Fund, but a rightful claimant may obtain payment, without interest, at any subsequent period.

The number of estates opened during 1912 was 785, from which the Curator received £54,323, and paid away £26,717; in connection with estates opened during previous years £23,693 was received, and £53,249 paid. Commission and fees to the amount of £3,305 were paid into the Consolidated Revenue Fund during the year. The revenue also benefited to the extent of £7,921 of unclaimed moneys, but on the other hand claims amounting to £2,549 were received for moneys which had been paid into the Consolidated Revenue Fund previously.

Year.	Administered by Curator.	Value of Estates received.	Disbursements.	Fees paid.	Unclaimed moneys.	Estates of Previous Years.		
						Money received.	Money paid.	Claims allowed against.
	No.	£	£	£	£	£	£	£
1911	656	46,293	13,296	3,495	13,061	24,754	50,705	1,540
1912	785	54,323	26,717	3,305	7,921	23,693	53,249	2,549

Bankruptcy Jurisdiction.

Any person unable to meet his debts may surrender his estate for the benefit of his creditors, or the latter may, under certain specified conditions, apply for a compulsory sequestration, the case coming under the Bankruptcy Jurisdiction of the Supreme Court.

Certain of the powers vested in the Judge in Bankruptcy are relegated 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 and the issue of summonses; 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 2½ per cent. commission on the amount realised, and 2½ 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 being 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 1912 shows the following grouping :—

Group.	Number of Bankrupts.	Group.	Number of Bankrupts.
Professional	14	Industrial	158
Domestic	12	Primary Producers	63
Commercial	87	Indefinite	10
Transport and communication...	15	Total	359

According to Bankrupts' Statements of Affairs, the liabilities of the estates sequestrated in 1912 amounted to £210,504, to meet which there were said to be assets to the extent of £153,633, thus leaving a deficit of £56,871.

The Court Fees paid to the Treasury were £4,237.

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 is vested in the Supreme Court jurisdiction 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.

Particulars as to divorces granted will be found in the part "Social Condition" of this Year Book.

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 subsequently settled by the parties; but the total amount involved in these claims is not, of course, 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 1912 the total bills of costs amounted to £44,628, but from this a sum of £14,476 was taxed off, leaving the net costs at £30,152. The Court costs of taxation amounted to £609:—

Year.	Writs issued.	Judgments signed.	Year.	Writs issued.	Judgments signed.
	No.	£		No.	£
1903	4,030	285,801	1908	2,266	189,350
1904	3,973	220,305	1909	2,023	193,039
1905	3,719	176,930	1910	1,868	139,223
1906	2,404	143,386	1911	1,892	169,708
1907	1,832	132,839	1912	2,497	258,208

The number of causes set down and tried is shown below:—

Year.	Causes set down.	Not proceeded with.	Referred to Arbitration.	Causes Tried.				
				Verdict for Plaintiff.	Verdict for Defendant	Disagreement of Jury.	Non-suited.	Total.
1903	300	102	4	131	39	3	21	194
1904	266	87	7	119	38	3	12	172
1905	260	89	2	102	49	5	13	169
1906	235	76	2	105	34	5	13	157
1907	174	62	4	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

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, and the effectiveness with which the mere issue of a writ secures settlement.

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, such assessors having 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 1912 numbered 22, of which 7 were as to collisions and 8 to strandings and shipwrecks, 3 to founderings, 3 to losses or supposed losses of vessels, and 1 to alleged misconduct of officers. The Courts found in 6 cases that blame was not attachable to any particular person; in 7 cases the master was exonerated; in 10 cases masters were found at fault, and 5 had certificates suspended. In a like manner 3 mates and 2 engineers were deemed at fault.

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 also 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 circuit districts, in which Circuit Courts were 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 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 to be a court of gaol delivery, for which purpose the Court may be constituted by one Judge sitting in open Court in the exercise of criminal jurisdiction. The gaoler at each gaol is required, at prescribed times, to make returns to the Supreme Court of persons under detention.

Quarter Sessions.

The Courts of Quarter Sessions are held by Chairmen, who also perform the duties of Judges of the District Courts. There are eight Chairmen of Quarter Sessions; three of these preside over the Courts in the metropolitan district, and one each in the following districts:—Southern and Hunter, south-western, northern, north-western, and western. All offences, except those involving the capital penalty, are within the jurisdiction of the Court. On the trial of prisoners at Quarter Sessions, at the request of the prisoner's counsel, the Chairman must reserve questions of law for the consideration of the Supreme Court.

Operations before Higher Courts.

During the year 1912 there were 993 persons, viz., 947 men and 46 women, charged before the higher Courts of the State. The following table shows the results in the cases of these accused persons for 1911 and 1912 in comparison:—

Sex.	1911.			1912.		
	Charged.	Convicted.	Withdrawn, discharged, &c.	Charged.	Convicted.	Withdrawn, discharged, &c.
Males	914	507	407	947	591	356
Females	65	31	34	46	29	17
Total	979	538	441	993	620	373

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 1912:—

Offences.	Males.		Females.		Total.	
	Number.	Per cent. of total.	Number.	Per cent. of total.	Number.	Per cent. of total.
Against the person	129	21·8	7	24·1	136	21·9
Against property	395	66·9	15	51·7	410	66·1
Forgery and against the currency ...	46	7·8	2	6·9	48	7·8
Against good order	2	·3	...	...	2	·3
Other offences...	19	3·2	5	17·3	24	3·9
Total...	591	100·0	29	100·0	620	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.	1908.	1909.	1910.	1911.	1912.
Against the person	144	146	125	141	136
Against property	384	382	329	313	410
Forgery and against the currency	56	60	41	48	48
Against good order	12	3	5	14	2
Other offences	18	28	46	22	24
Total	614	619	546	538	620

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, in the interests of justice such legal aid should be supplied, the Attorney-General may arrange for the defence of the accused and payment of expenses of all material witnesses.

Special Courts.

Special Courts have been established for the purposes of particular legislative enactments, such as the Industrial Arbitration Court and the Commonwealth Conciliation and Arbitration Court, concerning which details are given in part, "Employment and Arbitration," of this Year Book, and the Land Appeal Court, to deal with matters relating to the various Land Acts.

Land Appeal Court.

For the year ended 30th June, 1913, the cases referred to the Court numbered 76, of which 65 were referred by the Minister for Lands, and 11 by local Land Boards. Of the cases heard during the period, 57 resulted in the appeal being upheld, and 14 were sent back for rehearing, 37 were dismissed, and 4 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 so 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 1912, 456 appeals were taken before Courts of Quarter Sessions in this way, and of this total convictions were confirmed in 274 cases, varied in 49, and quashed in 68, the balance, viz., 65 cases, being not concluded at end of the year. Questions of fact as well as of law may be taken before these Courts, and the only savings as to the right of appeal from Magistrates' orders or convictions are as to orders made under the Seamen's Act, and adjudication to imprisonment for failure to comply with an order for payment of money, or for finding sureties.

Appeals to Supreme Court.

During 1912, applications for writs of prohibition and mandamus numbered 30, of which 14 were to Judges in Chambers, and 16 to the Full Court. Writs granted were 8, viz., 1 of mandamus and 7 of prohibition.

The special cases numbered 27; decisions were sustained in 9 and reversed in 6 from the Magistrates' Courts. Of Appeals in Land Cases, 6 decisions were sustained and 6 reversed. Included in the Magistrates' Court Cases which were sustained were 2 Local Government cases, 2 Land and Income Tax cases, and 1 stated by the Commissioner for Stamp Duties.

Appeals to Full Court.

In Common Law 28 cases were taken during 1912, 2 being criminal cases, in which 1 conviction from Quarter Sessions, Central Criminal, and Circuit Courts was affirmed, and 1 reversed. The civil cases consisted of 26 new trial

motions, of which 6 were granted and 14 refused, and 6 were not proceeded with. The following statement shows the appeals in Equity, Probate, Bankruptcy, and Divorce, viz. :—

Equity, 2 sustained and 1 disallowed ; Probate, nil ; Bankruptcy, 1 sustained, 1 not concluded ; Divorce, 1 disallowed.

Appeals from District Courts numbered 11, of which 1 was allowed and 5 refused, and 5 not proceeded with.

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, to be 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, if it thinks fit, may quash the sentence and substitute another either more or less severe.

During 1912, one application to a judge was granted and 14 refused ; 21 convictions were affirmed, 2 sentences being varied.

In addition to determining appeals in ordinary cases the Court has power, in special cases, to record a verdict and pass a sentence in substitution of the verdict and sentence of the court of trial. The Court is also empowered to 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 vests in the Supreme Court, which has both original and appellate jurisdiction as the High Court of Australia. Its original jurisdictions 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 and conclusive ; 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 referred to its appellate jurisdiction. During 1912 the following appeals were made from decisions of Judges of the Supreme Court of New South Wales :—

Jurisdiction.	Appeals set down.	Allowed.	Disallowed.	Settled.
Equity	6	1	3	2
Bankruptcy	1	1	...	...
Divorce	1	1	...	...
Probate	...	...	...	...
Common Law...	1	1	...	...

In addition, appeals from the Full Court of the Supreme Court of New South Wales numbered 10, of which 5 were allowed and 5 were dismissed. The Full Court also dealt with 4 special cases, 1 certiorari, 4 prohibitions, 1 appeal from a Justice of the High Court, and one matter referred to it from the original jurisdiction of the Court.

One appeal from the decision of a Judge exercising Federal jurisdiction in New South Wales was allowed. Four notices of appeal under the Land Tax Assessment Act of 1910 were filed during 1912, in connection with which 1 special case was referred to the Full Court. In the other three cases a settlement was effected.

Five applications for Leave to Appeal from judgments of the Supreme Court of N.S.W. were refused.

Appeals to Privy Council.

During 1912, 4 applications were made and granted for leave to appeal, 3 in Common Law and 1 in Equity. There were 4 appeals to the Privy Council; 3 in Common Law, 1 of which was upheld and 2 dismissed, and 1 in Equity was not concluded.

THE GOVERNMENT IN LITIGATION.

The Government of the State was concerned in 1,184 actions commenced during the year 1912, viz., in 1,131 as plaintiff, and in 53 as defendant. Of these actions 852 were settled without coming to trial; the causes tried, numbering only 75, resulted in 66 instances in verdicts for the Government, 60 being as plaintiff, and 6 as defendant; and 9, as defendant, the decisions were against the Government. Causes under consideration at end of the year numbered 257. The majority of actions commenced related to taxation, viz., 975, and to agriculture 51.

A review of the actions at law, in which the Government has been concerned as a party, reveals that for 1912 the causes commenced are small compared with the years 1905, 6, 7, and 8, when there were 8,378, 14,404, 9,687, and 6,831 actions respectively.

In connection with the Railway Department, the actions commenced numbered 880, of which 732 were settled without trial; 57 were tried, and 91 were pending at the end of the year. In 40 of the causes tried verdict was given for the Railway Department, viz., 15 as plaintiff and 17 as defendant.

Concerning the Metropolitan Board of Water Supply and Sewerage, the total actions commenced were 59; in 58 the Department was plaintiff, and defendant in the other. All of the cases were settled or discontinued.

PATENTS.—COPYRIGHT.—TRADE MARK CERTIFICATES.

Since 1st June, 1904, the administration of the Patents, Copyright, and Trade Marks Acts has devolved upon the Federal authorities, and a patent granted under the Commonwealth Act is thus afforded protection in all the States, and the Territory of Papua, the period for which it remains in force being limited to fourteen years. The copyright in a book, the performing right in a dramatic or musical work, and the lecturing right in a lecture, continue for the author's life and fifty years after his death. The British Copyright Act subject to certain modifications is in force in the Commonwealth under the Copyright Act, 1912,

The registration of a trade-mark protects it for fourteen years, but may be renewed from time to time. Under the "Commonwealth Designs Act" an industrial design may be protected for five years, and the period extended to fifteen years, provided it is used in Australia within two years of registration.

Under the various Federal acts, arrangements may be made for the protection in other countries of patents, copyrights, trade-marks, and designs.

In all cases the rights of holders under the legislation of a State were reserved to them.

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 England, Ireland, or Scotland, or in any State of the Commonwealth of Australia, must have qualified by passing examinations as outlined in part "Education" of this Year Book. Admission of a solicitor may take place during any law term. A solicitor who ceases to practise for two years continuously is allowed to resume practice only under an order from the Court. A barrister who has been in practice as such for five years, having caused himself to be disbarred, may be admitted as a solicitor without examination.

The Board for admission of barristers of the Supreme Court consists of the Judges of the Supreme Court, the Attorney-General, and two elected members of the Bar. Applicants must have been students-at-law for three, or, in the case of graduates, for two years, and have passed all examinations prescribed by the Board. A solicitor who has been in practice for at least five years, and who has removed his name from the roll of solicitors, may be admitted as a barrister without examination.

There were, during 1912, 169 barristers practising in New South Wales, while the number of solicitors was 1,025. Of the latter, 608 were in the Metropolis.

POLICE AND PRISON SERVICES.

Duties of the General Police.

Apart from the preservation of order and the protection of life and property, the general police are charged with a variety of duties, which, though beyond the scope of usual police work, are allotted to them as the most efficient and economical agents—as in the collection of records and statistics, and the pursuit of investigations and inquiries for various branches of the Public Service. Upon the police devolve the tasks of compiling new electoral rolls and jury lists; of collecting annually, statistics of pastoral holdings, manufacturing and slaughtering establishments, mills, and private schools. The police also issue timber, fuel, and quarry licenses, miners' rights, business and mineral licenses; and serve as inspectors under the following Acts:—

Liquor.
Cattle Slaughtering and Diseased Animals and Meat.
Tobacco.
Dairies Supervision.
Diseases in Sheep.
Alien Immigration.
Fisheries.
Early Closing.
Noxious Trades.
Shearers' Accommodation.
Pure Foods.
Of Slaughter-houses, for Shire Councils.
Magazines and Explosives.
Vineyards.
Weights and Measures.
Commonwealth Old-Age Pensions.
Factories and Shops.
State Children's Relief.
&c., &c.

In some localities the police also act as clerks of petty sessions, gaolers, wardens' clerks, mining registrars, and registrars of births, deaths, and marriages.

As regards the services of the police in cases of accident, it is of interest to note that during the year 1912, at examinations in swimming held by the Royal Life-saving Society, 82 police were successful. Of the total police force of 2,610 men at 31st December, 1912, no less than 504 were the holders of First Aid Certificates.

Police Regulation Act.

Retirement of Police at age 60.

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.

Police Superannuation and Reward Fund.

During 1912 there were 38 members of the police force superannuated on pensions amounting to £6,836 per annum; 3 were discharged with gratuities to the total of £418. The sum of £1,412 was paid from the Police Superannuation and Reward Fund as gratuities to six widows, in addition to £42 funeral expenses.

Police Force.

A police force numbering 2,610 men is maintained under the immediate control of an Inspector-General. The following statement shows the distribution of the establishment at 31st December, 1912:—

	Superintendents.	Inspectors.	Sub-Inspectors.	Sergeants.	Constables.	Detectives.	Track'rs	Total.
General Police	12	11	34	218	2,094	...	56	2,425
Detective ,, ...	1	1	1	...	...	19	...	22
Water ,, ...	...	...	1	5	48	...	...	54
Traffic ,, ...	1	...	1	4	97	...	...	103
Weights & Measures Office	...	...	...	1	5	...	...	6
Total... ...	14	12	37	228	2,244	19	56	2,610

In addition to the above there are five women attached to the police stations as searchers.

It is to be expected that with a steadily increasing population the strength of the police establishment will advance also; but, as the following statement shows, during the last nine years the increases have not been proportionate; the extension of population has been so much more rapid than the extension of the police force, that the ratio of one policeman to 624 inhabitants, as subsisting at the end of 1904, and approximately for several years previously, has changed gradually, so that for 1912 the ratio was one policeman to 696 inhabitants:—

Year.	Number of Police.	Inhabitants to each Police Officer.	Year.	Number of Police.	Inhabitants to each Police Officer.
1903	2,270	624	1908	2,417	645
1904	2,310	624	1909	2,435	656
1905	2,342	627	1910	2,447	670
1906	2,342	640	1911	2,487	683
1907	2,381	643	1912	2,554	696

In connection with the duties of the Water Police, it may be stated that the crews of vessels visiting Sydney during 1912 numbered 160,891, and at Newcastle 26,532. These figures are exclusive of the crews of the many vessels engaged in trading between ports of the State.

In the metropolitan district the Traffic Police inspect public vehicles, test taximeters, regulate and control the use of motor vehicles upon public streets, besides exercising a general control over all street traffic. In this connection 2,537 accidents were recorded in public streets within the metropolitan area, and 773 persons were taken to hospitals by the Traffic Police.

Vehicles and Licenses.

Metropolitan Traffic Act.

The amount of traffic controlled by the Metropolitan Traffic Police may be seen in the following table, which shows the licenses granted under the Metropolitan Traffic Act for each class of vehicles during the years 1911 and 1912 :—

License.	Annual Fee.	Licenses Issued.		License.	Annual Fee.	Licenses Issued.	
		1911.	1912.			1911.	1912.
	s. d.	No.	No.		s. d.	No.	No.
Cab	20 0	772	763	Motor-van driver...	5 0	9	18
Motor cab	20 0	175	203	Omnibus driver ...	5 0	97	70
Van	20 0	1,303	1,468	Motor-bus driver ..	5 0	6	4
Motor van	20 0	3	11	Conductor	5 0	9	6
Omnibus	40 0	64	43	Transfer	1 0	230	251
Motor 'bus	40 0	4	2	Permit	1 0	238	277
Cab driver	5 0	917	932	Badge	2 0	209	229
Motor-cab driver ...	5 0	248	289	Taximeter test ...	10 0	285	355
Van driver	5 0	1,561	1,749				

The Revenue obtained under the Metropolitan Traffic Act was £3,312 for the year 1911, and £3,548 for the year 1912.

Motor Traffic Act and Regulations.

Certificates and Licenses granted under the Motor Traffic Act and Regulations during the years 1911 and 1912 are shown below :—

Certificate or License.	Annual Fee.	Licenses Issued.		Certificate or License.	Annual Fee.	Licenses Issued.	
		1911.	1912.			1911.	1912.
	s. d.	No.	No.		s. d.	No.	No.
Motor vehicle ...	20 0	3,975	5,944	Motor cycle duplicate..	2 6	21	26
Motor vehicle driver	5 0	5,517	8,834	Learner's permit ...	2 6	1,943	2,955
Motor cycle... ...	2 6	2,788	3,804	Transfers	2 6	666	1,014
Motor cycle rider ...	Free	3,323	4,596	New number plate	2 0	292	565

The Revenue obtained under the Motor Traffic Act was £6,061 for the year 1911, and £9,184 for the year 1912.

Weights and Measures.

The inspection and verification of weights, measures, and weighing instruments at traders' premises is a duty of the Police. Transactions during the year 1912 were as follow :—

Inspection.

	Metropolitan District.	Country Districts.		Metropolitan District.	Country Districts.
Premises visited	10,935	1,151	Weighing Instruments—		
Weights—			Total examined ...	16,156	1,460
Total examined ...	55,097	7,334	Correct	13,596	1,366
Correct	47,395	6,890	Seizures of Material ...	35	13
Measures of Length—			Prosecutions	35	8
Total examined ...	6,995	228	Cautions issued... ...	3,136	.....
Correct	6,685	228	Fines	80	6
Measures of Capacity—					
Total examined ...	20,743	771			
Correct	19,925	756			

Verification.

	Metropolitan District.	Country Districts.		Metropolitan District.	Country Districts.
Weights—			Weighing Instruments—		
Total examined ...	39,120	4,142	Total examined ...	6,797	1,135
Correct	38,153	3,962	Correct	6,320	1,103
Measures of Length—					
Total examined ...	3,155	35	Fees collected	892	128
Correct	3,155	34			
Measures of Capacity—					
Total examined ...	12,195	1,350			
Correct	11,651	1,306			

Inspections at Bakehouses and Shops.

The inspections by the police under the Bread Act during 1912 were :—

	Metropolitan District.	Country Districts.		Metropolitan District.	Country Districts.
Premises visited	652	.....	Prosecutions	3	2
Weights found correct ...	610	493	Cautions	39	.....
,, ,, incorrect	42	13	Fines ... ... £	14	6

Inspections of Coal-weighing Machinery.

The inspection of coal-weighing machinery under the Coal Mines Regulation Act in New South Wales, as performed by the police during the year 1912, was as follows :—

Mines visited	136	Machines found correct... ...	274
Machines examined	286	,, ,, incorrect ...	12

Apprehensions by Police.

In the following table are given the total number of persons apprehended by the police, and the proportion per 1,000 of the population at intervals since 1895 :—

Year.	Arrests.		Year.	Arrests.	
	Number.	Per 1,000 of Population.		Number.	Per 1,000 of Population.
1895	36,939	29·5	1908	41,301	26·7
1900	37,462	27·7	1909	40,865	25·9
1905	38,172	26·2	1910	45,914	28·4
1906	39,609	26·7	1911	47,022	28·2
1907	41,842	27·6	1912	54,715	31·5

The above figures relate to the total number of arrests made by the police in each year irrespective of individuals. Following is a statement showing the classes of offences for which arrests were made during 1912, and the relative importance of each class, as shown by the proportion per cent. of the total :—

Offences.	Number of Arrests.			Proportion of Total.		
	Males.	Females.	Total.	Males.	Females.	Total.
Against the Person	2,011	121	2,132	4·1	2·1	3·9
,, Property	5,185	501	5,686	10·6	8·5	10·4
,, Currency, &c.	113	6	119	·2	·1	·2
,, Good Order	39,470	5,211	44,681	80·8	88·9	81·7
Other offences	2,072	25	2,097	4·3	·4	3·8
Total	48,851	5,864	54,715	100·0	100·0	100·0

In connection with the operations of Magistrates' Courts, the figures relating to cases instituted by summons, as well as by arrest, are given in some detail on a previous page.

Prison Population.

There are in New South Wales 30 gaol establishments; of these, 5 are principal, 12 minor, and 13 police gaols. The total number of cells in all gaols is 2,279, and only one occupant is allowed in each cell.

The number of prisoners in confinement at the close of each year during the last eight 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

The prisoners under sentence at the end of the year 1912 are exclusive of inebriates, viz., 41 men and 65 women, but include 1 male debtor.

Nationalities and Ages.

During 1912, 11,361 convicted and unconvicted persons were received into, and 11,247 discharged from, the institutions. Of the persons received 4,594, representing 40 per cent., were born outside the Commonwealth of Australia. The following statement shows the grouping according to ages of persons received during the last five years :—

Age Group.	1908.	1909.	1910.	1911.	1912.
Years.					
Under 16 ...	23	12	2	6	9
16-20	1,208	1,118	933	897	1,079
21-24	1,306	1,343	1,105	1,136	1,261
25-29	1,880	1,819	1,543	1,483	1,837
30-34	1,609	1,423	1,258	1,223	1,589
35-39	1,613	1,489	1,172	1,157	1,426
40-44	1,426	1,304	1,159	1,012	1,152
45-49	1,149	1,043	933	873	1,082
50 and over ...	1,994	1,952	1,710	1,710	1,892
Not stated ...	46	47	34	35	34
Total ...	12,254	11,550	9,849	9,532	11,361

As will be seen by reference to the detail figures showing the operations of Magistrates' Courts, the proportion of cases remanded to higher courts is comparatively small. The majority of offences charged before the lower courts result in summary convictions for which, during 1912, fines were imposed and paid fully in 63 per cent. of cases; in 28 per cent. of convictions, involving imprisonment only in default of payment, the fine was in most cases paid, in whole or in part, with remission of sentence in proportion. Only in 3·4 per cent. of convictions was imprisonment peremptory, and mainly from such convictions, numbering 2,624 during 1912, was derived the prison population previously shown.

Decreasing Prison Population.

The total prison population at the close of 1912 was 1,363, which, with the exception of the last two years, represents the lowest level over a period of 38 years, while the following table, showing the relative position of general to prison population, and the gaol entries at intervals since 1875, proves that while the strength of the general population has been trebled, the prison population as between 1875 and 1912 has actually decreased by 6 per cent.; the gaol entries shown below represent convicted and unconvicted persons :—

Year.	General Population at 31st December.	Gaol Entries during Year.	Gaol Population at 31st December.	Ratio of Gaol 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	1,320*	·81
1911	1,698,736	9,532	1,249*	·74
1912	1,778,962	11,361	1,363*	·77

* Exclusive of inebriates detained.

To attempt to ascribe precise reasons for the decrease of the prison population is futile. Undoubtedly external influences, such as the extension of educational facilities, which tend to mould the law-abiding instincts of a community, and the continuance of fairly prosperous conditions in industry generally, have been potent factors in reducing the number of offenders.

Relaxation in administration of the law might readily cause a decrease in detected crime, but it is to be remembered that such decreases as are shown have resulted in spite of a thoroughly consistent administrative policy, and concurrently with the passing of new laws which impose higher standards of life, and necessarily extend the area of opportunity for offence.

A survey of the list of statutes bearing upon matters of law and orderliness shows that the years that were richest numerically in the production of specific enactments were from 1898 to 1902; but this period covers the interval when consolidation of existing enactments as at 1896 was being affected; in more recent years, from 1903 to the present date, the original enactments numbered ten and amendments numbered thirteen. Included in the original enactments of the later period, however, are several which mark radical alterations of policy, *e.g.*, the Influx of Criminals Prevention Act, 1903; Habitual Criminals Act, 1905; Prisoners Detention Act, 1908; Crimes (Girls' Protection) Acts, 1910 and 1911; and the Criminal Appeal Act, 1912.

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 is made from the amount for the prisoner's keep, the remainder is applied in, or towards, satisfaction of the order for the support of the wife or children of the prisoner under the Deserted Wives and Children Act, 1901, or the order for maintenance, education, expenses, and costs under the Infant Protection Act, 1904, or in or towards the deposit of any sum for preliminary expenses, and the payment into Court of the amount ordered to be secured by recognisances under the Infant Protection Act.

Institutional Treatment.

Grading of Establishments.

The prison establishments are graded with a view to the concentration of prison population in institutions large enough to ensure efficiency of supervision with economy of administration, and the maintenance of a strict and disciplinary organisation conducive to the highest ideals of reform.

During the last ten years the number of gaol establishments has been reduced from 60 in 1902 to 30 in 1912. In furtherance of the policy of concentration of prisoners, it was resolved in August, 1912, to close the Shaftesbury Institution.

The central establishment at Darlinghurst is reserved as a clearing-house, and also as a hospital for persons requiring medical care. From the Darlinghurst centre long-sentence prisoners are distributed to the principal country establishments, which are reserved for men in their special classes, viz., Goulburn for first offenders; Bathurst for men previously convicted but deemed amenable to reformative influences; Parramatta for more confirmed or habitual criminals; and Grafton for special cases. Maitland Gaol is reserved for men from the Northern District, with sentences not exceeding six months; and other and smaller establishments, as at Armidale, Young, Tamworth, Albury, &c., are used for short-sentence prisoners in the particular districts; while at the police gaols and lock-ups are detained only prisoners with sentences of less than fourteen days.

Classification and Segregation.

In all the large establishments an inter-classification system is operative, which assures the segregation of the inmates in various classes as to age and conduct, and transfers are effected when necessary from class to class, or from one establishment to another.

The various classes are distinguished as follows :—

1. Sentences of penal servitude, or of over two years, with hard labour.
2. Sentences of less than two years, with hard labour, for felony or misdemeanour.
3. Sentences of imprisonment or indeterminate sentences.
4. Persons awaiting trial or under examination.
5. Mental defectives.
6. Debtors.
7. Youthful offenders, *i.e.*, men and youths under age 25, with sentences of less than twelve months.

Restricted Association.

Prisoners under classes 1 and 2 are further subjected to divisional treatment, *i.e.*, they earn their right to promotion by exemplary conduct till placed in associated labour; but otherwise they are kept in separate cells, from which they go to the probationary division, when they benefit by various privileges preparatory to release.

For several years the principle of restricted association has been enforced, and has yielded results which demonstrate the unsoundness of the older principle of classification in groups according to length of service merely. Under present conditions association while at work, at exercise, and at religious instruction, is subject to the closest supervision ; cells are lighted, and literature is made available from the prison libraries, which, in December, 1912, contained 25,485 volumes.

The enforcement of this system of isolation has involved heavy expenditure, which has been counterbalanced, however, by the advantages accruing from the policy of concentration, quite apart from the moral benefit ensuing to the prisoners. Separate confinement is practically abolished, the maximum period enforceable being four weeks.

Prisoners' Dietary.

In pursuance of the general scheme of prison reform the prisoners' dietary has been revised by a board composed mainly of medical experts. The new dietary comprising six classes has been based on the nature of the employment, the penal element being eliminated, while special consideration was 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	¼	.....
	F	12	6	4	8	¼	.....
2	M	18	8	8	12	¼	.....
	F	14	6	6	10	¼	.....
3	M	18	8	12	12	¼	1
	F	16	6	10	12	¼	1
4	M	24	6	16	16	¼	1
5	M	16	.....	.....	.....	.....	.....
	F	16	.....	.....	.....	.....	.....
6	M	16	8	8	12	¼	1

In addition, ½ ounce of salt is allowed with each ration, and where females are employed at washing, etc., they may be allowed a pint of tea daily, after one month's servitude.

Inebriates are dieted under rations numbers 2 and 3, but may be granted indulgences on obtaining marks for conduct and industry.

Breaches of Prison Regulations.

Breaches of prison regulations are rare, the punishments imposed for such infractions of discipline affecting only 2·2 per cent of the total number of prisoners received into the gaols during the year 1912. A Visiting Justice is appointed under the Prisons Act, 1899, 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, such as long terms of solitary confinement, have been replaced by a policy of deprivation of privileges, and experience shows that the latter method is effective. No corporal punishments have been inflicted for prison offences in New South Wales since May, 1900.

Ideals of the System.

The aim of the whole prison system of the State is so to educate offenders and to remould their habits, as to enable them to obtain their freedom and to use it advantageously to themselves and to the community. The idea of imprisonment as punitive or retributive is no longer entertained, but it is taken as axiomatic that the committal of crime demonstrates unfitness to be at liberty and to compete with normal individuals in the struggle for existence; and while not yet attempting to distinguish and eliminate the causes, hereditary or acquired, which tend to manufacture 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.

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:—

	1908.	1909.	1910.	1911.	1912.
Persons committed to gaol in default of payment of fines	7,158	6,471	5,027	4,959	5,844
Prisoners subsequently released after paying portion of fines	1,538	1,435	1,385	1,480	1,807
Days prisoners would have served if portion of fines had not been paid ...	46,665	42,760	45,573	41,104	55,835
Days remitted by part-payment of fines ...	29,147	29,773	32,823	30,120	40,000
Amount received at gaol as part-payment of fines	£3,193	£2,924	£2,881	£3,153	£4,255

In the year 1912, 71 per cent. of the total persons received into gaol were detained in default of payment of fines. Of the 5,844 so detained, 1,807 subsequently obtained release by paying part fines proportionate with unserved balance of sentence, and an amount of £4,255 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 1912, 32 men and 3 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 1912 there was one debtor (male) in gaol. The number of persons sent to gaol for debt during each of the last ten years is given in the following table:—

Year.	Males.	Females.	Total.	Year.	Males.	Females.	Total.
1903	53	6	59	1908	43	3	46
1904	62	7	69	1909	40	5	45
1905	63	12	75	1910	34	...	34
1906	57	14	71	1911	33	1	34
1907	42	4	46	1912	32	3	35

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 1912, there were 361 persons, viz., 253 at Magistrates', and 108 at Higher Courts, released as first offenders; of these, 324 were men, and 37 women. These figures do not include 783 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 622 persons convicted during 1912, 297 had not been convicted previously.

At Goulburn Gaol special reformative 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. In the period 1901–1911, 1,417 prisoners were discharged from Goulburn Gaol, and of these 164, or less than 12 per cent. have been re-convicted.

Youthful Offenders.

Under the Borstal system, as applied in England, the ages between 16 and 21, or in certain cases 23 years, are regarded as essentially the critical years during which temptation is hardest to resist, and during which also young offenders may reap most benefit from disciplinary and moral influences and industrial training. In New South Wales, the upward limit is set at age 25, and a strict line of demarcation is drawn between offenders over and under that age. Offenders under age 25 are classified in age-groups, and also according to length of sentence over or under 12 months, and divisional treatment is accorded. Special scholastic, industrial, religious,

disciplinary, and physical training courses are enforced, for the last of which facilities in the form of workshops are available. Particularly is it found that healthy outdoor agricultural work supplies an effective means of ensuring profitable employment when the offenders are released conditionally. Great discrimination and special care are necessary to prevent such youthful offenders from becoming confirmed criminals.

During 1912 there were 563 prisoners eligible for instruction—170 at Darlinghurst, 161 at Parramatta, 119 at Bathurst, and 113 at Goulburn. Of this number, 19 were quite illiterate and 210 were mere beginners, *i.e.*, 229 were practically uneducated, being 41 per cent. of the total eligible, who are drawn mainly from offenders under the age of 25 years.

Women in Prisons.

Prior to 1909 the principal establishment for women at Biloela lacked adequate accommodation to permit of systematic classification and segregation of the prisoners, thus rendering reformative measures hopeless. In August, 1909, a specially designed and fully equipped establishment 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. 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. In August, 1912, the seven inmates (inebriates) of the Shaftesbury Institution were transferred to the State Reformatory, thus completing the system of concentration in the Metropolis.

During 1912, 1,405 women were received and 1,406 discharged from Long Bay, the number remaining at end of the year being 97. More than 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 reformative 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 £2,366. 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 1912 the daily average at the Long Bay State Reformatory was 118; and 43 prisoners were punished for breaches of the regulations of the establishment.

In 1912, at all gaols, 1,629 female prisoners were received under sentence, and the following table shows the daily average number of women detained in the gaols of New South Wales since 1905:—

Year.	Daily Average.	Year.	Daily Average.
1905	189	1909	175
1906	168	1910	150
1907	164	1911	135
1908	162	1912	149

Habitual Criminals and Preventive Detention.

The Habitual Criminals Act, 1905, empowers a judge to declare as an habitual criminal any person already convicted on three, or in certain cases two, occasions of specified criminal charges, either within or without the State, similar to the offence then charged. 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 Consultation 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 directly, and also indirectly, by removing the force of examples of criminality.

Three men were declared to be habitual criminals during 1912—making a total of 51 men and 1 woman so declared since the inception of the Act. Of this number, 3 men died, 5 were released on medical grounds, and 6 on account of technical flaws in the declaration determining their detention, so that at the end of 1912 there were under detention 19 men who had not yet completed the definite period, and 18 men and 1 woman who had passed through the definite term.

Of the habitual criminals in gaol on 31st December, 1912, in the definite stage, the range of sentences was from 1 to 14 years, with slightly more than half the number at 5 years. 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 reformative 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 1912, of the 19 prisoners in the indeterminate stage, 8 had succeeded in passing into the higher grade, whilst the one man who had been classed in the special grade in 1911 was released, conditionally, only to be re-convicted during the year and committed to his former custody as an habitual criminal.

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.

The benefits accruing to the system of indeterminate sentences, as initiated in New South Wales, have led to its adoption in other communities.

In New Zealand the Habitual Criminals and Offenders Act, 1906, empowers a judge to order the detention of declared habitual criminals; in South Australia, the Habitual Criminals Amendment Act, 1907, follows closely on the lines of the New South Wales Act; and somewhat similar provisions are contained in the Tasmanian Habitual Criminals and Offenders Act, 1907. In Victoria, the Indeterminate Sentences Act, 1908, provides for the adoption of the indeterminate sentence for habitual criminals, and also for certain other classes of offenders. The probation system was made applicable to adults as well as minors, and a special board was appointed to supervise the operations of the law. In Western Australia provision was made for preventive detention of habitual criminals under the Criminal Code Amendment Act of 1911. It is recognised that the Australian States now show the most advanced legislation in regard to reformative detention.

At the International Prison Congress held at Washington, in the United States of America, in 1910, resolutions were passed approving the principle of indeterminate sentences, and recommending the introduction of the system. The Congress further resolved that the reformatory system is incompatible with short sentences, and a relatively long period of reformatory treatment is more likely to be beneficial than repeated short terms of imprisonment under severer conditions. As to general principles, various resolutions were passed confirming the dual bases of every prison system—protection of the community and correction of the offender.

Drunkenness.

During 1912, the convictions for drunkenness with and without disorderly conduct numbered 32,720. The following table shows the total convictions or cases, not distinct individuals, during each of the last ten years, and their ratio to the mean population :—

Year.	Convictions (Not distinct individuals).			Convictions per 1,000 of Population.		
	Males.	Females.	Total.	Males.	Females.	Total.
1903	19,788	4,810	24,598	26·97	7·14	17·48
1904	18,116	4,827	22,943	24·34	7·05	16·06
1905	18,996	5,007	24,003	25·06	7·18	16·50
1906	20,589	4,664	25,253	26·64	6·55	17·01
1907	23,573	4,536	28,109	29·86	6·23	18·52
1908	23,730	4,087	27,817	29·59	5·49	18·00
1909	23,616	3,747	27,363	28·86	4·94	17·35
1910	24,450	2,930	27,380	29·10	3·78	16·94
1911	26,295	3,004	29,299	30·28	3·77	17·60
1912	29,264	3,456	32,720	32·05	4·19	18·82

It will be seen that there has been a decided decrease in the convictions of women ; this has been most marked in the years immediately succeeding the enactment of the Liquor Amendment Act of 1905, and the establishment of State institutions for treatment of inebriates in 1907. There is no doubt that the proportions during the last five years have been appreciably lowered by the detention of women who, though few in number, swelled the record of cases by repeated convictions on the charge of drunkenness.

With regard to the men, the figures show a decided increase. In 1904 the rate was 24·34 per 1,000 of male population, while in 1912 it was 32·05, an increase of over 31 per cent.

The Treatment of Inebriates.

Inebriates have been treated separately since 12th August, 1907, and in New South Wales during 1912 there were three State institutions devoted to their treatment, and under the control of the Comptroller-General of Prisons, viz., Darlinghurst, Long Bay, and Shaftesbury ; the last-named institution is now closed. The system is effective in supplying medical attention and care to chronic drunkards, who have become mentally and physically enfeebled. 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 ; the number of such persons who can be benefited permanently is very small, however, 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 contained in the Liquor Act. Except in cases of sickness or accident, no

person under the age of 18 years may be supplied with liquor, and persons under 17 years of age are not allowed in the bar of an hotel; females under 21 years, except in the case of the wife or daughter of a publican, are not permitted to serve liquor. Hotels must be closed during the time of voting for a Parliamentary election and on Sunday, though liquor may be sold to *bonâ fide* travellers, lodgers, servants, or inmates. In the case of travellers, publicans are not compelled to supply and may only do so where the traveller has travelled 10 miles from his lodging place of the previous night in the country, or 20 miles in the County of Cumberland.

The Inebriates Act has been designed to provide treatment for two classes of inebriates—those who have been convicted of an offence and those who have not in this way come under the cognisance of the law.

For the care and treatment of the latter class, the Acts authorise 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 also made 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 delinquent 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 frequently there are many previous convictions; for such offenders 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.

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 period not exceeding twelve months. 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, three in number, are under the direction of the Comptroller-General of Prisons. A portion of Darlinghurst Gaol has been set apart for inebriate men, but at present reformative treatment is hampered by the lack of adequate accommodation. Inebriate women are detained at the State Reformatory, Long Bay. Open air working conditions are apparently the most suitable for these persons; and it is proposed to remedy the existing lack of accommodation, especially for men inebriates, by erecting an institution, where outdoor work could be provided, at Long Bay, outside the prison area.

Transactions at State Inebriate Institutions.

The power of detaining inebriates in State Institutions was first exercised in August, 1907, and the majority of admissions have been of chronic offenders over 40 years of age who for many years prior to admission had served frequent sentences under the repeated short sentence system, and who in consequence had drifted into a condition from which reformation seemed almost hopeless. In view of this fact the results attained by the operation of the Acts may be considered encouraging. During the period dating from the first reception in August, 1907, till 31st December, 1912, the total number of original receptions amounted to 415—185 men and 230 women; 132 men and 219 women have been released on license; and in the cases of 34 men and 79 women it has been found necessary to cancel the licenses and recommit the holders to institutions.

The following statement shows the number of admissions to, and departures from, the three institutions of inebriates during 1912, viz.:—

	Darlinghurst.		Long Bay.	Shaftesbury.	Total.		
	M.	F.	F.	F.	M.	F.	Total.
Received from Courts	72	1	88	...	72	89	161
Discharged after detention	2	...	1	...	2	1	3
,, before completion of detention.	4	...	1	...	4	1	5
,, on medical grounds ...	6	...	1	...	6	1	7
Released on license	63	3	70	18	63	91	154
Died	...	...	...	...	...	...	...
Detained end of year	41	...	65	...	41	65	106

Of the persons released on license during 1912 from the institutions, 13 were sent to domestic service, 18 to gardening or labouring work, 5 to other more or less skilled work, 56 to homes, and 62 to care of friends, &c.

Of 161 persons admitted during 1912 to the institutions, 96 were Australian born, 78 being natives of New South Wales, and of the remainder 57 were British born. The minimum period of detention was twelve months, the range being—94 cases, 12 months; 30 cases, from 18 months to 2 years; 37 cases, over 2 years.

Of the persons admitted during 1912, the number of convictions recorded in the various cases were as follows:—

Convictions.	Cases.	Convictions.	Cases.
1	8	31–40... ..	12
2–5	11	41–50... ...	9
6–10	21	51–100 ...	23
11–20	45	Over 100 ...	13
21–30	19		

The majority of persons admitted during 1912 were over 40 years of age, viz.:—

Under 21, 1; 21–25 years, 3; 25–30 years, 6; 30–35 years, 23; 35–40 years, 15; 40–45 years, 33; 45–50 years, 34; 50 years and over, 46.

Of 72 men admitted 56 were labourers, dealers, &c., *i.e.*, unskilled, 2 were seamen, and 14 were skilled or professional workers.

The total expenditure on inebriate institutions during 1912 amounted to £3,766, the greater portion of which was on account of administration.

Industrial Activity in Prison Establishments.

Ability to perform useful and remunerative labour is recognised as of equal importance with good conduct in demonstrating fitness for freedom; and to encourage some degree of skill, employment at industries calculated to inspire interest, and subsequently to prove remunerative, is provided and is supervised by competent instructors.

During 1910 the workshops removed from Darlinghurst were concentrated at Parramatta, which is now the principal industrial gaol, though work under instructional control is performed also at Bathurst, Goulburn, and Long Bay.

The gross value of articles manufactured during 1912 amounted to £16,149, including the value of articles manufactured for Government Departments, and for use within prison establishments. On alterations and repairs within the institutions, at average rates, the work done was valued at £4,539; in domestic service the labour value for the year was £12,059.

The majority of offenders have no trade; but, where it is practicable, each person is kept at his particular trade. The large proportion of general workers among the prison population demonstrates this preponderance of unskilled labour, since among the persons listed as working at skilled trades or at manufacturing are many whose knowledge has been acquired only during detention.

Agriculture and Out-door Work.

Where land is available, considerable attention is given to agriculture, and offenders under age 25 are specially detailed for this work, which from its nature is recognised as particularly conducive to physical and moral improvement. The principal establishments at which agriculture and horticulture are carried on are Bathurst, Goulburn, Grafton, and Parramatta gaols and the State Reformatory for women.

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 work is carried on mainly by labour of prisoners and ex-prisoners. The prisoners engaged in this work number about 80, representing some 10 per cent. of the total prison population, and are all first offenders with light sentences. They are worked in groups of four and have the privilege of special liberties, *e.g.*, the use of a good library while off duty. The camps are fairly permanent and well laid-out, each man has his own hut, and a large central building serves as dining and recreation hall, &c. The present rate of planting is expected to yield in twenty years some 4,500,000 poles per annum, mainly larch, to be used for railway sleepers, mining timber, and fencing material.

The men engaged in the plantation work are also trained to fight forest fires; and both morally and physically improvement is noted in the individuals, while the gain to the community is obvious. 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 selected for the work is near Tuncurry, in the North Coast district. An area of 6,000 acres has been selected and the preliminary work initiated. A separate hut will be provided for each prisoner, and well conducted men will be allowed, on discharge, to join the free-labour camps.

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 1912 there were 211 such, the causes being—

In hospital, 38; under medical treatment, 30; in cells, 9; exempted, 11; recently received, 16; not under sentence, 104; debtors, &c., 3.

The unemployed represented less than 8 per cent. of the total prison population.

Sickness and Mortality in Gaols.

Visiting surgeons are attached to the various important establishments of which the sanitation and hygiene are on modern lines. Among the persons received into the institutions are included many whose physical condition is deplorable, persons in the last stages of disease, and aged and infirm persons, for whom a hospital or asylum is the befitting destination. Within the institutions cleanly habits are required, and there occur few instances of disease originating after reception; on the other hand, there are cases in which disease, apparently originated prior to committal, has grown so serious as to compel the release of the prisoner. The following statement shows particulars regarding the releases made on medical grounds during 1912:—

Paralysis, 3; alcoholism, 3; mental disease, 3; senility, 2; dropsy, 2; accidents, 2; other, 11.

In 22 cases the disease had originated before reception into prison.

The general medical statistics of prisons show that with an average daily number of 1,370 inmates, the total number of cases of sickness treated in hospital, irrespective of minor ailments treated outside hospital, was 728, of which 513 were treated at Darlinghurst and 92 at the State Reformatory for Women.

Particulars in regard to the duration of illness are not available, but details regarding the deaths show 2 from heart disease, 4 from natural causes, and 1 from execution. In addition to these deaths there were, as previously noted, 26 persons released from gaol as a result of advanced stages of disease.

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 confinement during the year:—

Year.	Deaths.		Death-rate per 1,000 persons in confinement.	Year.	Deaths.		Death-rate per 1,000 persons in confinement.
	Males.	Females.			Males.	Females.	
1895	19	3	8·83	1908	14	1	10·27
1900	15	3	9·02	1909	6	3	6·11
1905	12	1	6·98	1910	6	...	4·39
1906	5	3	4·90	1911	11	1	9·27
1907	9	1	6·48	1912	4	2	4·38

In 1912, one male prisoner was executed; this was the first occasion in which capital punishment was enforced since 1907.

Tubercular Ward.

During 1911 a special ward was erected in Bathurst Gaol for the treatment of prisoners suffering from tuberculosis. The report of the medical officer shows that the general condition of those treated to date, principally advanced cases, was good; but the results achieved in the few cases under observation would not justify any strong expression of opinion as to the general success attendant upon the treatment.

Insanity in Gaols.

During 1912, 61 cases of insanity, viz., 45 males and 16 females, were diagnosed among the gaol inmates, of which number 46 showed symptoms on reception and 8 developed them within one month of admission. There were also 16 prisoners sent to observation wards, 115 persons received for protection or on charges of mental defectiveness, and 13 were received suffering from the effects of alcoholism. Of the cases diagnosed, 10 recovered in gaol, 6 were certified for removal to a hospital for insane; in 7 cases the sentences expired, in 15 remission was granted, and in 18 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. 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, the medical officer may cause the prisoner to be detained until free from contagion even after the definite sentence is served. Twenty-five were so detained during 1912 for periods ranging from 1 day to 2 months 20 days.

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 191 cases were discharged from prison while possibly in a contagious state.

In the attached statements are shown the number of cases and sexes, also the disposal of the cases.

Prisoners Suffering.

Year.	Under Orders.		Eligible for Orders.		Not Eligible.		Total.		
	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	Total.
1909	43	27	35	11	54	21	132	59	191
1910	48	14	28	4	60	2	136	20	156
1911	55	15	14	5	52	7	121	27	148
1912	51	20	23	1	39	10	113	31	144

Result of Treatment.

Year.	Under Orders.		Eligible for Orders.		Not Eligible.		Total.			
	Cured.	Uncured.	Cured.	Uncured.	Cured.	Uncured.	Cured.	Uncured.	Remaining.	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

* Excludes 2 deaths.

Terms of Sentences.

The following statement shows the number of persons received into penal establishments during the years 1911 and 1912 for sentences of the duration specified :—

Term of Sentence.	Persons Received.					
	1911.			1912.		
	Males.	Females.	Total.	Males.	Females.	Total.
1 month and under	3,758	1,042	4,800	4,613	1,226	5,839
From 1 to 3 months	1,269	203	1,472	1,472	298	1,770
,, 3 to 6 ,, ...	507	83	590	633	92	725
,, 6 to 12 ,, ...	170	16	186	193	6	199
,, 1 to 2 years	123	1	124	126	2	128
,, 2 to 5 ,, ...	70	1	71	63	1	64
,, 5 to 10 ,, ...	7	...	7	6	...	6
Over 10 years	...	...	...	...	...	...
Death and Death recorded ...	5	...	5	9	...	9
Life...	...	...	...	1	...	1
Unspecified	177	1	178	214	4	218
Total	6,086	1,347	7,433	7,330	1,629	8,959

Cumulative sentences have been taken as in the aggregate, and concurrent sentences as equal to the longest term. It is noticeable that 65 per cent. of sentences are for periods not exceeding one month; and 95 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, 1912, there were 52 prisoners serving life sentences (including 2 females), and 12 sentences of various periods over 10 years. In these cases the sentences have been imposed by the Executive authority in lieu of capital punishment. In this State "Life Sentence" does not mean any fixed term, but a prisoner may petition for release after serving twenty years. Where, however, a prisoner's expectation of life is less than twenty-two years, the date of petition is in accordance with a fixed scale.

Licensing of Prisoners.

Some satisfactory results are derived from the system of licensing in lieu of absolutely discharging prisoners, but difficulty is experienced in compelling the license holders to comply with the conditions of the license. During 1912 425 persons were discharged from all prisons on license, viz. :—

	Males.	Females.	Total.
Under Crimes Act	80	6	86
,, Prison Regulation	325	14	339
Total	405	20	425

Licenses operate for the unexpired portion of the sentence; sureties are required. The licensee is required to report periodically, and for any breach of conditions is liable to cancellation of license, and to recommittal to gaol for the balance of the sentence.

Of the licenses issued under the Crimes Act, 68 were in force at the end of 1912, viz., 62 for men and 6 for women.

Fugitive Offenders and Extradition.

The Imperial statutes in force in New South Wales for the surrender of fugitive criminals are the Fugitive Offenders Act, 1881, and the Extradition Acts, 1870 to 1895. The Influx of Criminals Prevention Act was enacted by the State Legislature in 1903.

Under the Fugitive Offenders Act, 1881, provision is made for the surrender from the United Kingdom to a British possession or *vice versâ*, 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 1912, 32 persons—all males—were arrested in other countries as fugitive offenders, and returned to New South Wales. Of these 10 were discharged, 6 were summarily convicted before magistrates, 11 were committed to higher courts, and in four cases proceedings were discontinued, and the remaining case was dealt with otherwise.

The number of persons arrested in New South Wales during 1912 as fugitives from other parts of the British Empire was 45, of whom 4 were discharged, 34 were remanded to other States of the Commonwealth, 6 to New Zealand, and 1 to South Africa.

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 1912 one person was extradited to New Caledonia.

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 advantage of a morally and physically improved condition, resulting from the discipline and training imposed upon prison inmates, is fostered by the efforts of such agencies as the Prisoners' Aid Association, in assisting released persons to find suitable employment, in acting as trustees of gratuities and moneys earned while in prison, and in tendering material help to first offenders, licensees, and others. The work of the Association during the ten years of its existence has been so effective that only about 11 per cent. of the persons assisted have been reconvicted.

During 1912 the Association assisted 247 discharged prisoners with food, money, clothing, or lodging, and secured employment in 195 cases. Of those assisted the reconvictions numbered only 10. Formal applications for assistance numbered 421, of which only 19 were refused.

The work of the Association in assisting first offenders with advice or help in obtaining sureties covered 5,035 interviews during 1912. Fines amounting to £1,552 were collected in 806 cases, while sureties for payment of fines were found in 41 cases. Similarly the necessary bail was found in 242 remand cases thus assisting a large number to retain their employment.

The social operations of the Salvation Army organisation include the delegation of special officers for police court duty, and the work performed by such officers covers every possible form of assistance. Precise details as to the operations within New South Wales are not readily available.

Upon external agencies depend the provision of lectures, entertainments, &c., at the various institutions, but religious and educational work, as already noted, are functions of the system.

In December, 1912, the first issue of the *Compendium*, a monthly newspaper for issue to well-conducted prisoners in the gaols of New South Wales, was published. The paper is edited and compiled under the supervision of the Comptroller-General of Prisons, and was the outcome of a suggestion of the Prisoners' Aid Association. In addition to matters of a non-controversial nature, the paper contains information regarding the demands for labour in various parts of the State, which information will be of great value to prisoners whose sentences are about to expire.

Cost of Police and Prison Services.

The following table shows the amount expended in maintaining the police and prison services of New South Wales during the last five years, also the amount of fines paid into the Consolidated Revenue, and the net return from prison labour :—

Expenditure and Revenue.	1908.	1909.	1910.	1911.	1912.
Expenditure—	£	£	£	£	£
Police	446,747*	449,718*	479,216*	492,557*	551,646*
Penal establishments	101,668	120,242	104,608	131,632	105.399
Total	548,415	569,960	583,824	624,189	657,045
Revenue—					
Fines	19,414	21,578	23,813	25,637	29,760
Net return from prison labour ...	24,664	24,673	24,470	21,670	20,688
Total	44,078	46,251	48,283	47,307	50,448
Net Expenditure	504,337	523,709	535,541	576,882	606,597
	s. d.	s. d.	s. d.	s. d.	s. d.
Per Head of Mean Population ...	6 5	6 7	6 7	6 11	7 0

* Financial year ending subsequent 30th June.

LAND LEGISLATION AND SETTLEMENT

Area of New South Wales.

The area of New South Wales, as stated in Part I of this Year Book, is estimated at 310,367 square miles, or 198,634,880 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 transferrence on 1st January, 1911, of 576,000 acres at Yass-Canberra to the Commonwealth Government as Federal Capital territory, reduced the land surface of the State to 195,093,000 acres.

Recent Legislation.

The following is a list of the various important enactments passed since the consolidation of the Statutes in 1896, relating to land settlement:—

Advances to Settlers	1899, 1902 (2)
Balranald Irrigation	1902
Barren Jack Dam and Murrumbidgee Canals Construction	1906
Blockholders	1901
Church and School Lands	1897, 1900
Closer Settlement	1902, 1904, 1906, 1907, 1909, 1912
Closer Settlement Promotion	1910
*Crown Lands	1884, 1898, 1899, 1903, 1905, 1908, 1910, 1912 (2)
*Crown Lands Improvement Purchase	1909
Department of Agriculture	1907
Dividing Fences	1902
Drainage Promotion	1901, 1902
Hay Irrigation	1902 (2)
Improvement Leases Cancellation	1906, 1908 (2), 1909
Inclosed Lands Protection	1901
Irrigation	1912
Labour Settlements	1902
Murrumbidgee Irrigation	1910 (2)
Prickly-pear Destruction	1901
Western Lands	1901, 1905, 1908, 1909

* These are now included in the Crown Lands Consolidation Act, 1913.

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, viz.:—

	acres.
1. By grants, and sales by private tender to close of 1831	3,906,327
2. ,, ,, in virtue of promises of early Governors made prior to 1831, from 1832-40 inclusive	171,071
3. ,, sales at auction, at 5s., 7s. 6d., and 10s. per acre, from 1832-38 inclusive	1,450,508
4. ,, ,, ,, ,, 12s. and upwards per acre, at Governor's discretion, from 1839-41 inclusive	371,447
5. ,, ,, ,, ,, 20s. per acre, from 1842-46 inclusive	20,250
6. ,, ,, ,, and in respect of pre-emptive rights, from 1847-61 inclusive	1,219,375
7. ,, grants for public purposes, grants in virtue of promise of Governor made prior to the year 1831, and grants in exchange for lands resumed from 1841-61 inclusive	7,601
Total alienated on 31st December, 1861	7,146,579

Certain grants were made under special enactments, and instructions from the Imperial authorities to Sir Thomas Brisbane, then Governor, directed him to reserve one-seventh of the Crown lands in each county for Church and School purposes.

The aggregate area of such reserves up to the year 1832, stated at 443,486 acres, was, by subsequent surveys, shown to be actually 454,050 acres, and did not aggregate the proportional area specified in the instructions. These lands were administered by the Clergy and School Land Corporation until its abolition by Order of Council on the 4th February, 1833, when the lands reverted to the Crown, and an agent was appointed to determine the claims of purchasers, to whom deeds of grant were made, and confirmed by a subsequent Act of Council, dated the 5th August, 1834.

Of the reserves mentioned above, 171,746 acres were alienated up to the year 1880, when, by the Church and School Lands Dedication Act of that year, the balance of 282,304 acres came under the control of the State Legislature to be administered for the purpose of Public Instruction. Subsequently the Church and School Lands Act, 1897, revested 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, 1895, such area may be dealt with only by reservation, dedication, license, or held under special or annual lease.

The aggregate area of Church and School Lands held under lease at 30th June, 1913, in the Eastern Division was 6,855 acres, at a rental of £457 per annum, the subdivisions being as follows:—

	No.	Area. acres.	Rent. £
Pastoral	8	6,734	90
Agricultural	19	99	28
Ninety-nine Year	38	10	329
Miscellaneous	3	12	10
Total	68	6,855	457

In addition to the above, there were 15 miles of water races.

The Australian Agricultural Company, incorporated by Act of the Imperial Parliament, dated 21st June, 1824, was, in 1825, granted an area of 1,000,000 acres. An area containing 1,048,960 acres was selected in the country surrounding Port Stephens, but in 1832 the Company was authorised to exchange a portion of this grant, containing 600,000 acres, for two areas situated on the Peel River and on the Liverpool Plains, respectively, the three grants aggregating as follows:—

	acres.
Port Stephens Estate, County of Gloucester	464,640
Peel River Estate, County of Parry	249,600
Warrah Estate, Liverpool Plains, County of Buckland...	313,298
Total	1,027,538

In addition to this land, the Company obtained from the Crown the promise of a lease of the coal-fields at Port Hunter (Newcastle) for thirty-one years, which lease, however, was exchanged for a grant of 500 acres, increased in 1828 to 2,000 acres of coal land, upon which the Company's collieries are now situated.

Reserves.

The total area of reserved lands in the State as at 30th June, 1913, was 27,372,752 acres. A classification of reserves according to the purpose for which used is shown below :—

Class of Reserves.	Area. acres.
Travelling Stock	6,249,364
Water	2,897,188
Mining	1,263,939
Forest	6,714,370
Temporary Commons	573,194
Railway	334,973
Recreation and Parks	221,668
Pending Classification and Survey	4,486,857
From Conditional Purchase, within Gold-fields	868,002
Miscellaneous	3,763,197
Total	27,372,752

The extent of land set apart for timber conservation amounts to 6,714,370 acres ; for routes and camping-places for travelling stock 6,249,364 acres have been reserved, 3,715,008 acres being in the Western Division ; water reserves totalled 2,897,188 acres, of which 2,049,685 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 :—½d. for every sheep ; 1½d. 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 £551,088 in the financial year 1912-13.

The Crown Lands Acts of 1895 and 1903 to 1912.

The Act of 1861 failed conspicuously in encouraging *bonâ-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, supply the means of securing permanent settlers through the new system of tenure —homestead selections and settlement leases.

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, and includes a broad belt of land between the sea-coast and a line nearly parallel to it, starting from a point midway between the small settlements at Bonshaw and Bengalla on the Dumaresq River, and terminating at Howlong, on the River Murray, thus embracing the coastal districts of the State, as well as the northern and southern tablelands. In this division is excellent agricultural land, and all the original centres of settlement, which are readily accessible to the markets of the State. For these reasons, the conditions governing the purchase and occupation of the Crown lands in the Eastern Division are more stringent than is the case in the Central and Western Divisions.

The Central Division embraces an area of 57,055,846 acres, extending from north to south between the western limit of the Eastern Division and a line starting from a point on the Macintyre River, where it is crossed by the 149th meridian of east longitude, and following this river and the Darling to the junction of Marra Creek; thence along that creek to the Bogan River, and across to the River Lachlan, between the townships of Euabalong and Condobolin, along the Lachlan to Balranald, and thence to the junction of the Edward River with the Murray. The area thus defined contains the upper basin of the Darling River in the northern part of the State, and in the south portions of the basins of the Lachlan, the Murrumbidgee, and other affluents of the Murray. The land in this division has been devoted mainly to pastoral pursuits; but experience having proved that it is suitable for agriculture, the cultivated area is increasing steadily.

The Western Division is situated between the western limit of the Central Division and the South Australian border. It contains an area of 80,318,708 acres, watered by the Darling River and its tributaries, and is devoted to pastoral pursuits. Water conservation and irrigation are the factors which ultimately will counteract climatic conditions and irregular rainfall, and make agriculture possible over this large area, of which the soil is adapted to the growth of most crops; but legislation in regard to the occupation of the lands of the district is based upon the assumption that for many years to come there will be little inducement for agricultural settlement.

Methods of Acquisition and Occupation.

Under the Acts in force during 1912, land in the different divisions of the State is 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) Volunteer land orders to 31st January, 1912;
(11) Homestead selection;
(12) Settlement purchase, under Closer Settlement Acts;
(13) Homestead farms;
(14) Suburban holdings;
(15) Irrigation farms.

Crown lands may be occupied under the following systems of lease, viz.:—

(1) Annual;
(2) Conditional purchase;
(3) Conditional;
(4) Inferior lands;
(5) Occupation license;
(6) Pastoral;
(7) Scrub;
(8) Special;
(9) Residential on gold and mineral fields;
(10) Improvement;
(11) Settlement;
(12) Snow-lands;
(13) Working men's blocks;
(14) Crown.

The maximum area which may be purchased conditionally differs in the Eastern and Central Divisions according to the method of acquisition shown in the statement above. In the Western Division land may be alienated by auction or occupied under lease.

Acquisition.

Conditional Purchase.

Unreserved Crown lands in the Eastern and Central Divisions not held under pastoral or other lease are available for conditional purchase, and lands held under annual lease or occupation license may also be acquired in this way. Land under conditional lease in any division may be purchased conditionally by the leaseholder only. Lands within suburban boundaries

or within population areas may be proclaimed as special areas, and are open to conditional purchase under the special conditions prescribed. The value of any improvements on a conditional purchase must be paid by the applicant.

Residential conditional purchase may be taken up by persons over age 16, except married women who are living apart from their husbands and have not obtained orders of judicial separation; 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	640
,, ...	Central	40	2,560
Non-residential...	Eastern	40	320
,, ...	Central	40	320
Special area	Eastern	.....	320
,, ...	Central	.....	640

In the Eastern Division a maximum area of 1,280 acres may be obtained by converting a conditional lease into an additional conditional purchase.

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, 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 on annual tenure, must not exceed a home maintenance area, meaning thereby an area which, used for the purpose for which it is reasonably fitted, would be sufficient for the maintenance in average seasons and circumstances of an average family. Additional holdings need not necessarily adjoin the original holdings, but must be situated within a reasonable working distance.

Under the Crown Lands Amendment Act of 1905 areas may be set apart for original holdings, or for additional holdings; but no 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 deposit on residential purchases is at the rate of 5 per cent. of the price of the land, and 4s. per acre on non-residential purchases of ordinary land; but on special areas, and on lands within classified areas, it varies

according to the prices fixed for the land. Under ordinary conditions the balance of purchase money, with interest at 4 per cent. per annum, is cleared off by thirty annual payments of 1s. per acre. The first instalment is due on the expiration of three years from the date of the contract.

In the case of holdings brought under the Conditional Purchasers' Relief Act of 1896, the instalments may be reduced to 9d. per acre, and in some instances to 6d. per acre, thereby extending the total period of repayment to sixty-six years, provided the holders of the conditional purchases remain in residence. By the Crown Lands Act Amendment Act of 1903, the rate of interest on the balance of purchase money was reduced to 2½ 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, who may grant leave of absence under special circumstances. 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 by the applicant's previous residence on the series, up to, but not exceeding, five years.

The selector must enclose his land, within three years after confirmation, with such a fence as the Land Board may prescribe; but he may substitute improvements in lieu of fencing. In such a case, permanent improvements, of the value of 6s. per acre, but not exceeding £384, are required within three years, and these improvements must be brought up to the value of 10s. per acre, 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.

Under the Crown Lands Amendment Act, 1908, an original non-residential conditional purchase, with any non-residential conditional purchase made in virtue of it, may be converted into an original 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 proviso of the Crown Lands Amendment Act, 1910, permits of limitation of value of improvements to be effected, *i.e.*, 30 per cent. of price of the subject land within 3 years, or 50 per cent. within 15 years—this limitation applying to conditional purchases or leases, except purchases under section 47 of the Act of 1884.

Preferential Rights of Conversion.

Conditional purchases, or conditional leases of the same series, may be converted into a homestead selection, if the holder has been in *bonâ fide* residence for at least six months, in which case all moneys paid as interest or rent are deemed to have been paid for the use of the land, and all moneys paid off the purchase money are credited towards future rent of the selection. Under similar conditions, these tenures may also be converted into homestead farms.

Improvement Purchases.

Holders of miners' rights or of business licenses on a gold-field, being in authorised occupation 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 permitted to the extent of 200,000 acres in any one year. Town lands may not be sold in blocks exceeding half an acre, nor at a lower upset price than £8 per acre; and suburban lands must not exceed 20 acres in one block, the minimum upset price being £2 10s. per acre. Country lands may be submitted in areas not exceeding 640 acres, the upset price being not less than 15s. per acre. The value of improvements on the land may be added to the upset price.

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.

In many Crown grants of land having water frontage, reservations are maintained, 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 are not authorised which might interrupt or interfere with navigation.

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.

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 is a prominent feature of the Act of 1895, the land chosen for subdivision being good agricultural land. Where suitable lands are situated within easy access of towns, small blocks are set apart, the lands being available after particulars relating to area, capital value, &c., have been published in the *Gazette*. The maximum area that may be selected is 1,280 acres, but the selector is limited to a block as granted.

Any person eligible to take up a conditional purchase may apply for a homestead selection; the selector is 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 commence to reside on the selection within three months, and to erect 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, is $1\frac{1}{4}$ per cent. of the capital value of the block. The condition of residence may be fulfilled by deputy prior to the issue of the grant, but the applicant is 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 appraisement of the capital value of the land may be obtained under certain conditions.

Additional land may be acquired to make up an area which, with all other lands held by the applicant other than under annual tenure, 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, is issued, 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 transferree is required to live on the land while he holds it. Tenant-right in improvements is allowed, and the holding is 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, 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. Holders of conditional purchases may convert their holdings into homestead selections.

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. Any person—including an alien—of a minimum age of 16 years, if a male, or 21 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. An alien becoming the holder of an homestead farm, suburban holding, Crown lease, or irrigation farm, is required to become naturalised within three years.

The title of a homestead farm is a lease in perpetuity, the annual rent is charged at the rate of 2½ per cent. of the capital, 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 capital value is subject to re-appraisement after the first twenty-five years and for each subsequent period of twenty years.

A condition of perpetual residence is attached to every homestead farm, but in special cases residence in the nearest town or village, or anywhere within reasonable working distance, may be allowed.

The perpetual lease grant must 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.

Suburban Holdings.

The conditions of perpetual rent and perpetual residence are attached to suburban holdings. The area of a suburban holding is determined by the Minister for Lands; the rent—minimum £1 per annum— is calculated at the rate of 2½ per cent. of the capital value, to be appraised for each period of twenty years; males under 16 years, females under 21 years, and married women not living apart from husbands under judicial decree, are disqualified from applying.

Any suburban Crown lands, or Crown land within population boundaries, or within the Newcastle pasturage reserve, or any other Crown land, may be set apart for disposal by way of suburban holding.

Irrigation Farms.

The disposal of lands within duly constituted irrigation areas is regulated by the Crown Lands Amendment Act, 1912, and the Irrigation Act, 1912. A special land board, with the powers and duties of a local land board, may be appointed to administer the Crown Land Acts within an irrigation area; the lands are classified as town, irrigable, and dry or non-irrigable lands. Any person (except a married woman not separated from her husband by judicial decree) aged 16 years or over, or two or more such persons, may apply for an irrigation farm or block. The title is perpetual lease, subject to perpetual payment of rent and performance of residence. The rent is at

the rate of 2½ 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 shall be issued to the holder provided that the required conditions have been complied with.

In respect of town land blocks, the conditions of residence may be waived or suspended by the Commissioner for Water Conservation and Irrigation; no person may hold more than three adjoining blocks for residence, or four adjoining blocks for business purposes.

Occupation.

Annual Leases.

Unoccupied lands not reserved from lease may be obtained for pastoral purposes as annual leases, on application, or they may be offered by auction or tender. 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.

Conditional Purchase Leases.

Areas set apart for disposal by way of conditional purchase lease are subdivided as the Minister for Lands may determine. The lease is for forty years, at a rental of 2½ per cent. per annum on the capital value. The value of existing improvements is appraised by the Land Board, and special conditions may be imposed regarding improvements, cultivation, preservation, or planting of timber, &c.

Any male above the age of 18 years, and any female above 21 years, who is not disqualified under the provisions of the Land Act, may apply for a conditional purchase lease. A female applicant must be unmarried, or widowed, or living apart from her husband under a decree of judicial separation.

Residence on the lease must be continuous for ten years, and must commence within twelve months from the date of confirmation, but the commencement of residence may be deferred for five years. At any time after the confirmation of an application, the holder may convert the area into a conditional purchase by payment of a deposit of 5 per cent. on the capital value of the land, provided that the proper conditions have been observed, and subject to all the unperformed conditions of the lease, except payment of rent. The balance of purchase money is payable by equal annual instalments at the rate of 5 per cent. of the price, consisting of principal, and interest at the rate of 2½ 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, 1912, conditional purchase leases may be converted also into homestead farms.

Under the Crown Lands Act, 1908, land may 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 are no conditions of residence, but substantial improvements of value not less than 10s. per acre must be completed within three years.

Any 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 annual, exceed a home maintenance area.

Conditional Leases.

A conditional lease may be obtained by any holder of a conditional purchase (other than non-residential), or a conditional purchase within a special area in the Eastern Division. Lands available for conditional purchase are also available for conditional lease, with the exception of lands in the Western Division, or within a special area or a reserve.

Applications must be accompanied by a provisional rent of 2d. per acre and a survey fee. The area which an applicant may obtain as conditional purchases and conditional leases is restricted to 1,280 acres in the Eastern Division, and 2,560 acres in the Central Division; but the Land Board may specifically permit larger areas. The 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, or by auction or tender, but inferior-lands leases may be acquired only by auction or tender. There is no limitation as to area, and in the case of a 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 reappraisement. 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. 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, may 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.

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 auction or otherwise, the term of the lease not to exceed twenty-eight years. The conditions attached are suitable to the circumstances of each case, being, like the rent, determined by the Land Board. The Crown Land Act, 1908, provides for the conversion of special leases, and of church and school lands leases, into original or additional conditional purchase leases; or original or additional conditional purchases; or original or additional homestead selections; or original or additional settlement leases; or conditional leases.

Residential Leases.

The holder of a "miner's right" or "mineral license" within a gold or mineral field may obtain a residential lease. A provisional rent of 1s. per acre is charged, the maximum area 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. 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 require the surrender of the lease to the Crown, the lessee being compensated.

Settlement Leases.

Under this tenure, farms gazetted as available for settlement lease are 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 may be taken up is 1,280 acres; but where the settler must combine agriculture with grazing, the farms may contain any area not exceeding 10,240 acres. These areas, however, may be exceeded by means of additional holdings, which need not adjoin the original holding, but must be situated within a reasonable working distance thereof.

The lease is issued for a term of forty years, divided into four periods. The annual rent for the first period is that notified before the land is made available for lease; but the lessee may require that the rent be determined by the Land Board, and the annual rent for each succeeding period may be separately determined in like manner. Residence is compulsory throughout the whole term; and the land must 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, 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 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 as snow leases. Not more than two snow leases may be held by the same person. The minimum area is 1,280 acres, and the maximum 10,240 acres. The term of the lease is seven years, but may be extended by three years.

Working Men's Blocks.

This tenure has been created by the Blockholders' Act of 1901, under which workmen may secure a lease of a block, not exceeding 10 acres, for a period of ninety-nine years. An applicant must be not less than 18 years of age, and gain his livelihood by his own labour; the rent may not exceed 5 per cent. on the capital value of the land. The lessee and his family must reside on the land for at least nine months in every year, pay the rent annually, and all rates, taxes, and value of improvements, and must fence the land within two years. A blockholder may have his block protected from seizure for debt except for rates and taxes.

Crown Leases.

Crown leases were constituted under the Crown Lands Amendment Act, 1912. The term of lease is forty-five years, and the annual rent 1½ per cent. of the capital value, as determined every fifteen years. The rent payable for the first year may be remitted if 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 may convert into a homestead farm so much of the land as will not exceed a home maintenance area. 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 Act, 1901, is vested in three Commissioners, constituting "The Western Land Board of New South Wales," who, sitting in open Court, 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 Land Division from the 1st January, 1902.

The Commissioners recommend the areas, boundaries, and the rent chargeable, and determine the value of any improvements, prior to the opening of lands for lease.

The registered holder of a pastoral, homestead, improvement, scrub, or inferior lease or occupation license, of land in the Western Division, could apply before the 30th June, 1902, to bring his lease or license under the provisions of the "Western Lands Act of 1901;" in cases where application has not been made, such lease or license is treated as if the Act had not been passed.

All leases issued or brought under the provisions of the "Western Lands Act of 1901" expire on the 30th June, 1943, except in cases where a withdrawal is made for the purpose of sale by auction or to provide small holdings, when, as compensation, the lease of the remainder may be extended for a term not exceeding six years.

The rent on all leases current at the commencement 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 Act as at 30th June, 1913, were classified as follows :—

Class of Holding.	Leases issued.	Area.	Annual Rentals.
	No.	acres.	£
Pastoral Leases	300	40,505,935	51,064
Homestead Leases	1,110	10,303,614	22,575
Improvement Leases	116	1,950,875	1,040
Scrub Leases	3	17,431	25
Inferior Leases	4	209,950	48
Settlement Leases	8	40,050	130
Artesian Well Leases	29	296,631	395
New Special Leases	256	1,021,985	1,213
Special (Conversion) Leases	61	9,447	341
Residential Leases...	1	10	1
Occupation Licenses	110	7,920,215	2,418
Homestead Selections	12	7,896	27
,, Grants...	22	16,452	98
Section 32, Western Lands Act Leases...	285	2,757,770	2,132
Part VII, ,, ,, ...	337	8,445,211	7,852
Preferential Occupation Licenses	5	57,800	52
Permissive Occupancies	38	831,100	416
	2,697	74,392,372	89,827

Reappraisement.

Under the Crown Lands Amendment Act, 1910, the capital value of a homestead selection after it has been granted, or the rental of a settlement, or a conditional lease is determinable, on reassessment, at intervals of fifteen years.

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 leased to

the Board, in trust for the members of the settlement, for a period of twenty-eight years, with right of renewal for a further term of twenty-eight years.

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, 1913, the only settlements in existence were those at Bega and Wilberforce. At Bega an area of 1,360 acres is attached to the settlement, and on the date specified there were 26 men enrolled, the total population being 150. A sum of £2,420 has been advanced by the Government and the value of improvements, exclusive of crops, is £3,110. At Wilberforce, an area of 435 acres has been granted for settlement. On 30th June, 1913, there were 10 men enrolled, the total population being 41. Loans from the Government amount to £2,479, the value of improvements, exclusive of crops, being £1,450.

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. Owners may offer to surrender private lands in consideration of a price to be specifically set out, such offer to be binding on the owner for a period of nine months.

The Closer Settlement Amendment Act, 1907, constituted three Advisory Boards to report upon lands of a minimum value of £10,000, exclusive of improvements, 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 purchase or resume for purposes of closer settlement land, the property of one owner and exceeding £10,000 in value, on either side of the proposed railway.

Land comprised in an improvement or scrub lease, or lease to outgoing pastoral lessee, situated within 15 miles of an existing or duly sanctioned railway, 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, a plan of the designed subdivision, showing areas and values per acre of the proposed settlement purchases, must be approved by the Minister. The design plan includes 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.

Men above the age of 18 years, and women over 21 years, and not having the protection and support of a husband, 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.

Applications, accompanied by a deposit of 5 per cent. of the notified capital value of the settlement purchase sought, are lodged with the Crown Lands Agent. The purchase money, including interest at 4 per cent., is paid in thirty-eight annual instalments at the rate of 5 per cent. of the capital value of the land. These rates of deposit, instalment, and interest were fixed as minimum rates under the provisions of the Closer Settlement Amendment Act, 1912, which came into operation on 1st January, 1913. After that date the rates shall be such as shall have been prescribed by regulations in force at the commencement of the title of a settlement purchase.

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. 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.

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 regarded as the equivalent of this condition. Every purchaser is subject to conditions as to mining, cultivation, destruction of vermin and noxious weeds, &c.

Pending selection as settlement purchase, the land may be leased in areas not exceeding 320 acres. Leases so granted are subject to the following conditions:—Improvements are not to be effected without the written consent of the Minister or Chairman of the Land Board; leases expire on 31st December, but may be renewed on payment of yearly rent in advance not later than 10th December; the rent is to be appraised by the Land Board, and the granting of a lease does not exempt the land from settlement purchase; the Minister may at any time cancel the lease after three months' notice.

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 Acts as at 30th June, 1913:—

Name of Settlement Purchase Area.	Lands comprised in Settlement Areas.			Price paid for Acquired land.	
	Acquired land.	Adjoining Crown land.	Total.	Total.	Per Acre.
	acres.	acres.	acres.	£	£ s. d.
Myall Creek, Inverell	53,929	19,373	73,302	138,866	2 11 6
Gobbagombalin, Wagga	61,866	4,622	66,488	207,560	3 7 1
Marrar, Wagga	26,608	781	27,389	68,777	2 11 8
Walla Walla, Albury	50,156	1,580	51,736	250,687	5 0 0
Sunny Ridge, Cowra	12,031	416	12,447	49,038	4 1 8
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
Tuppal, 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
Total	676,439	87,759	764,198	2,525,056	3 14 7

Of the total area of Closer Settlement lands, 25,322 acres have been reserved for roads and other purposes, and 738,876 acres have been divided into 1,608 farms, the average area per farm being 459 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, 1913.	Area allotted.	Capital value of Farms selected.
		Acquired Lands.	Crown Lands.	Total.			
	No.	£	£	£	No.	Acres.	£
Myall Creek	134	138,589	24,890	163,479	134	66,984	163,479
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	255,267	3,845	259,112	126	50,605	259,112
Sunny Ridge	24	50,292	1,236	51,528	24	12,266	51,528
Boree Creek	30	68,737	539	69,276	30	17,034	69,276
Peel River	289	438,588	126	438,714	289	97,417	438,714
Mungery	62	117,497	81,962	199,459	62	95,111	199,459
Coreen Creek & Back Paddock	63	150,173	3,849	154,022	63	38,353	154,022
Brookong	20	43,155	341	43,496	20	12,006	43,496
Piallaway and Walhallow	38	63,485	1,371	64,856	38	12,631	64,856
Everton	18	19,886	11,571	31,457	18	12,307	31,457
Pine Ridge	16	29,557	625	30,182	16	7,946	30,182
Richlands	37	36,161	932	37,093	37	8,918	37,093
Larras Lake	30	57,148	3	57,151	30	11,486	57,151
North Logan	58	57,974	676	58,650	34	11,184	57,804
Hardwicke	23	26,827	277	27,104	23	5,890	25,275
Tuppal	117	232,160	2,364	234,524	117	49,605	234,524
Nangus	17	31,067	485	31,552	16	6,955	29,420
Gunningbland	19	38,792	118	38,910	19	12,389	38,910
Tibbereenah	77	51,298	868	52,166	75	12,711	52,140
Wandary	18	37,985	642	38,627	18	9,075	38,627
Crowther	22	53,687	694	54,381	22	10,677	54,381
Cole Park, Malton, & Rossiville	20	14,644	5,808	20,452	17	3,175	16,487
Bibbenluke	31	62,106	1,289	63,395	26	13,454	52,586
Maharatta	48	81,321	993	82,314	39	15,330	64,604
Warrah	83	210,011	..	210,011	73	39,875	187,722
Total	1,608	2,667,203	159,973	2,827,176	1,554	724,924	2,767,370

At 30th June, 1913, 1,554 farms, containing 724,924 acres, had been allotted, the average cost to the settler was £3 16s. 4d., per acre and £1,781 per farm. The farms which have not yet been selected are let under permissive occupancy, and remain available for settlement purchase application.

Closer Settlement Promotion Act, 1910.

The Closer Settlement Promotion Act, 1910, enables three or more persons qualified to hold settlement purchases, to negotiate with an owner of private lands in their particular district, and to apply to have such lands brought under the Act. Upon approval by the Minister, the vendor surrenders the land to the Crown, and the purchaser acquires it as a settlement purchase, obtaining an advance, secured by mortgage on the land, from the Commissioners of the Government Savings Bank, who may make advances up to 95 per cent. of the Crown valuation of the farm, with a maximum of £2,500 ; 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 5 per cent. of the Crown valuation of the farm on allotment. Repayments of advances from the Government Savings Bank were at the rate of 5 per cent. per annum, being 4 per cent. interest and 1 per cent. sinking fund, the whole indebtedness being discharged in thirty-eight years. From the beginning of the year 1913 these rates of deposit instalments and interest were subject to the provisions of the Closer Settlement Amendment Act, 1912, as noted above.

Slight variations in the dates of payment may be sanctioned in special circumstances, and subsequently holders of farms may obtain advances on account of improvements effected.

From the commencement of the Act in September, 1910, till 30th June, 1913, 798 farms of a total area of 309,620 acres, were applied for, the

amount involved being £1,666,579. Of this number 509 farms, embracing an area of 202,855 acres, at a cost of £1,072,218, were finally dealt with at 30th June, 1913.

The transactions for each financial year were as follows :—

Year.	Estates.	Farms.	Area.	Value.
			acres.	£
1911	17	128	50,769	251,766
1912	29	213	85,094	456,197
1913	23	168	66,992	364,255
Total ...	69	509	202,855	1,072,218

In addition to the land acquired by the State for closer settlement a number of estates have been subdivided for that purpose by private owners.

Land Resumptions.

Land required by the State may be obtained by resumption, purchase, exchange, surrender, or gift. Resumptions are those made under the Public Works and Lands for Public Purposes Acquisition Acts, and are treated by the Government Land Valuer, except those made for purposes of Public Instruction or of Railways.

The following statement shows such resumptions and purchases made during the past six years :—

Year.	Area of Resumptions, &c.		Total.
	Purchases.	Gifts.	
	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 1 40	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 23½	102,203 1 34½

Resumptions and purchases made during 1912–1913, principally in connection with irrigation and defence, were :—

	Area. a. r. p.		Area. a. r. p.
Commonwealth Bank ...	0 0 32	Post Offices	6 2 0¼
Defence	46,756 2 34	Public School sites ...	211 3 33
General Purposes... ...	734 3 3½	Railways and Tramways	2,885 2 5
Industrial School, Gosford	681 2 0	Water supply	17 2 20½
Irrigation	50,509 3 4½		
Maintaining Traffic ...	398 3 21¾	Total	102,203 1 34½

Dedications of Land.

	Area. a. r. p.		Area. a. r. p.
Additions to Town Hall site...	0 0 20	Public School sites	81 1 31
Cemeteries	60 3 23	Racecourse, Showground, etc.	119 3 0
Fire Brigade Station site ...	0 1 39	Reserve, Travelling Stock ...	2 0 24
Hospital Sites	6 2 20	Showground	40 0 0
Mechanics' Institute sites ...	2 0 25	State Children's Home, site for Industrial School	681 2 0
Municipal depôt	2 2 0		
Public Hall	0 1 0	Total ...	1,371 0 6
Public Recreation	27 0 5		
Public Roads	346 0 19		

Progress of Alienation.

The figures relating to land alienation under the legislation of 1861, and to its subsequent amendments, show that up to the 30th June, 1913, there were 14,912,707 acres sold by auction and other forms of sale.

As regards conditional purchases, the following applications have been made under the various Acts :—

	Applications.	
	No.	acres.
Under the Crown Lands Act of 1861—		
To May 24, 1880	136,389 ...	14,982,120
Under the Crown Lands Act of 1880	55,084 ...	8,488,020
Total to 31st December, 1884...	191,473 ...	23,470,140
Under the Crown Lands Acts of 1884, 1889, 1895, and amending Acts	91,439 ...	16,623,618
Grand total to 30th June, 1909	282,912 ...	40,093,758

The number of selections—viz., 282,912, containing 40,093,758 acres—has been reduced since 1909 by forfeitures, cancellations, conversions into homestead selections, &c., and increased by conversions from other tenures under the Crown Lands Amendment Act, 1908, so that the land wholly alienated, or in process of alienation, by conditional purchase, on the 30th June, 1913, amounted to 32,945,679 acres contained in 211,594 purchases. Deeds have now been issued upon 119,411 completed purchases, covering 15,638,374 acres, and the balance represents the number of purchases still in force, but upon which the conditions have not been fulfilled, viz., 92,183, covering an area of 17,307,305 acres.

Applications for homestead selections numbering 10,020 were received to 30th June, 1913, the aggregate area of such being 3,819,162 acres. Of the applications lodged, 7,925, covering 2,757,976 acres, were confirmed. Homestead grants to the number of 4,028, with an area of 1,628,176 acres, were issued to 30th June, 1910; during the following year 287 homestead grants, covering 123,086 acres, were prepared, and in 1911–12, 196 grants for 88,517 acres were prepared. The area held under homestead selection and grants on 30th June, 1913, was 1,480,834 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 the figure obtained, 171,998 acres shall probably represent the maximum in this direction, as the free grants ceased as from January 31st, 1912.

From 1862 to 30th June, 1913, the Crown has dedicated 234,193 acres for public and religious purposes, the dedications during the last year covering 1,370 acres. Homestead farms and suburban holdings were new forms of tenure created by the Crown Lands (Amendment) Act of 1912. The first areas for homestead farms were made available on 13th May, 1912; and for the year ended 30th June, 1912, 400 applications embracing 217,186 acres were lodged; 356 applications covering 203,365 acres were confirmed, the rental value being £7,368.

For the suburban holdings 548 applications embracing 12,704 acres, were received, and 373, covering 8,730 acres, were confirmed, the annual rental value being £1,021.

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, 1913, inclusive	14,912,707
Area sold under system of conditional purchase for which deeds issued, 1862 to 30th June, 1913, inclusive	15,638,374
Area granted under Volunteer Land Regulations of 1867	171,998
Area dedicated for public and religious purposes, less resumptions, 1862 to 30th June, 1913	234,193
Homestead selections and grants existing on 30th June, 1913	1,480,834
Homestead farms	241,221
Suburban holdings	9,731
Total, 30th June, 1913	39,835,637
Less alienated lands within Federal Capital Territory	173,451
Total area alienated, 30th June, 1913	39,662,186
Area in process of alienation under system of conditional purchase standing good on 30th June, 1913 (exclusive of Federal Capital Territory)	17,307,305
Area alienated and in process of alienation on 30th June, 1913, exclusive of lands dealt with under Closer Settlement Act, and Federal Capital Territory	56,969,491
Area acquired for Closer Settlement to 30th June, 1913 (including 203,357 acres under Closer Settlement Promotion Act, 1910)	879,796
Total	56,089,695
Lands (acquired and Crown) alienated for closer settlement to 30th June, 1913 (including 203,357 acres disposed of under Closer Settlement Promotion Act)	928,281
Total area alienated, and in process of alienation on 30th June, 1913 (exclusive of Federal Capital Territory)	57,017,976

It has been found impracticable to separate the area alienated by grant from that sold by private tender, as the records of early years are incomplete upon this point.

Conversion of Tenures.

In reference to the various methods of acquisition and occupation, details have been given of provisions of the Crown Lands Amendment Acts of 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.					
	1910–11.		1911–12.		1912–13.	
	No.	Area.	No.	Area.	No.	Area.
		acres.		acres.		acres.
Conditional Leases	2,194	1,110,037	1,464	555,972	1,850	780,773
Conditional Purchase Leases ...	147	43,934	122	39,296	41	17,904
Homestead Selections or Grants ...	1,476	753,018	426	186,796	176	70,703
Settlement Leases	646	1,853,435	218	587,269	94	308,863
Non-residential Conditional Purchases	12	1,132	2	254	4	548
Special Leases	557	84,675	397	59,871	269	36,791
Settlement Purchases	...	.....	...	.....	34	17,533
Church and School Lands Leases ...	11	1,945	14	8,098	2	1,537
Improvement Leases	...	.....	1	500	7	4,045
Conditional Purchases	...	.....	...	.....	1	224
Totals { Eastern Division	2,867	1,104,491	1,653	512,917	1,545	487,003
Totals { Central Division	2,176	2,743,685	991	925,139	933	751,918
Total for the State ...	5,043	3,848,176	2,644	1,438,056	2,478	1,238,921

Class of Holding.	Applications confirmed.					
	1910–11.		1911–12.		1912–13.	
	No.	Area.	No.	Area.	No.	Area.
		acres.		acres.		acres.
Conditional Leases	2,016	829,272	1,503	580,220	1,781	784,556
Conditional Purchase Leases ...	109	33,207	137	44,579	50	18,155
Homestead Selections or Grants ...	1,190	603,351	649	295,288	195	76,306
Settlement Leases	264	650,986	404	1,287,583	166	544,345
Non-residential Conditional Purchases	8	820	5	716	4	324
Special Leases	275	39,657	392	54,500	232	26,845
Settlement Purchases	...	.....	...	.....	19	9,944
Church and School Lands Leases ...	7	1,579	6	1,766	2	2,154
Improvement Leases	...	.....	1	595	1	600
Totals { Eastern Division	2,422	812,264	1,784	736,398	1,546	526,164
Totals { Central Division	1,447	1,346,608	1,313	1,528,849	904	937,065
Total for the State ...	3,869	2,158,872	3,097	2,265,247	2,450	1,463,229

Revenue from Public Lands, 1910–13.

The following statement shows the Revenue received from Public Lands during the years ended 30th June, 1910 to 1913, and also the Revenue per capita :—

Head of Revenue.	1910.	1911.	1912.	1913.
ALIENATION—				
Auction and Special Sales—	£	£	£	£
Auction Sales...	77,055	83,058	83,764	63,001
Improved Purchases...	2,951	3,825	1,225	3,149
Newcastle Pasturage Reserve Sales ...	676	1,061	996	904
Miscellaneous Purchases	7,636	11,049	13,631	25,801
Total ... ... £	88,318	98,993	99,616	92,855
Conditional Purchases—				
Deposits and Improvements (Acts, 1884 and 1889)	64,236	135,392	70,930	62,303
Instalments and Interest (Acts of 1875, 1884, and 1889)	538,175	537,226	595,805	660,703
Interest (Act of 1861)	22,200	21,614	18,894	17,094
Balances (Acts, 1861, 1875, 1884, and 1889)	174,495	186,592	146,593	138,013
Homestead Selections (Improvements and Rent)	71,624	62,917	48,577	40,767
Total ... ... £	870,730	943,741	880,799	918,880
OCCUPATION—				
Pastoral Leases—				
Pastoral	756	749	706	720
Conditional	204,965	199,214	201,450	207,043
Conditional Purchase	19,708	21,544	22,692	20,729
Occupation Licenses...	31,533	29,871	26,952	25,051
Homestead	1,555	1,688	1,771	1,216
Annual and Snow	38,152	34,297	33,547	40,607
Scrub and Inferior	10,389	9,896	9,853	
Settlement	115,561	106,736	85,331	79,147
Improvement	50,712	49,501	49,644	46,203
Artesian Well...	230	198	198	144
Church and School Land	7,751	632	471	515
Western Land Division	79,517	82,265	83,364	89,613
Blockholders Act of 1901	28	15	7	6
Leases under 18th Section, Land Act, 1903	11,538	11,451	9,645	10,146
Crown Leases...	...	...	1,017	4,059
Suburban Holdings	...	...	77	940
Homestead Farms	...	.....	.....	335
Total ... ... £	572,395	548,057	526,725	526,474
Mining—				
Mineral Leases	20,706	17,490	17,739	18,796
Leases of Auriferous Lands	2,310	2,544	1,892	1,837
Deposits—Gold and Mineral Dredging Act, 1899	1,236	987	945	821
Miners' Rights	3,184	2,913	2,777	3,004
Business Licenses	888	784	764	691
Residential Leases	1,713	1,661	1,679	1,703
Royalty on Minerals...	59,373	77,613	89,423	103,851
Fees—Warden's Courts and Department of Mines	2,063	1,889	1,689	1,715
Other Receipts	4,789	4,698	3,552	5,015
Total ... ... £	96,262	110,579	120,460	137,433

Head of Revenue	1910.	1911.	1912	1913.
OCCUPATION (*continued*)—				
Miscellaneous Land Receipts—	£	£	£	£
Timber Licenses, &c.	60,508	84,460	94,560	96,929
Rents, Special Objects	40,485	43,490	43,064	44,546
Fees on Preparation and Enrolment of Title-deeds	7,457	7,355	6,823	5,346
Survey Fees	28,883	30,823	24,297	27,428
Fees on Transfer of Leases	2,047	2,415	2,919	2,254
Quit Rents and Other Receipts	25,505	26,194	22,471	28,373
Total ... ... £	164,885	194,737	194,134	204,876
Gross Revenue ... ... £	1,792,590	1,896,107	1,821,734	1,880,518
Refunds ... ... £	62,850	57,190	56,275	44,050
Net Revenue ... ... £	1,729,740	1,838,917	1,765,459	1,836,468
REVENUE PER CAPITA.				
	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Auction and Special Sales	0 1 1	0 1 2	0 1 2	0 1 1
Conditional Purchases	0 10 10	0 11 6	0 10 5	0 10 4
Pastoral Occupation	0 7 2	0 6 8	0 6 3	0 5 11
Mining Occupation	0 1 2	0 1 4	0 1 5	0 1 7
Miscellaneous Land Receipts	0 2 0	0 2 5	0 2 4	0 2 4
Gross Revenue ... ... £	1 2 3	1 3 1	1 1 7	1 1 3
Refunds ... ... £	0 0 9	0 0 8	0 0 8	0 0 6
Net Revenue ... ... £	1 1 6	1 2 5	1 0 11	1 0 9

AREA LEASED AT 30TH JUNE, 1913.

The area leased to pastoral tenants and others at the end of June, 1913, amounted to 124,354,945 acres (including leases to miners under the Mining Act), and was subdivided as follows :—

Type of Lease.	Area, acres.	Type of Lease.	Area, acres.
Pastoral	1,137,095	Snow Land	60,104
To outgoing Pastoral Lessees	996,272	Special	620,447
Occupation License	8,105,249	Inferior Land	108,664
Conditional	16,189,521	Artesian Well	71,680
Conditional Purchase	611,152	Western Lands	74,392,372
Homestead	480,210	Under the Mining Act ...	219,812
Annual	4,237,898	Permissive Occupancy ...	1,002,794
Settlement	7,256,701	Other	82,970
Improvement	6,014,906		
Scrub	2,211,234	Total	124,354,945
Crown	555,864		

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, 57,017,976 acres, and the area leased, 124,354,945 acres, making a total of 181,372,921 acres, there remained a balance of 16,685,959 acres, representing the area of country neither alienated nor leased, and including roads, unoccupied reserves, land unsuitable for settlement, and water.

AREA AVAILABLE FOR SETTLEMENT.

In 1895 attention was directed to the question of land legislation, as it was contended that the Lands Acts of 1884 and 1889 had failed to prevent the accumulation of extensive landed estates in the hands of a very limited number of proprietors.

Although it may be said, in defence of the policy pursued by this class of landowners, that in many cases it was forced upon them by the defective nature of legislation which failed to discriminate between the very different interests of the pastoralists and of the agricultural settlers, it must nevertheless have been patent to everybody that these immense alienations of the public estate were not conducive to healthy settlement. The Acts mentioned have, however, been superseded by the Crown Lands Act of 1895. Many radical changes in land legislation have been effected by this Act ; but immediate remedial action can 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 prevents immediate action.

The lands which can be affected beneficially by the Act of 1895 are, therefore, limited to the area which is unalienated, or for which contracts have not been made, and is further reduced by reserves for public purposes, for gold-fields and other forms of mining enterprise, and for railway and other purposes. At the end of June, 1913, there were 39,662,186 acres absolutely alienated, excluding lands (173,451 acres) alienated within the Federal Capital Territory ; 17,307,305 acres conditionally sold, the conditions of purchase not being complete ; and 24,698,103 acres leased with the right to convert into freehold. These areas amounted to 81,667,594 acres ; but taking into consideration the lands dealt with under the Closer Settlement Acts—879,796 acres acquired and 928,281 acres disposed of—there are 81,716,079 acres which have been placed practically beyond State control.

The following statement shows the tenure under which the areas leased with right to convert into freehold, under the Crown Lands (Amendment) Act of 1908, are held :—

	acres.
Conditional Leases	16,189,521
Conditional Purchase Leases	611,152
Settlement Leases	7,256,701
Special Leases	620,447
Residential Leases on Mineral Fields	13,427
Church and School Land Leases	6,855
Total	24,698,103

The areas under long contracts of lease, in some cases with right of renewal, are given below :—

	acres.
Crown Leases	555,864
Pastoral Leases	1,137,095
Leases to Outgoing Pastoral Lessees	996,272
Homestead Leases	480,210
Scrub Leases and Inferior Land Leases	2,319,898
Artesian Well Leases	71,680
Snow-land Leases	60,104
Improvement Leases	6,014,906
Leases under Western Lands Act	65,583,257
Other Leases	282,500
Total	77,501,786

Adding together 81,716,079 acres practically beyond State control, and 77,501,786 acres of land leased on long contracts, a total of 159,217,865 acres shows the extent of territory which can now be more closely settled and intensely cultivated, only by voluntary action of the holders, or by more systematic and probably costly resumptions. Of the balance, after allowance has been made for useless land, it will be found that at 30th June, 1913, the State probably had about 33,000,000 acres available for occupation under various tenures. There is, however, a difficulty attending any calculation of the area included in land under long leases, which might be made available for settlement. This is apparent when the conditions under which the leases are now held are taken into consideration. Except where right to renewal on expiration of the lease exists, certain areas are continually reverting to the Crown by effluxion of time, and again in respect of certain leases provisions have been made whereby the Minister may at his discretion withdraw a part, and in some cases the whole, of a leased area, for the purposes of settlement.

The progress of alienation and of conditional settlement by purchase and lease at various periods from 1861 to 1913, is shown in the following table :—

Year.	Area Alienated for which deeds have issued.	Area Conditionally Purchased, standing good at end of year.	Area Conditionally Leased at end of year.	Area under Homestead Selection, exclusive of Homestead Grants.	Area under Homestead Grant.
	acres.	acres.	acres.	acres.	acres.
1861	7,146,579	.....	.....	.....	.....
1871	8,630,604	2,280,000	.....	.....	.....
1881	22,406,746	12,886,879	.....	.....	.....
1891	23,775,410	19,793,321	11,234,131	.....	.....
1901	26,408,169	20,044,703	13,980,942	1,491,073	35,385
1906	32,486,086	16,499,823	15,807,249	984,426	1,087,065
1911	38,569,028	15,614,036	16,978,816	679,554	1,049,600
1912	39,076,189	16,529,008	16,795,342	1,528,703	
1913	39,662,186	17,307,305	16,800,673	1,480,834	

As already stated, land held under conditional lease is virtually alienated, since the holder has the right of converting his lease into a freehold at any time during its currency.

Areas for Settlement, 1912–13.

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, 1,839,837 acres were made available during the year 1912–13, for the classes of holdings specified below :—

	acres.
For Crown Lease	1,209,640
Homestead Farms	391,235
Suburban Holdings	28,653
Additional Holdings	73,060
Irrigation Farms and Allotments	28,693
Settlement Purchase	765
Area acquired (Closer Settlement)	107,791
Total...	1,839,837

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 also 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. In addition to the applications

for the year 1912–13, as shown below, there were 2,292 applications, covering an area of 914,274 acres, for conversion into conditional purchase from other forms of tenure; the apparent decrease for the year is due to this cause. The following table shows the transactions under each class of conditional purchase during the last eight years:—

Year.	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

The experience of the past ten 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 eight years:—

Year.	Homestead Selections.		Settlement Leases.	
	No	Area.	No.	Area.
		acres.		acres.
1906	383	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

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 year ended 30th June, 1913. The following table shows the applications received for the new tenures:—

Year.	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

The principal element which contributed to the aggregation of great landed estates was that of auction sales of country lands, which, upon the application of the run-holders, were measured in vast areas and bought generally at the upset price—at first a minimum of £1 per acre, raised in 1878 to £1 5s. per acre.

Particulars of the auction sales of country lands from the year 1862 to 30th June, 1913, inclusive, are given hereunder:—

Year.	Lots.	Total Area.	Amount realised.	Average Price per Acre.
	No.	acres.	£	£ s. d.
1862–1872	9,228	582,479	616,399	1 1 2
1873–1883	43,465	7,963,093	8,640,098	1 1 8
1884–1894	8,631	645,770	1,222,271	1 17 10
1895–1904	5,553	397,386	675,178	1 14 0
1905*	269	20,152	28,829	1 8 7
1906	496	18,119	32,877	1 16 3
1907	484	20,094	32,009	1 11 10
1908	416	9,000	19,368	2 3 0
1909	527	8,045	20,018	2 9 9
1910	480	4,574	22,595	4 18 9
1911	336	3,494	21,263	6 1 9
1912	335	2,466	10,859	4 8 1
1913	318	2,104	7,999	3 16 0
Total	70,538	9,676,776	11,349,763	1 3 5

* 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.

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 31st March, 1913, under the various tenures in the different defined divisions of New South Wales :—

Division.	Number of Occupiers of—					Total.
	Freehold.	Private Rented.	Freehold and Private Rented.	Holdings of Alienated and attached Crown Lands.	Separate Crown Lands Holdings.	
Coastal	29,534	9,460	2,725	3,777	1,024	46,520
Tableland	9,963	2,050	1,040	6,302	1,076	20,431
Western Slopes	10,484	1,270	527	3,873	1,316	17,470
Western Plains and Riverina ...	6,006	407	209	2,729	2,351	11,702
Western	637	65	13	481	938	2,134
New South Wales... ...	56,624	13,252	4,514	17,162	6,705	98,257

The majority of holders own the land they occupy; the total number of occupiers of alienated lands with or without attached Crown lands was 91,552, of whom 56,624, or 61·8 per cent., occupy their own freeholds; and of 17,162 holdings which are partly Crown leases, 15,696 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 :—

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	7,072,119	1,534,563	8,606,682	3,814,997	507,688	12,920,367
Tableland	*25,831,246	10,046,456	853,432	10,899,888	8,815,247	911,896	20,627,031
Western Slopes ..	24,251,881	12,581,020	594,569	13,175,589	6,153,221	1,826,300	21,155,110
Western Plains and Riverina.	45,827,854	19,394,504	580,317	19,974,821	15,808,402	6,009,207	41,792,430
Western	80,368,498	1,580,381	52,827	1,633,208	60,933,191	15,507,501	78,073,900
New South Wales..	198,634,880	50,674,480	3,615,708	54,290,188	95,525,058	24,762,592	174,577,838

* Including 576,000 acres, the approximate area of the Federal 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 47·8 per cent. of the land occupied is freehold.

Tenancy, as understood in older settled communities, has made comparatively little progress in this State, 93·3 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 the averages of alienated land only, and also of the total area occupied, as at 31st March, 1913, of alienated and attached Crown lands and also of holdings under all forms of tenure in the various divisions of New South Wales :—

Division.	Average size of Holding.		
	Alienated Area only.	Alienated and attached Crown Lands.	All Tenures.
	acres.	acres.	acres.
Coastal	189	273	278
Tableland	563	1,019	1,010
Western Slopes	816	1,197	1,211
Western Plains and Riverina ...	2,136	3,827	3,571
Western	1,366	52,313	36,586
New South Wales	593	1,636	1,777

The number of holdings has increased since 1880 at the rate of 129·4 per cent., while the area alienated increased by 138·9 per cent., and the average size of holding varied from 569 acres in 1880 to a maximum of 787 acres in 1890, then falling to 592 acres in 1912, with a slight increase 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 ended 31st March.	Average size of Holding.	Year ended 31st March.	Average size of Holding.
	acres.		acres.
1880	569	1905	635
1885	762	1906	632
1890	787	1907	625
1895	707	1908	611
1900	662	1909	608
1901	663	1910	602
1902	658	1911	596
1903	654	1912	592
1904	641	1913	593

Extent of Alienation.

In connection with the progress of land settlement, it has been shown that the total area of lands sold and otherwise alienated was 57,017,976 acres; the leased areas amounted to 124,354,945 acres, making 181,372,921 acres more or less removed from settlement, and, exclusive of the Federal Capital Territory, leaving a balance of only 16,685,959 acres, including roads, unoccupied reserves, lands unsuitable for settlement, and water surface.

The proportions of the several Divisions of the State which have been alienated in holdings are shown in the following rates derived from the figures already quoted :—

Division.	Percentage of Total Area contained in—			
	Alienated Lands.	Crown Lands.		Total Area in Holdings.
		Attached.	Separate.	
Coastal	38·50	17·07	2·28	57·85
Tableland	42·20	34·13	3·53	79·86
Western Slopes	54·33	25·37	7·53	87·23
Western Plains and Riverina ...	43·69	34·50	13·11	91·30
Western	2·03	75·82	19·29	97·14
New South Wales	27·33	48·09	12·47	87·89

Thus slightly less than 88 per cent. of the total area contained within the boundaries of the State has been alienated in holdings of 1 acre and upwards. The highest proportion of absolute alienation, 54·33 per cent. of the area of the Division, has taken place in the Western Slopes ; and the lowest, 2·03 per cent., in the Western Division ; but taking the total area of holdings, the Western Division shows the maximum proportion of its area—97·14 per cent.—removed from immediate further settlement ; the high proportions of 91·30 per cent. for the Western Plains and Riverina, and 87·23 for the Western Slopes show plainly that there is but little land now available in these Western Districts for some form of alienation.

Progress of Alienation.

Excluding from consideration land held simply under lease from the Crown, there were in the State of New South Wales at the end of March, 1913, 91,552 holdings of 1 acre and upwards in extent, comprising land acquired from the Crown by grant or purchase, with, in some cases, areas of Crown lands attached.

The number of these holdings, as returned by occupiers, and the alienated area in quinquennial periods since 1880 are given below, with the figures for 1913 in comparison :—

Year ended 31st March.	Alienated Holdings.		Year ended 31st March.	Alienated Holdings.	
	Number.	Area.		Number.	Area.
		acres.			acres.
1880	39,918	22,721,603	1900	68,098	45,086,209
1885	43,079	32,843,317	1905	75,672	48,081,314
1890	47,620	37,497,889	1910	85,178	51,256,563
1895	59,020	41,736,073	1913	91,552	54,290,188

The biggest absolute increases in the number of holdings occurred in the intervals 1890–5 (11,400) and 1905–10 (9,506), while the greatest absolute increase in the area alienated—over 10 million acres—occurred between 1880–5.

The percentage increases in the intervals quoted, calculating from 1880 as basis, 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	7·9	44·5	1905–1910	12·6	6·6
1885–1890	10·5	14·2	1910–1911	2·7	1·8
1890–1895	23·9	11·3	1911–1912	3 0	2·3
1895–1900	15·4	8·0	1912-1913	1·5	1·7
1900–1905	11·1	6·6			

The subjoined table shows the number of alienated holdings as at 31st March, at quinquennial intervals since 1895 and at year 1913. In the classification of holdings according to size, as shown in this and all but one of the subsequent tables, the area of Crown land attached to alienated holdings has not been taken into consideration; and the size of a holding, therefore, represents the extent of alienated land alone which it contains :—

Size of Holding.	1895.	1900.	1905.	1910.	1913.
acres.					
1 — 50 ...	21,587	27,356	31,734	36,288	38,677
51 — 100 ...	7,977	8,935	9,108	9,173	8,987
101 — 500 ...	18,593	20,160	21,989	24,672	26,341
501 — 1,000 ..	5,719	6,063	6,607	7,632	8,646
1,001 — 1,500 ..	1,596	1,835	2,234	2,752	3,288
1,501 — 3,000 ...	1,701	1,801	1,910	2,327	2,916
3,001 — 5,000 ...	685	687	784	912	1,126
5,001 — 10,000 ...	506	567	584	711	855
Over 10,000	656	694	722	711	716
Total ...	59,020	68,098	75,672	85,178	91,552

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 79 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 33,885, while in 1913 they numbered 47,262, showing an advance of 39 per cent., which is considerably lower than the rate of increase, 58 per cent., in the holdings of 1,501 acres and upwards, which numbered 3,548 in 1895 and 5,613 in 1913.

The area of the alienated holdings, as returned by occupiers, in quinquennial periods since 1895 and at year 1913 is given below :—

Size of Holding.	1895.	1900.	1905.	1910.	1913.
acres.	acres.	acres.	acres.	acres.	acres.
1 — 50 ...	395,209	462,212	486,203	501,589	505,575
51 — 100 ...	635,160	708,394	720,243	724,909	709,930
101 — 500 ...	4,594,270	4,953,889	5,428,153	6,175,692	6,705,584
501 — 1,000 ...	3,965,071	4,222,946	4,622,272	5,331,666	6,042,632
1,001 — 1,500 ...	1,990,433	2,280,673	2,744,051	3,378,235	4,032,583
1,501 — 3,000 ...	3,611,487	3,822,440	4,030,908	4,932,698	6,138,924
3,001 — 5,000 ...	2,654,673	2,667,894	3,047,469	3,490,908	4,317,783
5,001 — 10,000 ...	3,578,787	3,988,538	4,171,754	4,928,884	5,874,839
Over 10,000	20,310,983	21,979,223	22,830,261	21,791,982	19,962,338
Total ...	41,736,073	45,086,209	48,081,314	51,256,563	54,290,188

Enclosed Lands.

The greater portion of the alienated rural lands of the State has been enclosed; the following figures for quinquennial years since 1892, show the rate at which the enclosure has proceeded, and the small proportion of alienated holdings which yet remains to be enclosed :—

Year ended 31st March.	Area Enclosed.	Area Unenclosed.	Total Area of Holdings.	Unenclosed per cent. of Total Area of Holdings.
	acres.	acres.	acres.	
1892	37,347,172	2,713,114	40,060,286	6·8
1897	41,803,983	1,663,229	43,467,212	3·8
1902	45,027,795	1,590,030	46,617,825	3·4
1907	48,121,774	1,294,109	49,415,883	2·6
1912	52,473,021	933,863	53,406,884	1·7
1913	53,425,483	864,705	54,290,188	1·0

For 1913 the unenclosed alienated lands represented slightly more than 1 per cent. of the area alienated in holdings.

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 98,257 holdings, inclusive of 6,705 which consist of Crown Lands only, rather more than 34 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 57 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 as at 31st March, 1913, and in comparison the totals under each head for the years ended 31st March, 1908-1912 :—

Division.	Single-purpose Holdings.				Dual-purpose Holdings.			Residential, Mining, &c.
	Agriculture.	Dairying.	Grazing.	Total.	Agriculture, with Dairying, and with Grazing.	Other.	Total.	
Coastal	4,150	3,517	8,143	15,810	11,984	2,035	14,019	16,691
Tableland	1,303	212	6,372	7,892	7,250	399	7,649	4,890
Western Slopes ..	806	49	3,236	4,091	9,281	313	9,594	3,785
Western Plains and Riverina.. ..	805	46	3,788	4,639	5,478	78	5,556	1,507
Western . ..	106	7	1,102	1,215	104	11	115	804
Total, 1913 ..	7,175	3,831	22,641	33,647	34,097	2,836	36,933	27,677
Year 1908 ..	7,722	2,922	21,527	32,171	30,507	2,597	33,104	21,328
„ 1909 ..	7,244	3,575	21,874	32,693	30,422	2,347	32,769	22,871
„ 1910 ..	7,034	3,482	21,612	32,128	32,703	2,233	34,936	23,882
„ 1911 ..	6,677	3,493	21,770	31,940	33,382	2,757	36,139	25,690
„ 1912 ..	6,814	3,157	22,011	31,982	34,589	2,978	37,567	26,795
„ 1913 ..	7,175	3,831	22,641	33,647	34,097	2,836	36,933	27,677

In the six years 1908–1913, the increase in the total number of rural holdings as recorded above was 13½ per cent., the number of holdings returned as dual-purpose holdings having increased by 11 per cent., while the single-purpose holdings have increased by slightly more than 4 per cent.

Extent of Cultivation.

The total area under crops for 1913 season, in all classes of holdings, was 3,737,269 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	198,707	74,005	886	1,905	275,503	12,653,864	2·1
Tableland ...	338,612	55,941	2,106	2,127	398,786	20,228,245	1·9
Western Slopes ...	1,504,428	67,353	88,378	41,244	1,701,403	19,453,707	8·0
Western Plains and Riverina ...	1,172,899	46,582	52,606	80,144	1,352,231	40,440,199	3·2
Western	4,125	271	2,606	2,344	9,346	78,064,554	0·1
New South Wales	3,218,771	244,152	146,582	127,764	3,737,269	170,840,569	2·1

The area under crops on freehold lands represented 86·1 per cent. of the total area of rural holdings under crop, or 5·9 per cent. of the holdings of alienated lands; the area of leasehold lands under crop as compared with the total leasehold area was 6·8 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 held in conjunction with alienated 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.	1913.	1905.	1913.
acres.	acres.	acres.		
1 — 50 ...	113,543	89,391	4·36	2·48
51 — 100 ...	126,692	100,314	4·86	2·78
101 — 500 ...	773,728	844,205	29·68	23·39
501 — 1,000 ...	545,943	861,747	20·94	23·96
1,001 — 1,500 ...	224,271	455,015	8 60	12·61
1,501 — 3,000 ...	267,793	543,538	10·27	15·05
3,001 — 5,000 ...	129,074	249,927	4·95	6·92
5,001 — 10,000 ...	124,713	221,757	4·78	6·14
Over 10,000	301,208	240,611	11·56	6·67
Total ...	2,606,965	3,609,505	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 and 1,001 to 1,500 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 1899 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 1899 :—

Year ended March.	Area double cropped.	Actual area under crop on—	
		Alienated lands.	Crown lands.
	acres.	acres.	acres.
1899	2,000	2,137,306	67,194
1902	1,842	2,162,666	113,862
1907	2,446	2,604,812	219,399
1912	2,852	3,335,489	293,681
1913	3,557	3,462,923	274,346

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 1897 :—

Year ended March.	Area under Sown Grasses on—		Total.
	Alienated land.	Crown lands.	
	acres.	acres.	acres.
1897	333,229	50,787	384,016
1902	452,201	15,638	467,839
1907	669,173	28,458	697,631
1912	1,059,956	59,808	1,119,764
1913	1,100,229	52,220	1,152,449

The area of alienated holdings ringbarked, partially cleared, and under native grasses at 31st March, 1913, was approximately 36½ million acres, and on Crown lands over 28¾ million acres.

Holdings in Area Series.

Below will be found the number of holdings of various sizes throughout New South Wales, composed of alienated and attached Crown Lands :—

Size of Holding.	Freehold.	Private Rented.	Combined Freehold and Private Rented.	Combined Alienated and Crown Lands.	Total.
acres.					
1— 50	28,239	7,418	1,385	1,635	38,677
51— 100	5,132	1,839	491	1,525	8,987
101— 500	14,215	3,408	1,635	7,083	26,341
501— 1,000	4,776	380	503	2,987	8,646
1,001— 1,500	1,833	100	172	1,183	3,288
1,501— 3,000	1,438	67	165	1,246	2,916
3,001— 5,000	471	16	83	556	1,126
5,001—10,000	350	16	46	443	855
10,001—15,000	72	4	17	171	264
15,001—20,000	43	1	5	68	117
20,001—30,000	27	3	8	123	161
30,001—40,000	9	...	1	47	57
40,001—50,000	5	...	3	23	31
Over 50,000	14	...	...	72	86
Total	56,624	13,252	4,514	17,162	91,552

The total number of occupiers of freeholds only is 56,624, the proportion to the total number of occupiers being fairly constant in each size of holdings. Tenants of private lands, who number 13,252, 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 4,514. The persons who occupy alienated areas with Crown lands attached number 17,162, and 49 per cent. of the holdings over 1,500 acres in extent are in this category.

Comparison of the relation of the various classes to the total number of holdings for the last two years shows a slight increase in the proportion of freeholds, corresponding practically to a decrease in the proportion of private-rented holdings, but on the whole the variations are slight, viz.:—

Class.	1912.		1913.	
	Holdings.	Percentage of Total.	Holdings.	Percentage of Total.
Freehold	54,866	60·8	56,624	61·8
Private-rented	13,413	14·9	13,252	14·5
Combined freehold and private-rented ...	4,714	5·2	4,514	4·9
Combined alienated and Crown land ...	17,240	19·1	17,162	18·8
Total	90,233	100·0	91,552	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:—

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	395,764	109,811	1,777,981	2,283,556	·26	·07	1·19	1·52
51— 100	540,590	169,340	1,510,193	2,220,123	·36	·11	1·01	1·48
101— 500	5,698,301	1,007,283	13,970,644	20,676,228	3·80	·67	9·33	13·80
501— 1,000	5,558,110	484,522	16,463,645	22,506,277	3·71	·32	10·99	15·02
1,001— 1,500	3,761,410	271,173	10,515,874	14,548,457	2·51	·18	7·02	9·71
1,501— 3,000	5,729,201	409,723	13,301,143	19,440,067	3·83	·27	8·88	12·98
3,001— 5,000	4,065,534	252,249	11,723,888	16,041,671	2·72	·17	7·82	10·71
5,001—10,000	5,509,899	364,940	11,014,894	16,889,733	3·68	·25	7·35	11·28
10,001—15,000	3,009,647	196,702	4,918,389	8,124,738	2·01	·13	3·28	5·42
15,001—20,000	1,943,793	91,411	2,087,436	4,122,640	1·30	·06	1·39	2·75
20,001—30,000	3,690,109	209,642	3,344,419	7,244,170	2·46	·14	2·24	4·84
30,001—40,000	1,967,108	5,626	953,117	2,925,851	1·31	·01	·63	1·95
40,001—50,000	1,337,228	9,557	1,224,301	2,571,086	·89	·01	·82	1.72
Over 50,000 ...	7,467,786	33,729	2,719,134	10,220,649	4·99	·02	1·81	6·82
Total ...	50,674,480	3,615,708	95,525,058	149,815,246	33·83	2·41	63·76	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 :—

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 ...	27,543	30·08	128,863	·23	437,826	·46
16— 50 ...	11,134	12·17	376,712	·70	1,340,155	1·40
51— 100 ...	8,987	9·82	709,930	1·31	1,510,193	1·58
101— 500 ...	26,341	28·76	6,705,584	12·35	13,970,644	14·62
501— 1,000 ...	8,646	9·45	6,042,632	11·13	16,463,645	17·23
1,001— 1,500 ...	3,288	3·59	4,032,583	7·43	10,515,874	11·01
1,501— 2,000 ...	1,432	1·57	2,491,772	4·59	4,571,584	4·79
2,001— 3,000 ...	1,484	1·62	3,647,152	6·72	8,729,559	9·14
3,001— 4,000 ...	707	·77	2,447,288	4.51	7,515,896	7·87
4,001— 5,000 ...	419	·46	1,870,495	3·44	4,207,992	4·40
5,001— 7,500 ...	571	·62	3,433,208	6·32	7,916,039	8·29
7,501—10,000 ...	284	·31	2,441,631	4·50	3,098,855	3·24
10,001—15,000 ...	264	·29	3,206,349	5·91	4,918,389	5·15
15,001—20,000 ...	117	·13	2,035,204	3·75	2,087,436	2·19
20,001—30,000 ...	161	·18	3,899,751	7·18	3,344,419	3·50
30,001—40,000 ...	57	·06	1,972,734	3·63	953,117	1·00
40,001—50,000 ...	31	·03	1,346,785	2·48	1,224,301	1·28
Over 50,000	86	·09	7,501,515	13·82	2,719,134	2·85
Total	91,552	100·00	54,290,188	100·00	95,525,058	100·00

It is one of the features of the table, that whilst the holders of estates exceeding 1,000 acres constitute but 9·72 per cent. of the total number of occupiers, the land held represents 74·28 per cent. of the total alienated area. This is still more accentuated in the case of 86 holdings of 50,001 acres and upwards, which represent only 0·09 per cent. of the total number of holdings, but embrace 13·82 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 at 31st March, 1913, was 95,525,058 acres, attached to 17,162 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 6,705, representing 24,762,592 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	1,024	507,688	2,791
Tableland...	1,076	911,896	4,233
Western Slopes	1,316	1,826,300	129,622
Western Plains and Riverina	2,351	6,009,207	132,750
Western	938	15,507,501	4,950
New South Wales	6,705	24,762,592	274,346

Settlement in Land Divisions.

The divisions into which the country may be classified for land purposes are five, viz., Coast, Tableland, Western Slopes of the Great Dividing Range, Western Plains and Riverina, and the Western Division. Each division, having its own special character, offers different natural resources according to its climatic conditions. From Sydney as centre, settlement extended first along the coast, then to the central and more readily accessible parts of the tableland, following afterwards the course of the great inland rivers towards the southern and western parts of the State; thence to the great plains of the west, and across the river Darling.

Geographical features and climate have been the primary factors in determining the trend of settlement, and other considerations, such as soil fertility, distribution of rainfall, density of timber growth, and consequent cost and difficulty of clearing, &c., naturally regulate the character of rural settlement in a given locality and the purposes to which lands are applied.

But of more vital importance than considerations of soil fertility and climate is the question of communication between the sparsely settled and the populous centres, and accessibility to a good market which will assure to the settler some certainty of disposing of his products, and permit an effort to regulate such products 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 7,175 purely agricultural holdings in 1913, 4,150 were in the Coastal Division, and 1,308 in the Tableland.

The returns which follow 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. As in previous tables, the figures for each Division are exclusive of holdings made up of Crown leases only.

Coastal Division.

From the county of Cumberland settlement advanced westward, and after the alluvial lands of the Hawkesbury and Nepean valleys had been occupied, the lower portion of the valley of the river Hunter, abounding with natural resources, agricultural as well as mineral, soon attracted settlers; and at the present time more population is concentrated in this district than in any other part of New South Wales outside the metropolitan area. Settlement gradually extended to the whole of the watershed of the Hunter and Manning Rivers.

The North Coast district, which is occupied by a farming population, exhibits the most satisfactory results as regards settlement, which, during recent years, has extended very rapidly along the banks of the rivers.

In the early nineteenth century settlement took a southerly direction from the metropolis, and extended rapidly along the lower valleys of the rivers of the South Coast, where the best lands were alienated in grants of large areas to a few families. Later on, however, the nature of the country and a more intelligent conception of the principles which should guide settlement brought about the subdivision of these large estates into numerous small holdings.

The figures in the following table show the settlement of the Coastal Division in holdings of 1 acre and over made up of alienated lands or

alienated lands in conjunction with Crown lands, and are exclusive of holdings within the boundaries of Sydney and suburbs :—

Size of Holding.	Number of Holdings.	Area occupied.			Area under—	
		Alienated.	Crown Lands attached to alienated holdings.	Total.	Crops.	Grazing, &c.
acres.		acres.	acres.	acres.	acres.	acres.
1— 50 ...	24,179	311,088	119,868	430,956	50,973	379,983
51— 100 ...	5,554	438,382	135,222	573,604	45,159	528,445
101— 500 ...	12,648	2,894,410	989,064	3,883,474	122,851	3,760,623
501— 1,000 ..	1,930	1,331,863	563,546	1,895,409	27,909	1,867,500
1,001— 1,500 ...	526	636,082	355,096	991,178	7,794	983,384
1,501— 3,000 ...	392	820,061	297,619	1,117,680	7,937	1,109,743
3,001— 5,000 ...	135	511,765	369,971	881,736	3,993	877,743
5,001—10,000 ...	85	595,514	354,444	949,958	3,497	946,461
Over 10,000	47	1,067,517	630,167	1,697,684	3,485	1,694,199
Coastal Division...	45,496	8,606,682	3,814,997	12,421,679	273,598	12,148,081

The total area of this Division is 22,355,401 acres, of which 8,606,682 acres have been alienated, and 3,814,997 acres of Crown lands are held in conjunction with the alienated, making a total of 12,421,679 acres.

Holdings under 51 acres represent 53·1 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 273,598 acres, being 5,467 acres less than for the previous year, due mainly to a period of dry weather which prevented many maize-growers from cropping their lands.

Rural settlement in the valleys of the northern coastal rivers, and in the country extending from the sea to the first slopes of the Great Dividing Range, has proceeded in a way very different from that of the tableland, which extends from north to south, and divides the rich agricultural valleys of the coastal rivers and their broken mountainous watershed from the immense plains of the western district.

Tableland Division.

After crossing the ranges which form the western boundary of the coastal strip, settlement proceeded in the central tableland, thence south and north, and later westwards, at first following the courses of the great rivers.

In the northern tableland the disproportion between freeholders and tenants is strongly marked, the latter forming a very small minority of the occupiers of alienated land.

The following statement shows the actual state of rural settlement in the Tableland Division :—

Size of Holding.	Number of Holdings	Area Occupied.			Area under—	
		Alienated.	Crown Lands Attached to Alienated Holdings.	Total.	Crops.	Grazing, &c.
acres.		acres.	acres.	acres.	acres.	acres.
1— 50 ...	6,812	101,317	142,869	244,186	17,580	226,606
51— 100 ...	1,960	154,598	238,006	392,604	21,392	371,212
101— 500 ...	6,681	1,739,139	2,868,198	4,607,337	160,979	4,446,358
501— 1,000 ...	1,906	1,338,110	1,204,999	2,543,109	68,000	2,475,109
1,001— 1,500 ...	723	889,531	667,104	1,556,635	33,932	1,522,703
1,501— 3,000 ...	645	1,346,194	1,056,271	2,402,465	37,782	2,364,683
3,001— 5,000 ...	266	1,020,585	647,243	1,667,828	18,278	1,649,550
5,001—10,000 ..	213	1,487,381	859,819	2,347,200	17,675	2,329,525
Over 10,000	149	2,823,033	1,130,738	3,953,771	21,041	3,932,730
Tableland Division ...	19,355	10,899,888	8,815,247	19,715,135	396,659	19,318,476

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 the last ten years, improvement in methods of wheat-growing, and extension of share farming, a considerable impetus has been given to agriculture.

In the South-western Slope, which is traversed by the principal permanent rivers of western New South Wales, the land has been alienated to a large extent, and immense areas of freehold land are in the hands of a small number of landholders. The state of settlement in the Western Slopes may be gathered from the following table:—

Size of Holding.	Number of Holdings.	Area Occupied.			Area under—	
		Alienated.	Crown Lands attached to alienated Holdings.	Total.	Crops.	Grazing, &c.
acres.		acres.	acres.	acres.	acres.	acres.
1— 50 ...	5,259	66,870	61,009	127,879	16,339	111,540
51— 100 ...	1,082	85,527	57,505	143,032	28,299	114,733
101— 500 ...	4,835	1,389,792	1,153,598	2,543,390	376,922	2,166,468
501— 1,000 ...	2,413	1,689,415	1,285,787	2,975,202	390,503	2,584,699
1,001— 1,500 ...	934	1,152,639	520,420	1,673,059	209,921	1,463,138
1,501— 3,000 ...	886	1,894,679	962,168	2,856,847	278,110	2,578,737
3,001— 5,000 ...	311	1,208,322	517,393	1,725,715	119,616	1,606,099
5,001—10,000 ...	254	1,740,352	732,354	2,472,706	117,920	2,354,786
Over 10,000 ...	180	3,947,993	862,987	4,810,980	122,529	4,688,451
Western Slopes...	16,154	13,175,589	6,153,221	19,328,810	1,660,159	17,668,651

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:—

Size of Holding.	Number of Holdings.	Area Occupied.			Area under—	
		Alienated.	Crown Lands attached to Alienated Holdings.	Total.	Crops.	Grazing, &c.
acres.		acres.	acres.	acres.	acres.	acres.
1— 50 ...	1,831	20,155	210,587	230,742	3,971	226,771
51— 100 ...	317	25,270	69,180	94,450	5,227	89,223
101— 500 ...	1,995	634,368	841,419	1,475,787	182,471	1,293,316
501— 1,000 ...	2,274	1,598,524	2,122,337	3,720,861	377,237	3,343,624
1,001— 1,500 ...	1,046	1,281,795	1,965,195	3,246,990	203,001	3,043,989
1,501— 3,000 ...	942	1,970,079	1,991,081	3,961,160	218,508	3,742,652
3,001— 5,000 ...	373	1,417,378	1,497,741	2,915,119	107,220	2,807,899
5,001— 10,000 ...	266	1,799,649	1,901,093	3,700,742	81,782	3,618,960
Over 10,000 ...	307	11,227,603	5,209,769	16,437,372	92,670	16,344,702
Western Plains and Riverina ...	9,351	19,974,821	15,808,402	35,783,223	1,272,087	34,511,136

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 present state of rural settlement in the Western Division is illustrated by the figures given below :—

Size of Holding.	Number of Holdings.	Area occupied.			Area under—	
		Alienated.	Crown Lands attached to alienated Holdings.	Total.	Crops.	Grazing, &c.
acres.		acres.	acres.	acres.	acres.	acres.
1— 50 ...	596	6,145	1,243,648	1,249,793	528	1,249,265
51— 100 ...	74	6,153	1,010,280	1,016,433	237	1,016,196
101— 500 ...	182	47,875	8,118,365	8,166,240	982	8,165,258
501— 1,000 ...	123	84,720	11,286,976	11,371,696	1,098	11,370,598
1,001— 1,500 ...	59	72,536	7,008,059	7,080,595	367	7,080,228
1,501— 3,000 ..	51	107,911	8,994,004	9,101.915	1,201	9,100,714
3,001— 5,000 ..	41	159,733	8,691,540	8,851,273	820	8,850,453
5,001— 10,000 ...	37	251,943	7,167,184	7,419,127	883	7,418,244
Over 10,000 ...	33	896,192	7,413,135	8,309,327	886	8,308,441
Western Division ...	1,196	1.633.208	60,933,191	62,566,399	7,002	62,559,397

The proportion of land alienated is little more than 2 per cent. of the total area, being an aggregate of 1,633,208 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, 60,933,191 acres being attached to alienated holdings. The general character of the country militates against agricultural production and the successful rearing of cattle ; sheep-breeding is practically the only industry, except in the vicinity of townships, where market-gardens and fruit orchards are found.

All Holdings.

For the years ended March, 1912 and 1913, particulars are available respecting the number and total area of holdings of various sizes, irrespective of the conditions governing the tenure of the land. The results shown in the following table are inclusive of all holdings of an acre and upwards, the actual land held—whether alienated only, alienated with Crown lands attached, or Crown land only—being taken as the basis for each area group :—

Size of Holding.	Number of Holdings.		Total Area.		Percentage in each series.			
					Holdings.		Area.	
	1912.	1913.	1912.	1913.	1912.	1913.	1912.	1913.
acres.			acres.	acres.				
1— 50	38,850	39,677	494,091	501,199	40·33	40·38	·28	·29
51— 100	7,956	8,084	627,402	629,909	8·26	8·23	·36	·36
101— 500	23,969	24,299	6,147,882	6,277,671	24·88	24·73	3·53	3·60
501— 1,000	9,299	9,549	6,618,331	6,776,643	9·65	9·72	3·81	3·88
1,001— 3,000	9,858	10,069	17,004,449	17,317,947	10·23	10·25	9·78	9·92
3,001— 5,000	2,397	2,480	9,220,473	9,578,035	2·49	2·52	5·30	5·49
5,001— 10,000	1,881	1,942	12,816,405	13,155,684	1·95	1·98	7·37	7·54
10,001— 20,000	918	964	12,452,619	13,097,932	·95	·98	7·16	7·50
20,001— 50,000	717	703	21,436,719	21,180,029	·74	·71	12·32	12·13
50,001— 100,000	232	225	16,139,784	15,668,791	·24	·23	9·28	8·97
Over 100,000 ...	267	265	70,994,781	70,393,994	·28	·27	40·81	40·32
Total ...	96,344	98,257	173,952,936	174,577,838	100·00	100·00	100·00	100·00

The general tendency of the holdings up to 20,000 acres is to increase, both absolutely and proportionately. In the groups over 20,000 acres the actual reduction of area during the last year was 1,338,470 acres, but by far the greatest number of the largest holdings are in the Western Division and consist chiefly of Crown lands only. It is significant that the number and area of holdings in the first and last groups are practically in inverse ratio to each other.

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 1912, 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...	505,575	85,112	16·83
51— 100	709,930	93,452	13·16
101— 500...	6,705,584	804,591	12·00
501— 1,000...	6,042,632	819,727	13·57
1,001— 1,500	4,032,583	436,751	10·83
1,501— 3,000	6,138,924	519,741	9·45
3,001— 5,000...	4,317,783	243,420	5·64
5,001— 10,000...	5,874,839	220,049	3·75
Over 10,000	19,962,338	240,080	1·20
Total	54,290,188	3,462,923	6·37

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 about $6\frac{1}{3}$ per cent. of the total area alienated in rural holdings of one acre and over. 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 6 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 March, 1905, when the closer settlement policy

was commencing to operate actively, and 1913, is given below, also the proportions in each series:—

Size of Holding.	Number of Holdings.		Alienated Area.		Percentage in each series.			
					Holdings.		Area.	
	1905.	1913.	1905.	1913.	1905.	1913.	1905.	1913.
acres.			acres.	acres.				
1— 50...	31,734	38,677	486,203	505,575	41·94	42·25	1·01	·93
51— 100...	9,108	8,987	720,243	709,930	12·04	9·82	1·50	1·31
101— 500...	21,989	26,341	5,428,153	6,705,584	29·06	28·76	11·29	12·35
501— 1,000...	6,607	8,646	4,622,272	6,042,632	8·73	9·45	9·61	11·13
1,001— 1,500...	2,234	3,288	2,744,051	4,032,583	2·95	3·59	5·71	7·43
1,501— 3,000...	1,910	2,916	4,030,908	6,138,924	2·52	3·19	8 38	11·31
3,001— 5,000...	784	1,126	3,047,469	4,317,783	1·04	1·23	6·34	7·95
5,001— 10,000...	584	855	4,171,754	5,874,839	·77	·93	8·68	10·82
Over 10,000 ...	722	716	22,830,261	19,962,338	·95	·78	47·48	36·77
Total ...	75,672	91,552	48,081,314	54,290,188	100·00	100·00	100·00	100·00

The number of holdings has increased in the seven years from 75,672 to 91,552, or by 21 per cent., and the area from 48,081,314 acres to 54,290,188 acres, or by 12·9 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 one 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. 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.	1913.	1905.	1913.
acres.	acres.	acres.		
1— 50 ...	2,050,314	2,283,556	1·38	1·52
51— 100 ...	1,713,464	2,220,123	1·16	1·48
101— 500 ...	17,261,607	20,676,228	11·66	13·80
501— 1,000 ...	19,105,229	22,506,277	12·91	15·02
1,001— 1,500 ...	11,394,537	14,548,457	7·70	9·71
1,501— 3,000 ...	19,994,336	19,440,067	13·50	12·98
3,001— 5,000 ...	16,166,642	16,041,671	10·92	10·71
5,001— 10,000 ...	15,384,516	16,889,733	10·39	11·28
Over 10,000	44,973,165	35,209,134	30·38	23·50
Total	148,043,810	149,815,246	100·00	100·00

Surf Bathing, Ocean Beach, Manly, Sydney, N.S.W.

SOCIAL CONDITION.

Social Welfare.

Active effort by the State 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, is restricted mainly to the protection of infant life, the removal of children from unsuitable environments, and the housing and care of mental defectives, and of the aged and infirm. Although the Coast Hospital treating general diseases, and the Waterfall Hospital for Consumptives and the Lady Edeline Home for Infants (Vaucluse), are controlled entirely by the State, and there are hospitals at the State Asylums for the Infirm, its intervention in the care of the sick consists chiefly in subsidising established institutions, in recognition of specific and well-directed effort to alleviate distress, whether attributable to improvidence, to sickness, or to pressure of economic conditions, over which the individual as an isolated force can exert no controlling influence.

In addition to such State or State-aided agencies for social betterment, there exist numerous private charities which do not receive direct monetary assistance from the State in performance of the tasks they have undertaken. But though the cure and care of sickness and destitution are thus left to a considerable extent to private initiative, the State is an active agent in safeguarding public health from the loss likely to accrue through otherwise preventable disease. The more universal preventive work, as of quarantine, and the making of laws with respect to trade and commerce and immigration, are functions of the Commonwealth Government; 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.

In New South Wales a Department of Public Health is maintained which undertakes the general medical work of the Government, safeguards public health, and advises Local Government bodies. Acts relating to public health, pure food, private hospitals, supervision of dairies and dairy cattle, noxious trades, sanitation, cattle slaughtering and diseased animals and meat, and Sydney abattoirs, the various State hospitals and asylums, are administered by the Department and are under its control. It also exercises supervision over public and private hospitals.

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.

State Expenditure on Hospitals and Charitable Relief.

The amount paid by the State towards the maintenance of Hospitals and Charitable institutions, including institutions for protection of State children and the care of the insane was for the year 1912-13 approximately £781,000. The State expenditure includes the cost of maintenance of State institutions and departments administering relief, and subsidies to other institutions—granted on condition that an equal amount be raised by

private annual contributions, and that the Government through approved officers have the right of recommending the admission of patients. In addition to these payments made from Consolidated Revenue, there is usually a considerable annual expenditure from Public Works Account for buildings, &c. The following is a statement showing the growth of such expenditure in the last five years:—

Payments from—	Year ended 30th June.				
	1909.	1910.	1911.	1912.	1913.
	£	£	£	£	£
Consolidated Revenue	495,999	531,363	553,264	593,030	693,090
Public Works Account ...	89,343	68,764	85,614	48,755	87,857
Loan Account	1,418	.....	.....	.....	.....
Total ... ... £	586,760	600,127	638,878	641,785	780,947

There has been an increase in the Government expenditure on hospitals and charities throughout the period reviewed, the total amount expended for the year ended 30th June, 1913, exceeding that for the year 1909 by £194,187, or an increase of 33 per cent. during the four years.

Grouping the items of expenditure from the Consolidated Revenue Fund under various appropriate headings, a comparison of the respective items for the last two years is shown below:—

	1912.	1913.
	£	£
General Hospitals and Benevolent Institutions ...	128,922	155,717
Mental Hospitals and Institutions	212,616	263,831
Children's Relief	106,557	108,755
Benevolent Asylums—Government	87,708	96,892
Destitute and Deserted, Sick and other	32,281	31,513
Aborigines Protection	16,475	16,849
Benevolent Societies	4,624	11,453
Leper Lazaret	1,446	1,727
Miscellaneous	2,401	6,353
Total	593,030	693,090

Analysis of the detailed statement for 1913 reveals an increase of 16·9 per cent. in the expenditure from Consolidated Revenue, the increases being greatest in connection with children's relief and Government asylums.

In the miscellaneous item for the year 1913 are included £1,500 to the West Wyalong mining disaster fund and £1,000 to the Mount Lyell (Tasmanian) mining disaster.

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 the previously existing 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.

On 1st September, 1913, there were under control 6,915 aborigines, viz., 1,861 full-bloods, and 5,054 half-castes. The following statement shows the classification as recorded at that date:—

Aborigines.	Adults.		Children.	Total.
	Males.	Females.		
Full-bloods	792	522	547	1,861
Half-castes	1,266	1,036	2,752	5,054
Total	2,058	1,558	3,299	6,915

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.

The ages of the 6,915 aborigines in 1913 are given as follows:—Under 20 years, 3,299; 20-40 years, 2,149; 40-60 years, 1,074; over 60 years, 393.

During 1913 the average number of aborigines assisted by the Board was 2,258, viz., 996 adults, and 1,262 children. The expenditure amounted to £28,579, including £17,701 for general maintenance, £5,604 for the purchase of blankets, clothing, &c., £4,217 for educational purposes, £1,008 for medical attention, and £49 for other services.

The Board is extending the "Sale Store System" under which the aborigines are able to purchase goods in general use from the station store at practically cost price.

The reserves controlled by the Board aggregated 24,699 acres at the end of December, 1912, the area set apart during the year being 664 acres. At the various stations and camps, dwellings, and in some cases dormitories, have been erected, and additional training homes are projected. In the schools of the State there were 994 aboriginal children in attendance, viz., 873 at public schools, and 121 at private schools. During 1912 new schools intended exclusively for the use of aborigines were established at Euraba, near Boomi, at Terry-hie-hie, and Angledool; every aboriginal child under 14 years of age is required to attend the nearest available school.

Aboriginal children between the ages of 14 and 21 years may be apprenticed by the Board, and to this end the education of the children is conducted so as to render them efficient members of society.

A home for orphan and neglected aboriginal children was established at Cootamundra in 1912 for the purpose of caring for the children and training them for domestic service. Provision is made for 23 children, and a graduate of the Kindergarten College is employed. A home-finder has been appointed for the purpose of obtaining situations and apprenticing out aboriginal children.

In connection with a preliminary scientific expenditure to the Northern Territory, where aboriginal natives are more numerous than elsewhere in Australia, and, except in the vicinity of the older settlements, have been least in contact with conditions which are quite foreign to them, the natives were found to be of great service on the cattle stations, invaluable to travellers, and essential in the police force as trackers. Regarding the civilisation of the natives, investigation proved the truth of the view held by the New South Wales Aborigines Protection Board that attention should be devoted to the children, rather than to the adult aboriginals, and that if the children be taught some legitimate means of earning a livelihood, they must gradually lose their instinct and capacity for a roaming life. On the mission

stations the practice is followed of giving, to adult natives, food only in return for work done, and in the establishment of other stations, arrangements will be made for training the natives as agriculturists.

As regards the protection of aboriginal life on the lines of the New South Wales legislation, an Association for the Protection of Native Races exists, which aims at co-ordination of methods in treating all the native races in the Western Pacific and in Australia.

The Protection of Infant and Child Life.

The care and protection of child-life devolves upon the State Children's Relief Board, as the administrative agency directly concerned in the effort to rectify some of the disabilities attaching to the otherwise defenceless years of childhood.

The Board administers the following Acts:—State Children's Relief, 1901; Children's Protection, 1902; Infant Protection, 1904; Neglected Children and Juvenile Offenders, 1905.

In connection with the effort of the State to promote the welfare of the child population, it is interesting to note that the President of the State Children's Relief Board was appointed in January, 1912, a Royal Commissioner to inquire into the management of delinquent and neglected children, and the whole question of infant nurture in Great Britain, Europe, and America, and to represent the State at the International Triennial Conference on child-life.

The Infant Protection Act, 1904, designed for the protection, maintenance, education, and care of infants and children up to 7 years of age, provides for the inspection, control, and licensing of places established or used for the reception and care of two or more infants under 7 years of age, apart from their mothers, whether for payment or not.

Licensed homes are classified in two groups—those for the reception of five or less children, being frequently 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 last six years is shown below:—

Year.	Private Dwellings Registered.	Institutions.	
		Number.	Inmates under 7 years of Age.
1907	97	13	189
1908	124	14	170
1909	145	15	251
1910	137	15	238
1911	144	17	263
1912	155	19	229

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, operating under special Acts, are exempted from the provisions of the Infant Protection Act.

Ages of Children in Institutions.

The nineteen institutions licensed during 1912, provided accommodation for 419 children, and the ages of those admitted ranged from infancy up to 12 years, but the provisions of the Act apply only to those under age 7; the following statement shows the number under supervision, in each age group:—

Age group.	Number.	Age group.	Number.
Under 1 year	40	5-6 years	41
1-2 years	31	6-7 years	31
2-3 years	17		
3-4 years	36	Total	229
4-5 years	33		

Homes for Sick Infants.

In connection with the State Children's Relief Department, homes for Sick Infants are maintained at Paddington and at Croydon, being essentially hospitals for dealing with the most serious diseases of childhood. The home at Paddington was established in 1907, and that at Croydon in November, 1909, its work being complementary to that of the other home. During 1912, 76 infants under 2 years of age were admitted to the Paddington Home, 55 were discharged, and 17 died, 29 babies remaining in the institution in April, 1913. The mortality was 16·8 over all cases, and curiously the rate of infants admitted with mothers was 18·1. These rates are very favourable when compared with the rates of six years ago, when 66 per cent. failed to survive. Harmony Home, Thirlmere, was closed in 1912, the inmates being distributed amongst the other homes. From the opening of the Croydon Home to April, 1913, 136 babies were admitted, of whom 7 died, and 111 were discharged.

Infants' Home (Government).

Towards the end of the year 1913 the Lady Edeline Home for Infants was established at Vaucluse. The institution is under the direction of the Public Health Department, and accommodation is provided for 40 children. At the end of March, 1914, there were 33 children in residence.

Children's Protection Act.

The Children's Protection Act, 1902, requires the careful supervision of children under 3 years of age who are boarded-out privately apart from their mothers, and provides for the registration of nursing homes. A Boarding-out officer is vested with the necessary powers of supervision, and any person who receives for payment a child under 3 years of age, must notify the officer, and where two or more children under 3 years are received, the foster-home must be registered. There are provisions for the superintendence of children engaged in public performances, and for the registration of all births (including still-births) which occur in maternity homes.

The transactions under this Act during the last five years may be seen in the following statement:—

Particulars.	1908.	1909.	1910.	1911.	1912.
Registrations from Lying-in Homes ...	2,774	2,683	4,203	3,796	2,830
Foster Homes registered	96	91	114	71	95
Children registered	1,557	1,235	1,138	1,188	1,215
,, died	85	76	51	62	41
,, discharged from supervision ...	851	636	511	567	491
,, under supervision at 31st Dec....	621	523	576	559	683
Theatre Licenses for Children	201	257	188	216	321

Within the Metropolitan area medical attention is enforced for all infants up to 12 months old, who come under the provisions of the Act, and those placed with foster-mothers must be taken fortnightly by their custodians to a Children's Hospital, where they are weighed, and treated, if ill, and their custodians are advised as to methods of further treatment. The total number of children under supervision during 1912 was 1,215, of whom 41 died, the principal cause of death being broncho-pneumonia 16, gastro-enteritis 12, influenza and bronchitis 6, meningitis 5, marasmus 4.

Inspectors are charged with the supervision of the conditions of infant life in Sydney and suburbs, and honorary lady visitors and the inspectorial staff attached to the Department made over 32,000 visits to State children during the year.

Dependent and Neglected Children.

To the State Children's Relief Board is entrusted the supervision and guardianship of dependent and neglected children, and of juveniles committed from the Children's Courts. Under the provisions of the State Children's Relief Act, 1901, embodying the original Act of 1881, under which the department was constituted, dependent children are boarded-out with approved guardians or with their own mothers, when the latter are widows or deserted wives with children under 12 years of age.

During the thirty-two years' operation of the Board, 20,772 children have been removed for boarding-out, from State and other institutions, from asylums, and from hospitals. Of this total, 16,038 children had been discharged to their parents or otherwise removed from the control of the Board, so that there were 4,734 remaining under its charge on 5th April, 1913, of whom 2,756 were boys and 1,978 were girls. In addition to these children under direct control, the Board was paying allowances towards the support of 5,386 children under 12 years of age, living with their mothers, who are widows or deserted wives; the Board thus having the supervision of 10,120 children. Of these children, 2,876 (1,658 boys and 1,218 girls) were boarded out to persons deemed to be eligible after strict inquiry by the Board, the rate of payment being usually 5s. per week, but in special circumstances ranging up to 10s. per week, the highest rates being paid for infants under 1 year, who require more than ordinary care. 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.

A comparison of the number of children under care of the State's direct or delegated control and in private institutions at the end of each of the last ten years is as follows:—

Year.	Supported by Government.		State Apprentices.	State children adopted without payment.	*Inmates of private institutions.	Total.
	State children boarded out or in homes, depôt, or hospitals.	Children living with their mothers.				
1903	2,401	3,435	1,194	184	1,541	8,755
1904	2,419	3,317	1,156	225	1,600	8,717
1905	2,390	3,146	1,246	254	1,591	8,627
1906	2,536	3,025	1,201	287	1,388	8,437
1907	2,707	3,633	1,285	210	1,485	9,320
1908	2,779	3,980	1,270	198	1,565	9,792
1909	2,938	4,097	1,256	196	1,747	10,234
1910	2,976	4,182	1,281	241	1,632	10,312
1911	3,143	4,453	1,345	189	1,805	10,935
1912	3,266	5,386	1,253	215	1,829	11,949

* These figures represent the inmates at the end of the year, and not the total inmates during the year.

The number of children who were wards of the State Children's 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	1913	2,756	1,978	4,734

The following table shows, for a period of five years, the ages of children when received by the Board:—

Age	Year ending April—				
	1909.	1910.	1911.	1912.	1913.
Under 1 year ...	101	140	196	191	170
1 year	61	48	56	72	71
2 years	49	46	55	66	48
3 ,, ...	35	45	34	46	42
4 ,, ...	31	46	32	45	40
5 ,, ...	43	40	48	45	55
6 ,, ...	27	44	46	56	53
7 ,, ...	40	46	45	52	53
8 ,, ...	52	60	55	49	53
9 ,, ...	65	65	55	54	58
10 ,, ...	69	79	74	85	58
11 ,, ...	72	84	88	93	87
12 ,, and over ...	207	184	183	285	290
Unknown	130	84	32	30	31
Total	982	1,011	999	1,169	1,109

There has been a marked increase in the number of children placed under the control of the Board as a result of the operation of the Neglected Children and Juvenile Offenders Act.

Of the 1,109 children shown above, for the year 1913, 606 were boarded out direct from the State Children's Depôt, 53 were received from the Benevolent Asylum, 425 were committed from the Children's Courts, and 25 from other sources.

The Depôt (Ormond House, Paddington) fulfils the function of a central depôt for State children, and is also used as a shelter for the proportionately few girls passing through the Children's Court; the boys being accommodated in premises specially erected and opened in October, 1911. During the year ended April, 1913, 1,843 State children, and 150 Court children passed through the Depôt and the Boys' Shelter.

The gross amount expended by the Government during the year ended April, 1913, on account of the services of the State Children's Relief Department was £116,654; of this amount £50,680 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 £44,461. Contributions by parents and relatives and repayments of maintenance allowances amounted to £5,884, being £1,523 more than was contributed in the previous year, but the Department experiences the need

for comprehensive and remedial legislation on the lines of the Destitute Persons Act, of New Zealand, to enable the recovery of fuller maintenance contributions from any near relative of a destitute person.

The net cost to the Government of the Department's services for the year ended April, 1913, was £110,770.

The following statement shows the increase in the expenditure of the Department since 1901:—

Year ended April.	Expenditure by Government.					Contributions by Parents, &c.	Net Cost to Government.
	Boarding-out.		Cottage Homes.	Children's Protection and Neglected Children's Acts and Supervision of School Attendance.	Total.		
	With Mothers.	Apart from Mothers.					
	£	£	£	£	£	£	£
1901	41,322	18,775	3,069	66*	63,232	1,442	61,790
1906	38,573	22,835	4,621	1,459*	67,488	1,727	65,761
1907	37,034	20,934	5,444	6,360	69,772	2.078	67,694
1908	40,688	20,027	6,917	8,278	75,910	3,024	72,886
1909	42,901	23,757	10,860	9,045	86,563	3,587	82,976
1910	43,497	27,563	10,253	10,951	92,264	3,419	88,845
1911	44,193	29,152	11,085	9,634	94,064	3,712	90,352
1912	46.001	33,743	13,242	10,187	103,173	4,361	98,812
1913	50,680	44,461	12,541	8,972	116,654	5,884	110,770

* Children's Protection Act only.

Payment for Children boarded out.

The rates of payment for children boarded-out with their mothers range from 2s. to 5s. per week, and in April, 1913, 1,052 widows and 841 deserted wives were in receipt of relief on account of 5,386 children under 12 years of age, the term "deserted wife" being construed to include wives technically deserted by being deprived of their husband's support, whether through insanity (158), imprisonment (95), or through detention of the husband in hospital (142), or in an asylum (69). Actual desertion was represented by 377 cases, being 36 per cent. of the total number.

Of 3,266 children entirely supported by the Department, 2,876 are resident as boarders with guardians, the remainder being in hospitals or cottage homes; the maximum number of children boarded out in any one family is three. Usually the payment for maintenance ceases at age 12, when the majority of children are apprenticed in terms of the State Children's Relief Act, but under an amending regulation introduced in 1911, the Board was given discretionary power to continue payment for children boarded-out with their mothers or with guardians up to 14 years, and to exempt children from apprenticeship up to that age.

Apprenticeship of State Children.

The following statement shows the number of apprentices placed by the Board during the past five years:—

	1909.	1910.	1911.	1912.	1913.
Boys ...	270	338	291	288	220
Girls ...	151	208	169	183	103
Total ...	421	546	460	471	323

At the end of April, 1913, there were 1,253 apprentices (768 boys and 485 girls) still under indentures. The terms of indenture prescribe a wage payment and pocket-money on a specified scale, the wages being banked half-yearly to the credit of the apprentice; one-third of the accumulated amount is paid over on completion of the apprenticeship, the balance remaining at interest till age 21 is attained, unless exceptional circumstances arise before this time, when the Board may allow the money to be paid earlier. From 1887 to April, 1912, the total collections of the Apprentices' Fund were £73,050, of which £56,118 had been paid over on completion of the indentures, and £16,932 remained to the credit of the fund, the collections for the year having been £4,379. The majority of the girls are apprenticed in domestic service, the boys going 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.

Cottage Homes for Children.

Cottage Homes for dependent children requiring special treatment are maintained by the State Children's Relief Board. The first was opened at Mittagong in 1882; there are now ten at Mittagong, and three at Parramatta, all situated amid rural surroundings. Five of the Mittagong cottages form the Cottage Farm Home for truants and juvenile offenders committed from the Children's Court; while two are occupied by feeble-minded children, and one by crippled boys. The remainder are reserved for sick and debilitated children. One of the Parramatta homes is reserved for feeble-minded girls.

The homes form a valuable adjunct to the boarding-out system, 5,877 children having been treated since their establishment. The admissions and discharges during the last ten years were as follow:—

Year ended 5th April.	Admissions.	Discharges.	Year ended 5th April.	Admissions.	Discharges.
1904	180	178	1909	465	406
1905	222	225	1910	444	525
1906	157	169	1911	370	383
1907	306	271	1912	555	517
1908	392	325	1913	534	520

On 1st April, 1913, 298 children remained in the various Homes, 212 boys and 86 girls, inclusive of 126 boys at the Cottage Farm Home; there were 5 boys and 14 girls in hospital.

Invalid and crippled children numbered 157, and were classified according to age, sex, and physical condition. The principal ailments are shown in the following statement:—

Debility	42	Skin Diseases	16
Weak Intellect	34	Bronchitis	5
Ophthalmia	9	Heart Disease	5
Crippled	18	Other	3
Epilepsy and Paralysis	25	Total	157

The nature of the infirmities frequently demands long detention in the homes.

The Cottage Farm Home at Mittagong provides suitable industrial occupation and training for boys committed from the Children's Court, and the products of the farm are available for the invalid children in the Cottage Homes. The boys on the farm home are taught bootmaking, carpentering, blacksmithing, and general farm-work. Since the opening of the home in October, 1906, 1,878 boys have been admitted and 1,752 discharged, boys who proved their trustworthiness being released on probation. The number of boys under control at the end of the year was 126.

In conjunction with the two homes for feeble-minded, children are instructed according to Montessori principles, and probationary farms are maintained at Dora Creek and Toronto to permit of the detention of mentally and morally deficient boys.

Probationary System.

In connection with the operations of the Law Courts, particulars have been given elsewhere in this volume as to children brought before the Children's Courts. The majority of the children dealt with are released on probation either directly from the Court or through the State Children's Relief Department, and it is noticeable that committals to industrial and reformatory institutions have declined in proportion as the probation clauses of the Neglected Children and Juvenile Offenders Act, 1905, have been applied.

At 5th April, 1913, there were 1,129 children under probation supervision, 988 boys, and 141 girls. Distinguishing between city and suburbs and the country, it is found that the majority, 815, came from the former. Their ages ranged up to 16 years, viz.:—

	Boys.	Girls.		Boys.	Girls.
5 to 10 years...	101	17	14 to 16 years...	349	59
10 to 12 ,, ...	193	29			
12 to 14 ,, ...	345	36	Total	988	141

The probationary periods were as follow:—1 year and under, 408; 1-2 years, 608; 2-3 years, 53; and over 3 years, 60.

Since its inauguration, approximately, 5,394 children have been placed on probation by the Metropolitan Children's Court. This system compares favourably with the former method of committing juvenile delinquents to institutions, only 5 per cent. of the children being subsequently committed to institutions.

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. Licenses are issued by the State Children's Relief Department to boys under 16 years, and the trading hours prescribed for boys between ages 12 and 14 are from 7 a.m. to 7 p.m., being extended to 6 a.m. to 10 p.m. for boys over 14 years of age. 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. Girls are not allowed to engage in street occupations. Licenses are renewable half-yearly, and entail the wearing of an arm badge. Of the 652 boys licensed in March, 1913, 477 were under, and 175 over, 14 years of age, 604 being engaged in newspaper selling.

With regard to street-trading and probation work, the State Children's Relief Department has some supervision over school attendance, and restricts the extension of truancy.

Child Hygiene.

Medical Inspection of School Children.

In the chapter relating to Education, some details have been given as to the Medical Inspection of children attending State schools; but 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, and some further discussion is essential to a clear comprehension of the systematic effort necessary to prevent physical deterioration. In the effort to eliminate 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 considerably more attention has been given to the question of physical fitness; and Swedish drill, exercises, and sports have been embodied as essentials in the school curricula. As a consequence of the introduction of such a system of physical training, even over the limited period since it was initiated, the latest records may be expected to show a definite improvement in physique as compared with those obtained in early investigations.

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. A further extension of the work upon a systematic basis is contemplated, with the objective of embracing the total school population. In the first year two medical officers were engaged on the inspection work; subsequently the number was increased to four; and in 1911 four school nurses were appointed to supplement the work of the doctors. During 1913 the number of doctors was increased from four to ten, and the additional assistance of two more nurses was projected. The duty of the inspecting officer is to discover and diagnose, not to treat, ailments.

The following statement shows the extent of the inspection work to the end of the year 1911. Similar information for 1912 has not been compiled, owing to reorganization in the scheme. Complete statistics will be furnished for the year 1913:—

Extent of Inspection.	May, 1907, to April, 1908.	April, 1908, to June, 1909.	1910.	1911.
Schools visited	50	98	127	144
Enrolment	36,118	66,000	75,854	67,577
Children presented...	4,000	14,360	16,036	16,909
Complaints disclosed	4,795	22,824	21,558	18,341

At each investigation it has been found that the ailments revealed consist mainly of nasal obstruction and defective sight; the numbers of such cases noted in 1911 being 5,750 and 4,848 respectively; amongst the less numerous ailments may be noted throat complaints, disorders of the eyes, and bad hearing.

The complaints observed amongst pupils in schools inspected during 1911 were as follows:—

Nature of Complaint.	Complaints observed among Pupils.								
	Metropolitan District.		Newcastle District.		Other Country Schools Inspected.		Total.		
	Boys.	Girls.	Boys.	Girls.	Boys.	Girls.	Boys.	Girls.	Total.
Bad sight	1,050	1,546	888	1,232	53	79	1,991	2,857	4,848
Bad hearing	397	504	102	154	45	47	544	705	1,249
Diseases of—									
Eye, internal ...	27	30	22	13	4	3	53	46	99
,, external ...	149	200	492	557	...	3	641	760	1,401
Ear	91	51	44	71	1	2	136	124	260
Nose	1,362	1,300	1,348	1,515	123	102	2,833	2,917	5,750
Throat	661	776	252	336			913	1,112	2,025
Skin	27	31	13	20	...	...	40	51	91
Bone	8	2	3	4	...	...	11	6	17
Joint	4	8	1	2	...	1	5	11	16
Lungs	27	26	3	10	...	...	30	36	66
Heart	20	12	6	3	5	3	31	18	349
Digestive organs ...	154	165	2	1	...	...	156	166	22
Urinary organs ...	30	31	...	5	...	...	30	36	66
Paralysis	29	18	39	25	4	3	72	46	118
Nervous system ...	15	19	10	8	...	...	25	27	52
Teeth (very bad cases)	58	60	290	214	10	19	358	293	651
Enlarged glands ...	273	212	1	1	5	1	279	214	493
Spinal curvature ...	12	11	3	6	17	34	32	51	83
Defective speech ...	120	73	48	30	8	4	176	107	283
Mentally defective ...	66	37	6	7	6	9	78	53	131
Anæmia	59	88	10	11	...	3	69	102	171
Rheumatism	10	28	1	2	...	...	11	30	41
General debility ...	14	12	...	...	...	...	14	12	26
Ringworm	3	1	...	...	...	...	3	1	4
Other complaints ...	13	7	...	...	5	4	18	11	29
Total	4,679	5,248	3,584	4,227	286	317	8,549	9,792	18,341

The number of complaints recorded above does not represent the full extent of the defects prevalent among children attending the State schools visited, as pupils known to be undergoing treatment privately were not included. As the results of the notifications sent to parents during 1911, it is recorded that remedial action was taken in only 36 per cent. of the cases. The proportion had increased from 25 per cent. during the previous two years, but the fact that nearly two-thirds of the notifications were disregarded showed that the question of ensuring satisfactory treatment after inspection is of vital importance, and the success of the scheme is largely dependent on the solution of this difficulty.

Dental Inspection.

In 1904 the Dental Association of New South Wales voluntarily commenced inspection in a school in a relatively poor suburb of Sydney; subsequently the area of inspection was increased to cover metropolitan schools. During 1908, records of inspection of 4,076 children were received, viz., 2,631 boys and 1,445 girls. During 1908-9 the examination was extended by the Association to various country centres, the inspection covering 3,574

children—1,802 boys and 1,772 girls. In 1911 a limited number of inspections were made in the metropolitan and country schools. A summary of the results is shown hereunder:—

Classification.	Boys.				Girls.			
	1908-9.		1911.		1908-9.		1911.	
	Metropolitan.	Country.	Metropolitan.	Country.	Metropolitan.	Country.	Metropolitan.	Country.
Pupils examined... ...	2,631	1,802	408	1,161	1,445	1,772	242	1,161
Teeth examined... ...	61,586	41,690	9,283	27,020	33,095	42,304	5,755	26,692
Percentage of teeth defective	19	17	24	24	23	19	26	23
Average number of defective teeth per child...	4·4	3·9	5·2	5·7	5·2	4·5	6·2	5·5

The teeth of the girls were found to be more defective than those of the boys, and the permanent set were found to be far less defective than the first set, also the permanent teeth of the country children were rather less defective than of city children. The periods of greatest defect were—(*a*) ages 6-7, and (*b*) ages 14-16 for boys, and 12-15 for girls.

Anthropometric Survey of School Children.

In conjunction with the medical inspection an anthropometric survey of children is made in order to show the physical development in relation to mental progress, and the effect of environment on physical condition, as well as to establish a basis of comparison of the children of this State with those of other countries. The investigation is based on the measurements of height, weight, and vision made by the teachers in Sydney and various country districts.

The following table shows the averages of measurements in height and weight recorded during 1911:—

Age last Birthday.	Boys—26,597 Records.		Girls—23,100 Records.	
	Average Height.	Average Weight.	Average Height.	Average Weight.
years.	inches.	lb.	inches.	lb.
3	40·7	39·0	40·0	37·9
4	41·4	39·2	40·5	38·5
5	42·3	42·9	42·0	40·8
6	44·2	44·9	44·1	44·4
7	46·5	49·8	46·1	48·4
8	48·2	53·7	48·1	52·8
9	50·3	58·6	49·9	57·5
10	52·2	64·0	51·9	62·8
11	53·8	68·1	53·9	69·7
12	55·5	74·9	56·0	77·1
13	57·4	83·2	58·2	86·5
14	60·2	94·4	60·5	96·8
15	63·0	108·2	61·4	105·3
16	65·3	122·5	62·0	111·4
17	66·7	132·1	62·6	114·8
18	66·8	137·1	63·3	121·1

Chest Measurements.

To compare the physical condition of children in this State with that of children in other countries on the basis of lung capacity, chest measurements of 2,050 boys at selected city schools were recorded during 1908-9. These are of value as indicating the variation in measurements of boys at different ages in this State. For purposes of comparison with other communities the records are of little value unless the conditions under which the measurements are taken are known to be uniform for the countries under comparison, and failing the necessary uniformity reliance is placed upon records of height and weight as subject in a slight degree only to the influence of varying conditions.

The records of chest measurements disclose that, under fairly uniform conditions, boys in the State schools in Sydney maintain a standard equal to those of other countries. The circumference of the chest in the cases of Sydney boys increases gradually up to the twelfth year, after which there is a period of more rapid growth for four years, the maximum increase being recorded between the fourteenth and fifteenth years. This period of rapid growth corresponds to that noted for height and weight, and the mean chest girth is rather less than half the average height of the child at stated ages.

Comparison with the records obtained in Great Britain, the United States of America, Poland, and Tasmania shows the favourable results of the New South Wales investigations. Measurements at Sydney were taken over the bare skin, the records being the mean of observations at full expansion and full contraction. Tasmanian measurements are over shirt and vest.

Following are the figures obtained as to chest girth, being average measurements of boys of various countries:—

Age last Birthday.	Great Britain (Anthrop. Comm.)	U.S. America (Kline).	Tasmania—Hobart (Elkington).	Poland (Landsberger).	New South Wales—Sydney.
	inches.	inches.	inches.	inches.	inches.
7	.....	.....	23·9	21·8	23·6
8	.....	.....	24·8	22·8	23·9
9	.....	23·48	25·48	23·7	24·5
10	26·1	24·30	25·7	24·4	25·1
11	26·53	25·34	26·34	25·1	25·9
12	27·2	26·28	27·1	25·6	26·7
13	28·03	27·28	27·4	27·2	27·7
14	28·46	28·55	28·1	.....	28·9
15	29·74	29·90	29·0	.....	30·6
16	31·53	.....	.....	.....	31·8
17	33·64	.....	.....	.....	32 7
18	34·19	.....	.....	.....	33·5

Vision of School Children.

During 1911, 42,000 records of vision of public school children in metropolitan and country districts were obtained. The records disclosed that the sight of both boys and girls is more defective in the metropolitan district than in the country; and the sight of girls in both Sydney and country is worse than that of boys. To a large extent, however, the abnormalities in vision are of a minor character, many of which become corrected as the child grows older.

School Children with—	Boys.		Girls.	
	Metropolitan.	Country.	Metropolitan.	Country.
	per cent.	per cent.	per cent.	per cent.
Both eyes normal	77·2	78·7	66·8	70·0
One eye defective	10·4	9·9	11·9	11·8
Both eyes defective	12·4	11·4	21·3	18·2
Very good vision	85·3	86·2	76·3	78·9
Good vision	7·6	6·9	11·0	10·0
Fair vision	4·5	3·9	7·6	6·7
Bad vision	2·1	2·2	4·0	3·9
Very bad vision	0·5	0·8	1·1	0·5

Of the boys examined, 78 per cent. had normal vision in both eyes; 10 per cent. were found to be below normal in one eye; and 12 per cent. were found to be below normal in both eyes. Of the girls examined, 68 per cent. had normal vision in both eyes; 12 per cent. had less than normal vision in one eye; and 20 per cent. had both eyes below normal.

In connection with the prevalence of defects of vision in the schools, it may be of interest to detail the results of recent investigations made in Tasmanian schools as to the cause and cure of defective vision. The hygiene of the eye is dependent, to a very great extent, on the lighting of the school-room, and the construction of the desks and general furniture, but even more on the character of the work, particularly in the case of sewing and reading. In the New South Wales experience, the eyesight of girls is generally worse than of boys; and in some of the sewing classes visited, work of girls of 12-14 years was examined which showed 40-48 stitches per inch done in rooms not brilliantly lighted.

As regards reading, the cause of much ocular defectiveness may be traced in the type of the books used. The standard type adopted as the result of scientific investigation in German schools, on the basis of Roman "n" as measurement should not be less than 1·5 mm. in height; the smallest leading allowable being 2·5 mm., with a maximum line length of 9mm., and a down-stroke of 0·3 mm. thickness. Practically none of the books examined conformed to these standards, the failure being particularly noticeable in books relating to music and poetry. To remedy these defects in ocular hygiene, proper illumination of school-rooms is essential, and attention should be given to the matter of hygienic furniture, standard-type books, and scientific instruction in sewing.

Hospitals for the Sick.

There were in New South Wales, at the end of 1912, 146 general hospitals for the treatment of the sick. Twenty-four of these were in the metropolitan area, and 122 in country districts; the accommodation provided was 5,379 beds, viz., 2,229 in the metropolitan hospitals, averaging 93 beds per hospital; and 3,150 in country districts, averaging 26 beds per hospital. The cubic capacity of metropolitan hospitals was 2,830,479 cubic feet, averaging 1,315 cubic feet per bed; in the country hospitals the average was 1,227 cubic feet, the average for New South Wales being 1,262 cubic feet per bed. The following statement shows the extent to which hospital services have increased since 1901:—

Increase in—	1901.		1912.	
	Metropolitan.	Country.	Metropolitan.	Country.
Hospitals	15	103	24	122
Beds	1,453	1,938	2,229	3,150
Indoor patients during year	16,919	16,093	33,264	28,447
Outdoor patients general)	72,645	7,614	114,842	9,898
Indoor patients per 1,000 of mean population	24·1		35·5	

Private Hospitals.

In addition to the subsidised hospitals which are open to the public, and are subject to the Public Hospitals Act, 1898, and its amendments, there exist numerous private hospitals which receive no revenue from the State, and 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 be received) exists only by virtue of a license issued annually by the Board of Health. The premises are inspected, and both the management and the premises must be approved before a license issues. The hospitals thus licensed on 31st March, 1913, numbered 440, viz., 119 in Sydney, and 321 in the country.

The following statement shows the classification of private hospitals:—

Type of Hospital.	Sydney.	Country.	Total.
Medical, surgical, and lying-in	41	104	145
Medical or surgical...	9	8	17
Lying-in	69	209	278
Total	119	321	440

The country hospitals were scattered over 140 towns, in the majority of which the accommodation provided was from 1 to 3 beds; only in 16 hospitals, all in Sydney, were more than 20 beds available.

Staffs and Patients in Public Hospitals.

The following statement shows the medical and nursing staffs attached to public hospitals during 1912:—

Hospitals.	Medical Staff.		Nursing Staff.			
	Honorary.	Salaried.	Qualified Nurses.	Nurses Training.	Others.	Total.
Metropolitan ...	314	64	513	293	50	856
Country	185	138	356	277	78	711
Total	499	202	869	570	128	1,567

During the year 61,711 persons were under treatment as indoor patients, viz., 33,264 in metropolitan and 28,447 in country hospitals, and the number remaining in hospital at the close of the year was 3,685 (2,090 males and 1,591 females). The average time during which each person was under treatment was: of those who died—males, 26·1 days, and females, 17·5 days; and of those who recovered—males, 20·7 days, and females 20·8 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.		Deaths.		Number of Patients at the close of year.
	Total.	Number Discharged.	Number.	Per cent. of treated.	
1903	37,011	31,860	2,660	7·2	2,491
1904	38,430	33,532	2,431	6·3	2,467
1905	38,646	33,581	2,529	6·5	2,536
1906	41,552	36,402	2,576	6·2	2,574
1907	44,667	39,133	2,767	6·2	2,767
1908	47,349	41,391	3,020	6·4	2,938
1909	50,541	44,208	3,194	6·3	3,139
1910	54,683	48,379	3,224	5·9	3,089
1911	56,564	49,605	3,550	6·3	3,409
1912	61,711	53,538	4,488	7·3	3,685

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 24·8 per 1,000 in 1902 to 35·5 per 1,000 in 1912.

The death-rate per 1,000 persons under treatment during 1912 was 7·3 as compared with 7·5 in 1902. The death-rate in hospitals in New South Wales is apparently high, but this to a large extent is due to the number of deaths from accidents, which form a considerable proportion of the total causes of deaths registered. A majority of the accidents are treated in the hospitals; and these institutions, especially in country districts, are maintained principally for the treatment of surgical cases.

Sickness in Public Hospitals.

The statement below shows the principal diseases of patients who were treated during 1912, including those remaining in hospital at the end of the year. The number of patients who died, who were discharged as recovered, relieved, or unrelieved is also shown.

As will be seen from the table, 61,711 patients—males 33,571 and females 28,140—were treated. There were 2,885 deaths of males, and 1,603 of females; 42,746 patients were discharged as recovered, 9,328 as relieved, and 1,464 as unrelieved.

Disease.	Total under Treatment during 1912.		Number of those discharged during the year who—					
			Recovered.		Were Relieved.	Were unrelieved.	Died.	
	Males.	Females.	Males.	Females.	Persons.	Persons.	Males.	Females.
Typhoid	1,078	663	795	513	10	1	128	60
Diphtheria and croup ...	1,686	2,213	1,461	1,934	108	5	88	94
Influenza	632	331	609	312	15	1	4	1
Tuberculosis of lungs ..	1,141	474	77	40	649	148	219	66
Tuberculosis, other organs	410	309	128	106	289	30	39	26
Venereal Diseases ...	978	480	191	111	986	59	20	11
Cancer	788	552	238	180	269	263	199	110
Rheumatism	1,106	621	673	351	499	15	24	20
Diseases of the eye ...	728	481	414	283	372	65	...	...
Heart diseases	768	384	89	57	575	26	233	93
Hæmorrhoids, &c. ...	591	341	507	277	80	16	2	2
Diseases of nose ...	839	858	810	830	31	17	2	...
Bronchitis	697	373	503	297	172	5	53	16
Pneumonia	1,526	800	1,140	632	28	3	313	117
Diseases of the Stomach	759	753	569	576	255	16	25	9
Diarrhœa and enteritis	926	650	601	408	87	14	196	163
Appendicitis, typhlitis...	1,386	1,372	1,147	1,208	129	20	52	32
Intestinal obstruction ...	900	310	768	255	50	18	53	27
Nephritis, Bright's disease	455	244	95	71	221	17	165	84
Diseases, female genital organs	...	3,272	...	2,717	271	78	...	50
Diseases of skin, &c. ...	1,177	523	972	395	202	14	19	6
Accidents	6,040	1,144	4,754	862	725	81	282	81
All Causes	33,571	28,140	22,061	20,685	9,328	1,464	2,885	1,603

Duration of Illness.

The following figures show the condition under which discharges during 1912 were effected for all cases, and the average number of days' illness suffered:—

Discharges.	Proportion Discharged.		Average Duration of Illness.	
	Males.	Females.	Males.	Females.
	per cent.	per cent.	Days.	Days.
Recovered	70·1	77·9	20·7	20·8
Died	9·1	6·1	26·1	17·5
Relieved	18·1	13·7	.....	.....
Unrelieved	2·7	2·3	.....	.....
	100·0	100·0	23·6	21·5

Fatality Rates in Age-groups.

For all cases of sickness treated in hospital, the fatality rates were 9·2 per cent. for males and 6·0 per cent. for females, the various age-groups showing as follows:—

Age-group.	Fatality Rates.		Age-group.	Fatality Rates.	
	Males.	Females.		Males.	Females.
	per cent.	per cent.		per cent.	per cent.
Under 1 year ...	27·2	32·6	45–64 years ...	13·0	10·3
1–4 years	10·5	11·5	65 and over ...	21·9	18·7
5–19 „	3·6	3·3	All ages	9·2	6·0
20–44	5·7	3·8			

The fatality rates per 100 cases of various diseases treated during 1912 are shown below; the cases of persons remaining in the hospitals at the end of the year are not included:—

Disease.	Cases.		Fatality Rate.	
	Males.	Females.	Males.	Females.
			per cent.	per cent.
Typhoid Fever	930	577	13·8	10·4
Diphtheria and Croup	1,596	2,094	5·5	4·5
Tuberculosis—Lungs	853	346	25·7	19·1
Other	354	264	11·0	9·8
Cancer	736	523	27·0	21·0
Diseases of the Heart	717	356	32·4	26·1
Bronchitis	677	369	7·8	4·3
Pneumonia	1,471	762	21·3	15·4
Diarrhœa and Enteritis ...	864	605	22·7	27·0
Appendicitis	1,289	1,299	4·0	2·5
Intestinal Obstruction	872	299	6·1	9·0
Nephritis	421	232	39·2	36·2
Accident	5,701	1,084	4·9	7·5

Out-Door Hospital Patients.

During 1912, 124,740 persons were treated as out-door patients of the general hospitals, viz., 114,842 at metropolitan hospitals, and 9,898 at country hospitals, and 5,585 were treated at the metropolitan dental hospital.

Smallpox Outbreak, 1913.

Early in July, 1913, smallpox in a very mild form was discovered in Sydney, and up to the end of January, 1914, the number of persons attacked was 1,083—583 males and 500 females. The ages of the sufferers ranged from 8 days to 82 years, the greatest number attacked in one household being nine.

Stringent quarantine measures were taken to restrict the epidemic, so that only 61 cases were reported from the country, with a miximum of 6 cases from any one town.

During the progress of the epidemic more than 3,000 cases of chicken pox were diagnosed, and more than 5,000 contacts vaccinated by medical officers of the Health Department.

The effects of the epidemic on the vaccination lists may be gauged from the fact that for the ten years ended 31st December, 1912, the total number vaccinated had been 1,126, and in contrast, from 1st July, 1913, to the end of January, 1914, upwards of 520,000 were vaccinated, approximately 220,000 of them at public depôts.

Leper Lazaret.

At the Leper Lazaret on 31st December, 1912, there were 20 persons of whom 15 were males. Six of the inmates were born in New South Wales, 5 were natives of the Pacific Islands, and 3 were Chinese. The cost of management of the Lazaret was £1,865, the average cost per inmate per annum being £98 15s. 6d.

The total number of lepers is fairly constant, since, during the last 10 years the least number treated annually was 20 in 1903 and the greatest 25 in 1904.

Also the number remaining at the end of the year varies only from 17 in the years 1903 and 1904 to 22 in 1907. During the last ten years 18 lepers have been repatriated.

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, and is exclusive of minor cases treated outside the hospitals:—

Year.	Cases of Sickness treated.	Year.	Cases of Sickness treated.
1906	704	1910	525
1907	626	1911	732
1908	683	1912	728
1909	673		

The major number of these 728 cases, viz., 513, were treated at Darlinghurst, while Parramatta accounted for 99, and the State Reformatory for Women for 92.

At Bathurst Gaol special provision has been made for the treatment of tuberculous prisoners, and so far shows satisfactory results.

Anti-tuberculosis Dispensaries.

An important innovation in connection with out-door relief has been made by the establishment of anti-tuberculosis dispensaries. The first was opened in Sydney in 1912 under the auspices of the National Association for the Prevention of Consumption, aided by a Government grant of £500. In addition, two metropolitan hospitals have opened special out-door departments for the treatment of tuberculous patients, and an extension of the dispensary system in connection with hospitals is contemplated. An Advisory Board consisting of medical and veterinary experts meets regularly to advise the Government regarding the treatment of tuberculosis, the expenditure for this purpose for the year ended 30th June, 1913, being £336.

In addition to the State institutions described later, the Queen Victoria Homes for Consumptives and the R. T. Hall Sanatorium provide open air treatment for persons suffering from consumption in curative stages, and tuberculous cases are received at the Sacred Heart Hospice for the Dying. Further particulars regarding tuberculosis and its treatment are given in the chapter "Vital Statistics."

Ambulance and First Aid.

In the work of rendering first aid, and transporting invalid or injured persons, several organisations are engaged, viz., the St. John Ambulance Association and Brigade, the Civil Ambulance and Transport Corps, and the New South Wales Marine Ambulance, none of which is subsidised by the Government.

The primary object of the St. John Ambulance Association is the dissemination of general information as to the preliminary treatment of the sick and injured; a large number of classes for First Aid instruction are held throughout the State, certificates of competency being awarded by the Association. Ambulance Corps connected with the Railway and Tramway Department and with the Department of Mines, also encourage first aid instruction. During the year 1913 an amount of £105 was expended by the State in making additions to the Woolloomooloo Ambulance Depôt. The Royal Life-saving Society promotes technical education in life-saving and resuscitation of the apparently drowned.

Subsidiary Social Services.

Supplementing the activities of the larger institutions, there exist various minor organisations, some of which are subsidised by the Government.

In the matter of nursing, the District Nursing Association, the Bush Nursing Association, and the Sydney Day Nursing Association are active. The Sydney District Nursing Association restricts its operations to Sydney and its suburbs, and during 1912 the nurses connected with the Association made 23,788 visits to 651 patients. The Association is maintained by public subscriptions, but received a grant of £250 from the Government in 1912.

To provide a measure of nursing and hospital services in districts sparsely settled or remote from an established hospital the Bush Nursing Association was instituted during 1911, and during its first year four nurses were installed, viz., one each at Jindabyne, Euston, Lake Cudgellico, and Carinda. In each town a cottage was furnished and equipped for the use of the nurse; the costs of equipment and services are guaranteed by local committees, promoted and subsidised by the association which was inaugurated with an endowment provided by public subscriptions, and is maintained by annual contributions subsidised by the Government. During the financial year 1913 the Government subsidy was £75, which sum was provided for nurses at Coff's Harbour railway line. Among other public institutions engaged in social service may be mentioned the Royal Life-saving Society, with a State subsidy for 1913 of £150; the New South Wales Public Disaster Relief Fund, which received £1,500 from the Government during 1913, the Royal Shipwreck Relief and Humane Society of New South Wales, and the Surgical Appliance Aid Society, which receives an annual subsidy of £50. The Sydney Medical Mission treated 2,339 patients during 1912, dispensed medicines, and visited numerous patients. The Fresh Air League sent 101 children and 102 adults for trips to the country during the year 1912.

The Alice Rawson Schools for Mothers received a subsidy of £250, and during the year the nurse paid 2,916 visits.

Hospital Finance.

The following statement shows the revenue and expenditure of the public hospitals for the year 1912:—

Items.	Metropolitan.	Country.	New South Wales.
Receipts—	£	£	£
State aid	119,661	84,700	204,361
Subscriptions and donations	74,402	70,116	144,518
Patients' contributions	28,164	30,252	58,416
Miscellaneous	15,670	6,500	22,170
Total Receipts ... ... £	237,897	191,568	429,465
Expenditure—			
Buildings and repairs	35,832	28,589	64,421
Salaries and Wages	69,463	70,813	140,276
Provisions, Stores, &c.	83,380	82,093	165,473
Miscellaneous	22,804	17,345	40,149
Total Expenditure ... £	211,479	198,840	410,319

The expenditure in connection with the Coast Hospital, Little Bay, and the Hospital for Consumptives at Waterfall has been included in the figures stated above; these institutions are controlled entirely by the Government.

At the Coast Hospital there were 342 beds, a nursing staff of 91, and a medical staff of 14, of whom five were salaried; 4,528 patients were treated during the year, the cost of the establishment being £28,012.

The Waterfall Hospital was established in 1909 for the treatment of persons suffering from pulmonary tuberculosis in early as well as advanced stages of the disease. There are 314 beds in the institution, and 703 patients were treated during 1912 at a cost of £14,633, including £496, contributed by patients. Hitherto only male patients had been admitted, but a department for females was opened during this year.

According to the hospital accounts the total expenditure of the Government in connection with the hospitals in the metropolitan area in 1912 was £119,661, and on the country hospitals £84,700. The total for the State was £204,361, comprising special grants amounting to £41,672 for metropolitan, and £13,537 for country hospitals, and subsidies, £77,989 to metropolitan and £71,163 to country institutions. These amounts are irrespective of payments for attendance on aborigines, and of expenses in connection with special outbreaks of disease, which are met from the general Medical Vote, nor do they include cost of maintenance of a large number of chronic and incurable cases in destitute asylums.

Progression of Hospital Finance.

The revenue and expenditure of public hospitals at intervals since 1900 are shown below:—

Year.	Revenue.					Expenditure.			
	State aid.	Subscriptions and Donations.	Patients' contributions.	Other.	Total.	Building and Repairs.	Salaries and Wages, Provisions, Stores, &c.	Other.	Total.
	£	£	£	£	£	£	£	£	£
1900	88,463	65,634	20,458	16,474	191,029	17,362	131,932	14,339	163,633
1905	100,976	72,430	27,635	14,824	215,865	34,541	167,815	22,808	225,164
1906	109,296	85,421	31,525	16,617	242,859	26,815	179,431	18,666	224,912
1907	128,690	87,812	34,126	14,497	265,125	40,260	193,419	20,630	254,309
1908	135,183	85,452	38,985	15,842	275,462	53,446	213,207	20,744	287,397
1909	146,774	96,733	41,208	16,358	301,073	44,502	225,316	23,402	293,220
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

The State aid received by the hospitals has increased by 131 per cent. since 1900; the subscriptions and donations by 120 per cent.; the patients' contributions by 186 per cent., and the total revenue by 125 per cent. The expenditure on maintenance has increased during the same period by 148 per cent., and the total expenditure by 157 per cent.

Hospital Funds.

The balances of the funds of the hospitals as at the beginning and end of the year 1912 are shown in the following statement:—

Hospitals.	At 1st Jan., 1912.		At 31st Dec., 1912.	
	Current Account.	Invested Funds.	Current Account.	Invested Funds.
	£	£	£	£
Metropolitan ...	(—) 20,336	119,319	(—) 6,911	132,312
Country ...	26,182	99,800	22,514	96,196
Total ...	5,846	219,119	15,603	228,508

(—) Indicates debit balance.

Public Charitable Collections.

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 other collections.

Hospital Saturday Fund.

The Hospital Saturday Fund of New South Wales, inaugurated in 1895, 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, 1913, £9,557 was collected and £8,800 was distributed, the expenses amounted to £749. Four city and ten suburban hospitals participated in the 1913 distribution, as did 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, 1913, the amount collected was £2,064, and the amount distributed was £1,400, the expenses being £442.

In 1913 twenty-two charitable institutions benefited to the extent of £800; these were mostly orphanages and children's homes. Also thirty-three relief societies, mainly 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, 1912, amounted to £235,924. The Act authorises the appointment of an Inspector-General of Insane, who is empowered to visit every hospital, reception-house, ward, cell, or licensed house, and to inquire generally as to the care, treatment, and health, mental and physical, of the patients. Persons deemed to be insane may be examined and detained on the order of a Justice; and in public hospitals, and in gaol establishments, wards are reserved for the reception and observation of insane patients, but special hospitals are maintained by the Government for their treatment and care. The number of such hospitals open during 1912 was nine, 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.

Hospitals for the Insane.

For the treatment of the insane there were during 1912 nine Government and three private hospitals.

The medical staff numbered 21, while the nursing staff and attendants numbered 564 males and 471 females, and the average daily number of patients resident, excluding patients on leave, was 6,134, comprising 3,716 males and 2,418 females.

At the end of the year 1912 there were in the New South Wales hospitals 6,160 patients—3,718 males and 2,442 females; in the South Australian hospitals the patients from New South Wales numbered 18 men and 18 women; in addition there were 130 men and 180 women on leave from various institutions, making a total number of 6,506 insane persons—3,866 males and 2,640 females.

In the following table is stated the number of persons certified as insane at the close of each year, with their proportion per 1,000 of the population at quinquennial intervals since 1876:—

Year.	Number of Insane Persons.			Proportion per 1,000 of Population.		
	Males.	Females.	Total.	Males.	Females.	Total.
1876	1,072	533	1,605	3·21	1·90	2·61
1881	1,354	726	2,080	3·16	2·06	2·66
1886	1,644	1,073	2,717	3·03	2·41	2·75
1891	1,912	1,222	3,134	3·04	2·29	2·70
1896	2,356	1,489	3,845	3·46	2·49	3·01
1901	2,684	1,804	4,488	3·72	2·75	3·26
1906	3,285	2,240	5,525	4·13	3·11	3·65
1911	3,810	2,573	6,383	4·30	3·19	3·77
1912	3,866	2,640	6,506	4·13	3 13	3·66

From these figures it appears that generally the proportion of insane treated in the hospitals for insane is increasing steadily from period to period; the figures for 1912, however, show a decided improvement on those of the previous year. 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.

Each institution admitting new cases is provided with a mental hospital specially designed and fully equipped for the treatment of curable patients, in separate buildings, so that a classification system can be ensured, and a high standard of nursing and care maintained.

Juveniles are sent to the Hospital for the Insane at Newcastle—an asylum reserved for imbecile and idiot children, and young people and those requiring special nursing; kindergarten classes undertaken in this hospital have proved of great benefit to the children attending. In connection with the State Children's Relief Department two cottage homes for feeble-minded children are maintained.

Admissions and Discharges.

The steadily increasing number of admissions resulted in so overtaxing the accommodation available in the large hospitals, that temporary 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 1912, under these provisions, 51 insane patients were received, 27 being discharged after a few days' treatment at the Reception House, while 24 were admitted to Hospitals for the Insane.

The numbers of admissions and re-admissions to hospitals for the insane since 1876 are shown below in five-year periods:—

Period.	Admissions.			Re-admissions.		
	Males.	Females.	Total.	Males.	Females.	Total.
1876–1880	1,164	610	1,774	203	145	348
1881–1885	1,441	801	2,242	116	131	247
1886–1890	1,615	972	2,587	156	105	261
1891–1895	1,843	1,116	2,959	217	201	418
1896–1900	1,980	1,278	3,258	300	259	559
1901–1905	2,488	1,621	4,109	415	365	780
1906–1910	2,708	1,724	4,432	518	410	928
1911	674	387	1,061	113	73	186
1912	624	394	1,018	117	78	195

Of the admissions in 1912 natives of New South Wales formed 50·6 per cent., other Australian States 12·5, England 19·5, Ireland 8·1, Scotland 4·9, and other countries 4·4 per cent.

The number of admissions in relation to the population is called "the occurring insanity."

The following table shows the number of admissions, and the population per admission:—

Year.	Admissions.	Population per Admission.	Year.	Admissions.	Population per Admission.	Year.	Admissions.	Population per Admission.
1893	688	1,778	1900	859	1,585	1907	977	1,608
1894	712	1,757	1901	848	1,627	1908	969	1,655
1895	715	1,787	1902	947	1,484	1909	1,070	1,538
1896	740	1,753	1903	1,065	1,344	1910	1,221	1,384
1897	692	1,912	1904	1,020	1,432	1911	1,247	1,358
1898	730	1,844	1905	1,009	1,482	1912	1,213	1,466
1899	796	1,704	1906	1,123	1,363			

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.
1876-1880	578	301	879	93	104	197	461	143	604
1881–1885	624	394	1,018	88	78	166	529	226	755
1886–1890	732	531	1,263	76	47	123	630	344	974
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

Analysis of the direct causes of deaths as certified, during 1912, 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 ...	43	20	63
General Paralysis	54	17	71
Other Cerebral Diseases	39	25	64
General Debility and Old Age	36	19	55
Pulmonary Consumption	30	20	50
Diseases of Heart and Blood-vessels	41	21	62
Inflammation of Lungs, Pleura, and Bronchia...	35	15	50
Abdominal Diseases	55	23	78
Other Diseases	2	5	7
Accident and Suicide	.....	1	1
Total	335	166	501

Causes of Insanity.

On the admission or readmission of patients to hospitals or reception houses, the causes of insanity, apparent or assigned, are verified; the records gathered for 1912 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, ascertained congenital defects, and hereditary influence. In the cases of 82 men and 74 women earlier attacks were recorded, than those which were responsible for their admissions in 1912.

In connection with the treatment of feeble-minded persons, on scientific lines, the trend of modern method is towards segregation and their treatment in establishments specially adapted for the purpose. Grave consideration has been given to the question in England, in the United States, and Canada, and at the Medical Congress held in Sydney during 1911, the subject was fully discussed, in view of its national importance, and its social reactions on the healthy minded among the population. The suggested policy in regard to the feeble-minded demands the examination of children in all schools, so as to ascertain exactly the proportion of feeble-minded, and thereupon the establishment of special schools where individual attention under special teachers may be assured. Naturally, among a number of feeble-minded persons (adults or children), will be many who are fairly normal, and capable of considerable mental development; thence the capacity may decline through the grades of those who lack resource, judgment, initiative, or even intelligence, to those who are absolutely without mental equipment and school knowledge. A proper system of classification is essential to any attempt at improvement through the development of skill in some form of manual work, and the formation of normal habits. As regards those who become dependent on the State, or who infringe the law, oversight and supervision are already provided, but more comprehensive measures are necessary to safeguard the community, and properly protect and educate all feeble-minded persons.

The recent Royal Commission in England inquiring into mentally defectives, included in this category epileptics, inebriates, moral imbeciles, and mentally defective deaf and dumb.

It would appear, therefore, that the State will be called upon in the near future to extend its scope of operations. An Amending Bill is now under consideration, and it is suggested to embody the recommendations of the British Commission, or at least such as are applicable to this State.

In the report on the subject of neglected and delinquent children in Great Britain, Europe and America, Sir Charles K. Mackellar, President of the State Children's Relief Board, speaking generally on the subject, recommends the introduction of legislation for dealing specially with the feeble-minded portion of the community.

The Commissioner points out—

(1) That legal provision should be made to include those classes of feeble-minded children not at present certifiable for the Hospitals for Insane.

(2) Special schools should be established in country centres for the education of the feeble-minded.

(3) Cottage homes should be established, and children taught various industries to enable them to maintain themselves in after years.

(4) Feeble-minded adults should be segregated in homes and given an opportunity of working at the various trades which they have been taught.

On the specific subject of the feeble-minded, he proposes the classification broadly in three classes—(*a*) permanently incapable, (*b*) temporarily incapable, (*c*) conditionally capable.

The first class would of necessity be permanently confined to homes, while the other classes would be treated in various ways. The latter classes would include many of those children now dealt with by the Children's Court, who from actual test (Binet-Simon) would in the new classification of the "feeble-minded" be included. In order to prevent clashing with the work of the Children's Court it would be necessary to establish a tribunal with power to deal with feeble-minded children after the necessary "mentality report" has been made.

Should this recommendation be given effect to a permanent check will be imposed against—

(1) Treating mental instability as criminal delinquency.

(2) Mental and moral contamination of one type by another as in institutions.

(3) The evil of promiscuous association of the morally and mentally unfit with those who are not so affected.

(4) The wilful stupidity and ignorance of parents and guardians, who frequently neglect to take timely remedial measures in regard to children.

(5) The growth of vice and crime.

In regard to the utterly degenerate, the permanent segregation is recommended with a view to preventing the propagation of the physically or mentally unfit.

Cost of Maintenance.

The weekly cost of maintaining insane patients in Government hospitals during the year 1912 was 14s. 8⅝d. per patient, of which the State paid 12s. 3⅜d., the balance being derived from private contributions. The subjoined table shows the average weekly cost per patient from 1903 to 1912:—

Year.	Annual Cost of maintenance of Patients.	Cost of maintenance of Patient per week.		
		To State.	Private Contributions.	Total per Patient without deducting collections.
	£	s. d.	s. d.	s. d.
1903	151,309	10 10	1 10½	12 8½
1904	139,974	9 5¾	1 10½	11 4¼
1905	137,971	8 9¾	2 0¼	10 10
1906	143,245	8 8½	2 0¾	10 9¼
1907	149,728	8 9	2 1⅜	10 10⅜
1908	165,428	9 8⅛	2 2¼	11 10⅜
1909	166,528	9 6⅛	2 2⅝	11 8¾
1910	181,482	10 0⅛	2 2½	12 2⅝
1911	185,266	9 9⅛	2 3¼	12 0⅜
1912	231,185	12 3⅜	2 5¼	14 8⅝

The increase in the cost of maintenance, £45,919, is almost wholly due to benefits conferred on the staff, £22,000 being required to pay the salaries of additional staff required to introduce the 48-hour week.

In a similar manner £8,900 was expended in providing a minimum salary of £110 to all adult employees, including nurses, while regrading and increments involved an additional £7,700.

Duration of Treatment.

The duration of treatment of completed cases shows that, during 1912, of 486 cases recovered, viz., 287 men and 199 women, the majority had been under treatment ranging from one to six months, or in more stubborn cases from one to two years. The following table shows the duration of treatment of those who recovered and those who died during 1912:—

Length of Residence in Institution.	Recovered.			Died.		
	Males.	Females.	Total.	Males.	Females	Total.
Under 1 month ...	12	5	17	43	24	67
From 1 to 3 months	86	24	110	32	16	48
,, 3 6 ,,	66	27	93	30	11	41
,, 6 9 ,,	38	29	67	27	11	38
,, 9 12 ,,	22	24	46	22	7	29
,, 1 2 years	36	58	94	42	21	63
,, 2 3 ,,	10	13	23	26	13	39
,, 3 5 ,,	10	11	21	22	10	32
,, 5 7 ,,	3	3	6	14	11	25
,, 7 10 ,,	2	3	5	11	17	28
,, 10 12 ,,	...	...	...	3	7	10
,, 12 15 ,,	...	1	1	22	5	27
Over 15 years ...	2	1	3	41	13	54
Total	287	199	486	335	166	501

Mental Ward.

At Darlinghurst in May, 1908, a mental ward was opened for uncertified cases of insanity, with the object of treating mental diseases in their early and curable stages.

The experimental stage has been passed and much success has been achieved. During 1912 the number of cases treated was 89, of whom 72 were discharged, 3 died, and 14 remained at the end of the year.

An effort has been made to induce the general hospitals to establish mental wards.

SUPPLEMENTARY INSTITUTIONS.

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 six months ended 31st December, 1912, was 2,940 as compared with 2,907 during the year 1911-12.

The following statement shows the weekly cost per inmate at the Government Asylums during the years ended 30th June, 1909-13:—

Head of Expenditure.	Weekly Cost per Inmate.				
	1909.	1910.	1911.	1912.	1913.
	s. d.	s. d.	s. d.	s. d.	s. d.
Salaries and money allowances	2 2	2 4¼	2 6½	3 4	3 10½
Provisions, extras, medical comforts, and forage ...	3 4	3 8	3 0¾	3 3½	4 8½
All other expenses	2 8½	2 0¾	2 2	2 8¾	2 9¾
Gross weekly cost for maintenance per inmate ...	8 2½	8 1	7 9¼	9 4¼	11 4¾
Average weekly contribution towards Revenue per inmate.	0 5	0 4	0 4	0 8¾	1 2¾
Net weekly cost per inmate	7 9½	7 9	7 5¼	8 7½	10 2

Charitable Institutions.

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 being the homes for women, and for the blind, deaf, and dumb; for the relief of consumptives; for granting casual aid to indigent persons; for the help of discharged prisoners.

There are a number of charitable institutions which are maintained partly by State aid and partly by private contributions, as well as others which are wholly dependent on private aid.

During 1912 the recorded admissions to the various charitable institutions numbered 10,716, viz., 6,551 males, and 4,165 females, and at the end of 1912 there were 5,951 persons in the institutions, of whom 2,140 were children, and were included in a previous table relating to dependent children. The estimated value of outdoor relief afforded during 1912 was £3,941. State aid amounted to £139,926, the total revenue and expenditure being respectively £245,118 and £251,359.

In addition to the institutions which afforded both indoor and outdoor relief there exist numerous societies which are engaged in distributing relief in various forms. During 1912 these societies distributed outdoor relief to the value of £14,858, their total revenue and expenditure being £66,112 and £56,846 respectively, State aid amounting to £21,498.

Government Relief Orders.

To the various hospitals and asylums the Government issues orders authorising the holders to secure relief from the institutions. During 1912, 11,378 orders were granted, of which 4,892 were to the Government hospitals and asylums, 2,741 were to the Government Coast Hospital, and 2,274 were for out-door treatment at different hospitals; the balance were distributed among other institutions. The total applications numbered 13,048 in 1912, as compared with 10,613 in 1911, and 10,791 in 1910; 1,670 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 1912 were over 40 years of age, 2,447 being over 60.

The principal birthplaces of applicants for orders are given as New South Wales 6,265, England 2,764, Ireland 1,635, Scotland 630.

As might be expected, labourers with 3,297 head the list of occupations of applicants, with the indefinite occupations "married woman" and "no occupation" showing 1,487 and 1,980 respectively. Of the more definite occupations servant with 1,098, seaman with 572, and clerk with 441 are the most conspicuous.

Excluding the 6,265 born in New South Wales 4,033 were resident over 20 years in New South Wales, and 1,407 between 10 and 20 years.

Divorce.

A total of 7,793 petitions for divorce, 641 for judicial separation, and 88 for nullity of marriage, have been presented to the Supreme Court in the Divorce and Matrimonial Causes Jurisdiction from 1873 to the end of 1912. Of the petitions for divorce, 2,570 were presented *in forma pauperis*.

The following statement shows the divorces, judicial separations, and decrees of nullity of marriage granted in New South Wales since the year 1873:—

Period.	Divorces.		Judicial Separation granted.	Nullity of Marriage.	
	Decrees *nisi*.	Decrees absolute.		Decrees *nisi*.	Decrees absolute.
1873–1877	55	33	...	...	...
1878–1882	85	70	...	...	...
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	242	206	13	3	1
1909	317	287	15	3	4
1910	207	257	9	2	3
1911	219	206	12	5	4
1912	316	343	12	7	6
Total	5,501	5,038	317	61	56

The first Divorce Act in New South Wales was passed in 1873, and from 1st July in that year down to the end of 1892 the number of divorce decrees made absolute was 447. In August, 1892, an amended Divorce Act came into force, and in 1893 the number of decrees was 247, and in the following year 288; in 1907 the number decreased to 147, rising again to 287 in 1909; in 1912 the number was 343.

Reckoning as a divorce only those cases where the decree has been made absolute, the total number of decrees from 1873 to 1912 was 5,411, of which 5,038 were divorces, 56 cases of nullity of marriage, and 317 judicial separations.

The majority of petitions are lodged by the wife, the proportion being approximately 70 petitions made by the wife to 30 lodged by the husband.

The following statement shows the sexes of petitioners for divorce in the cases of decrees made absolute during the past ten years:—

Year.	Petitions for Divorce.		Year.	Petitions for Divorce.	
	Husband.	Wife.		Husband.	Wife.
1903	67	116	1908	68	138
1904	69	147	1909	85	202
1905	63	119	1910	81	176
1906	51	106	1911	64	142
1907	40	108	1912	116	227

In regard to judicial separations over the same period, 19 were granted on petition of the husband, and 115 on petition of the wife.

The grounds of suits for divorce made during each year since 1903 were as follow:—

Ground of Suit.	1903.	1904.	1905.	1906.	1907.	1908.	1909.	1910.	1911.	1912.
Adultery	64	70	58	60	62	67	85	69	65	87
,, coupled with bigamy, cruelty, and desertion	3	11	8	6	4	7	13	10	5	3
Cruelty and repeated assaults	...	1	2	...	1	1	1	3	1	1
,, ,, habitual drunkenness ..	5	11	8	9	6	8	7	5	...	1
Desertion	96	116	98	73	65	110	157	152	118	224
Habitual drunkenness and neglect to support	5	5	4	3	6	5	11	4	11	12
Habitual drunkenness and neglect of domestic duties	9	2	..	2	1	1	2	2	3	2
Imprisonment of husband for three years	1	...	2	1	1	2	4	2	...	1
Non-compliance with order for restitution of conjugal rights	...	...	2	3	2	5	7	10	3	12
Total	183	216	182	157	148	206	287	257	206	343

As to the grounds of appeal for divorce, the majority of petitions granted were made on counts of desertion, a lesser proportion including habitual drunkenness as a causative factor in the conditions upon which the appeal

was based. The following statement shows the proportions of petitions based on these grounds, viz., desertion and habitual drunkenness, during the ten years 1903-1912:—

Year.	Causes based on—		Other.	All Causes.	Year.	Causes based on—		Other.	All Causes.
	Desertion.	Drunkenness				Desertion.	Drunkenness		
1903	96	19	68	183	1908	110	14	82	206
1904	116	18	82	216	1909	157	20	110	287
1905	98	12	72	182	1910	152	11	94	257
1906	73	14	70	157	1911	118	14	74	206
1907	65	13	70	148	1912	224	15	104	343

It will thus be seen that over 60 per cent. of divorces granted are allowed on these two counts. As regards judicial separations, cruelty and repeated assaults are prominent factors. There is, however, a large proportion of causes based upon mutual consent.

As regards the duration of marriages dissolved, the records for 1912 show an average of 12·9 years, the families averaging 1·5 children.

Friendly Societies.

Progress of Legislation.

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, but provision was not made to enforce correlation of contributions to benefits, nor to secure periodic financial statements from the societies, and no officer was specifically appointed to supervise the administration of the Act.

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.

In 1881 a Royal Commission was appointed to investigate the working of the Act, and a series of valuations made of the positions of the societies disclosed a condition of insolvency in all cases. For eighteen years no attempt was made, however, to carry out recommendations made by the Commission; but under the Friendly Societies Act, 1899, 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 the process of re-registration of the societies the vital question of adequacy of contributions was raised, and the necessity for actuarial certification of scales of payments was enforced; but the difficulty of impressing this necessity upon old members accustomed to paying a contribution far lower than was judged commensurate actuarially with the benefit accruing, was great, and was eventually adjusted by compromise, which permitted all

societies subsisting at the commencement of the Act of 1899 to register, subject to provision being made for keeping the accounts of contributions and benefits of old members separate from those of future members; new members were to pay at actuarially certified rates, while the rates of old members were to be not less than those formerly payable, and the registration was to be effective until the next quinquennial investigation, when re-registration could be secured, (1) if such valuation showed that the society had improved its financial position in respect of persons who were members at the last preceding registration; (2) if the rules of the society provided that the rates of contribution to be charged in respect of such old members were certifiable by an actuary.

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. Separation of accounts of old and new members was no longer required, but 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.

An amending Act was introduced in 1912 providing that after valuation the Registrar may authorise surplus moneys belonging to any one fund or benefit to be used in any manner for the purposes of any other fund or benefit. Before this Act was passed, however, the enactments relating to Friendly Societies were consolidated in the Friendly Societies Act, 1912. As it was doubtful whether, under the circumstances, the provisions of the amending Act could have any effect, to make the law quite clear another amending Act was passed.

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 range from £20 to £40 at death of the member, with a contingent benefit of £10 or £15 on death of the wife. A separate benefit for widows, 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. With one exception, in which a 4 per cent. interest rate was adopted, the valuation was made on a 3 per cent. basis on the experience of the M.U.I.O.O.F. of England, 1866-70.

Taking into account only the large affiliated Orders, the results showed that eight of them possessed surpluses amounting in the total to £28,967, and in the remaining ten instances there were deficiencies representing an aggregate amount of £289,997. There was, consequently, a net deficiency of £261,030, in respect of total liabilities of £3,904,545. Of the single societies three showed small surpluses, amounting in the aggregate to £346, and thirteen had deficiencies amounting to £10,936. Dealing with the figures for

all societies, 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.

To strengthen the financial position of the societies, and to improve their status, the Registrar recommended to the societies close watchfulness of finances as to collection and allocation of contributions, and as to investments and the payment of benefits; adequate rates of contributions for every benefit quoted; and consolidation of resources under control of a central committee for each society; careful selection of new members as to soundness of health; the preparation of tables of benefits in accordance with the average earnings of members; and insistence on a special premium from members engaged in hazardous occupations. By these measures, efficient management of the finances would be secured, high sickness and mortality rates lessened, and imposition and malingering prevented.

In their observance of these recommendations, the societies endeavoured to improve the state of their finances, and the result disclosed by the second valuation, as at the 31st December, 1909, showed that the position of the societies as a whole is distinctly sound. The second quinquennial valuation was made on a 3½ per cent. rate on the basis of the experience of the Friendly Societies in this State during the nine years 1900-8. Sickness and Funeral benefits were valued for 116,186 members, funeral benefit only for 5,258, and sickness benefit only for 13,109 members. In addition, there were subsidiary risks on account of 54,391 persons, comprising members, their wives, and children.

The results showed that the eighteen affiliated societies had a surplus of £135,780 in the Funeral Fund, and a deficiency of £70,800 in the Sickness Fund, the net result being a surplus of £64,980 on the total liability of £4,122,197. The single societies showed a surplus of £1,411 over liabilities of £97,570. The assets of all the societies were, therefore, £66,391 in excess of the liabilities, £4,219,767, so that for every £1 of liability they held assets valued at £1 0s. 4d.

The results of the 1904 and 1909 valuations are compared in the following table, which shows the value of assets for £1 of liabilities at each date:—

Societies.	1904.	1909.
	s. d.	s. d.
Affiliated	18 8	20 4
Single...	17 3	20 3
All Societies... ...	18 8	20 4

The deficiency of 1s. 4d. in the £ at the first valuation was converted to a surplus of 4d. in the £ during the quinquennial period. The Sickness Funds show a deficiency of 6d. in the £, and the Funeral Funds a surplus of 2s. 1d., the combined funds disclosing a surplus of 4d., as shown above.

Societies.

At the end of 1912 there were in existence 62 societies, 7 of which possessed branches, and 45 were single societies, although in 3 of the latter type juvenile branches were attached.

The 62 societies may be divided into 39 Friendly Societies proper, and 23 miscellaneous societies, and so wide is the range of benefits and so strong the appeal to individual sympathies, that the field of operations for new societies is limited, and thus in 1912 no new societies were opened, though 5 closed, 1 to effect amalgamation.

To show the growth of branches it is very necessary to state that in 1902 there were 936 in existence, but in 1912 the number had increased to 1,853, an increase of 98 per cent.

The average membership per branch has in the meantime remained constant, standing at 97 in 1902, and at 96 in 1912.

Membership.

The following table shows the position as to the number of societies, branches, and members, during the eight years ended 31st December, 1912:—

Year.	Branches.	Aggregate Membership.	
		Members.	Percentage of Population.
1905	1,195	101,463	6·8
1906	1,299	106,678	7·0
1907	1,333	116,985	7·5
1908	1,393	123,297	7·8
1909	1,492	133,129	8·3
1910	1,635	149,442	9·1
1911	1,769	164,780	9·7
1912	1,853	179,806	10·1

The membership of 179,806 at 31st December, 1912, representing 10·1 per cent. of the total population of the State, is the highest ratio yet attained in a steadily rising scale; the benefits of medical attendance and medicine accrue also to the member's family, so that approximately one-third of the population derive advantage from the societies in some form.

The membership in 1912 comprised 162,395 adult males, 11,495 adult females, and 5,916 juveniles. The earliest age at which members are admitted to full membership is 16 years, and it is estimated that of the male population aged 16 years and over, one in every five was a member of a friendly society in 1912.

As compared with the previous year there was an increase of 14,657 adult male members and 807 females, while the juveniles decreased by 438, the total net increase being 15,026 members.

Initiations and secessions are the main factors controlling the increase of membership, and the movements under these headings during 1912 were as follow; the figures are exclusive of clearances:—

Members.	Initiations.		Secessions.	
	Number.	Percentage of Membership.	Number.	Percentage of Membership.
Adult Males ...	28,304	19·2	12,461	8·4
,, Females ...	2,902	27·2	2,047	19·2
Juveniles	2,032	32·0	2,019	31·8
Total	33,238	20·2	16,527	9·9

The excess of initiations over secessions during 1912 represented a gain of 10·3 per cent. on the total membership at 31st December, 1911, but this was reduced to 9·1 per cent. by deaths, and clearances outstanding or removals to other States.

Secessions.

The following table shows the secession rates prevailing amongst male adult members of Friendly Societies in New South Wales, during the period 1900-08, and, in comparison, the rates found to exist in the tabulated experience of the three other authorities. The quotations are given in age-groups, to enable the variations throughout life to be traced:—

Central Age.	Rate of Secessions per cent. per annum.			
	Manchester Unity, England, 1866-1870.	South Australia, 1895-1904.	Victoria, 1903-1907.	New South Wales. 1900-1908.
18	4·4	9·1	13·7	11·0
23	5·3	8·8	13·6	13·3
28	4·4	6·8	9·7	11·0
33	3·1	4·6	6·6	7·9
38	2·2	3·1	4·6	5·6
43	1·4	1·8	2·9	3·4
48	·9	1·3	1·9	2·0
53	·6	1·0	1·5	1·2
58	·5	·7	·8	1·1
63	·4	·5	·5	·8
68	·3	·4	·5	·7

The total number of initiations during the year was 33,238, representing 10·3 per cent. of the membership at the close of the previous year.

The secessions numbered approximately half the initiations, reaching the high figure of 16,527.

Over a series of years it would appear that the number of secessions during the year amongst males is between 7 and 8 per cent., but is less promising amongst females and juveniles, where the figures are approximately 20 and 30 per cent. respectively.

It is to be expected that the extension of benefits made possible by the subvention system will have a marked effect in decreasing the rate of secessions at all ages, but particularly in the higher age groups, where the majority of the lapses have probably been caused through inability to pay contributions at an age when the member's financial resources are small.

Finances of Friendly Societies.

Receipts and Expenditure.

The receipts and expenditure of the societies for the eight years ended 31st December, 1912, are set out in the following statement:—

Year.	Receipts to Funds.					Expenditure from Funds.					Excess of Receipts.
	Sickness.	Funeral.	Medical and Management.	Other.	Total.	Sickness.	Funeral.	Medical and Management.	Other.	Total.	
	£	£	£	£	£	£	£	£	£	£	£
1905	149,495	60,015	170,890	10,066	390,466	103,910	26,844	175,633	8,105	314,492	75,974
1906	144,702	60,726	180,240	10,359	396,027	93,093	26,005	172,833	7,269	299,200	96,827
1907	163,438	86,381	175,075	9,106	434,000	111,705	25,764	168,352	15,660	321,481	112,519
1908	153,199	74,546	184,195	23,384	435,324	111,260	46,245	179,915	8,989	346,409	88,915
1909	150,022	91,870	191,957	31,675	455,524	112,458	47,483	195,420	22,807	378,168	77,356
1910	156,783	80,616	206,837	19,762	463,998	130,550	29,905	203,500	15,727	379,682	84,316
1911	177,898	88,724	226,296	22,319	515,237	152,012	32,945	223,080	20,547	428,584	86 653
1912	193,021	96,304	246,712	22.055	558,092	168,409	36,105	242,490	20,192	467,196	90,896

The apparent retrogression shown by the figures for the years 1908 and 1909 is to be explained mainly by the introduction of reduced rates of contributions authorised 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.

Investment of Funds.

The total funds of the Friendly Societies at the end of 1912 amounted to £1,597,244, disposed as under:—

Mode of Disposal.	Sickness Fund.	Funeral Fund.	Medical and Management Fund.	Other Funds.	Total.
	£	£	£	£	£
Mortgage	598,617	516,142	14,622	27,092	1,156,473
Public Funds	11,176	3,155	100	50	14,481
Savings Banks	57,628	38,680	26,412	7,622	130,342
Other Banks	10,680	30,827	2,026	717	44,250
Buildings and Freehold Property	93,036	39,710	26,372	4,505	163,623
Other Investments	8,332	480	3,089	928	12,829
Uninvested	28,514	22,775	23,152	7,177	81,618
In use by other Funds	6,927	3,659	2,207	5,967	18,760
Total	814,910	655,428	97,980	54,058	1,622,376
Overdraft	6,864	431	15,494	2,343	25,132
Total Funds...	808,046	654,997	82,486	51,715	1,597,244

Stating these figures as a total of all funds it is found that long-dated or permanent investments, comprising mortgages, buildings, freeholds, &c., form 83·4 per cent. of the total—short call investments, *i.e.*, money in savings banks, other banks, and public funds, form 11·9 per cent., while cash represents 5·1 per cent. Overdrafts in the year under review represented 1·6 per cent, but the greater portion of these were financed by other funds, in most cases illegally, and the actual overdraft obtained from outside sources represented only ·4 per cent. of the total funds.

To place the case more concisely, ready money equal to 5 per cent. of the assets is, viewing the whole funds, sufficient to carry on business, with an additional 12 per cent. available for easy realisation, while for the remainder more permanent investment is sought.

The adoption of consolidation of funds 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 11·9 per cent. in 1912; and conversely the investments on mortgage have risen from 42·8 per cent. to 72·4 per cent. in the same period.

For the quinquennium 1905-9 the average interest earned by all societies in all funds was 3·82 per cent., but for 1912 it rose to 4·6 per cent., the distribution into sickness and funeral funds revealing almost identical figures.

The following comparative table shows the accumulated assets of all funds at the close of each of the last eleven years:—

Year.	Sickness Fund.	Funeral Fund.	Medical and Management Fund.	Other Funds.	Total.
	£	£	£	£	£
1902	438,794	239,996	67,055	38,622	784,467
1903	474,099	263,988	64,924	48,589	851,600
1904	504,363	296,411	61,251	22,669	884,694
1905	549,949	329,582	56,508	24,629	960,668
1906	602,314	365,003	64,170	27,337	1,058,824
1907	651,812	425,620	70,894	20,782	1,169,108
1908	693,751	453,921	75,174	35,177	1,258,023
1909	731,315	488,308	71,711	44,045	1,335,379
1910	757,548	539,019	75,048	48,080	1,419,695
1911	783,434	594,798	78,264	49,852	1,506,348
1912	808,046	654,997	82,486	51,715	1,597,244

The advancement recorded in the above figures is shown by the following percentage rates of growth of the funds during the years 1910-12:—

Funds.	Increase per cent. over previous year.		
	1910.	1911.	1912.
Sickness	3·6	3·4	3·1
Funeral	10·4	10·3	10·1
Medical and Management	4·7	4·3	5·4
Other	9·2	3·7	3·7
Total	6·3	6·1	6·0

The effect of the subvention system is visible in the reduction of the rate of increase in the sickness fund from 6·4 per cent. in 1908 to 3·1 per cent. in 1912. The main cause of reduction is that aged members are no longer required to pay contributions.

The rate of increase in the Funeral Fund was practically the same in the three years.

State Subvention of Friendly Societies.

To enlarge the sphere of usefulness of the Friendly Societies the Subvention to Friendly Societies Act, 1908 (now Part VIII of the Friendly Societies Act, 1912), 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 all 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 of prolonged sickness.
   (*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. Refund of 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 the exception of two societies, who have the matter under consideration, all affiliated Societies have become applicants under the Act. Details of the claims of the societies for the year 1912 are shown below: Sick pay under clause 1 (*a*) is shown as for continuous sickness, and under 1 (*b*) as sickness for aged members:—

Society.*	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.	
	No.	£	No.	£	No.	£	No.	£	£
A.H.C.G.	10	60	77	360	179	208	178	93	721
A.O.F. (Sydney)	36	198	65	564	181	216	227	85	1,063
,, (New England) ..	1	6	..	..	..	..	..	..	6
G.U.O.F.G.	26	131	16	97	28	32	33	14	274
G.U.O.O.F.	112	563	230	1,432	501	605	618	343	2,943
H.A.C.B.S.	23	69	31	118	82	99	79	26	311
I.O.O.F.	52	280	93	584	226	262	248	96	1,222
I.O.R.	18	155	7	19	27	33	27	12	220
M.U.I.O.O.F.	174	1,017	476	3,160	1,287	1,422	1,291	775	6,374
N.I.O.F.	6	25	..	..	1	1	1	..	27
O.R.F.	16	82	61	365	199	220	215	141	807
P.A.F.S.	48	208	206	1,143	584	665	637	210	2,227
O.S.T.	15	68	123	695	315	355	390	306	1,424
U.A.O.D.	66	368	96	781	176	200	..	..	1,348
Single Societies	14	48	38	264	154	180	226	108	599
Total	617	3,278	1,519	9,582	3,940	4,498	4,170	2,209	19,566

* The full titles of the Societies denoted are shown in a subsequent table.

The refunds to the Societies on account of sick pay to 2,136 members amounted to £12,859, and the payments on account of contributions to £6,707; of the latter amount £4,498 went to provide medical attendance and medicine to 3,940 aged members and widows, and £2,209 to pay the contributions to the Funeral Fund of 4,170 aged members and widows.

The following is a summary of the claims paid on account of the four years during which the system has been in operation:—

Year.	Applicant Societies.	Sick Pay.				Contributions.				Total Amount of Claims.
		Continuous Sickness.		Sickness of Aged Members.		Medical.		Funeral.		
		Claimant Members.	Amount.	Claimant Members.	Amount.	Claimants.	Amount.	Claimants.	Amount.	
			£		£		£		£	£
1909	18	285	925	701	2,763	2,569	1,348	2,486	822	5,858
1910	28	457	2,442	1,188	7,072	3,608	3,402	3,481	1,871	14,787
1911	30	576	2,838	1,417	8,427	3,194	4,028	3,400	2,055	17,348
1912	29	617	3,278	1,519	9,582	3,940	4,498	4,170	2,209	19,567

The claims of the whole period amounted to over £57,000. 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, with 12 more societies, there was a still further increase, and in 1912 the claims reached £19,500.

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 position of the societies respecting aged members is shown in the following table, which has been compiled from figures published in the last valuation report:—

Society.	Total Members over age 16 at 31st December, 1909.			Males 66 and over.		Females 61 and over.	
	Males.	Females.	Total.	Number.	Per cent. of all Males.	Number.	Per cent. of all Females.
Australasian Holy Catholic Guild...	2,993	331	3,324	141	4·71	...	...
Ancient Order of Foresters (Sydney)	4,856	...	4,856	115	2·37	...	...
Grand United Order of Free Gardeners	2,980	...	2,980	21	·71	...	...
Grand United Order of Oddfellows	20,277	1,162	21,439	421	2·08	12	1·03
Hibernian Australasian Catholic Benefit Society	6,302	1,134	7,436	46	·73	4	·35
Independent Order of Oddfellows	12,754	1,436	14,190	128	1·00	...	...
Independent Order of Rechabites ...	4,359	116	4,475	10	·02	...	...
Loyal Protestant Benefit Society ...	341	611	952	35	10·26	17	2·78
Manchester Unity Independent Order of Oddfellows	29,313	...	29,313	902	3·08	...	...
National Independent Order of Oddfellows	1,788	78	1,866	...	...	...	...
Order of Royal Foresters	2,648	...	2,648	119	4·49	...	...
Protestant Alliance Friendly Society	9,726	42	9,768	283	2·91	...	...
Sons and Daughters of Temperance	1,726	779	2,505	210	12·17	110	14·12
United Ancient Order of Druids ...	12,081	716	12,797	127	1·05	2	·28
Other Societies	2,928	529	3,457	...	...	...	...
Total, Affiliated Societies ...	115,072	6,934	122,006	2,558	2·22	145	2·09
Single Societies	4,708	280	4,988	272	5·78	12	4·28
Total, all Societies	119,780	7,214	126,994	2,830	2·36	157	2·35

THE FRIENDLY SOCIETIES' EXPERIENCE OF SICKNESS AND INFIRMITY.

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 female members was too small to be of any practical value.

For the derivation of experience rates in valuation, 18 years was regarded as the most representative commencing age, the membership below that age being insufficient to provide reliable quotations, and owing to sparseness of data at the higher ages, the rates were not extended beyond age 65 as the upper limit. The following table shows the average annual weeks of sickness per member in New South Wales at every fifth year of age during the years 1900-08 in comparison with the experience of the Manchester Unity Friendly Society of England, 1893-7, the South Australian Friendly Societies, 1895-1904, and the Victorian Friendly Societies, 1903-7.

Central Age.	New South Wales Friendly Societies, 1900–1908.	Manchester Unity, England, 1893–1897.	South Australian Friendly Societies, 1895–1904.	Victorian Friendly Societies, 1903–1907.
Years.				
18	·84	·95	·74	·91
23	·76	·90	·77	·86
28	·74	·97	·75	·85
33	·75	1·10	·79	·89
38	·84	1·33	·89	·99
43	1·02	1·65	1·04	1·20
48	1·32	2 11	1·32	1·46
53	1·85	2·98	1·80	2·10
58	2·94	4·41	2·84	3·82
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.

The total cases of sickness of adult males in 1912 were 33,613 at an aggregate cost of £160,514, or an average amount of sick pay of £4 15s. 6d. per sick member. The records for female and juvenile sickness are small relatively to those for male adults, and conclusions of practical value are not deducible from them. The following statement shows the extent to which each section of membership participated in sickness benefits:—

Members.	Sick Members.	Period of Sickness.	Sick Pay.
		weeks.	£
Adult Males ..	33,613	200,360	160,514
,, Females ...	1,915	11,613	5,461
Juveniles	272	871	295
Total .	35,800	212,844	166,270

The sickness experience of the male members of all ages during the last eight years is shown below:—

Year.	Male Members exposed to risk of Sickness.	Sick Members.		Period of Sickness.	
		Number.	Proportion to total exposed to risk.	Total.	Per membe exposed to risk.
			per cent.	weeks.	weeks.
1905	81,642	17,982	22·0	102,420	1·25
1906	84,053	18,156	21·6	102,633	1·22
1907	89,986	21,721	24·1	120,440	1·35
1908	95,030	21,150	22·2	124,084	1·30
1909	99,080	19,976	20·2	131,306	1·32
1910	110,813	25,319	22·8	155,702	1·41
1911	128,516	30,509	23·7	181,374	1·41
1912	145,158	33,613	23·2	200,360	1·38

In 1912 the number of sick members and the total period of sickness were the highest in the eight years' experience, while the proportion of sick members has been exceeded twice.

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:—

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.

The deductions made from the experience of mining localities have since been verified by an occupational experience made available through the more complete records of one Society, the Independent Order of Rechabites, Salford Unity, which permitted of an analysis of the experience during six years of persons actually engaged in the mining industry. Following are the results of this investigation:—

Central age of Group.	Standard Rate of Sickness of non-Miners per annum (all Societies).	Actual Rate of Sickness of Miners per annum.	Miners' Rates per cent. of non-Miners (100).
	weeks.	weeks.	
18	·839	1·410	168
23	·761	1·208	159
28	·738	·769	104
33	·751	1·908	254
38	·834	1·382	166
43	1·020	1·847	181
48	1·306	2·828	217

In connection with this question of the extra sickness risk involved in hazardous occupations as denoted by the experience quoted above for miners, it may be of interest to record the principal recommendations made at the end of 1911 by the Miners' Phthisis Commission in Western Australia. These recommendations were as follows:—

(1) Compulsory medical examination and certification of miners before employment; (2) all miners then engaged to be examined three months after the passing of the proposed Act, and to be medically examined every six months; (3) employment of uncertificated miners to be an offence; (4) miners medically rejected for tuberculosis or intermediate fibrosis to be sent to a sanatorium at the State's expense; (5) a Miners' Claims Board to be created to deal with the employment of medically rejected men, the board to be financed by the State until the scheme of employment is perfected. Miners' Insurance Trust to be established, the men to contribute one-third of the premium on the basis of one-half per cent. of their wages up to £250 a year; (6) the mine-owners also to contribute one-third, and the State the remaining third, miners who are adequately insured in an ordinary insurance company or benefit society to be exempted from contribution; (7) contribution miners to receive medical attention and medicine free.

"The report recommends the reservation of special areas for settlement under the Miners' Claims Board, for miners who are obliged to leave mine work as a result of medical inspection.

"The commission holds that tuberculosis should be treated on different lines to pneumoniocosis, as defined by Dr. Cumpston's clinical standard for 'intermediate fibrosis.' The former is a danger to the entire community; the latter only involves increasing incapacity to earn a living.

"For the prevention of disease, boards of experiment should be created on the Kalgoorlie and Murchison fields, to test inventions for improving ventilation, disposing of dust and explosive gases, and the prevention of accidents in mines."

MORTALITY.

Experience of Friendly Societies.

The following figures show the mortality experience per 1,000 adult males 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 1900-08:—

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	4·03	7·01	9·71	15·49	24·12	40·86	50·80	6·07	93
M.U.	3·02	2·17	2·85	5·15	4·99	5·69	8·51	11·64	20·02	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	8·06	12·39	20·25	31·98	66·07	7·27	91

* The full titles of the societies denoted are shown in a previous table.

The general death rate per 1,000 adult males, irrespective of age incidence, during each of the past eight years has been as follows:—

Year.	Death Rate per 1,000 Adult Males.	Year.	Death Rate per 1,000 Adult Males.
1905	7·4	1909	6·9
1906	7·1	1910	6·9
1907	6·6	1911	7·2
1908	7·7	1912	7·2

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 this State in comparison with that of other experiences:—

Age.	N.S.W. Friendly Societies, 1900-8.	Manchester Unity Friendly Society, England, 1893-97.	South Australian Friendly Societies, 1895-1904.	Australian Mutual Provident Society, 1849-1903.	Victorian Friendly Societies, 1903-7.
18	48·68	47·11	47·89	49·12	48·45
23	44·37	42·73	43·84	44·81	44·15
28	40·02	38·57	39·71	40·56	39·85
33	35·70	34·49	35·69	36·36	35·57
38	31·48	30·44	31·65	32·26	31·27
43	27·34	26·54	27·65	28·25	27·03
48	23·30	22·74	23·75	24·32	22·96
53	19·43	19·11	19·98	20·55	19·09
58	15·92	15·72	16·48	16·92	15·50
63	12·76	12·60	13·30	13·63	12·43
68	9·87	9·91	10·36	10·78	9·70
73	7·43	7·55	7·75	8·37	7·51
78	5·49	5·72	5·38	6·11	5·71
83	3·97	4·45	3·73	4·24	4·37
88	2·81	3·62	2·72	2·82	3·30
93	1·95	2·69	1·46	1·53	2·37
98	1·39	1·34	...	...	1·27

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 are 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	20·660	19·052
58	15·807	15·386	15·695	16·176	15·387	16·740	15·648
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	40·930	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	57·750	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 7½ 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.

Deaf Mutism.

The number of persons who were deaf and dumb in 1911 was 640, equivalent to one person in every 2,573 of the population.

The rate at ages 10 to 20 is the highest; whereas, since deaf-mutism is an affliction of childhood, it is reasonable to expect that the rates below those ages would be the highest. This probably arises from the unwillingness of parents to make known this infirmity in their children.

Age-group.	Number of Deaf Mutes.			Proportion per 1,000 of Population.		
	Males.	Females.	Total.	Males.	Females.	Total.
Under 10... ...	42	33	75	·22	·18	·20
10 and under 20...	89	86	175	·55	·54	·54
20 „ 30...	70	55	125	·43	·35	·39
30 „ 40...	59	52	111	·49	·47	·48
40 „ 50...	33	35	68	·34	·43	·38
50 „ 60...	21	21	42	·31	·41	·35
60 „ 70...	13	16	29	·37	·54	·45
70 and over ...	2	7	9	·05	·17	·10
Not stated ...	1	5	6	...	...	...
Total ...	330	310	640	·38	·40	·39

Excluding children under 10, it will be seen that the rate declines more or less regularly as the age advances. At all ages over 30 the female rate is higher than the male.

Blindness.

The number of persons afflicted with blindness at the census of 1911 was 1,011; this is equivalent to one person in every 1,629. The higher proportion which exists among males is probably due to the greater risk of accident to which they are exposed. Blindness comes on with approaching old age, as will be seen below, where the numbers and proportion in various age groups are given:—

Age-group.	Number.			Proportion per 1,000 living.		
	Males.	Females.	Total.	Males.	Females.	Total.
Under 10... ...	16	10	26	·09	·05	·07
10 and under 20...	29	29	58	·18	·18	·18
20 „ 30...	31*	32*	63	·19	·20	·20
30 „ 40...	47	23	70	·39	·21	·31
40 „ 50...	68	41	109	·70	·51	·61
50 „ 60...	89	47	136	1·33	·93	1·15
60 „ 70...	101	69	170	2·85	2·35	2·63
70 „ 80...	136	97	233	7·88	7·02	7·49
80 „ 90...	68	53	121	19·48	17·63	18·63
90 and over ...	3	13	16	12·55	45·30	30·42
Not specified ...	3	6	9	...	...	...
Total ...	591	420	1,011	·69	·53	·61

*Includes one blind-deaf-mute.

Among both sexes the rate increases from the lowest to the highest ages, and rapidly after age 60. Practically at all ages the male rate is higher than the female. The majority of young persons afflicted with blindness were probably so at birth.

The care and education of the blind and the deaf and dumb are undertaken at several institutions in New South Wales. The New South Wales Institution for Deaf and Dumb and the Blind is maintained partly by Government subsidy and partly by public subscription; special educational courses are provided, the fees being remitted in cases of financial inability. Denominational institutions for the instruction of male deaf mutes are conducted at Newcastle and at Wallsend, and one for blind girls at Liverpool.

The Sydney Industrial Blind Institution undertakes the care of the adult blind, and provides industrial training to enable them to earn a livelihood. Homes for blind women and for blind boys, and a free circulating library of embossed books are also conducted in connection with this institution.

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. The Government of this State, however, subsidises various activities in the nature of sectional social insurances for the public services and for other institutions. The following statement shows particulars of these funds as at 30th June, 1913; except in the two instances specially marked, the whole expenditure is from the general revenue of the State. The figures are exclusive of costs of administration:—

Classification.	Pensioners.	Contribution Rate % of Salary.	Aggregate Payments for year 1912-13.
			£
Pensions: To Officers: Constitution Act, 1902—Judges ...	—	—	4,510
Other Officers	—	4	3,116
Public Service Superannuation Acts, 1884 and 1899—			
State Public Service generally	950	4	165,898
Officers transferred to Commonwealth—Proportional payment—(Includes payment from accumulated funds, £17,004).			
Police Regulation (Superannuation) Act, 1906 [Amending Act]—			
Police ... ... (Includes payment from accumulated funds.)	353	4	58,511
Railway Service Superannuation Act, 1910—			
Railway Officers ... ... (Paid from accumulated funds.)	709	1½	37,698

The cost of these endowments is supplementary to the cost of charities and relief work in their various forms. In addition to the abovenamed sums, approximately £30,000 was disbursed by way of gratuities and compensations, while over £100,000 was expended on subventions, &c.

Particulars of the pensions under the Police Superannuation and Reward Fund are given in the chapter "Police and Prison Services."

The Railway Service Superannuation Board came into existence in October, 1910, as the result of the Railway Service Superannuation Act, 1910. At 30th June, 1913, there were 24,026 contributors on the basis of 1½ per cent. of salary. At the same date there were 709 pensioners on the

list, viz., 574 over 60 years of age, and 135 under 60 years of age. The average rate of pension payment was £65 10s. 2d. per annum. Since the inception of the fund 773 pensions have been granted, and 64 pensioners have died, 32 being over, and 32 under, 60 years of age. During the year 1912-13 the receipts of the fund amounted to £53,604; the disbursements representing pensions, gratuities, refunds, &c., amounted to £42,382. The assets of the fund at 30th June, 1913, amounted to £60,210, viz., cash in hand, £52,935, and £7,275 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.

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. The pensions payable to persons in New South Wales at 30th June, 1913, represented a rate of £351 per annum.

Invalid and Old-age Pensions.

Invalid Pensions.

Invalid pensions were first paid in New South Wales under the Invalidity and Accidents Pensions Act, passed by the State Parliament in 1907, which allowed pensions up to £26 a year to persons over 16 years of age permanently incapacitated for any work; the amount of pension diminished in proportion to the income of the applicant, or to the contributions of relatives. It was essential that applicants should have resided for five years, and have become incapacitated, in the State, but the pensions were not payable to inmates of charitable institutions, nor to persons already in receipt of old-age pensions. The Act was administered in conjunction with the Old-age Pensions Act, 1901, of the State until the Commonwealth Invalid and Old-age Pensions Act, 1908-1909, commenced to operate in July, 1909, when the payment of old-age pensions became a function of the Commonwealth.

The payment of invalidity pensions was undertaken by the Commonwealth as from 15th December, 1910, till which date the State system was maintained; the operations recorded during the currency of the State Act, were as follow:—

Period ended 30th June.	Certificates Issued.	Pensions Current.	Amount Paid.
			£
1908	1,906	1,765	12,527
1909	4,065	3,732	73,387
1910	5,165	4,252	101,192

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. An important amendment of the Commonwealth Act in 1912 authorised the payment of invalid

pensions to persons permanently blind; persons permanently incapacitated or blind by reason of congenital defect are regarded as having become so in Australia, if brought to Australia before the age of 3 years.

It is worthy of note that up to the date of commencement of the Commonwealth Invalid Pension system, New South Wales was practically the only State in which such a pension scheme was operative; in Victoria, the only other State from which claims were transferred to the Commonwealth, the system had only just been initiated, and 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

*From 15th December, 1910.

The Invalid Pensions current in New South Wales on 30th June represented 3·3 per thousand of population compared with 2·9 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 the 1st August, 1901, and virtually expired on 1st July, 1909, when that portion of the Commonwealth Invalid and Old-age Pensions Act, 1908-1909, came into operation, which relates to the payment of old-age pensions to men. The portion of that Act authorising payment of pensions to women of attained age 60 commenced to operate on 15th December, 1910.

The following statement shows the number of pensioners on the old-age pension list of New South Wales on the 1st August of each year from the establishment of the system, the monthly rate of pension payment, the aggregate amount voted in each financial year, and the cost per head of mean population:—

Year.	Pensioners.	Monthly Pension Rate.	Annual Appropriation.	Cost per Head of Population.
		£	£	s. d.
1901	13,957	28,037	436,183	6 4
1902	22,182	44,318	524,967	7 7
1903	20,905	41,795	508,133	7 2
1904	20,438	40,617	496,300	6 11
1905	20,483	40,493	489,095	6 8
1906	20,817	40,924	494,227	6 7
1907	20,963	41,684	503,030	6 7
1908	21,345	42,679	526,835	6 9
1909	21,979	42,713	594,440	7 6

On the introduction of the Commonwealth administration, 21,292 State pensions were converted to Commonwealth pensions, and the following statement shows the applications received in New South Wales, and the number of old-age pensions current on 30th June in each year:—

Year.	New Claims.	Lapses.			Old-age Pensions current in New South Wales at 30th June.		
		Deaths.	Cancellations and Transfers.	Total.	Male.	Female.	Total.
1910	7,588	1,680	126	1,806	13,169	12,046	25,215
1911	6,174	2,100	402	2,502	14,572	13,588	28,160
1912	4,763	2,421	566	2,987	13,639	16,029	29,668
1913	4,288	2,459	628	3,087	14,078	16,791	30,869

The old-age pensioners in New South Wales represent 17·3 per thousand of population, which is, with the exception of Western Australia, the lowest in the Commonwealth, where the rate is 17·5.

The conditions governing the payment of old-age pensions under the Commonwealth have varied but slightly from the conditions prevailing under the State Act; the age qualification remains at 60 years for women and 65 years for men, with a reduction to 60 years in case of men permanently incapacitated; the length of residence qualification is reduced from twenty-five years in New South Wales to twenty years in Australia, but absences amounting in the aggregate to one-tenth of the total period of residence are permitted. Naturalised persons are eligible for pensions, but aliens and aboriginal natives are disqualified.

The maximum pension payable is £26 per annum, with proportionate reduction in respect of any income or property of the claimant, so that the pensioner's income with the pension shall not exceed £52 per annum; in computing income any benefits accruing from friendly societies are not to be reckoned as income, nor any gifts and allowances from children or grandchildren; in assessing the value of property the home in which pensioner permanently resides is not included.

Prior to the introduction of the Commonwealth system, old-age pensions had been payable only in three States—New South Wales, Victoria, and Queensland.

Negotiations are proceeding between the Commonwealth Government and New Zealand with the object of establishing reciprocity in respect to the payment of old-age pensions.

Old-age and Invalid Pensions current in Australia.

The following statement shows for each State of the Commonwealth the number of old-age and invalid pensioners, and the average fortnightly rate of pension payment:—

State.	Old-age.		Invalid.		Total.	
	Pensioners as at 23rd January, 1914.	Average Fortnightly Pension as at 30th June, 1913.	Pensioners as at 23rd January, 1914.	Average Fortnightly Pension as at 30th June, 1913.	Old-age and Invalid Pensioners.	Annual Rate of Payment (approximate).
		s. d.		s. d.		£
New South Wales..	32,091	19 6	6,104	19 8	38,195	969,513
Victoria	26,645	19 7	4,425	19 8	31,070	791,316
Queensland ...	11,504	19 7	1,806	19 8	13,310	338,980
South Australia ...	8,140	19 2	1,076	19 7	9,216	230,139
Western Australia..	3,788	19 4	679	19 4	4,467	112,521
Tasmania	4,333	19 2	1,185	19 7	5,518	138,089
Total ...	86,501	19 6	15,275	19 8	101,776	2,580,558

For the Commonwealth, the expenditure on old-age and invalid pensions during the financial year ended 30th June, 1913, amounted to £2,289,048, and the administration charges being £44,523, the total cost to the community was £2,334,571. In addition to this sum, £13,287 was paid to Benevolent Asylum for maintenance of pensioners.

Maternity Allowances.

The payment of maternity allowances to mothers of children born within the Commonwealth 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 where more than one child is born at one birth. The allowance is payable only 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 particulars of maternity allowances in each State of the Commonwealth from the date when the Act came into operation, on 10th October, 1912, to 24th January, 1914:—

State.	Passed.	Rejected.	Under consideration.	Total.	Amount Paid.
					£
New South Wales	60,419	479	520	61,418	302,095
Victoria	43,619	190	230	44,039	218,095
Queensland	23,335	133	165	23,633	116,675
South Australia	14,760	76	91	14,927	73,800
Western Australia	10,717	96	126	10,939	53,585
Tasmania	7,114	46	39	7,199	35,570
Total	159,964	1,020	1,171	162,155	799,820

Housing.

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. The following statement shows the number of dwellings, and the acreage of the various divisions:—

Municipalities.	Number of Dwellings.			Acreage.
	1907.	1908.	1909.	
Sydney	22,207	21,445	23,035	3,327
Suburbs	95,748	99,210	100,825	91,932
Total	117,955	120,655	123,860	95,259
Newcastle	2,337	2,381	2,434	1,060
Suburbs	9,461	9,494	9,442	17,919
Total	11,798	11,875	11,876	18,979
Country Municipalities	71,713	72,275	73,465	1,803,842
Total	201,466	204,805	209,201	1,918,080

Shires—Year 1909—99,945 dwellings. Area, 182,111 sq. miles.

In Sydney, particularly, improvements and resumptions have been continuous; since 1909 many of the old buildings have been destroyed. In the rebuilding on the areas thus made available, modern requirements have been kept in view; but apart from them there has been a distinct, though gradual, development of an architectural style adapted to local conditions. In the suburbs the cottage plan of dwelling-house is favoured, quite 85 per cent. of new buildings being in this style. During the past seven years new buildings have been erected in the city and suburbs at a rate averaging 6,400 per annum, viz.:—

Year.	New Buildings.			Net Increase of Population, Sydney and Suburbs.
	Sydney.	Suburbs.	Total.	
1907	211	4,042	4,253	17,380
1908	233	4,150	4,383	14,920
1909	356	5,736	6,092	13,800
1910	326	4,910	5,236	16,330
1911	319	6,651	6,970	34,570
1912	290	8,049	8,339	38,000
1913	281	9,061	9,342	30,600

In the earlier months of 1910 the output of bricks from various yards was somewhat curtailed on account of a general strike in the coal-mining industry, and during the year the high cost of building materials generally, and dearth of labour in the building trades, combined to restrict operations somewhat below the level of 1909; but during the last three years the number of new buildings in the suburban areas has largely increased.

Occupied Dwellings.

The number of occupied dwellings in New South Wales at the Census of 1911 was 332,841; the classification according to the nature of dwellings is shown below:—

Nature of Dwelling.	Dwellings.	Proportion per cent.	Nature of Dwelling.	Dwellings.	Proportion per cent.
Private house	317,462	95·38	Military and Naval Establishment	112	·03
Tenement in Private House ...	2,304	·69	Police Barracks	28	·01
Caretaker's Quarters in Store, Offices, &c.	237	·07	Police Station and Quarters ...	534	·16
Hotel	2,795	·84	Fire Station	65	·02
Boarding-house, Lodging-house, Coffee Palace	5,966	1·79	Unspecified	68	·02
Educational Institution	229	·07	Wagons, Carts, Trains, &c. ...	250	·08
Religious Institution (not educational)	135	·04	Aboriginal Camps in which Whites or Half-castes were living...	21	·01
Hospital	479	·14	Other Camps without dwellings	1,865	·56
Charitable Institution (other than Hospital)	159	·05			
Penal Establishment	132	·04	Total	332,841	100·00

Private dwellings, including tenements, numbered 319,766, or 96·07 per cent. of occupied dwellings; boarding and lodging houses, 5,966, or 1·8 per cent.; hotels, 2,795, or ·8 per cent.

The inmates of private dwellings numbered 1,494,504, or 91·2 per cent. of the total population of the State. The next statement shows the number of inmates according to the size of the dwellings; it will be seen that nearly 25 per cent. of the inmates of private dwellings reside in houses containing 5 rooms, while 84 per cent. reside in houses containing from 4 to 9 rooms.

Rooms.	Inmates.			Proportion per cent.		
	Private Dwellings.	Other Dwellings.	Total.	Private Dwellings.	Other Dwellings.	Total.
1	28,656	695	29,351	1·93	·54	1·82
2	38,541	247	38,788	2·59	·19	2·40
3	88,295	506	88,801	5·93	·40	5·49
4	303,967	1,291	305,258	20·42	1·01	18·88
5	366,640	3,909	370,549	24·63	3·06	22·93
6	295,975	9,132	305,107	19·88	7·15	18·88
7–9	289,050	24,216	313,266	19·42	18·95	19·38
10–14	65,062	27,625	92,687	4·37	21·62	5·73
15–19	8,234	14,708	22,942	·55	11·51	1·42
20 and over	4,172	45,442	49,614	·28	35·57	3·07
Unspecified	5,912	11,067	16,979	...	...	...
Wagons, carts, trains, &c.	...	1,160	1,160	...	...	...
Camps	...	4,181	4,181	...	...	...
Total ... ... Exclusive of 8,051 Shipping.	1,494,504	144,179	1,638,683	100·00	100·00	100·00

The principal materials used for building are wood and bricks, 4·97 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
Ruberoid and other compositions.	130	2	132	516	28	544	·0	·0
Unspecified	1,566	99	1,665	6,318	2,488	8,806	·5	·5
Wagons, carts, trains, &c....	...	250	250	...	1,160	1,160	·1	·1
Aboriginal Camps, in which Whites or Half-castes were living	...	21	21	...	151	151	·0	·0
Other camps without dwellings	...	1,865	1,865	...	4,030	4,030	·6	·3
Total	319,766	13,075	332,841	1,494,504	144,179	1,638,683*	100·0	100·0

* Excludes Shipping, 8,051.

Rental Values of Dwellings.

The weekly rental values of private dwellings in New South Wales, as ascertained at the Census of 1911, are shown below:—

Weekly Rental Value.	Private Dwellings.	Proportion per cent.	Weekly Rental Value.	Private Dwellings.	Proportion per cent.
Under 5s.	35,978	13·63	£3 and under £4	700	·26
5s. and under 10s.	90,254	34·18	£4 „ £5	242	·09
10s. „ 15s.	76,689	29·05	£5 „ £6	123	·05
15s. „ 20s.	28,122	10·65	£6 „ £7	68	·03
20s. „ 25s.	16,040	6·08	£7 „ £8	23	·01
25s. „ 30s.	7,372	2·79	£8 „ £9	10	·00
30s. „ 35s.	4,449	1·69	£9 „ £10	5	·00
35s. „ 40s.	1,175	·44	£10 and over ...	15	·01
40s. „ 45s.	1,823	·69	Unspecified ...	55,741	...
45s. „ 50s.	301	·11			
50s. „ 55s.	558	·21	Total ...	319,766	100·00
55s. „ 60s.	78	·03			

The weekly rental values of 264,025 private dwellings were ascertained. Of this number 87·51 per cent. were under £1, 47·81 per cent. being under 10s.; 11 per cent. ranged from £1 to £2; and only 1·49 per cent. were over £2.

The rents paid for dwellings form a large deduction from the earnings of the industrial class in any community. In Germany for 1908 the expenditure for rent or maintenance of dwellings was estimated to absorb 17·96 per cent. of the total family expenditure, the cost of food, drinks, &c., approximating to 50 per cent. of the total. In New South Wales precise figures are not available, but an estimate would place the cost of rent or house maintenance at an average of 20 to 25 per cent. of total expenditure, though necessarily the proportion decreases as the income increases, and *vice versâ*. In the suburbs the rents vary in accordance with the class of people which constitutes the population; in more recently developed localities dwellings are rarely long vacant, and rents up to £1 per week, which seems to be the limit set by an average worker's income, are readily obtainable. In his judgment in the inquiry into the cost of living and the living wage, His Honor, Mr. Justice Heydon, after exhaustive inquiry, fixed 12s. per week as the rent of a workman's home of three rooms and a kitchen.

The progress which has marked the operations of building societies during recent years, particularly those which favour the ballot and sale system of advances, indicates that, to a large extent, the industrial classes are endeavouring to become freeholders.

Comparison of rental rates may be made with those prevailing in New Zealand, where statistics have been collected since 1906. In April, 1911, the averarge weekly rental for five-roomed dwellings ranged from 12s. 9d to 14s. 2d. per week in Auckland, from 15s. 7d. to 18s. 8d. per week in Wellington, and about 13s. per week in Christchurch and Dunedin.

In the matter of high rents, and the difficulty of securing adequate accommodation, a Select Committee of the Legislative Assembly of New South Wales was appointed in 1911 to investigate the question of the alleged recent increase in house rents, and the advisableness of introducing a Fair Rents Bill to restrict rentals within a definite range.

Of the causes to which the Committee ascribed the rise in house rents may be mentioned—the increase of population, the increased cost of labour and material, the demolition of buildings by public authorities, the growing demand resultant upon general prosperity, and the increased popularity of cottages in preference to the less costly terrace houses. The Committee

estimated that the increase in cost of labour and material during the period 1906-12 amounted to 45 per cent., of which 16 per cent. occurred in the last two years of the period.

As remedial measures the Committee recommended that the Government Savings Bank Commissioners be empowered to lend, on easy terms, 95 per cent. of the money required by artisans to build small dwellings; that the Crown land about the suburbs be made available for building purposes; that a faster and cheaper railway service be provided to outlying suburbs; that the Government construct dwellings to be let at a reasonable rental to wage-earners; and that local government authorities be empowered to do likewise.

The Committee also favoured the introduction of a Bill to regulate house rents, 10 per cent. gross being considered a satisfactory return on the cost of houses.

Housing Acts.

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 ¼ 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 first scheme placed under the Board's control was the Dacey Garden Suburb, situated in the municipalities of Botany and Mascot, where the erection of a number of cottages was commenced in April, 1912. The site adjoins the suburb of Kensington, and is about 5 miles from the centre of the City of Sydney.

The area, covering 336½ acres, was composed principally of Crown lands, with soil of a light sandy nature, and almost free from rock and clay. The main roadway is 100 feet wide, with secondary roads 66 feet wide. Reservations have been made for parks, gardens, and other open public places, also for public buildings, schools, and for religious purposes, the proportion of area allotted for various purposes being as follows:—

Roads, 76 acres; park lands, 31¾ acres; Public Schools and Technical College, 7½ acres; churches, 5¼ 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 unimproved value of the land was fixed at £65 per acre, and the estimate of levelling, road-making, and drainage was £105,000, or £312 per acre, a total of £377 per acre. This rendered the price at about 30s. per foot, which has been adopted by the Board as the price of the land in connection with the dwellings erected.

To 30th June, 1913, 67 cottages had been finished and let by ballot. The rentals ranged from 14s. 6d. to 21s., the total expenditure on the cottages varying from £500 to £640. The rentals are, on the whole, 15 to 20 per cent. cheaper than similarly situated private-owned cottages.

In the smallest type there are approximately 700 superficial feet of floor space; back yard space, 1,750 superficial feet; and side and front garden, 1,580 feet. In the largest type these figures increase to 910, 2,750, and 1,670 respectively. All cottages have rooms 10 feet high, electric lighting, gas-cooking, laundry, bathroom, pantry, fuel-shed, sewerage, &c. Cottages are brick built, on stone or rubble foundations, imported tile and slate roof, imported pine and local hardwood.

On 30th June, 1913, there were in the cottages representatives from the professional, domestic, commercial, transport and communication, and industrial occupations.

The buildings were carried out by day labour, and the material was supplied by the Public Works Department.

For the financial year 1912-13, £63,700 was expended on the scheme, £41,331 being for the erection of cottages.

The management of the Observatory Hill Resumed Area was transferred to the Housing Board in May, 1911. This area is situated on the harbour foreshores adjoining the wharves, and was previously controlled by the Sydney Harbour Trust. It contains a number of business premises and residences, including dewllings erected on the flat system, for waterside workers. An Act was passed in 1912 to enable the Municipal Council of the City of Sydney to erect and let dwelling-houses, and for that purpose to acquire land.

Land was acquired in Chippendale, and a block of flats erected, covering a ground space of 279 feet by 78 feet. The buildings are three storeys high, and each end presents four shops to business thoroughfares. The remainder of the ground surface, and the first and second floors, are divided up into 71 suites of flats of from two to six rooms, all self-contained, with bathroom, scullery, gas stove, and electric light.

Laundries are arranged on the roof-flat and the building is in seven blocks, with separate fireproof staircase to each.

The building cost £35,000, and was carried out under the direction of the City Architect, assisted by the Chief Draftsman.

To assist anyone to build, complete, or purchase a home, or to discharge any mortgage or encumbrance already existent on such holding, the Savings Bank Act of 1906 was amended in 1913 to permit that institution to advance money and arrange for its repayment.

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 should be made within thirty years, and within twenty years in the case of wooden structures.

The Commissioners may order the repayment of a percentage value of second-hand buildings to be paid within a few years.

Repayments in all cases are to be made monthly or quarterly, but may be varied. No advance may be made to any person who at the time of application is the owner of a dwelling in the State.

Workers' Dwellings in Queensland.

During 1909 a Workers' Dwellings Act was passed in Queensland, and from the inception of operations up to 30th June, 1913, 2,593 applications were received for advances amounting in the aggregate to £671,916. Of these applications 2,362 had been granted for amounts aggregating £602,748, and averaging £255 per application granted; 183 applications were under consideration for £49,481. Dwellings completed and occupied numbered 1,837. Generally applicants preferred dwellings built to suit their own

requirements rather than to stock designs, and the average cost was between £200 and £300. The following statement shows the contract prices of dwellings erected or in course of erection at 30th June, 1913:—

Cost.	Number of Buildings.	Cost.	Number of Buildings.
Under £100 ...	2	£300-£400	743
£100-£200	226	£400-£500	60
£200-£300	1,104	£500-£600	9
		£600-£700	1
			2,145

Race-courses.

No race meeting can 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 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, 1912, there were 484 separate licenses issued for horse-racing, pony-racing, and trotting contests, the license fees received amounting to £1,186. For the year 1913, the licenses numbered 506, and the fees were £1,208.

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.

To 31st December, 1913, licenses were issued in respect of 1,171 theatres and public halls in New South Wales, in which seating accommodation was provided for approximately 564,500 persons.

Religions of the People.

Churches in New South Wales.

New South Wales being originally a Crown colony, the church establishment as existing in England was introduced. Subsequently, there was accorded to the clergy of each of the principal denominations support from the Crown in the form of subventions, which were continued under a statute passed in the New South Wales Parliament (Act 7, Wm. IV, No. 3), after the initiation of responsible government, as an annual payment of £30,000 divisible between the Church of England, Roman Catholic, Presbyterian, and Wesleyan denominations. In 1862 these subventions were restricted to the clergy then actually in receipt of State aid, and in the succeeding year (1863) the subventions paid by the State amounted to £32,372, distributed as follows:—Church of England, £17,967; Roman Catholic, £8,748; Presbyterian, £2,873; Wesleyan Methodist, £2,784.

At the end of 1912 the number of recipients of these subventions was reduced to four, the allowance made to these clergy during 1912-13 amounting to £537.

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 of Charles I, in the Bishop of London.

In 1814 the territories under the Government of the East India Company, *i.e.*, all the countries and places situate beyond the Cape of Good Hope and the Straits of Magellan, being not then (1600) occupied by any European power, were erected into the Bishopric of Calcutta. By Letters Patent under the Great Seal, dated 2nd October, 1824, there was constituted an archdeaconry in and over the British Territories within the Colony of New South Wales (*i.e.*, Australia and New Zealand), subject and subordinate to the jurisdiction, spiritual and ecclesiastical, of the Bishop of Calcutta.

In 1834 the Colonies of New South Wales and Van Diemen's Land were severed from the Diocese of Calcutta, and in 1836 all the territories and lands comprised within or dependent on the Colonies of New South Wales (still including New Zealand), Van Diemen's Land, and West Australia, were erected into the Bishopric of Australia. The important subdivisions subsequently made of this Bishopric date as follows:—

New Zealand and Tasmania (Van Diemen's Land) were formed into suffragan sees in 1842, and Sydney, Newcastle, Adelaide, and Melbourne Dioceses were erected in 1847. Further variations and subdivisions have resulted in the existence of twenty-one dioceses of the Church of England in Australia, of which six are in the province of New South Wales, under a Metropolitan, viz., Sydney, and Newcastle, Goulburn, Bathurst, Grafton and Armidale, and Riverina. The clergy attached numbered 496 in January, 1914, of whom the majority were in the Sydney diocese, as the following statement shows:—

Diocese.	Clergy.	Diocese.	Clergy.
Sydney	246	Newcastle	62
Bathurst	51	Riverina	17
Goulburn	51		
Grafton and Armidale ...	69	Total	496

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, Vicarates 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.

The following statement shows the establishment of the Roman Catholic Church in New South Wales in 1913:—

Diocese.	Priests.	Religious Brothers.	Nuns.
Sydney	222	218	1,496
Bathurst	39	7	266
Goulburn	66	8	325
Lismore	27	3	120
Maitland	41	13	268
Wilcannia	18	...	151
Armidale...	32	9	172
Total	445	258	2,798

In 1913 there were 639 churches, 3 ecclesiastical seminaries, 11 boys' colleges, 60 boarding schools for girls, 102 superior day schools, 421 primary schools, and 42 charitable institutions belonging to the Roman Catholic Church in New South Wales.

The various branches of the Presbyterian Church in the State are classified into seventeen Presbyteries, consisting of a number of separate charges, to each of which a Minister is appointed. The management of the affairs of the 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. In September, 1914, the Assembly meets in Brisbane.

On the 1st January, 1902, the Wesleyan Methodist Church, the Primitive Methodist Church, and the United Methodist Free Church in New South Wales entered into organic union, with a common name, common funds, common laws, and equal rights. The United Church is known as "The Methodist Church of Australasia." In 1913 there were attached to the New South Wales districts 180 ministers, 29 supernumeraries, 40 preachers on trial, and 954 local preachers. The Church members on the roll numbered 25,132, and junior members 2,494. There were 671 churches, 593 other preaching places, and 139 school buildings. The South Sea Mission Districts are under the control of the New South Wales Conference, and embrace Tonga, Samoa, Fiji, New Britain, Papua, and Solomon Islands, with 34 white missionaries and 14 probationers, 63 native ministers, 62 native probationers, and 18 supernumeraries (native), 42,409 church members, and 6,250 on trial, 1,110 churches, and 714 other preaching places.

The Congregational Union of New South Wales was incorporated in 1882 by an Act which gives it legal status, and empowers it to hold land and other property. The Union allows every separate church to maintain perfect independence in the administration of its local affairs. Assemblies for the transaction of denominational business, &c., are held every six months. In 1913 there were 39 self-supporting churches, 79 aided churches and preaching stations, 72 ministers, and 5 mission agents; church members numbered 5,011, and Sunday-school scholars 7,522, teachers 892, and 71 lay preachers.

The churches of the Baptist Denomination, which are independent of each other, in January, 1914, numbered 58. They are united together in a voluntary association called the Baptist Union of New South Wales, which holds

annual and half-yearly meetings. The denomination has a fund controlled by trustees, from which churches are assisted on terms, with easy repayments.

At the annual, or Assembly, meetings, officers are chosen by nomination and ballot, and ministers or laymen are eligible for the highest positions.

The churches raise considerable sums towards the prosecution of Home Mission work in this State, and maintain a very efficient and prosperous Foreign Mission Establishment in India.

During the year a journal maintained by the six States of the Commonwealth, and published weekly, has taken the place of all other Baptist papers in the States.

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 Army in New South Wales in December, 1913, had 117 societies and 283 outposts, worked by 270 officers; there were also 537 bandsmen and 559 local officers, being persons holding positions without pay. Sixteen homes and institutions are maintained for neglected boys and girls, inebriates, homeless men and women, and discharged prisoners. Sixty-four officers are in charge of the social work.

The Jewish element in the population of New South Wales dates from its earliest years of settlement, and up till recently, when a small current from Russia by way of Siberia has commenced to make itself evident, the Jewish population was derived from England, and in a small degree from South Africa and other British colonies.

The twenty Jews, mostly single men, 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 congregations, now defunct through the movements of population, at West Maitland and Newcastle; and there is one in existence at Broken Hill.

At the Census of 1911 of 7,660 Hebrews in New South Wales, 6,355 were resident in the metropolis, where there are six regular places of worship, attended by nine ministers and assistants, and where seating accommodation is found for 1,680. The number of contributing seat-holders is 1,200, of whom the Great Synagogue claims 983. The lay administration of the community is in the hands of the board of management of the Great Synagogue, which maintains intimate contact with the London Board of Deputies of the British Jews, the Anglo-Jewish Association, and similar bodies.

The New South Wales Board of Jewish Education, presided over by the Chief Rabbi, maintains a staff of professional teachers to exercise the right of entry at public schools under the Act, and to hold Sabbath classes. The number of pupils attending is 577, while 43 attend at other centres.

The Jewish community maintains a number of institutions for the care of its sick and poor.

Census Records of Religion, 1911.

The following statement shows for New South Wales the strength of religious denominations, as disclosed by the Census of 2nd April, 1911:—

Religion.	Males.	Females.	Total.
Christian—			
Church of England	380,324	353,676	734,000
Presbyterian	96,354	86,557	182,911
Methodist	75,512	75,762	151,274
Congregational	10,888	11,767	22,655
Baptist	9,891	10,788	20,679
Church of Christ	2,865	3,547	6,412
Salvation Army	3,475	3,938	7,413
Lutheran	4,824	2,263	7,087
Seventh Day Adventist	806	1,193	1,999
Unitarian	512	332	844
Protestant (undefined)	21,309	15,595	36,904
Roman Catholic	190,122	185,269	375,391
Greek Catholic	885	198	1,083
Catholic (undefined)	18,214	18,408	36,622
Others	4,503	4,552	9,055
Total	820,484	773,845	1,594,329
Non-Christian—			
Hebrew	4,062	3,598	7,660
Mohammedan	776	43	819
Buddhist	437	11	448
Confucian	1,198	6	1,204
Pagan	254	.....	254
Others	2,238	150	2,388
Total	8,965	3,808	12,773
Indefinite—			
No Denomination	328	235	563
Freethinker	873	164	1,037
Agnostic	845	131	976
Others	1,022	613	1,635
Total	3,068	1,143	4,211
No Religion—			
Atheist	184	20	204
No Religion	2,228	446	2,674
Others	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.
Protestant—						
Church of England	503,054	623,131	734,667	45·32	46·58	45·46
Methodist	112,448	137,638	151,392	10·13	10·29	9·37
Presbyterian	109,390	132,617	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
Total Protestants	791,346	965,654	1,182,232	71·30	72·18	73·16
Roman Catholic	286,911	347,286	412,680	25·85	25·96	25·54
Greek Church...	253	561	1,083	·02	·04	·07
Others—						
Jew, Hebrew	5,484	6,447	7,660	·49	·48	·47
Buddhist, Confucian, Mohammedan, &c.	11,508	8,035	5,114	1·04	·60	·32
Freethinkers, Agnostics, &c. ...	6,358	3,564	3,929	·57	·27	·23
No Denomination, No Religion ...	8,062	6,265	3,239	·73	·47	·21
Object to state	11,237	13,068	22,008	...	...	...
Unspecified	2,795	3,966	10,503	...	..	...
Total	1,123,954	1,354,846	1,648,448	100	100	100

NOTE.—The figures for 1911, for purposes of comparison with the previous Census returns, include persons within the Federal Capital Territory.

MINISTERS FOR THE CELEBRATION OF MARRIAGES.

Under the Registration of Births, Deaths, and Marriages Act, 1899, ministers of religion desirous of celebrating marriages in New South Wales must be registered by the Registrar-General of the State. The total number of ministers registered for the year 1914 was 1,647, those for each denomination being:—Church of England, 512; Roman Catholic, 395; Methodist, 250; Presbyterian, 228; Congregational (Independents), 71; Baptist, 68; Church of Christ, 26; Salvation Army, 36; Seventh Day Adventist, 7; Jews, 5; German Evangelical Lutheran Church, 5; Evangelical Lutheran Church, 4; Presbyterian Church of Eastern Australia, 7; Reorganised Church of Jesus Christ of Latter Day Saints, 8; Australian Aborigines Mission, 6; Lay Methodist Church, 2; Catholic Apostolic Church, 2; The Aborigines Inland Mission, 2; and one each for the following:—Strict Baptist Church, Society of Friends (Quakers), Sydney, Society of the New Church, The Free Church (Banksia), Unitarian Church, Church of Christ (Burwood), Greek Orthodox Church, Church of the Brethren, Particular Baptist Church, Sydney Christadelphian Ecclesia, Whitefield's Devonshire-street Congregational Church, Mascot Congregational Church, Full Gospel Mission.

LOCAL GOVERNMENT.

In the years 1905 and 1906 legislation was passed giving the State of New South Wales full local government.

The Act of 1842, by which the City of Sydney was incorporated, contained no provision for conferring municipal privileges on other localities; but in 1843 the first step was taken in respect of the country districts by the incorporation of Campbelltown, Appin, Camden, Narellan, and Picton as one district council, which was subdivided into two, 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. In the latter year the first important measure relating to general municipal government was enacted. An Act was passed dissolving the district councils, and placing the area controlled by them under municipal bodies. 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 good government of the municipality, to control roads, bridges, and ferries, and to remove nuisances. The general rate was limited to one shilling in the £ on the annual value of ratable property, but a special rate for water supply, sewerage, and street lighting was permissible. Endowment by the Government was provided during a term of fifteen years, based on the amount of general rates actually collected. No district, however populous, was obliged to become incorporated, and it was only on the presentation of a petition, signed by at least fifty of the prospective ratepayers, and containing a larger number of signatures than those attached to any counter petition, that a municipality could be formed.

Municipalities Act of 1867.

The Act of 1858 was repealed by the Municipalities Act of 1867. Under this Act the existing municipalities were continued as boroughs, and all areas incorporated in the future were to be classified either as boroughs or municipal districts. Boroughs might include any city, town, or suburb of the metropolis, or any country district with a population exceeding 1,000 persons and an area not less than 9 square miles. Municipal districts might include any area not containing a borough, with a population not less than 500 and an area not more than 50 square miles.

The powers of the councils were extended slightly, and the rating power remained as before. It was left optional for any district to become incorporated, and consequently local government was not generally adopted.

The Municipalities Act of 1897 consolidated the Acts and Amending Acts which had been passed from time to time, but did not alter their principles. The voluntary principle of incorporation which was retained

was not conducive to the adoption of a general system of local government, as it was natural that, so long as the central Government continued to construct local works, the persons benefited would submit to the absence of local management of their affairs.

Local Government (Shires) Act.

The Local Government (Shires) Act, 1905, provided for the compulsory division of the State into local government areas, called shires. The city of Sydney and existing municipalities, the whole of the Western Division, the Quarantine Station, Lord Howe Island, and the islands in Port Jackson were excepted from its operation. The Act provided for the payment of a sum not less than £150,000 annually, as endowment from the Consolidated Revenue Fund, in the following proportions, viz.:—First-class shires, from nil up to 10s. per £; second-class, 15s. per £; third-class, 20s.; fourth-class, 25s.; fifth-class, 30s.; and sixth-class, 40s. or more. These endowments were made payable on the amount of general rates received during the preceding year, the amount of endowment being fixed triennially, according to the area, revenue, and expenditure of the shires.

The councils were authorised to exercise the following powers:—The care, control, construction, fencing, and maintenance of all public places, except those vested in the Railway Commissioners, or other public bodies or trustees, and except national works; regulation of traffic; street and road lighting; prevention of bush fires; flood relief and prevention; construction and maintenance of streets, jetties, wharfs, and buildings for the transaction of business; and the administration of the Impounding and Public Watering Places Acts. The right was given to acquire other powers, such as the prevention of nuisances; water supply; regulation and licensing of public vehicles and hawkers; management of parks and commons; and the administration of the Public Gates Act and the Native Dog Destruction and Poisoned Baits Act.

The Act also provided for the division of the shires into ridings, each riding having equal representation on the council, and triennial elections were prescribed. All owners and occupiers of ratable property of annual value not less than £5, over 21 years of age, male and female, unless not naturalised, were entitled to be entered on the electors' roll, any male person enrolled being qualified for nomination as a councillor. The usual conditions as to disqualification were provided, also the penalties for acting while not properly qualified.

Under an important provision in the Act rates are charged on the unimproved value of the land, and not on the annual rental. The rate levied must be not less than 1d., nor more than 2d. in the £, unless the minimum rate is more than sufficient to meet the requirements of the shire, in which case a rate of less than 1d. may be levied by permission of the Governor. The ratable value of coal-mines is fixed at 50 per cent. of the gross value of the average annual output for the preceding three years, and of other mining properties at 40 per cent. for the same period. Another important feature of the Act is the provision for suspending the operation of the State land tax when the Council has imposed a rate of 1d. in the £ on the unimproved capital value. Commons, public reserves, and parks, cemeteries, public hospitals, benevolent institutions, churches and other buildings used exclusively for public worship, free public libraries, and unoccupied Crown lands are exempted from taxation.

In 1906 a very comprehensive measure, the Local Government Extension Act, was passed by Parliament. The first important provision of this Act is for the establishment of cities; the Governor is authorised to proclaim as a

city any municipality which has had during a period of five years a population exceeding 20,000 persons and a revenue of £20,000, and which is an independent centre of population. During the year 1907 the municipality of Broken Hill was proclaimed a city.

It was also enacted that all municipalities not receiving statutory endowment under the existing Act, if found on investigation to be in necessitous circumstances, should be entitled to a sum not exceeding 3s. 4d. in the £ on the general rate collected; but if the revenues were sufficient to meet the reasonable requirements under proper management of the corporations, endowment would not be paid. When, however, the estimated responsibility for expenditure (transferred with the land tax) exceeds the amount of the suspended tax, the amount of 3s. 4d. in the £ may be increased, provided that the endowment were not greater than the excess of that expenditure.

The rates are levied on the unimproved value, at a minimum amount of 1d. in the £, but if this rate proves more than sufficient to meet the requirements of the municipality, it may be reduced. Having levied the general rate of 1d. on the unimproved value, a council is empowered to impose, either on the improved or on the unimproved value, such additional rate as may be required. Special, local, and loan rates are to be imposed on the improved or unimproved value, at the option of the council. The conditions as to ratable value and the franchise of electors are similar to those of the Local Government (Shires) Act.

Other important provisions are the power to borrow up to 10 per cent. of the unimproved value, such loans to be guaranteed by the Government; redistribution and reconstruction of existing areas, so that the municipalities might form portions of shires; acquisition of land and works; control of cattle-slaughtering and public health; dealing with noxious animals and plants; safety of the public; regulation of hoardings and other structures; the appointment of auditors, and the inspection of accounts by Government examiners. The Governor is authorised to proclaim any park, road, bridge, or other public work as a national work to be maintained by the State, but which may be handed over to the council at any time.

Local Government Act, 1906.

The Local Government Act, 1906, deals fully with both shires and municipalities, and came into operation on 1st January, 1907, as regards shires, and on 1st January, 1908, as regards municipalities. It repeals the Local Government (Shires) Act, 1905, and the Local Government Extension Act, 1906, and consolidates their provisions. Under an amending Act passed at the end of 1908, councils must cause a valuation of all ratable land to be made at least once in every three years, provided that they may adopt for any period the whole or any part of the valuations in force at the close of the preceding period.

Prior to the inception of the Local Government Act, 1906, a very small portion of the State had been incorporated, as will be seen in the statement below, which gives the area incorporated and unincorporated in 1906 in the three great land divisions of the State:—

Division.	Incorporated.	Unincorporated.	Total.
	sq. miles.	sq. miles.	sq. miles.
Eastern	1,977	93,742	95,719
Central	571	88,579	89,150
Western	282	125,216	125,498
Total	2,830	307,537	310,367

On 31st December, 1912, 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 ...	683,780
In Country Municipalities	2,853 ...	444,190
In Shires	180,567 ...	632,570
Total (incorporated)...	183,569 ...	1,760,540
Western Division (portion unincorporated) ...	125,893 ...	18,422
Total	309,462 ...	1,778,962

City of Sydney.

The City of Sydney was incorporated on 20th July, 1842, under the Sydney Municipal Council, the election of aldermen taking place on the 9th November. The city was originally divided into six wards, but at a subsequent adjustment the number was increased to eight.

Great dissatisfaction soon arose in the minds of the citizens as to the manner in which the affairs of the Corporation were conducted. A Select Committee of the Legislative Council was appointed in 1849 to inquire into the matter, and reported in favour of the abolition of the Municipal Council, with a recommendation that its powers should be vested in three Commissioners. This was not carried into effect until 1853, when the Corporation was dissolved, and its authority was transferred to a Commission of three persons, who administered the affairs of the city from the beginning of 1854 to the end of 1857, when a new Council, consisting of sixteen aldermen—two for each ward, came into existence. By the Sydney Corporation Act of 1879 the number of aldermen was increased to twenty-four, being three representatives for each ward.

Towards the close of 1900 an Amending Act was passed, dividing the city into twelve wards, each returning two aldermen. The innovation of retiring the whole of the aldermen simultaneously was introduced, with a provision for the election of a new Council on the 1st December in every second year, re-election of qualified persons being permitted.

Important changes were effected under this Act as to the franchise, sub-tenants and lodgers being placed on the rolls, also extended powers were conferred on the Council as to resumption of lands for city improvements.

The Sydney Corporation Act of 1902 consolidated the statutes previously passed relating to the City of Sydney.

In 1905 a further amending Act was passed to provide for the better government of the city, especially with regard to the control of hoardings, the proper cleansing of footways, the prevention or regulation of the smoke nuisance from furnaces and chimneys, the regulation and control of refreshment stalls and stands, the control of juvenile hawkers and shoeblacks, and the prevention of betting in public places, and the tenure of office of the aldermen was altered to three years. The Municipality of Camperdown was amalgamated with the City of Sydney as from 1st January, 1909, and the Council now consists of twenty-six aldermen elected every third year by thirteen wards. The Lord Mayor is elected by the aldermen from their own number.

The Act of 1905 also regulates the election of the city members of the Metropolitan Board of Water Supply and Sewerage, and of the Fire Brigades Board, and extends the power of the Council as regards resumptions, in order to provide workmen's dwellings, and further provision is made for the extension of the city boundaries.

In 1908 an Amending Act was passed, containing several important provisions. Commencing with the year 1909, the Council must levy a rate, not less than one penny in the £, upon the unimproved capital value, which rate is to be in addition to any rate under the Act of 1902, the latter being 21d. in 1912. It is provided, however, that the total amount leviable shall not exceed the amount which would be yielded by a rate of 3d. in the £ on the unimproved capital value, and 2s. in the £ on the average annual value, taken together, of all ratable property. On the Council imposing such rate on the unimproved capital value, the land tax is suspended automatically. The valuation of the unimproved capital value is to be made at least once in every five years. The Council was empowered also to establish public libraries and milk depôts, to control certain parks, and to widen certain streets. The Lending Branch of the Public Library, and various parks and public ways were vested in the Council by the Government under certain conditions.

The Sydney Corporation (Dwelling-houses) Act, 1912, enables the City Council to erect and let dwelling-houses, and for that purpose to acquire land.

Greater Sydney.

The amalgamation of the metropolitan municipalities is a question which has attracted considerable attention, and various schemes have been suggested.

In 1902 a Parliamentary Select Committee collected evidence regarding a system of local government for Greater Sydney, but the matter was not brought to a definite conclusion. In 1912 the subject was revived, and a Bill was introduced into Parliament for the constitution of a convention to formulate a scheme for the amalgamation of the local government areas of Sydney and neighbouring municipalities. This Bill was not passed by Parliament, but in 1913 a Royal Commission was appointed to inquire regarding the establishment of a Greater Sydney Municipal Council, by consolidating into one central government the various local areas in the metropolitan district.

The Report of the Commissioners was submitted to the State Governor on the 20th November, 1913, and the results of the investigations are as follows :—

In the first place it was recommended that Greater Sydney should embrace the whole metropolitan area, and be divided into two zones, an inner and outer. The inner zone suggested, 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 provided for, 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 only be obtained after approval by the Governor-in-Council, conditionally on provision being made for repayment in fifty years.

The construction of the North Shore bridge was also discussed, and it was decided that provision should be made in the proposed constitution, for co-operation between the Council and the State Government for the construction of the bridge. It was suggested that special powers should be conferred on the Council for raising a loan for this purpose, and for imposing tolls on users, as well as a bridge rate on the metropolitan area, and also to receive contributions from the Railway Commissioners for upkeep of permanent-way, &c.

Other imposts were mentioned, such as wheel-tax, payment for services, &c., and the exemptions from taxation provided for in existing Acts, were also recommended.

Ratings.

The Sydney Corporation Act of 1902 directs that improved property within the city shall be assessed at a fair average annual value, with an allowance for outgoings not exceeding 10 per cent., and the unimproved property at a maximum of 6 per cent. on its capital value; and on the value of such assessment a city rate not exceeding 2s. in the £ may be levied, exclusive of lighting. The rate stood at 16d. from 1891 to 1899, but was increased to 18d. for 1900, and 24d. for 1901. In 1902, it was reduced to 22d., and still further reduced to 21d. in 1903, which was also levied from 1904 to 1912. The Act provides for a special local rate not exceeding 6d. in the £ of annual value, for any work which may be for the particular benefit of one locality, but then only if two-thirds of the ratepayers of such locality petition for the same. Occasional advantage of this power has been taken for street-watering, though not of late years, and the amount now levied covers the expenses of street-lighting and street-watering.

The other councils were formerly empowered to raise revenue by rates not exceeding 1s. in the £ for ordinary purposes and the same amount for special purposes, with 6d. in addition for street-watering. The amount of each rate was calculated upon nine-tenths of the fair average annual rental of all buildings and cultivated lands, or lands let for pastoral, mining, or other purposes, and upon 5 per cent. of the capital value of the fee-simple of all unimproved lands.

Municipalities which avail themselves of the provisions of the Country Towns Water and Sewerage Act of 1880 are empowered to levy a rate for each service not exceeding a maximum of 10 per cent. on the assessed annual value of land and tenements, in addition to the ordinary municipal rates. Under the Local Government Act, however, a water rate equivalent to this maximum of 10 per cent. on the assessed annual value must be levied either on the unimproved or the improved capital value of lands within the reticulated area.

On 30th June, 1913, there were fifty-two municipalities with water-works constructed under the provisions of the Act, and eleven with sewerage works.

In order to aid municipalities in providing for the expenditure in their formative stages, the 1867 Act provided for endowment by the State during a period of fifteen years. In each of the first five years after incorporation, every municipality is entitled to a sum equal to the whole amount actually raised by rates or assessments; in each of the next succeeding five years, a sum equal to one-half; and in each of the next five years, a sum equal to one-fourth of the amount so received. After the expiry of these fifteen years, such assistance ceases, and further aid from the State must be obtained by special grant. At the end of 1912 there were eleven municipalities entitled to statutory endowment.

Valuations.

It has already been explained that under the Local Government Act of 1906 the basis of rating was changed. The valuations for 1909, 1910, 1911, and 1912, therefore, cannot be compared with those of previous years.

Property in the City of Sydney was in 1912 still rated on the basis of the annual rental value, and the following is a comparision of the capital and annual values in the city during the three years 1910-1912 :—

	1910.	1911.	1912.
	£	£	£
Unimproved capital value	19,9 2,793	23,940,030	23,988,480
Improved capital value	52,142,200	55,520,640	57,395,288
Assessed annual value...	2,346,390	2,498,429	2,582,783

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 1912 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 they ranged in 1912 from 2d. to 5d. in the £, and in the country from 1d. to 12d. The number of municipalities levying the rates specified below was as follows, distinguishing suburban from country, and showing the unimproved capital value of the land in each class:—

General Rate Levied.	Number of Municipalities.		Unimproved Capital Value of Land.	
	Suburbs of Sydney.	Country.	Suburbs of Sydney.	Country.
			£	£
1d. and under 2d....	Nil.	21	Nil.	3,277,674
2d. ,, 3d	4	22	2,256,208	2,886,027
3d. ,, 4d....	13	49	12,126,728	8,538,983
4d. ,, 5d....	19	31	11,134,807	2,846,590
5d. ,, 6d....	4	16	2,417,751	1,748,723
6d. and over	Nil.	10	Nil.	1,054,476
Total	40	149	27,935,494	20,352,473

The majority of suburban councils levied rates between 4d. and 5d.; the next in number were between 3d. and 4d., and the next between 2d. and 3d. In the country municipalities the proportions were different as the majority charged 3d. to 4d. per £, while the number between 4d. and 5d. ranged next, and from 2d. to 3d. in the third place. The municipalities which levied 6d. and over in the £ were Braidwood, Wallsend, Warialda, and Wyalong, each 6d. Scone 6½d., Lambton 7d., Bourke 8d., Broken Hill 8½d., Wrightville 9d., and Hillgrove 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 six country municipalities.

As regards other than general rates, one municipality levied additional general rates on the unimproved capital value, viz., Wilcannia 4½d., and fourteen on the improved capital value, ranging from ¼d. to 2d. in the £.

Seventy-two municipalities levied special and local rates on the unimproved capital value, ranging from $\frac{9}{64}$d. to 24d. in the £, and twenty-eight on the improved capital value, ranging from ⅕d. to 2¼d. in the £.

Twenty-eight municipalities levied loan rates on the unimproved capital value, ranging from $\frac{1}{30}$d. to 2½d. in the £, and two on the improved capital value, ranging from $\frac{7}{10}$d. to ¾d.

The rates levied amounted to £1,444,644, of which £1,042,816 were general and additional general rates.

As was anticipated under the new system of rating, the unimproved values were increased; the upward movement continuing in 1912.

In the following table the unimproved values and improved values for 1911 and 1912 are compared :—

Division.	Unimproved Value.		Improved Value.		
	1911.	1912.	1911.	1912.	Increase.
	£	£	£	£	per cent.
Sydney—City	23,940,030	23,988,480	55,520,640	57,395,288	3·4
Suburbs	25,942,704	27,935,494	63,855,054	67,480,676	5·7
Metropolis... ...	49,882,734	51,923,974	119,375,694	124,875,964	4·6
Country	19,961,743	20,352,473	47,484,486	48,814,203	2·8
Total	69,844,477	72,276,447	166,860,180	173,690,167	4·1

The particulars in respect of unimproved values in former years were somewhat misleading, owing probably to the fact that in certain cases the town clerks furnished returns showing ratings before appeal in the previous year. The figures shown above for 1911 and 1912, on the other hand, represent the values generally as reduced after appeal.

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.		
	1911.	1912.	Increase.
	£	£	per cent.
Sydney—City	31,580,610	33,406,808	5·8
Suburbs	37,912,350	39,545,182	4·3
Metropolis ..	69,492,960	72,951,990	5·1
Country	27,522,743	28,461,730	3·4
Total	97,015,703	101,413,720	4 5

The steady increase in the value of improvements may be taken as indicative of municipal prosperity, taken together with existing industrial conditions. Of late years, particularly in the city and suburbs, there has been an increasingly marked activity in the building trade; old buildings have been demolished and have been replaced by more extensive structures, made still more valuable by reason of the increased cost of labour and materials.

The unimproved capital value of ratable land in municipalities is £72,276,000, and in shires £97,461,000, the total being £169,737,000. 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 £179,737,000. 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 £101,414,000, or 140 per cent. of the unimproved value. In the suburbs it was 142 per cent., and in the country 139 per cent.. The value of improvements is not available for all the shires, but assuming 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, a value of, say, £95,000,000 is obtained. In the Western Division it may be placed at £10,000,000, so that for the whole State the following values are obtained:—

Division.	Unimproved Value of Land.			Value of Improvements.		
	Total.	Per Head.	Per Acre.	Total.	Per Head.	Per Acre.
	£	£	£ s. d.	£	£	£ s. d.
Sydney—City	23,988,000	206	7,210 2 0	33,407,000	287	10,041 3 7
Suburbs ...	27,936,000	49	303 17 7	39,545,000	70	430 3 1
Metropolis ...	51,924,000	76	545 1 8	72,952,000	107	765 16 7
Country Municipalities	20,352,000	46	11 2 11	28,462,000	64	15 11 9
Shires	97,461,000	154	0 16 10	95,000,000	150	0 16 5
Western Division (part unincorporated).	10,000,000	543	0 2 6	10,000,000	543	0 2 6
State	179,737,000	101	0 18 2	206,414,000	116	1 0 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. With the exception of the Electric Lighting Fund, the various accounts of the city are kept on a "cash" basis, and apart from the fact that those accounts show receipts and disbursements in respect of both capital and revenue, the information 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, therefore, that when discussing the financial transactions of the whole municipal area of the State an endeavour to collate similar information from two entirely different systems of accounts would serve no useful purpose, and the figures for statistical comparison would be of doubtful value.

For the reasons stated above, the following particulars relating to municipal accounts are divided into two parts, one dealing with the City of Sydney and the other with the suburbs of Sydney and country municipalities.

City of Sydney—Receipts.

The receipts from the various funds, exclusive of the Electric Lighting Fund, in 1912 amounted to £483,783, the City Fund contributing £429,710, the Public Markets Fund £44,639, and the Cattle Saleyards Fund £9,434.

The total disbursements exceeded the receipts by £24,220. Although abstracts of receipts and disbursements in respect of the Public Markets and the Cattle Saleyards Funds are shown in the city accounts, those funds are really subsidiary to the City Fund, their balances at the end of the year being transferred and shown as adjustments in that fund.

The following is a statement of the receipts of the City Fund under appropriate headings:—

	£
General Purposes	329,065
Works	7,452
Health Administration	14,551
Public Services...	9,654
Municipal Property	52,277
Miscellaneous	16,711
Total	£429,710

Rates, £226,688, together with land tax, £100,267, form by far the greater part of the receipts under the heading "General Purposes." As provided by the amending Act of 1908, rating on the unimproved value of land was first brought into force in 1909, and that such a large amount should be realised with the minimum rating of 1d. in the £ shows the importance to be attached to the acquisition of the transferred Land Tax as an addition to the city finances. The revenue from city improvements amounted to £1,121, or 15 per cent. of the total from works; resumptions were responsible for £40,489, or over three-fourths of the receipts from municipal property.

Disbursements.

The disbursements of the City Fund in 1912 amounted to £444,997, of the Public Markets Fund £60,226, and of the Cattle Saleyards Fund £3,780, making a total of £509,003. Shown under the same headings as the receipts, the following were the disbursements of the City Fund:—

	£
General Purposes	39,305
Works	68,815
Health Administration	91,834
Public Services..	55,136
Municipal Property	27,384
Miscellaneous (Interest, Sinking Fund, &c.) ...	162,523
Total	£444,997

Salaries, which amounted to £29,210, absorbed a very large share of the expenses for General Purposes. Out of the sum spent on Public Works, Health Administration, and Public Services, streets, footpaths, &c., claimed £61,355, city cleansing cost £64,036, and street lighting £21,942. The large amount shown under "Miscellaneous" includes the Annual Debenture indebtedness, which in 1912 was £95,169 for interest, commission, &c., and £25,193 from Sinking Fund contributions.

With the transfer of the Land Tax, the amending Act of 1908 provided that the City Council should take over the control or bear the expenditure contingent to certain works and services hitherto a charge on the Government. As a result of this enactment the following items appear as disbursements in 1912:—Pyrmont Bridge, £3,650; Medical Officer of Health, £800; and Traffic Regulation, £3,750. The three items mentioned are annual statutory payments to the Crown, as the works and services concerned are still under Government control.

The receipts and disbursements of the Public Markets Fund, as stated, were £44,639 and £60,226 respectively, showing a deficit of £15,587 on the year's transactions. Although the Queen Victoria Markets brought in revenue to the extent of £17,556, or about 39 per cent. of the total, that amount was insufficient to meet even the interest charges on Capital Expenditure and Sinking Fund contributions, which together amounted to £18,470. The total outlay was £25,475, or £7,919 in excess of the receipts.

The following statement shows the net result of the transactions of the year in respect of each source of revenue included in the fund :—

Balances transferred to City Fund.

	Dr.	£	£
Belmore Building		965	
Fish Markets		2,600	
Cooling Chambers		203	
Queen Victoria Markets		7,919	
Municipal Market, No. 1		588	
,, ,, No. 2		40	
,, ,, No. 3		5,385	
Market Stores		892	
		———	18,592
	Cr.		
Old Belmore Site		2,950	
Fish Agency Account...		55	
		———	3,005
Net Deficit			£15,587

The Council expended £3,780 on the Cattle Saleyards during the year, and received in return revenue amounting to £9,434, leaving a credit balance of £5,654 to be transferred to the City Fund.

The next item to be considered is the Revenue Account of the Electric Lighting Fund for the year 1912 :—

Expenditure.	£	Income.	£
Generation of Electricity ...	46,291	Private Lighting	124,427
Distribution	32,754	Public Lighting	19,823
Management	14,783	Power Supply	62,714
Special Charges	17,510	Rentals—Meters, Motors, Lamps, &c.	9,548
Bad debts written off	225	Net Revenue — Company Purchases	17,513
Total	£111,563	Miscellaneous	303
Balance carried to Net Revenue Account	122,762		
Total	£234,325	Total	£234,325

Generation forms the largest item of expenditure, accounting for 41·5 per cent. of the whole. Distribution cost 29·3 per cent., and Management 13·3 per cent. The special charges were monthly payments on account of transferred customers to companies whose works were purchased by the City Council. They represent, however, the gross expenditure only, as after expenses of management, &c., have been deducted the municipality is credited with the balance, amounting to £17,510, as shown on the income side of the account.

The sales of current to the public for light and power amounted to £186,629, and the sales to the Council realised £20,335.

The principal charges, out of a total of £85,690 against the gross profit of £122,762 carried to the Net Reserve Account, were:—Interest on Debentures, £39,695; Interest on Balances—Company purchases, £2,629; Sinking Fund contribution, £9,216; and Depreciation Reserve Account, Loan flotation expenses, &c., £34,150. It will be seen from the foregoing that the net gain for the year was £37,072, which, added to the net profit from 1911, viz., £1,817, gives a total of £38,889 credited to profit and loss at the end of 1912.

Below is a summary of the balance-sheet of the Electric Lighting Fund on 31st December, 1912:—

Liabilities.	£	Assets.	£
Debenture Loans...	1,000,000	Capital Expenditure — Land, Buildings, Machinery, Plant, &c.	1,325,060
Company Purchases—Balance of Purchase Money	27,812	Goodwills—Company Purchases	74,000
Sinking Fund	46,610	New South Wales Treasury—Sinking Fund Investments ...	46,610
Reserve and Suspense Accounts	156,301	Other	35,291
Sundry Creditors...	49,123		
Miscellaneous	1,149		
Balance—Net Revenue Account	38,889		
Bank of New South Wales debit balance	161,077		
	£1,480,961		£1,480,961

The Loan Capital, which forms about 68 per cent. of the liabilities, returned 3·9 per cent. profit for the year; but consideration of the fact that the interest payments and Sinking Fund contribution for the year amounted to £51,540, that £31,899 was allowed for depreciation, and that the Sinking Fund is represented by an investment of £46,610 in Government Stock, will show that the finances of the Sydney Electric Lighting 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, 1912:—

Liabilities.	£	Assets.	£
Debentures current	4,977,500	Bank Balances, Cr.	235,055
Bank Balances, Dr.	296,978	Rates Outstanding	6,267
Sundry Creditors	60,690	Landed Properties, Baths, and Sundries	4,187,711
Debenture Interest Account, Services payable, and Sundries...	319,643	Machinery, Plant, Furniture, Stores, &c.	1,130,015
		Sundry Debtors	41,916
		Sinking Funds	355,524
		Investments	73,923
	£5,654,811		£6,030,411

Notwithstanding the large Loan indebtedness the assets exceed the liabilities by £375,600. It should be noted that the Debentures include £1,000,000 borrowed in connection with Electric Lighting, and £875,000 for Public Markets, and that as the proceeds of such loans have been spent on reproductive municipal works, such works should provide the annual interest charges and sinking fund contributions. It follows that "rate" revenue is relieved to the extent that annual liabilities of this nature are so liquidated. It is true that the Electric Lighting Fund is quite self-supporting; but, then again, the loss on Queen Victoria Markets, which, as already stated above, was in 1912 £7,919, becomes a charge on the city rates. Landed properties, baths, &c., which comprise about 69·4 per cent. of the assets, include such large items as Public Markets, £1,090,069, Town Hall, £530,602, Resumptions, £1,857,576, Electric Light Buildings, Works, &c., £359,590. The accumulated Sinking Fund, £355,524, as against a Debenture Debt of £4,977,500, must be regarded as a satisfactory cover.

Progress of Sydney.

The following table is appended for the purpose of showing the progress of the city during the last four years :—

Particulars.	1909.	1910.	1911.	1912.
Area ... ... Acres	3,327	3,327	3,327	3,327
Population ... ... No.	120,660	119,800	118,800	116,400
	£	£	£	£
Unimproved Capital Value ...	19,970,365	19,952,793	23,940,030	23,988,480
Improved Capital Value	50,948,240	52,142,200	55,520,640	57,395,288
Assessed Annual Value	2,292,671	2,346,399	2,498,429	2,582,788
City Fund—				
Receipts—Rates...	202,272	206,461	221,450	226,688
Land Tax	78,723	83,569	98,183	100,267
All other sources ...	79,179	69,664	92,085	102,755
Total	360,174	359,694	411,718	429,710
Disbursements	333,062	385,947	407,055	444,997
Public Markets Fund—				
Receipts	30,383	33,807	38,899	44,639
Disbursements	34,048	43,557	46,666	60,226
Cattle Saleyards Fund—				
Receipts	26,666	18,568	17,315	9,434
Disbursements	16,619	8,146	8,381	3,78
Electricity Works Fund—				
Expenditure	111,498	141,335	161,898	197,253
Income	128,980	166,047	190,289	234,325
Total Receipts—All Funds ...	546,203	578,116	658,221	718,108
Total Disbursements—All Funds...	495,227	578,985	624,000	706,256
Liabilities—All Funds	2,994,579	3,794,063	4,310,441	5,654,811
Assets—All Funds	3,677,159	4,318,028	4,845,111	6,030,411
Loans outstanding 31st Dec. ...	2,679,000	3,231,900	3,870,600	4,977,500
Sinking Fund	220,621	259,061	303,553	355,524

The tendency of a city population as compared with a suburban population is to decrease rather than increase. Three important factors have combined to make this particularly applicable to Sydney—private enterprise shown by the building of extensive premises designed almost entirely for business purposes, improved facilities for reaching suburban areas by quicker and cheaper means of transport, and perhaps the most important, the council's policy of city improvement by demolishing delapidated buildings, and opening up new streets, which must force the population outwards.

The steady progression in the city finances indicated in the above statement is marred by the figures relating to the Public Markets Fund, which shows a loss on each year's transactions, attributable almost wholly to the Queen Victoria Markets, which show a deficit of about £8,000 annually.

Each year's returns emphasise the rapid and at the same time profitable expansion of the electric lighting undertaking. The lights were used for the first time on 8th July, 1904, when parts of the city were illuminated, and since that date great progress has been made, and the public parks as well as the remainder of the streets under the control of the council are now included.

The cattle saleyards form another productive asset, the transactions showing each year an increasing surplus.

Although additions are continually being made to the loans current it will be seen by a glance at the above figures that the sinking fund obligations have been strictly fulfilled.

Suburbs of Sydney and Country Municipalities.

As already stated, with 1908 a new era began in the municipal bookkeeping of this State, and for the same reason that the accounts of the City of Sydney cannot be included with those of municipalities working under the provisions of the Local Government Act, the transactions of the latter for the years subsequent to 1908 cannot, with any advantage, be compared with those of earlier years when the accounts were kept on a "cash basis."

The value of the statistical information disclosed is somewhat discounted by the exclusion of particulars relating to Bega, Broken Hill, and Narromine for 1911, and Balranald for 1912, the municipalities in question having neglected to furnish the prescribed returns.

Expenditure.

The total expenditure during 1912 by the various municipalities under the Local Government Act amounted to £1,309,611, which was £36,642 less than the income. The following statement shows the expenditure allocated to the various funds in 1911 and 1912:—

Funds.	1911.			1912.		
	Suburbs of Sydney.	Country.	Total.	Suburbs of Sydney.	Country.	Total.
	£	£	£	£	£	£
General Fund	463,220	320,042	783,262	535,953	384,400	920,353
Trading Accounts ...	9,708	90,247	99,955	8,078	106,035	114,113
Special and Local Funds	38,090	185,391	223,481	46,434	228,129	274,563
Loan Funds	35,574	31,738	67,312	34,581	29,709	64,290
Reserves and Renewals Account	775	1,643	2,418	...	1,859	1,859
Gross Expenditure ...	547,367	629,061	1,176,428	625,046	750,132	1,375,178
Deduct Transfers... ...	45,806	59,373	105,179	37,258	28,309	65,567
Net expenditure ...	501,561	569,688	1,071,249	587,788	721,823	1,309,611

The greatest expenditure was naturally from the General Fund, which accounted for 70·4 per cent. of the whole, as against 73 per cent. in 1911.

The trading concerns of the municipalities are gas and electricity; the special and local funds relate to water supply, sewerage, street-watering, street-lighting, old loans interest, and a few other miscellaneous matters.

A review of the figures in the preceding table shows a substantial increase in the expenditure of each fund in 1912, indicating an increased activity in the management of municipal affairs.

Details of the expenditure from the General Fund are shown below:—

Source of Expenditure.	1911.			1912.		
	Suburbs of Sydney.	Country.	Total.	Suburbs of Sydney.	Country.	Total.
General Purposes—	£	£	£	£	£	£
Rates and interest abandoned	2,399	2,407	4,806	1,377	2,251	3,628
Administrative expenses	48,925	53,115	102,040	45,475	53,246	98,721
Public Works	252,666	160,580	413,246	314,819	189,737	504,556
Health Administration ...	53,672	28,103	81,775	60,612	38,553	99,165
Public Services	74,262	35,135	109,397	78,017	44,659	122,676
Municipal Property ...	16,797	19,844	36,641	20,895	27,858	48,753
Transfers	7,719	15,028	22,747	10,017	17,348	27,365
Other	6,780	5,830	12,610	4,741	10,748	15,489
Total expenditure ...	463,220	320,042	783,262	535,953	384,400	920,353

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 a greatly increased expenditure on Health Administration and Public Services. The cost of street lighting in the suburbs is still met out of the General Fund, and the expenditure on Public Services therefore is not affected by the amendment.

The proportion of expenditure under each head to the total expenditure was as follows:—

Source of Expenditure.	1911.			1912.		
	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	0·5	0·8	0·6	0·3	0·6	0·4
Administrative Expenses ...	10·6	16·6	13·0	8·5	13·8	10·7
Public Works	54·5	50·2	52·8	58·7	49·4	54·8
Health Administration	11·6	8·8	10·5	11·3	10·0	10·8
Public Services	16·0	10·9	13·9	14·6	11·6	13·3
Municipal Property	3·6	6·2	4·7	3·9	7·3	5·3
Transfers to Loan Funds ...	1·7	4·7	2·9	1·8	4·5	3·0
Other	1·5	1·8	1·6	0·9	2·8	1·7
Total	100·0	100·0	100·0	100·0	100·0	100·0

Of the expenditure by municipalities, 10·7 per cent. was on administrative expenses, and 54·8 per cent. on public works. Of the administrative expenses, salaries were the largest. The relative cost of administration in the country is high, being 13·8 per cent. of the total expenditure; the suburban municipalities spend only 8·5 per cent. under the

same heading. The significance of the foregoing remarks, showing the effect of the amended Act on certain items of expenditure, may be more readily understood by glancing at the relative cost of these items as set out in the above table. The high relative cost of administration in the country is due, no doubt, to the sparse population and small revenue of many of the country municipalities. In such cases, the expenses on account of salaries, &c., would naturally be larger proportionately than in the more closely-settled localities in the suburbs. Public Services for 1912 include —Pounds, £1,556; street-watering, £10,424; street-lighting, £65,616; and all other services, £45,080. The greatest part of the expenditure on Public Works was on roads, streets, &c., as will be seen below:—

Services.	1911.			1912.		
	Suburbs of Sydney.	Country.	Total.	Suburbs of Sydney.	Country.	Total.
	£	£	£	£	£	£
Supervision	...	...	...	9,715	5,907	15,622
Roads, streets, culverts, &c....	232,726	146,253	378,979	285,850	169,976	455,826
Bridges	493	4,060	4,553	343	3,794	4,137
Drains, sewers, &c. ...	12,632	4,018	16,650	9,902	3,691	13,593
Ferries, wharfs, and jetties	3,275	3,050	6,325	3,461	1,710	5,171
Sundries	3,540	3,199	6,739	5,548	4,659	10,207
Total	252,666	160,580	413,246	314,819	189,737	504,556

Of the expenditure on roads, streets, &c., in 1912, the amount spent on maintenance, renewals, and repairs was £213,500; £81,144 was expended on construction, £37,119 on street and gutter cleaning, £42,143 on kerbing and guttering, £44,528 on footpaths, and £5,053 on sundries, a large part of which was absorbed by tree-planting.

The Trading Accounts, which relate to the supply of gas or electricity, will be treated later under those headings, and the special Water and Sewerage Funds will also be discussed.

Income.

The total income in 1912 of all the municipalities brought under the provision of the Local Government Act, 1906, was £1,346,253, including £25,737 received as endowments or grants from the Government. Under the same funds as in the expenditure the income for 1911 and 1912 is shown below:—

Funds.	1911.			1912.		
	Suburbs of Sydney.	Country.	Total.	Suburbs of Sydney.	Country.	Total.
	£	£	£	£	£	£
General Fund	483,721	331,217	814,938	537,244	383,497	920,741
Trading Accounts ...	8,067	92,992	101,059	8,027	94,804	102,831
Special and Local Funds	32,668	194,388	227,056	40,523	249,259	289,782
Loan Funds	43,983	46,298	90,286	42,408	48,057	90,465
Reserves and Renewals Account	799	6,088	6,887	3,810	4,191	8,001
Gross Income ...	569,243	670,983	1,240,226	632,012	779,808	1,411,820
Deduct Transfers... ...	45,806	59,373	105,179	37,258	28,309	65,567
Net Income	523,437	611,610	1,135,047	594,754	751,499	1,346,253

Details of the items of the General Fund for 1911 and 1912 are as follows:—

Source of Income.	1911.			1912.		
	Suburbs of Sydney.	Country.	Total.	Suburbs of Sydney.	Country.	Total.
General Purposes—	£	£	£	£	£	£
Rates levied (including interest)	400,152	242,478	642,630	434,821	285,598	720,419
Government Endowments, &c.	899	6,001	6,900	576	6,562	7,138
Sundries	7,732	6,253	13,985	9,218	7,872	17,090
*Public Works	35,310	15,535	50,845	45,785	16,279	62,064
*Health Administration ...	16,546	13,413	29,959	20,172	16,717	36,889
*Public Services	6,203	14,970	21,173	7,016	14,631	21,647
Municipal Property	12,249	24,862	37,111	17,692	30,136	47,828
Miscellaneous	4,630	7,705	12,335	1,964	5,702	7,666
Total	483,721	331,217	814,938	537,244	383,497	920,741

* Including Government grants.

Comparing this statement with the expenditure of the General Fund, it will be found that the income in 1912 was £388 in excess. Included in the rates levied is an amount of £5,286, being interest due on unpaid rates.

To the income from public works, the Government contributed £8,242 as grants for roads, streets, &c., and £690 as grants for ferries.

Under Health Administration are included Government grants for Parks, &c., amounting to £7,901. The Government also granted £362 for General Purposes and Public Services.

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.	1911.			1912.		
	Suburbs of Sydney.	Country.	Total.	Suburbs of Sydney.	Country.	Total.
General Purposes—	per cent.	per cent.	per cent.	per cent.	per cent.	per cent.
Rates levied (including interest)	82·7	73·2	78·8	80·9	74·5	78·2
Government Endowments, &c.	0·2	1·8	0·9	0·1	1·7	0·8
Sundries	1·6	1·9	1·7	1·7	2·0	1·9
*Public Works	7·3	4·7	6·2	8·5	4·2	6·7
*Health Administration ...	3·4	4·0	3·7	3·8	4·4	4·0
*Public Services	1·3	4·6	2·6	1·3	3·8	2·4
Municipal Property	2·5	7·5	4·6	3·3	7·9	5·2
Miscellaneous	1·0	2·3	1·5	0·4	1·5	0·8
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 78·2 per cent. In the suburbs it was 80·9 per cent., and in the country 74·5 per cent. The next important source of income was from Public Works, but it should be remembered that about 14·4 per cent. of the contribution was provided by the Government by way of grants. By the transfer of the Sanitary and Garbage Services from the General Fund, as provided by the 1908 Amendment of the Act, Health Administration lost its most important factor of revenue, contributing only 4·0 per cent. of the total as against 9·8 per cent. in 1908. The difference is still more marked in the country, where the proportion was 15·5 per cent. in 1908 and 4·4 per cent. in 1912. 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 1911 and 1912 are shown in the following table:—

Funds.	1911.			1912.		
	Suburbs of Sydney.	Country.	Total.	Suburbs of Sydney.	Country.	Total.
Expenditure—	£	£	£	£	£	£
Water Supply	... ..	70,814	70,814	.....	70,704	70,704
Sewerage	.....	8,094	8,094	.....	9,190	9,190
Sanitary and Garbage ...	15,747	78,226	93,973	19,544	106,558	126,102
Street Lighting	.....	19,281	19,281	.....	21,979	21,979
Street Watering	1,686	371	2,057	1,604	571	2,175
Old Loans' Interest ...	6,265	1,298	7,563	3,856	704	4,560
Miscellaneous	10,354	7,307	17,661	16,955	18,423	35,378
Cemetery	4,038	.....	4,038	4,475	.....	4,475
Total	38,090	185,391	223,481	46,434	228,129	274,563
Income—						
Water Supply	.....	71,961	71,961	.....	78,535	78,535
Sewerage	.....	8,546	8,546	.....	10,010	10,010
Sanitary and Garbage ...	16,506	82,290	98,796	20,199	108,820	129,019
Street Lighting	... ..	20,512	20,512	.....	22,088	22,088
Street Watering	1,383	394	1,777	1,685	612	2,297
Old Loans' Interest ...	6,373	1,374	7,747	5,689	967	6,656
Miscellaneous	2,592	9,311	11,903	7,114	28,227	35,341
Cemetery	5,814	.....	5,814	5,836	.....	5,836
Total	32,668	194,388	227,056	40,523	249,259	289,782

Balance-sheet.

The financial position of the municipalities, as at 31st December, 1911 and 1912, is shown by the following statement of liabilities and assets of the various funds:—

Funds.	1911.			1912.		
	Suburbs of Sydney.	Country.	Total.	Suburbs of Sydney.	Country.	Total.
Liabilities—	£	£	£	£	£	£
General Fund	53,531	46,685	100,216	70,474	61,531	132,005
Trading Accounts ...	4,282	28,736	33,018	2,763	35,787	38,550
Special and Local Funds	8,474	1,062,015	1,070,489	26,346	1,084,325	1,110,671
Loan Funds	769,783	613,722	1,383,505	760,033	634,100	1,394,133
Reserves and Renewals Account	949	9,694	10,643	4,759	13,081	17,840
Total	837,019	1,760,852	2,597,871	864,375	1,828,824	2,693,199
Assets—						
General Fund	250,675	410,251	660,926	268,902	446,889	715,791
Trading Accounts ...	2,409	62,024	64,433	2,480	76,164	78,644
Special and Local Funds	23,094	1,135,160	1,158,254	35,892	1,176,033	1,211,925
Loan Funds	160,955	444,973	605,928	158,201	513,883	672,084
Reserves and Renewals Account	949	9,694	10,643	4,759	13,081	17,840
Total	438,082	2,062,102	2,500,184	470,234	2,226,050	2,696,284

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 three municipalities in 1911 and four in 1912 was there an excess of liabilities. The liabilities and assets of the General Fund in the various municipalities, as at 31st December, 1911 and 1912, are shown below:—

Classification.	1911.			1912.		
	Suburbs of Sydney.	Country.	Total.	Suburbs of Sydney.	Country.	Total.
Liabilities—	£	£	£	£	£	£
Temporary loans	18,203	11,930	30,133	29,912	17,062	46,974
Overdrafts	13	883	896	.....	859	859
Sundry creditors (including amounts due to other Funds)	35,315	32,499	67,814	40,562	40,970	81,532
Other	.....	1,373	1,373	.....	2,640	2,640
Total	53,531	46,685	100,216	70,474	61,531	132,005
Assets—						
Outstanding rates (including interest)	31,656	60,741	92,397	34,471	62,961	97,432
Stores and materials	4,187	6,042	10,229	5,448	6,913	12,361
Bank balance and cash ...	37,695	44,582	82,277	33,887	45,677	79,564
Land and buildings	140,951	224,913	365,864	151,186	232,962	384,148
Plant and furniture	24,277	40,630	64,907	27,408	57,007	84,415
Other	11,909	33,343	45,252	16,502	41,369	57,871
Total	250,675	410,251	660,926	268,902	446,889	715,791

The principal asset of the municipalities consists of land and buildings, which were at the end of 1912 valued at £384,148, or 53·7 per cent. of the total assets. Outstanding rates and interest amounted to £97,432, while bank balances and cash in hand were equal to £79,564.

Loans.

The total amount of loans raised during 1912 was £1,005,155, including £856,900 borrowed by the City of Sydney, £91,058 by the Suburbs, and £57,197 by Country municipalities, and allowing for additions and reductions of secured overdrafts; while the sinking funds were increased by £56,022, viz.:—City of Sydney, £51,971; Suburbs, £2,577; and Country, £1,474. Most of the new loans in the suburban and country districts were renewals. Apart from the liability of the State under the Country Towns Water and Sewerage Act, the total amount of loans outstanding at the close of the year was £6,463,696, and towards this amount there was at the credit of the sinking funds a sum of £387,118.

Rates of interest ranged from 3 per cent., which was carried by £3,165, to 8 per cent., which, however, was payable only on £100; and the amount paid and due as interest on loans during the year was £253,162. The total indebtedness was £6,463,696, bearing an average rate of interest of 3·99 per cent., viz., 3·90 per cent. on the loans of the City of Sydney, 3·81 per cent. on those of the suburban municipalities, and 4·17 per cent. on those of the country municipalities.

The average rate of interest payable on all loans is scarcely, however, an index of the true value of municipal debentures to the investors, as out of a total debt of £6,463,696 the sum of £2,614,775 pays interest at 4 per

cent., £2,184,915 at 3⅞ per cent., and £514,300 at 3¾ per cent. Of these amounts the metropolitan municipalities are responsible for £2,469,168, £2,184,915, and £507,300 respectively. The country municipalities borrowed £145,607 at 4 per cent., £200,192 at 4½ per cent., and £119,301 at 5 per cent.

The total debt per head of population living in municipalities amounted to £5 12s. 10d., without allowance being made for sinking funds, while the yearly charge for interest is 4s. 6d. 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, 1912, and the sinking funds set apart to meet them:—

Division.	Municipal Loans Outstanding.			Sinking Funds.	Interest paid and due on Loans, 1912.
	New South Wales.	London.	Total.		
	£	£	£	£	£
Sydney—City	3,927,500	1,050,000	4,977,500	355,524	194,153
,, Suburbs	715,074	59,000	774,074	16,505	31,687
Country	519,747	30,915	550,662	15,089	27,322
Total ... ... £	5,162,321	1,139,915	6,302,236	387,118	253,162

Temporary loans, amounting altogether to £97,305, which bear interest at current bank rates, and loans payable on demand amounting to £64,155, are excluded from the above table.

The loans are redeemable at various periods from 1913 to 1945, and the total amount to be repaid in London was £1,139,915, or rather less than one-eighth of the total, and the total amount of debentures held locally was £5,162,321.

The majority of the loans are renewable at maturity, and sinking funds have been established in connection with several of the issues, the aggregate amount of which, at the end of 1912, was £387,118.

Under the Local Government Act, 1906, 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.

Purposes for which loans may be raised are prescribed (*a*) for permanent improvements or works; (*b*) for any object which the Council may legally effect; and (*c*) for the repayment of former loans. All loans are to be borrowed on the credit of the municipality, and to be a charge upon the revenues.

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.

It has been considered inadvisable to show the revenue accounts of these funds, as their revenue practically consists of transfers from other funds to repay principal and interest, and there is a danger of duplication in

quoting them. The following is a statement of the total liabilities and assets of all funds at the close of 1912; but it is incomplete to some extent, as several municipalities, where a loan related to a trading concern or public work, have included the assets in the balance-sheet of the loan fund :—

Classification.	Suburbs of Sydney.	Country.	Total.
Liabilities—	£	£	£
Loans current	753,132	612,207	1,365,339
Interest due and unpaid...	6,551	18,689	25,240
Other	350	3,204	3,554
Total ... ... £	760,033	634,100	1,394,133
Assets—			
Bank balance and cash	4,841	18,591	23,432
Sundry creditors (including amounts due from other funds)	5,149	37,276	42,425
Land and buildings	101,883	159,515	261,398
Plant, &c.	24,691	241,355	266,046
Investments	14,873	6,481	21,354
Other	6,764	50,665	57,429
Total ... ... £	158,201	513,883	672,084

The liabilities of the loan funds exceeded the assets by £722,049, but against the loans of a municipality may be set its whole revenue and credit, so that there is no element of danger in the position as stated. Further, the municipalities have inconvertible assets in the shape of roads, streets, bridges, and other permanent improvements, which have been constructed out of loans, and which are valued at over six millions sterling. Although these have not been included in the balance-sheet, they are very necessary for developing the various localities, and add materially to their resources for rating purposes, in the increased value they give to property.

Shires.

Since 1st January, 1907, 134 shires have been working under the Local Government Act, 1906. These shires are all in the Eastern and Central Land Division, 96 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 1912 eight shires levied a rate less than 1d.

The rates levied in 1912, 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.	No. of Shires.	General Rate levied in £	Unimproved Capital Value of Land.
	d.	£		d.	£
3	½	3,774,321	24	1½	16,545,921
2	⅝	1,695,090	31	1¾	17,532,373
3	¾	2,585,098	28	2	16,571,437
42	1	37,682,502	—	—	—
1	1⅛	1,074,712	134	....	£97,461,454

In addition to the general rates shown above, local rates were also levied by several shires, particulars of which are shown in the following table:—

Shire.	District.	Purpose for which Levied.	Amount of Rate.
Berrigan	Berrigan	Footpaths and drainage	2d. in £ on u. c. v.
	Tocumwal	do do ..	3d. in £ on u. c. v.
	Finley	do do ..	3d. in £ on u. c. v.
Bland	Barmiedman	Street improvements...	1d. in £ on u. c. v.
	West Wyalong	do do ..	2d. in £ on u. c. v.
Blaxland ..	Portland	Roads and streets and water supply.	6d. in £ on u. c. v.
Blue Mountains..	Leura	Street lighting ...	$\frac{3}{8}$d. in £ on u. c. v.
Bolwarra ...	Phœnix Park... ...	Drainage	1d. in £ on u. c. v.
	Lorn	Fire Brigade	$\frac{1}{16}$d in £ on i c. v.
	do	Street lighting ..	$\frac{1}{4}$d. in £ on i. c. v.
	do	Parks	$\frac{1}{8}$d. in £ on i. c. v.
Boree	Canowindra	Street improvements...	3d. in £ on u. c. v.
Byron	Bangalow	Street improvements...	2d. in £ on u. c. v.
Cessnock ...	Cessnock	Fire Brigade	$\frac{1}{4}$d. in £ on u. c. v.
	Kurri Kurri	do	$\frac{1}{4}$d. in £ on u. c. v.
	Cessnock	Street lighting ...	$\frac{3}{4}$d. in £ on u. c. v.
Crookwell ...	Crookwell	Street improvements...	2d. in £ on u. c. v.
Dorrigo	Coffs Harbour ...	Fire Brigade	$\frac{1}{2}$d. in £ on u. c. v.
Erina	Gosford	Street lighting ..	1d. in £ on u. c. v.
		Reclamations	1d. in £ on u. c. v.
Gilgandra ...	Gilgandra	Street improvements .	3d. in £ on u. c. v.
		Fire Brigade	$\frac{1}{2}$d. in £ on u. c. v.
Gloucester ...	Gloucester	Street lighting and street improvements	3d. in £ on u. c. v.
Goobang ...	Trundle	Water supply	3d. in £ on u. c. v.
Hornsby... ...	Hornsby and Waitara	Street lighting ...	$\frac{3}{4}$d. in £ on u. c. v.
	Pennant Hills, Beecroft, and Epping.	do	1d. in £ on u. c. v.
Ku-ring-gai ...	Wahroonga, Warrawee, Turramurra, Pymble, Gordon, Killara, Lindfield, and Roseville.	Street lighting ..	$\frac{3}{8}$d. in £ on u. c. v.
Kyogle	Kyogle	Street improvements...	3½d. in £ on u. c. v.
Lake Macquarie..	Boolaroo and West Wallsend.	Fire Brigade	½d. in £ on u. c. v.
	Boolaroo	Street improvements...	¼d. in £ on u. c. v.
Rylstone ...	Rylstone	Street improvements. .	3d. in £ on u. c. v.
Tintenbar ...	Alstonville	Roads and streets ...	3d. in £ on u. c. v.
Wakool	Barham	Kerbing and guttering	2d. in £ on u. c. v.
Warringah ...	Freshwater and Queenscliff.	Street lighting ...	¾d. in £ on u. c. v.
Wingadee ...	Quambone	Water supply	7$\frac{3}{8}$d. in £ on u. c. v.

The unimproved capital value of the shires in 1912 was £97,461,454, but it is not possible to give the improved capital value, or the assessed annual value, as the shires are not compelled to make these valuations. The total amount of general rates levied was £515,560, and special and local rates £8,925. These figures represent the rates actually levied in respect of the year 1912, 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 1912-15 being as follows:—

54 shires in 1st class receive no endowment.
59 ,, 1st ,, ,, up to 10s. in the £ on General Rate.
7 ,, 2nd ,, ,, ,, 15s. ,, ,,
5 ,, 3rd ,, ,, ,, 20s. ,, ,,
3 ,, 4th ,, ,, ,, 25s. ,, ,,
5 ,, 5th ,, ,, ,, 30s. ,, ,,
1 ,, 6th ,, ,, not less than 40s. in the £ on General Rate.

The highest endowment allotted in 1912 was 40 shillings in the £ to Bellingen shire, and, as will be seen from previous publications, considerable reductions have been made in the allowances by the Government. In 1912 the Government paid £372,952 as endowment to the shires, and a further sum of £29,868 was paid as grants for special purposes, making the total subvention from the State £402,820.

Income.

The principal heads of income in 1912 were as follows; for purposes of comparison the 1911 figures are attached:—

Particulars.	1911.		1912.	
	Income.	Per cent.	Income.	Per cent.
General Fund—	£		£	
General rates	463,501	52·3	517,025	51·7
Government endowment	319,593	36·3	372,952	37·3
Public works	45,331	5·3	45,152	4·5
Health administration	3,998	0·5	4,886	0·5
Public services	8,769	1·0	9,232	0·9
Shire property	6,731	0·8	8,768	0·9
Miscellaneous	8,594	1·0	5,648	0·6
Special and local funds	24,513	2·8	35,835	3·6
Total Income ... ... £	881,030	100·0	999,498	100·0

The proportion of general rates showed a decrease in 1912, being 51·7 per cent. of the total income, as compared with 52·3 per cent. in the previous year. There was a slight increase in the Government endowment, while the income from special and local funds increased about 46 per cent., owing principally to the expansion in the Sanitary, Garbage, and other Local Funds.

Of the total income in 1912, Government assistance, exclusive of grants for public works, provided 37·3 per cent., as against 36·3 per cent. in 1911. The principal items in public works were contributions to roads, bridges, &c., £12,852; Government grants for roads, &c., £21,279; and the receipts from ferries, including Government grants amounting to £7,663, were £9,730. The principal item in public services was rent, &c., from public watering places, £7,480. The income derived from special and local funds, consisting of the proceeds of special and local rates and sanitary and garbage fees, claimed 3·6 per cent. of the total, as compared with 2·8 per cent. in 1911.

Expenditure.

The following statement shows the expenditure during 1912 in comparison with the previous year :—

Particulars.	1911.		1912.	
	Expenditure.	Per cent.	Expenditure.	Per cent.
General Fund—	£		£	
Rates and interest abandoned ...	3,377	0·4	5,033	0·5
Administrative expenses	128,126	15·4	83,721	8·9
Public works	647,220	77·8	773,479	82·9
Health administration	5,724	0·7	7,199	0·8
Public services	15,410	1·9	15,809	1·7
Shire property	7,657	0·9	10,419	1·1
Miscellaneous	3,743	0·4	3,397	0·4
Special and local funds	20,949	2·5	34,268	3·7
Total Expenditure ... £	832,206	100·0	933,325	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 £83,721, or 8·9 per cent. of the total expenditure. This may be considered high, especially in connection with the expenditure on works and services, and suggests the possibility of too many shires. Of the administrative expenses, £32,761 were on salaries, £13,068 on advertising, stationery, printing, &c., £4,829 on valuation fees, and £15,777 on presidents' allowances and councillors' travelling expenses. The expenditure on works accounted for 82·9 per cent. of the total, and was more than double the grants received from Government. The principal expenditure was £654,092 on roads, streets, culverts, &c., of which £337,308 were on maintenance, repairs, and renewals, £314,022 on construction, and £2,762 on sundries. On other public works—bridges, punts, ferries, wharfs, &c.—£45,041 were spent on maintenance and repairs, and £25,964 on construction.

Balance-sheet.

The financial position of the shires on 31st December, 1912, was strong, as there was an excess of assets of £377,926. The combined balance-sheet of the shires on 31st December, 1912, appears as follows:—

Liabilities.		Assets.	
General Fund—	£		£
Temporary Loans	17,212	Outstanding Rates...	31,814
Due to Trust Fund	56	Stores and Materials	10,740
Sundry Creditors	45,121	Bank Balance and Cash	149,378
Due on Contracts	829	Sundry Debtors	6,435
Other	176	Land and Buildings	66,636
		Plant and Property	150,663
Total, General Fund ...	£63,394	Furniture, &c.	14,823
Special or Local Funds	14,100	Other	930
Total, all Funds... ...	77,494	Total, General Fund ...	£431,419
Excess of Assets	377,926	Special or Local Funds	24,001
Total	£455,420	Total	£455,420

It will be observed that a very large proportion of the assets of the General Fund—£149,378, or about 34 per cent.—consists of cash in bank or in hand. Probably a large part of this amount represented endowments recently received from the Government. 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 £2,373,556, equal to £1 7s. 8d. per head of the population residing in the taxable districts. This sum includes £1,145,152, rates collected by municipalities; £524,548, rates collected by shires; and £703,856, 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	1,041,362	103,790	1,145,152	1 0 10
Shires	515,788	8,760	524,548	0 17 0
Metropolitan water and sewerage charges	637,711	.....	637,711	0 16 5
Hunter District water and sewerage charges.	66,145	.....	66,145	0 14 5
Total ... ... £	2,261,006	112,550	2,373,556	1 7 8

Boards and Trusts.

In addition to the ordinary form of municipal local government, there are various boards and trusts with local jurisdiction. The control of the water supply and sewerage of the Metropolitan and Hunter districts is placed under separate boards. The Metropolitan and the Country Towns Water Supply and Sewerage Acts, the Fire Brigades Act, the Sydney Harbour Trust Act, and the Metropolitan Traffic Act, were all passed with the object of extending the principle of local government, and boards have been established to carry out the provisions of some of these Acts.

The majority of the Boards dealing with local affairs have jurisdiction within the metropolitan area, and work mainly in connection with the local municipalities, although possessing powers independent of those bodies. In 1900 the Metropolitan Traffic Act was passed, which gives the complete control of street traffic, and the licensing of public vehicles, drivers, and conductors, to the Inspector-General of Police, and the Motor Traffic Act of 1909 places the supervision of motor vehicles under the same authority.

The Metropolitan Board of Water Supply and Sewerage was established in 1887, and the Hunter District Board in 1892, and a reference to their transactions will be found in subsequent pages.

The Sydney Harbour Trust was established in the year 1900, and a description of its functions will be found in the chapter of this Year Book dealing with "Shipping."

Board of Fire Commissioners.

The Fire Brigades Act, 1909, which came into operation on 1st January, 1910, repealed the Act of 1902. At the commencement of the Act 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 as notified in the *Government Gazette;* they may be extended to other districts by proclamation. The provisions of the Act were extended during the year 1910 to part of one additional shire, and at the beginning of 1911 to one country municipality and areas in two shires; and during 1911 three municipalities and the area in one shire were withdrawn, while in 1912 five new areas were constituted, and one withdrawn, the total districts existing at the close of 1912 being 81.

The administration of the Act is placed in the hands of a Board of Fire Commissioners, consisting of five members. The councils of the metropolitan municipalities, the councils of the country municipalities and shires, the insurance companies, and the volunteer fire brigades each elect one member; and the president is appointed by the Governor. The Board may group together any municipalities or shires, and constitute them a fire district, and must estimate each year the amount to be expended in each district. The three parties—municipalities and shires, the insurance companies, and the Government—each contribute one-third of this amount to the Board. Where a fire district contains more than one municipality or shire, the amount of contribution is apportioned according to the average annual value in the case of the City of Sydney, and to the assessed annual value under the Local Government Act of 1906 in any other municipality or shire. Where the Act applies to the whole of a municipality or shire, the contribution must be paid out of the City Fund of Sydney, and out of the general fund of any other municipality or of a shire. Where the Act applies to part only of a municipality or of a shire, the council must raise the required amount by a local rate in such part.

The estimates adopted by the Board for the year 1913 amounted to £76,758 for the Sydney Fire District and £34,887 for other districts—a total of £111,645; the contributions levied upon the municipalities and shires, the insurance companies, and the Government therefore amounted to £37,215 respectively.

The calls attended during 1912 numbered 1,931, of which 722 were in the Sydney district. Particulars are shown below:—

Calls.	Sydney District.	Country Districts.	Total.
False alarms	163	16	179
Chimney alarms	37	27	64
Fires—Slight	950	528	1,478
,, Serious	22	4	26
,, Total destruction... ...	37	147	184
Total	1,209	722	1,931

The following table shows the Revenue Account and Balance-sheet for the year ended 31st December, 1912:—

REVENUE ACCOUNT, 1912.

Revenue.	£	Expenditure.	£
Balance from 1911	13,778	Administration	4,818
Subsidy from Government ...	30,288	Salaries—Permanent	51,773
Subsidy from Municipalities and Shires	30,288	Salaries—Volunteer	9,206
		Buildings, repairs and alterations	1,633
Subsidy from Fire Insurance Companies	30,288	Plant, stores, and clothing ...	4,543
		Electrical work, telephones, fire alarms, &c.	569
Other sources	4,218	Horses, fodder, harness, &c. ...	4,477
		Lighting and fuel	1,722
		Miscellaneous	11,712
		Balance	18,407
Total	£108,860	Total	£108,860

BALANCE-SHEET, 1912.

Liabilities.	£	Assets.	£
Fund Account	31,945	Lands and buildings	11,356
Sinking Fund	5,115	Plant, stocks on hand, &c. ...	44,758
Revenue Account	18,407	Sundry debtors	64
Other	2,721	Bank balance and cash	2,010
Total	£58,188	Total	£58,188

GOVERNMENT EXPENDITURE ON LOCAL WORKS.

Excluding the expenditure on works of national importance, the Government has expended no less than £45,615,000 on works of purely local character. It was not to be expected that the division of the State into local government districts would be followed by an entire stoppage of expenditure on works of local interest by the Central Government, but the larger portion of the works previously undertaken by the Government are left to the local authorities, who, having to provide the revenue, should see that it is laid out to the best advantage. The expenditure by the Government on account of works which may be classed as local, during the last ten years, is given below:—

Year ended 30th June.	Total Expenditure.	Per head.	Year ended 30th June.	Total Expenditure.	Per head.
	£	s. d.		£	s. d.
1903	1,349,100	19 2	1908	837,000	10 6
1904	768,400	10 9	1909	896,000	11 2
1905	641,300	8 9	1910	816,000	9 11
1906	655,400	8 9	1911	907,000	11 1
1907	887,000	11 7	1912	1,091,600	12 10

The amounts given above are approximate, and include the expenditure from loans, consolidated revenue, and from Public Works Fund, but the endowments to municipalities and shires have not been taken into account. The expenditure on the Burrinjuck Reservoir and

Northern Murrumbidgee Irrigation Scheme has also been excluded. The large decline from 1903 to 1906 is due chiefly to the smaller borrowing policy of the Government, while the increase during the later years is caused by the operation of the Water and Drainage Act and a considerable expansion of tramway construction, harbours and rivers, water supply and sewerage, &c.

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, 1913, fifty-two municipal councils had availed themselves of the privileges offered as regards the former 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, 1913, of the water-works completed and handed over by the Government, with the amounts expended, and the sums payable annually for the period of 100 years:—

Municipality.	Amount of Debt (as gazetted).	Amount Payable Annually.	Municipality.	Amount of Debt (as gazetted).	Amount Payable Annually.
	£	£		£	£
Albury	41,000	1,483	Junee	42,000	1,519
Armidale	40,718	1,474	Katoomba	20,730	884
Ballina	17,652	664	Kiama	7,073	256
Balranald	6,000	217	Lismore	18,526	716
Bathurst	55,734	2,019	Lithgow	35,732	1,441
Berry	4,380	159	Mittagong	11,996	524
Blayney	10,771	389	Moama	7,601	275
Bourke	13,436	486	Moree	12,940	509
Bowral	872	61	Moss Vale	13,000	470
Casino	12,246	456	Mudgee	19,947	767
Cobar	26,911	999	Murwillumbah ..	518	22
Condobolin	8,059	297	Nowra	13,259	483
Cooma	17,964	766	Nyngan	10,219	369
Coonamble	10,214	387	Orange	40,323	1,507
Cootamundra	22,916	876	Parkes	22,000	796
Corowa	11,549	506	Picton	17,194	630
Cowra	15,647	669	Singleton	22,977	930
Deniliquin	18,668	682	Tumut	10,238	370
Dubbo	22,980	843	Wagga Wagga ..	41,588	1,518
Forbes	29,021	1,257	Warren	5,819	256
Goulburn	56,571	2,056	Wellington	18,433	706
Grenfell	11,378	486	Wentworth	4,090	145
Gunnedah	14,881	634	Wilcannia	8,381	303
Hay	17,075	624			
Hillgrove	4,090	170			
Inverell	6,538	245	Total .. £	900,455	34,351

At Forbes, Hay, and Wilcannia, the works were constructed by the municipal authorities, and the expenditure shown in the table is not the actual cost of the works, but the Government valuation.

The combined financial statements—revenue account and balance-sheet—of the municipalities which maintain waterworks are shown below. The revenue account was as follows for 1912 :—

Expenditure.	£	Income.	£
Management	12,562	Rates levied...	50,216
Working and maintenance ...	20,632	Meter rents	275
Repairs and renewals	3,491	Water sales	22,362
Interest payable to Government...	29,887	Garden charges, &c.	5,682
Other...	4,132		
Total...	£70,704	Total...	£78,535

Of the expenditure, management charges accounted for 17·8 per cent., working and maintenance for 29·2 per cent., repairs and renewals 4·9 per cent., interest payable to Government 42·3 per cent., and miscellaneous items 5·8 per cent.

Rates contributed 64·0 per cent. to the income, meter rents 0·2 per cent., water sales 28·5 per cent., and garden charges, &c., 7·3 per cent.

The combined balance-sheet, on 31st December, 1912, was as follows:—

Liabilities.	£	Assets.	£
Amount for which liable to Government	862,743	Waterworks—plant, buildings, &c.	881,461
Interest due to Government and unpaid	32,637	Outstanding rates...	12,820
Sundry creditors	16,382	Bank balances and cash in hand	21,378
		Stores and materials	3,095
		Sundry debtors	21,216
		Fixed deposits (including interest)	5,305
Total	£911,762	Total	£945,275

The total amount advanced by the Government was £878,969, of which £16,226 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 £33,513.

Sewerage Works.

Only eleven municipal councils have taken advantage of the Act providing for the construction of sewerage works in country towns, and the capital debt and annual repayments on 30th June, 1913, were as follows:—

Municipality.	Amount of original Debt.	Amount payable Annually.	Municipality.	Amount of original Debt.	Amount payable Annually.
	£	£		£	£
Ballina	327	20	Lismore	28,368	1,067
Blayney	429	26	Narrandera ...	10,064	464
Casino	3,023	129	Parramatta ...	66,011	2,387
Coraki	1,214	69	Tamworth	1,217	56
Forbes	1,624	59			
Hay	22,368	809	Total... £	169,393	6,479
Katoomba	34,748	1,393			

Other sewerage systems are in existence in several places, but they have been constructed altogether apart from the Act, and with few exceptions, the operations have been on a minor scale. The general system of sewerage in the metropolitan area has superseded the isolated systems of some of the suburban districts. The Metropolitan Board has assumed control of the sewerage constructed by the City of Sydney and by various suburban municipalities.

In addition to the assistance granted for the works mentioned above, the Government has advanced a sum of £291,121 for water trusts, swamp drainage, bores, garbage destructors, and other services, which is payable by annual instalments, and the amount outstanding on 30th June, 1913, was £264,588.

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 1912 was as follows:—

Expenditure.		Income.	
	£		£
Management	1,410	Rates levied	8,343
Working and maintenance... ...	2,565	Other	1,667
Repairs and renewals	233		
Interest payable to Government ...	4,425		
Other	557		
Total	£9,190	Total	£10,010

Practically the only source of income is from rates. Of the expenditure, management charges took up 15·3 per cent., working and maintenance 27·9 per cent., repairs and renewals 2·5 per cent., interest payable to Government 48·2 per cent., and other expenses 6·1 per cent. The combined balance-sheet was as follows:—

Liabilities.		Assets.	
	£		£
Amount of Capital Debt for which liable to Government	144,189	Works	145,276
Interest due to Government and unpaid	4,881	Outstanding rates	1,078
Sundry creditors	1,012	Bank balance and cash	2,209
		Stores and materials	154
		Sundry debtors	1,331
Total...	£150,082	Total...	£150,048

Two of the municipalities showed an excess of liabilities amounting to £2,523, the others showing an excess of assets of £2,489. On the whole there was an excess of liabilities amounting to £34.

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 fifteen municipalities.

The operations of the municipalities with gas-works in 1912 will be seen from the subjoined statements showing the trading fund revenue account and balance-sheet, and the loan fund balance-sheet. The first statement is the trading fund revenue account, and particulars for 1911 are appended for purposes of comparison :—

Expenditure.	1911.	1912.	Income.	1911.	1912.
	£	£		£	£
Manufacture	29,942	33,836	Private lighting ...	43,183	46,523
Distribution	2,931	3,806	Public lighting ...	9,258	10,177
Management expenses	5,323	6,345	Sale residual products	5,806	6,157
Public lighting ...	2,149	2,747	Other	252	395
Other	4,564	2,156			
Total ... £	44,909	48,890	Total ... £	58,499	63,252

On the total operations for 1912 there was a gross profit of £14,362, none of the municipalities showing a loss. The manufacture of gas accounted for 71·2 per cent. of the expenditure, as compared with 66·7 per cent. in 1911, and private lighting for 73·6 per cent. of the income as against 73·8 per cent. in 1911.

The gross profit was reduced in the Net Revenue Appropriation Account, which is not shown here, by charges amounting to £15,140. Transfers to the loan fund included £5,194 for payment of interest, and £3,433 for other purposes; and the net profit for 1912 was £672, which, added to the credit balance of £12,771 brought forward from 1911, leaves £13,443 to be carried forward.

The next statement is the balance-sheet of the trading account for 1912 :—

Liabilities.		Assets.	
	£		£
Due to other Funds	2,667	Materials, stock, &c.	38,298
Sundry creditors	20,210	Sundry debtors, including amounts due from other funds	13,368
Reserves	3,172	Fixed deposits	1,573
		Bank balance and cash	6,649
Total	£26,049	Total	£59,888

The total excess of assets amounted to £33,839, to which each municipality, with three exceptions, contributed.

The following balance-sheet of the loan fund really shows the value of the assets of this trading concern for 1912 :—

Liabilities.	£	Assets.	£
Loans current	151,667	Land and buildings	31,992
Interest accrued not paid... ...	2,071	Plant, &c.	150,312
		Due from other funds	14,431
		Investments	5,916
		Other	1,957
Total	£153,678	Total	£204,608

Against a total loan indebtedness of £153,678, the municipalities had assets valued at £204,608, the excess of assets being substantial. Of the assets, land, buildings, plant, &c., made up 89·1 per cent.; amounts due from other funds, chiefly trading accounts, 7·1 per cent.; and investments, &c., 3·8 per cent.

Electricity Works.

The following municipalities have erected electric lighting plants :— Sydney, Redfern, Broken Hill, Moss Vale, Newcastle, Penrith, Tamworth, Young, and Inverell. These works were erected under special Acts, as electric lighting may not be undertaken without the authority of a special Act.

Dealing with the electricity works in a similar manner to the gas-works, the following accounts show the results of the operations in 1912 in respect of municipalities operating under the Local Government Act, Sydney electric lighting undertaking having already been dealt with.

The trading revenue account for 1911 and 1912 shows :—

Expenditure.	1911.	1912.	Income.	1911.	1912.
	£	£		£	£
Generation	13,322	18,611	Private lighting ...	9,478	18,787
Distribution	1,957	3,476	Public lighting ...	9,569	12,414
Management, &c. ...	1,930	3,377	Power supply	5,373	6,580
Special charges	1,046	390	Rents of meters, &c. ...	297	862
Reserves (renewals and repairs)	.....	401	Other	469	936
Public lighting	2,090	2,276			
Other	56	446			
Total ... £	20,401	28,977	Total ... £	25,186	39,579

Generation of electricity is the largest item of expenditure, accounting for 64·2 per cent. of the whole. Distribution of the current cost 12·9 per cent., and management 11·7 per cent. The gross profit of this concern to the municipalities combined was £10,602; but the transactions of the Net Revenue Appropriation Account (not included here) show a debit balance of £4,309 to be carried forward to the next account. This unsatisfactory result was brought about by the burdening of the debit side of the account with amounts transferred to the loan fund.

The balance-sheet of the trading fund for 1912 is as follows:—

Liabilities.		Assets.	
	£		£
Due to other funds...	9,527	Materials, stock, &c.	5,644
Sundry creditors...	2,974	Sundry debtors	8,925
		Bank balance and cash... ...	4,044
		Other	143
Total ... ... £	12,501	Total ... ... £	18,756

The last statement is the balance-sheet of the loan fund for 1912:—

Liabilities.		Assets.	
	£		£
Loans current	123,273	Land and buildings	9,552
Interest accrued not paid ...	13,332	Steam plant	32,837
Other	3,554	Dynamos...	5,322
		Cables, poles, &c.	40,793
		Due from other funds	18,918
		Bank balance and cash ...	6,816
		Other	9,972
Total ... ... £	140,159	Total ... ... £	124,210

The liabilities exceed the assets by £15,949, and the assets do not even cover the outstanding loans and accrued interest. It should be noted, however, that as the trading fund is able to meet interest charges, provide for redemption and sinking fund, and still show a surplus, there is no reason to doubt the solvency of the undertakings.

Polls of Ratepayers.

Municipalities and Shires, 1906 *to* 1913.

Under the Local Government Act, 1906, before certain proposals can be brought into effect a poll of ratepayers must be taken in the Municipality or Shire concerned. For example, polls of ratepayers must be held, both in Shires and in Municipalities, on proposals to unite two or more adjoining areas, or to unite part or parts of an area to the whole or part or parts of another area, as to levying special or local rates, and as to whether such rates shall be levied on the unimproved capital value or the improved capital value. On a favourable vote of ratepayers the council of either a Shire or Municipality may be granted the right to exercise special powers on a number of minor subjects, such as the regulation of buildings to be erected; the suppression of public nuisances, and the establishment, maintenance, &c., of bands, gardens, libraries, amusement places, &c.

A municipality may submit to its ratepayers questions as to whether a loan shall be raised, and, if so, whether the resultant loan rate shall be levied on a particular part of the municipality, and whether on the unimproved capital value or improved capital value.

Shire ratepayers are allowed to decide at the poll whether a portion of the Shire shall be proclaimed an "urban area."

The ratepayers' roll contains the names of owners or lessees of ratable property, of managers, &c., of public companies which own ratable property, and of lessees of ratable Crown land.

From the date of the institution of Local Government in 1906 up to the end of June, 1913, twenty-one polls of ratepayers were held by twenty shires, and seventy-one municipalities were responsible for the conduct of 100 such polls.

An analysis of the voting discloses the fact that in the majority of instances the ratepayers evidenced a lack of interest in matters of importance. Of 106,729 person eligible to vote at municipal polls, only 23,622, or 22·1 per cent., voted. Shire ratepayers displayed more interest in the questions submitted to them, and of 6,714 qualified to vote, 2,210, or 32·9 per cent., voted.

In one municipality, Richmond, a poll was advertised to be held to decide whether an additional area should be added to the municipality. No person voted, either for or against the proposal. The Narrandera Municipal Council sought an expression of opinion from the 430 ratepayers as to whether a sum of £1,400 should be borrowed to construct a water main. Only six persons voted, all being in favour of the loan. At Murrumburrah and Mosman polls regarding loans resulted in 3·3 per cent. and 4·9 per cent. of ratepayers voting respectively.

On the other hand, 86·8 per cent. of the Narrabri West ratepayers voted on a proposal to amalgamate with the adjacent shire, while a poll held at Jamberoo respecting the town boundaries drew 85·3 per cent. of voters to the poll.

In the Shires the highest proportional vote was given at Lockhart, 60·9 per cent. on the subject of a local rate, and the lowest was in Ku-ring-gai, where only 15·7 per cent. of ratepayers expressed an opinion as to whether the number of councillors should be increased from 6 to 9.

Of the 100 polls held in municipalities fifty-one were on questions respecting loans, and twenty-one on rating, the remaining twenty-eight being on various subjects, such as street lighting, water supply, erection of town halls, gasworks, &c., and others dealing with municipal boundaries, abolition of wards, and amalgamation with shires or other municipalities.

In shires, polls were held as follows:—Rating 7, Proclamation of townships as "Urban areas" 5, Amalgamation with municipalities 3, the remaining 6 being on miscellaneous subjects.

In most instances the voting was very light on financial matters such as loans and rating, while the greatest interest was manifested in matters dealing with amalgamation, alteration of boundaries, and formation of urban areas, these being perhaps more easily understood and creative of more local interest than questions of finance.

The following statement shows the number of polls held in municipalities and in shires up to June, 1913, distinguished according to the proportion of ratepayers who voted:—

Percentage of Ratepayers who Voted.	Number of cases where Poll fell within specified limits of proportion of Ratepayers voting.		
	Municipalities.	Shires.	Total.
Under 10 per cent.... ...	11	...	11
10 to 25 ,, ...	53	2	55
26 to 33⅓ ,, ...	14	6	20
33⅓ to 50 ,, ...	18	10	28
51 to 75 ,, ...	2	3	5
Over 75 ,, ...	2	...	2
Total	100	21	121

From this it is apparent that in eighty-six (71 per cent.) of the cases not more than one-third of the ratepayers voted, and in 114 (94 per cent.) of the cases not more than one-half of the ratepayers voted.

Consideration of these results suggests the advisableness of an amendment of the Act to provide for a minimum poll of, say, one-third of ratepayers being secured before the question at issue shall be decided.

The statement below shows the municipalities and shires in which polls have been held, the date of the poll, and particulars respecting the number who voted and the result of the poll:—

Polls of Ratepayers.

Municipality.	Year.	Reason for holding Poll.	Ratepayers on Roll.	Number who Voted.				Proportion of Ratepayers who Voted.
				For.	Against.	Informal.	Total.	
								per cent.
Alexandria	1912	Loan	37	16	1	...	17	45·9
Ashfield	1913	,,	3,679	234	153	36	423	11·5
Balmain	1910	Abolition of Wards	3,552	108	185	3	296	8·3
Drummoyne	1910	Loan	1,612	204	178	13	395	24·5
Enfield	1910	Sec. 109	1,041	32	130	21	183	17·6
Glebe	1912	Loan	1,450	134	68	...	202	13·9
Hunter's Hill	1912	Local Rate	33	...	13	...	13	39·4
Kogarah	1910	Loan	315	39	51	6	96	30·5
,,	1912	,,	350	78	45	...	123	35·1
,,	1913	Local Rate	366	20	52	3	75	20·5
Lane Cove	1912	,,	501	69	53	4	126	25·1
Manly	1910	Loan	2,000	144	8	3	155	7·7
Marrickville	1913	,,	5,298	880	196	28	1,104	20·8
,,	1913	,,	5,298	758	316	30	1,104	20·8
,,	1913	,,	5,298	441	629	34	1,104	20·8
Mosman	1908	U.C.V. or I.C.V. Rate	2,173	388*	84†	7	479	22·0
,,	1913	Loan	2,486	78	38	7	123	4·9
Mascot	1911	Changing name	1,362	281	229	28	538	39·5
,,	1913	Loan	1,363	159	228	11	398	29·2
Newtown	1913	Town Hall erection	2,464	79	422	11	512	20·8
Randwick	1908	Rating	2,889	248	322	4	574	19·9
,,	1910	Abolition of Wards	2,889	181	264	8	453	15·7
Redfern	1910	Loan	1,491	63	187	9	259	18·5
Ryde	1912	,,	1,624	144	123	...	267	16·4
Waterloo	1909	Local Rate	47	2	10	...	12	25·5
Waverley	1908	Rate	2,945	413	333	3	749	25·4
,,	1911	Town Hall	3,467	804	343	49	1,196	34·5
Woollahra	1908	U.C.V. or I.C.V. Rate	1,796	273*	171†	2	446	24·8
,,	1912	Loan (Local)	128	35	7	1	43	33·6
Albury	1912	Loan	823	154	45	1	200	24·3
Armidale	1908	Saleyards Erection	680	70	35	4	109	16·0
Barraba	1910	Loan	205	34	11	...	45	21·9
Blayney	1908	U.C.V. or I.C.V. Rate	425	30*	17†	4	51	12·0
Bowral	1912	Water	395	45	44	...	89	22·5
Broken Hill	1907	Water Trust	4,371	1,123	279	21	1 423	32·5
,,	1908	Subsidy to Bands	4,371	1,049	1,033	128	2,210	50·6
,,	1908	Street-lighting Rate	4,371	345	350	25	720	16·5
Casino	1909	Loan	694	38	82	16	136	19·6
,,	1909	,,	694	40	77	19	136	19·6
,,	1909	Gas	694	71	37	28	136	19·6
,,	1912	Local Rate	20	3	6	...	9	45·0
Cooma	1910	Sec. 109 (X)	322	77	11	3	91	28·3
,,	1911	Loan	322	45	10	...	55	17·1
Corowa	1909	,,	405	49	15	...	64	15·8
,,	1912	,,	241	41	7	...	48	19·9
Glen Innes	1909	,,	583	66	7	...	72	12·3
Goulburn	1912	,,	1,358	204	55	...	259	19·0
Grafton	1910	,,	614	72	180	11	263	42·8
Greta	1912	,,	271	11	5	4	20	7·4
,,	1913	,,	273	21	...	1	22	8·1
Hay	1910	U.C.V. or I.C.V. Rate	438	66*	27†	4	97	22·1
Inverell	1908	Loan	633	189	86	11	286	45·2
,,	1910	,,	682	25	24	2	51	7·5
Jamberoo	1908	Boundaries	43	15	22	...	37	85·3
Katoomba	1909	Loan	1,160	113	81	14	208	17·9
Kempsey	1912	Elec. Works	580	103	56	2	161	27·8
Lismore	1913	,,	827	38	60	4	102	12·3
Lithgow	1909	Loan	970	47	113	8	168	17·3
,,	1912	,,	975	52	20	2	74	7·6
,,	1913	Rate of Loan	975	61	16	...	77	7·9
Maclean	1912	Rate	201	25	55	...	80	39·9
Maitland, East	1909	U.C.V. or I.C.V. Rate	632	88*	84†	...	172	27·2
,,	1910	,, ,, ,,	632	120*	80†	3	203	32·1
,,	1912	Rate	684	31	101	...	132	19·3
,,	1912	Loan	684	56	58	2	116	16·9
Maitland, West	1913	,,	1,022	84	209	3	296	28·9

* Indicates the number who voted in favour of the Unimproved Capital Value being the basis of rating.
† Indicates the number in favour of the rate being levied on the Improved Capital Value.

Polls of Ratepayers—*continued.*

Municipality.	Year.	Reason for holding Poll.	Ratepayers on Roll.	Number who Voted.				Proportion of Ratepayers who Voted.
				For.	Against.	Informal.	Total.	
								per cent.
Moss Vale	1910	Loan	270	48	19	...	67	24·8
,,	1912	,,	273	40	16	...	56	20·5
Mudgee	1911	Sec. 109	650	148	113	2	263	40·5
Murrumburrah	1913	Loan	336	8	2	1	11	3·3
Murrurundi	1913	Rating	213	58	25	1	84	39·4
Muswellbrook	1911	Water Supply	271	71	59	...	130	47·9
Narrabri	1912	Loan	308	25	33	1	59	19·1
,, West	1912	Amalgamation with Shire.	53	43	3	...	46	86·8
Narrandera	1911	Loan	430	6	...	...	6	1·4
Newcastle	1908	,,	1,140	118	305	26	449	39·4
,,	1912	,,	1,227	144	98	...	242	19·8
Adamstown	1909	Lighting Streets	494	36	98	6	140	28·8
,,	1911	,,	494	87	63	...	150	30·4
Lambton, New	1913	Local Street lighting	361	18	56	...	74	20·5
Merewether	1911	,,	635	219	111	5	335	52·7
Stockton	1911	Band	511	7	53	2	62	12·1
Wickham	1908	Rating	1,387	39	222	1	262	18·9
Orange	1911	Amalgamation	448	90	10	...	100	22·3
,, East	1911	,,	393	113	66	...	179	45·5
Parkes	1909	Loan	381	61	27	3	91	23·8
Peak Hill	1909	,,	258	24	12	1	37	14·3
,,	1910	,,	258	9	24	1	34	13·2
Port Macquarie	1911	,,	210	18	12	...	30	14·3
Richmond	1906	To add to Municipality	179	...	...	...	Nil	...
Scone	1912	To alter Boundaries	197	65	7	...	72	36·5
Singleton	1909	U.C.V. or I.C.V. Rate	523	54*	14†	...	68	13·0
,,	1909	,, ,,	523	52*	16†	...	68	13·0
Smithfield and Fairfield.	1911	Local Lighting	176	26	28	...	54	30·7
Tamworth	1910	Loan	849	54	38	...	92	10·8
,,	1911	Local Loan	97	11	22	...	33	34·0
Temora	1912	Loan	481	87	14	8	109	22·7
Tenterfield	1909	Amalgamation	461	69	65	...	134	29·1
Wollongong	1909	U.C.V. or I.C.V. Rate	795	131*	17†	1	149	18·7
Wyalong	1912	Town Hall	313	39	13	1	53	16·9
			106,729	...	...	...	23,622	22·1

* Indicates the number who voted in favour of the Unimproved Capital Value being the basis of rating.
† Indicates the number in favour of the rate being levied on the Improved Capital Value.

Shires.

Shire.	Year.	Reason for holding Poll.	Ratepayers on Roll.	Number who Voted.				Proportion of Ratepayers who Voted.
				For.	Against.	Informal.	Total.	
								per cent.
Adjungbilly	1910	*Re* Urban Area	37	16	9	2	27	72·9
Bannockburn	1913	,,	75	6	25	...	31	41·3
Blaxland	1909	Rate, Local	346	68	37	...	105	30·3
,,	1912	Municipality at Newnes	108	4	27	4	35	32·4
Bolwarra	1909	*Re* Urban Area	124	10	40	...	50	40·3
Burrangong	1912	,,	84	12	38	1	51	60·7
Byron	1912	Local Rate	143	6	42	...	48	33·6
,,	1913	,,	77	2	29	...	31	40·2
Crookwell	1910	Powers of Municipality	152	31	37	5	73	48·0
Gadara	1911	Loan	280	45	88	...	133	47·5
Gilgandra	1908	,,	117	7	13	...	20	17·1
,,	1909	Rate	117	12	35	1	48	41·0
Ku-ring-gai	1911	Increase Number of Councillors.	1,925	267	35	...	302	15·7
Kyogle	1910	Garbage Service	120	7	27	...	34	28·3
Lake Macquarie	1912	Local Rate	340	39	65	1	105	30·9
Lockhart	1908	,,	82	21	28	1	50	60·9
Namoi	1912	Amalgamation of West Narrabri.	1,029	61	355	60	476	46·3
Nepean	1911	Amalgamation of Mulgoa.	694	89	123	6	218	31·4
Wakool	1911	Rate	75	24	11	1	36	48·0
Woodburn	1911	Urban Area	50	3	17	...	20	40·0
Wooloomba	1912	Amalgamation of Scone	730	216	70	31	317	42·9
			6,714	...	...	...	2,210	32·9

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, 1913, this had increased to 1,864 miles, inclusive of trunk mains. There were 70¼ miles of sewers in 1889, lengthened to 890½ miles of sewers, and 52¼ miles of stormwater drains in 1913.

The Board consists of seven members, three of whom are appointed by the Government, two by the City Council, and two by the suburban and country municipalities within the county of Cumberland supplied with water. The Board is subject to the general control of the Minister for Works—a provision considered necessary, as the Government advances the whole of the money for the construction of the works, the amount so advanced constituting part of the public debt of the State.

Metropolitan Water Supply.

As early as 1850 authority was given by the Legislative Council to the City Corporation for the construction of water and sewerage works, and a system of water supply from the Lachlan, Bunnerong, and Botany Swamps was adopted. By this scheme the waters of the streams draining these swamps were intercepted at a point near the shore of Botany Bay. A pumping plant was erected there, and the water raised to Crown-street reservoir, 141 feet above the level of the sea, thence into Paddington reservoir, at an elevation of 214 feet above sea-level; and to Woollahra, 282 feet above sea-level. The cost of these works was £1,719,565. This system has since been superseded by the Upper Nepean system, the management of which was transferred in 1888 to the Metropolitan Board of Water Supply and Sewerage.

The sources of supply under the existing system are the waters of the Nepean, Cataract, and Cordeaux Rivers, draining an area of 354 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 63¼ 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, *vid* Prospect, is 66½ miles.

The dimensions of the Prospect and Cataract dams are shown in the following statement:—

Dam.	Height above Sea-level.	Area.	Capacity.	Length.	Width at top.	Height.
	ft.	acres.	gallons.	ft.	ft.	ft.
Prospect	195	1,266⅓	11,029,180,000*	7,300	30	85⅔
Cataract	950	2,400	21,411,000,000	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-feet wrought-iron and steel pipes to the Potts' Hill Balance Reservoir, which has a capacity of 100,000,000 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 2¼ 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 7,196·16 million gallons were raised at the various stations during the twelve months ended June 1912, representing 64·9 per cent. of the total quantity discharged from Prospect, and the pumping expenses amounted in the aggregate to £27,035. At Crown-street is situated the main pumping station, where are erected three sets of compound high-duty pumping engines. A covered reservoir, of a capacity of 18,500,000 gallons, has been constructed in the Centennial Park, at a height of 245 feet, for the purpose of ensuring a larger bulk of water within the city limits. At Ashfield there is a 100,000-gallon wrought-iron tank at an elevation of 223 feet above high water. This tank is supplied from the Centennial Park Reservoir by a main, and provides for the higher part of the district. Vaucluse Reservoir is connected with Waverley, and supplies a district of about 1,200 acres around Vaucluse 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, *viâ* Ryde, where there is a reservoir containing 2,116,000 gallons, from which the water is pumped into a million-gallon tank at Ryde village, 234 feet above sea-level, and, by a continuation of the same main, into a pair of tanks, of a joint capacity of 3,000,000 gallons, at Chatswood, at an elevation of 370 feet above high-water mark. Water can be lifted direct from Ryde to Wahroonga and Pymble, or may be re-pumped from Chatswood, where a

small pumping station has been erected. There are two tanks of 1,000,000 and 40,000 gallons capacity at Wahroonga, 7½ miles distant, at an elevation of 717 feet above sea-level, whence the water flows as far as Hornsby, 13 miles to the north-west of Port Jackson. 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, with a capacity of 72,800 gallons, and a reservoir with a capacity of 1,925,000 gallons 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 are two tanks 270 feet above sea-level, one of which has a capacity of 1,000,000 gallons, and the other of 22,800 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.
1904	109,191	546,000	18,690,000	6,840,549,000	171	34·2
1905	112,343	561,700	21,712,800	7,925,184,000	193	38·7
1906	116,202	581,000	22,393,300	8,173,555,000	193	38·5
1907	120,782	603,900	22,912,600	8,263,104,000	189	37·9
1908	124,083	620,400	24,500,400	8,967,135,000	197	39·5
1909	128,508	642,500	25,911,400	9,457,660,000	201	40·3
1910	133,788	668,900	26,903,000	9,819,652,000	201	40·2
1911	139,237	696,200	29,007,000	10,587,434,000	208	41·7
1912	146,236	731,200	30,522,000	11,141,700,000	208	41·7
1913	155,213	776,100	32,784,000	11,966,193,000	211	42·2

The rate levied for water is 6d. in the £ in the Metropolitan district, while 11d. is the charge for 1,000 gallons by meter. The revenue from the Water Service Branch during the year ended 30th June, 1913, exclusive of the country towns, was £361,187, and the expenditure, including interest on capital, £327,713. The net revenue showed a return of 3·96 per cent. on the capital debt of £5,907,125.

The following statement gives the transactions 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.	£
1904	4,289,012	222,827	57,800	144,927	3 85	20,100
1905	4,434,991	251,503	66,015	153,304	4·18	32,184
1906	4,674,341	270,263	64,487	164,216	4·40	41,560
1907	4,902,463	275,591	67.593	176,170	4·24	31,828
1908	5,009,012	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

The charges were reduced in 1907 and in 1908; but the returns still show a profit after paying working expenses and interest.

In addition to the city and suburbs, various country towns are supplied with water by the Metropolitan Board, and their accounts are kept distinct from those of the metropolis. The works at Richmond and Wollongong were constructed under the Country Towns Water Supply and Sewerage Act, and subsequently handed over to the Board; also the districts of Campbelltown, Camden, and Narellan, and Liverpool, receive the water by gravitation from the upper canal at Prospect. The following table shows particulars of the capital, receipts, and expenditure in the country districts during the year ended 30th June, 1913:—

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	8,491	936	307	210	182	699
Liverpool	20,806	1,464	752	408	468	1,628
Camden and Narellan ...	10,835	631	392	170	270	832
Richmond	15,810	874	571	924	...	1,495
*Wollongong	76,954	4,327	2,782	1,165	...	3,947
Total	132,896	8,232	4,804	2,877	920	8,601

*Includes extension to towns north of Wollongong.

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 Muni-

cipal Council of Newcastle, two by the adjacent municipalities, and one by the municipalities of East and West Maitland and Morpeth. The following districts are within the area of the Board's jurisdiction :—

Municipalities—

Adamstown, Carrington, Greta, Hamilton, Lambton and New Lambton, East and West Maitland, Merewether, Morpeth, Newcastle City, Plattsburg, Wallsend, Waratah, Wickham.

Shires—

In Bolwarra Shire: Bolwarra, Lorn.

In Cessnock Shire: Aberdare, Abermain, Abermain Government Township, Cessnock, South Cessnock, Bellbird, Hebburn, Heddon Greta, Homeville, Kurri Kurri, Mayfield, Neath, Oakhampton, Rutherford, Telarah, Weston.

In Lake Macquarie Shire: Argenton, Boolaroo, Spier's Point, West Wallsend.

In Tarro Shire: Hexham and Ash Island, Minmi, Morpeth Road, Pelaw Main, Stanford Merthyr.

The Government Railways and Tramways properties, nine in number, are also served by the Board.

The supply of water for the district is pumped from the Hunter River, about a mile and a half up stream from the Belmore Bridge, West Maitland. The pumping engines are situated above flood-level, on a hill about 44 chains from the river. At the pumping station there is a settling tank of 1,390,500 gallons; also six filter-beds, 10,000 superficial feet each, 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 East Maitland and one at Buttai. The former is connected by a 10-inch cast-iron main about $4\frac{1}{5}$ miles in length, with a capacity of 463,430 gallons, and supplies East Maitland, West Maitland, Morpeth, and neighbouring places. Buttai Reservoir is fed by two rising mains, one riveted steel pipe, $20\frac{3}{4}$ inches diameter, and a 15-inch cast-iron main, $5\frac{3}{5}$ 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 repumping, receive water for distribution.

The length of the mains when the Board was established was 105 miles, which has been increased to $354\frac{1}{4}$ miles as at 30th June, 1913.

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.	Houses Supplied.	Estimated Population served.	Supply.		Average Daily Supply.	
			Daily average.	Total.	Per House.	Per Head.
	No.	No.	gallons.	gallons.	gallons.	gallons.
1904	11,100	55,500	1,093,000	399,954,000	98	19·7
1905	12,167	60,800	1,266,000	461,936,000	104	20·8
1906	12,968	64,840	1,478,500	539,655,000	114	22·8
1907	13,569	67,845	1,479,400	539,964,500	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	739,589,000	114	22·7
1913	18,405	92,025	2,366,300	863,692,000	129	25·7

The funds necessary for the maintenance and management of the water supply and sewerage services, as well as the sum required to pay interest on the capital debt, are obtained by rates levied on the properties situated in the districts benefited by the systems. The assessments of the Municipal Councils are generally accepted by the Boards as the values on which to strike their special rates. In cases of heavy consumption of water, a charge is made according to the quantity used; but fixed charges are imposed for the use of water in certain trades and callings, for gardens, and for animals.

Year ended 30th June.	Estimated Capital Debt.	Revenue.	Expenditure (including Interest).	Return on Estimated Capital Debt.
	£	£	£	per cent.
1904	515,565	31,360	32,361	3·30
1905	533,270	34,486	33,714	3·64
1906	544,798	40,801	34,801	4·60
1907	398,618	41,822	38,886	6·25
1908	454,199	43,609	39,664	4·37
1909	474,485	43,395	41,184	3·90
1910	485,967	46,767	43,126	4·17
1911	495,747	45,711	45,420	3·55
1912	510,897	47,788	47,920	3·53
1913	531,969	53,673	49,042	4·42

The capital debt has been adjusted as from 30th June, 1907, in accordance with the report of the Committee appointed to investigate the accounts of the Board. The reduction was effected by writing off the difference between the revenue and expenditure of the Board, allowing for depreciation of the works to 30th June, 1907.

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 70¼ 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. A portion of the area has been cultivated, and fair crops have been raised. 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 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.	£
1904	3,824,530	156,274	43,320	129,653	2·95	(−)16,699
1905	3,774,264	213,937	54,314	130,519	4·23	+ 29,104
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

· The sewerage rate from the city of Sydney and the eastern suburbs up to 1903 was 7d. in the £, the northern and the western suburbs being rated at 1s., but in 1904 a uniform rate of 11d. was imposed. In 1907 it was reduced to 10d. in the £, and in 1908 to 9½d., the latter being the rate ruling in 1913.

The length of sewers in the metropolis, and the population and houses served during the last ten years are shown below:—

Year ended 30th June.	Houses connected.	Estimated Population served.	Length of Sewers.	Length of Storm-water Drains.	Length of Ventilating Shafts.	Length of Sewers Ventilated.
	No.	No.	miles.	miles.	feet.	miles.
1904	82,215	410,000	610·73	38·67	252,977	614
1905	85,958	430,000	630·42	44·71	256,535	622
1906	88,881	444,000	656·84	44·82	264,255	636
1907	91,940	457,000	684·38	46·15	281,885	654
1908	94,735	470,000	724·37	46·94	286,000	684
1909	98,009	490,000	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	110,988	555,000	863·29	49·69	382,654	809
1913	114,690	573,000	890·53	52·24	401,344	853

Newcastle and Suburbs Sewerage Works.

The sewerage scheme for Newcastle and suburbs, now in course of construction by the Public Works Department, will deal with the sewerage partly by gravitation and partly by pumping. The outfall is situated 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, 1913, 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	53,763	.....	.....	.....	.....	.....
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	2·46	−2,334
1913	301,809	12,472	7,722	9,244	1·79	−4,494

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 1913. As the following table shows, the length of sewers under the control of the Board on 30th June, 1913, was 51 miles, and 3,457 houses were connected :—

Year ended 30th June.	Houses 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

* Length not available.

Parks and Recreation Reserves.

It has always been the policy of the State to provide the residents of incorporated towns with parks and reserves for public recreation, and the city of Sydney contains within its boundaries a large extent of parks, squares, and public gardens. The most important are—Moore Park, where about 380 acres are available for public recreation, including the Association Cricket Ground, the Royal Agricultural Society's Ground, and the Zoological Gardens; the Botanic Gardens and Garden Palace Grounds, 60 acres, with the adjoining Domain, 90 acres, ideally situated on the shores of the Harbour, and Hyde Park, 40 acres, in the centre of the city. The total area covered is 679 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 3,826 acres of public parks and reserves, or about 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, a large area of land, situated about 16 miles south to the metropolis, and accessible by railway, was dedicated to the people in December, 1879. This estate, now known as the National Park, with the additions subsequently made in 1880 and 1883, contains a total area of 33,719 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 35,300 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 for public purposes.

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.

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. While yeoman service was done by the road pioneers prior to 1857, the modern system of road-making may be said to have begun in that year, consequent on the creation of the Roads Department, which was formed to take control of the roads. 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.

In many places the subdivision of both Crown and private lands for closer settlement has given an impetus to cultivation and dairying; and especially in the latter case is it necessary to provide for constant traffic, which, from the nature of the industry, requires good roads in all seasons.

With the expansion of closer settlement an important departure has been made from the policy of opening roads after settlement has taken place. Under the old system, settlers took up the land, which, in course of time, became more valuable by reason of the improved approaches provided at the expense of the State. But many large areas have been made available during recent years, and it has been decided that roads of access shall be made fit for traffic, as far as possible, before the blocks are offered for selection. The Department has the opportunity of selecting routes on the most suitable gradients and locations, thus avoiding the expense of subsequent deviations, while the Crown will be recouped to some extent for the outlay incurred by the additional value received for the land. The most notable of these cases is the system of roads in the Dorrigo subdivision.

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 of 1906 to the shires and municipal councils.

The roads leading to and within the areas of Crown lands which it is proposed to make available for closer settlement are constructed by the Government before transfer to the shires, also certain roads required mainly for tourists in districts not likely to produce revenue in rates to the 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.

A Main Roads Bill was submitted to Parliament in 1912, which provided for the appointment of a Main Roads Board, the amendment of the existing method of classifying shires for endowment, and the distribution amongst shires and municipalities of an additional endowment of £250,000 in respect to main roads. The Bill failed to pass into law; but as a sum of £125,000 had been voted for main road purposes on the Estimates of Parliament for the half-year ended 30th June, 1913, the Local Government Engineer was appointed to inspect the main roads and submit recommendations for the distribution of this amount.

Length of Roads.

The length of roads under Government control on 30th June, 1906, was 48,311 miles, while 195 miles were under the care of road trusts, and 1,338 miles within the municipal areas were subsidised by the Government, making a total of 49,844 miles. There were also about 8,000 miles of roads and streets belonging to the municipal councils. In addition to the roads mentioned, there were about 1,500 miles of mountain passes, many of which presented most formidable difficulties, and their construction reflects great credit upon the engineering skill of the Department, which for so many years designed and supervised the construction and maintenance of the roads and bridges of the State. Since 1906, statistics of roads, streets, bridges, and public ferries are collected triennially, the date of the latest returns being 1912. In that year the length of roads in the State was, approximately, 94,834 miles, of which 38 miles were controlled by the

Government, 9,762 miles by the municipalities, 79,089 miles by the shires, and 5,945 miles were in the unincorporated areas of the Western Division. The nature of these roads may be seen in the following statement :—

Divisions.	Metalled, Graveiled, 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.

Pyrmont Bridge.

The total length of the Pyrmont structure and its approaches is 1,758 feet. The bridge itself spans a distance of 1,209 feet, of which the swing part represents 223 feet, the remainder being covered by the twelve side spans, each of 82 feet 4 inches. The swing span, weighing 800 tons, is carried on a pivot which has its foundation on a caisson of 42 feet diameter, sunk to a depth of 62 feet. Its floor space is 12,000 superficial feet, as against 10,600 on the Newcastle-on-Tyne bridge, and the roadway is 4 feet wider than that on the Tower Bridge of London. The swing is operated by two 50-h.p. electrical motors supplied with power from the Ultimo Power-house, and can be opened or closed in forty-four seconds, at a cost of five farthings for the double operation, which includes the opening and closing of the gates as well as the swing. The total cost of this bridge was £145,000.

Glebe Island Bridge.

The Glebe Island Bridge is over 2,300 feet long, and consists of a steel swing bridge in the centre of the bay, with a stone causeway approach to either shore. A steel over-bridge is provided on the Glebe side to permit of traffic thereunder to the area on the northern side of the bridge, which has been made by partly cutting down Glebe Island, and reclaiming with the debris a valuable deep-water frontage of 2,800 feet, with 13 acres of level land, which will soon be connected with the railway system of the State by a goods railway from Flemington to Belmore, and Wardell-road to Glebe Island and Darling Island. The main bridge is 353½ feet long between abutments, and possesses a steel swing span, 191 feet 2 inches long, affording two clear waterways, each of 60 feet, for shipping, as against one of 34 feet in the old swing. This increase in waterway permits of the passage of large oversea vessels, thus opening up the great possibilities

of the frontages to the south of the bridge. The two steel side spans are 81 feet 2 inches centres, affording 20 feet clear headway above high-water mark in lieu of the 12 feet available in the old bridge. The bridge is provided with a steel floor carrying a 40-foot wood-blocked carriageway and two 5-feet footpaths, which enormously improves the travelling facilities, and allows the easy movement of electric trams across the bridge. The swing span, though smaller than at Pyrmont, contains a floor space of 9,600 feet, which compares favourably with the swings in Clarence Bridge at Cardiff (7,640 feet), the Hawarden Bridge (8,470 feet), or the bridges over the Manchester Ship Canal (9,430); and is but little less than that provided on the swing in the well-known bridge at Newcastle-on-Tyne, which is understood to have a larger floor space than any other bridge in the United Kingdom. The total weight of the swing span of the Glebe Island Bridge is 650 tons, and it revolves on a cast-steel roller 37 feet in diameter, carrying steel-covered treads. The swing, as well as the gates cutting off the road traffic at either end of the swing span, are operated by electricity, and it is possible to open or close the swing in forty-four seconds. The cost of this bridge was £107,000.

Hawkesbury River Railway Bridge.

The bridges used for railway traffic only are not included in the table showing particulars of bridges, &c., but the following description of the Hawkesbury River Railway Bridge may be of interest.

This bridge, which might well rank as the most important in the State, is the largest of its kind in Australia, and, as regards its foundations, one of the most remarkable in the world. It crosses the Hawkesbury River at a distance of 36 miles from Sydney, and was the last link in the continuous all-rail connection between New South Wales and the States of South Australia, Victoria, and Queensland.

There are in the bridge seven spans of 416 feet from centre to centre of the piers, the length of the bridge between abutments being 2,900 feet. The caisson for each pier is rectangular in form, with rounded ends, 48 feet by 20 feet, splaying out 2 feet wider all round at the bottom. The depths in feet of the six caissons below high-water level to which they were sunk, range from 101 feet to 162 feet, the last being the deepest bridge foundation in the world.

The roadway was completed on 23rd April, 1889, and after being thoroughly tested was formally opened for railway traffic on 1st May, 1889.

Number of Bridges and Ferries.

On 1st January, 1907, the period of the inception of the Local Government Act, the bridges of 20 feet span and over, including those in course of construction, numbered about 3,575. Of these, 256 bridges, of an aggregate length of 101,416 feet, which by reason of their cost, size, and extra-local importance would constitute a strain on the resources of the local councils, were proclaimed as "national works," to be maintained by the Government.

Where local conditions and limited traffic have not favoured the erection of a bridge, a punt or ferry has been introduced. The most important ferries which are worked otherwise than by hand, have been proclaimed as national services. Prior to 1st December, 1907, it was the practice to charge a small fee for ferry transit; but on that date tolls were abolished, and public ferries are now free.

The latest particulars of the bridges, culverts, and ferries of the State are shown below:—

Classification.	Bridges over 20 feet span.		Culverts.		Ferries.
	Number.	Length.	Number.	Length.	Number.
		ft.		ft.	
National Works	274	*.....	.....	.....	14
Municipalities	774	41,185	4,083	136,116	13
Shires	3,435	202,735	32,394	285,989	99
Western Division (unincorporated)	117	20,225	88	845	3
Total	4,600	*.....	36,565	422,950	129

* Information not available.

Traffic Routes in Sydney and Suburbs.

A Royal Commission was appointed in 1908 with the object of investigating proposals for the improvement of the City of Sydney and its suburbs. An important section of the Report, issued in 1909, deals with the avenues of traffic.

Owing to lack of foresight in the early days the city streets were allowed to develop without definite design, and were constructed to accommodate horse traffic only, with the result that serious congestion exists on all the important thoroughfares. The principal defect of the city streets is the lack of main outlets for through traffic to the suburbs.

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, which has been prominently before the public for more than thirty years. 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.

Many proposals for bridges and subways of various designs have been submitted as methods of communication.

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 the matter was not proceeded with 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. The schemes recommended by the Commission were as follows:—

(1) A railway subway from Lavender Bay to Kirribilli Point and Fort Macquarie to Moore-street; estimated cost, £753,000.

(2) A tramway subway from Arthur-street, North Sydney, *viâ* Milson's Point and Dawes' Point, to loop at Barton-street, Circular Quay; estimated cost £460,000.

(3) A vehicular subway from Arthur-street, North Sydney, *viâ* Milson's Point and Dawes' Point to Pottinger-street; estimated cost £502,000.

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 1¼ miles, and a headway of 170 feet above water level is provided. The cost, including £100,000 for land compensation, was estimated at £2,750,000.

In the opinion of the Committee bridge connection has many advantages over connection by subways, the principal being:—

Suitability of Site.—The configuration of the land which rises rapidly on both sides of the harbour favours a bridge.

Grades and Distances.—The distance *viâ* bridge is three-quarters of a mile shorter, and the grades much easier, therefore the cost of haulage for rail and tramway and for roadway would be considerably less than by subways.

Ventilation, Noise, and Seepage.—With a bridge these questions do not arise, but artificial ventilation must be provided for subways, while the noise is great and seepage a constant source of expense.

Cost.—The estimated cost of subways to give the same facilities as the proposed bridge is £3,613,000 or £1,863,000 higher than the cost of the bridge.

Shipping.—The proposed bridge will be at a greater height above high water than any long span bridge yet constructed, and will not restrict the size of vessels trading to the port in future, as the masts may be made telescopic; but the subways as proposed would limit the size of vessels to a maximum draught of 39 feet.

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, &c. (other than those classed at 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, 1906 to the municipal and shire councils. The funds of both shires and municipalities may, however, be subsidised, and shires are entitled to receive annually a total sum of at least £150,000 from the State.

In addition to the endowment and grants, the Government is still responsible for the administration and expenditure on account of public works and services within the Western Division, and such other works in the Central and Eastern Divisions as have been proclaimed "National."

In view of the transference of the administration of roads and bridges, with the exception of those noted previously, from direct State to local government control, the following return will be of interest. It shows the Government expenditure on works of a local character, before and after the inauguration of a general system of local government. The figures have been obtained from the reports of the Department of Public Works :—

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

It may be stated that there is now an annual loss to the State Government revenue of over £325,000 by remission of the land tax in shire and municipal areas (exclusive of that of the City of Sydney), and other annual receipts.

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 1912.

	£
City of Sydney—	
Salaries—Road Maintenance	920
Works—Streets—	
Maintenance	33,693
Footpaths	12,911
Woodpaving	6,378
City Improvements	4,561
Gullies	1,383
Street-lighting	21,942
Street Watering and Sanding	8,062
Public Service—Traffic Regulation	3,750
Public Lighting—Electricity Works Fund	12,218
Total £	105,818
Municipalities (other than Sydney)—	
Maintenance, Repairs, and Renewals	213,500
Construction	81,144
Street and Gutter Clearing	37,119
Kerbing and Guttering	42,143
Footpaths and Gutter Bridges	44,528
Street-watering	10,424
Street-lighting	65,616
Other, including Tree-planting, &c.	5,053
Total £	499,527
Shires—	
Maintenance, Repairs, Renewals, &c.	337,308
Construction	314,022
Other Expenditure	2,762
Total £	654,092
Grand Total £	1,259,437

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 municipal returns of expenditure on account of bridges show that the annual expenditure for the Pyrmont Bridge, Sydney, was £3,650. In municipalities other than Sydney, an amount of £4,137 was spent; and in the shires the maintenance, repairs, renewals, &c., of bridges was £17,210; whilst £25,964 was spent on construction.

Winter—The Hotel Kosciusko N.S.W.

TOURIST ATTRACTIONS OF NEW SOUTH WALES.

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 al parts of the State to the inquiring traveller and prospective citizen.

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

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

Tourist Districts.

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

The main tourist districts are:—

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

Sydney and its Surroundings.

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

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

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

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

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

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

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

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

been provided for surf bathers. Throughout the year the climate of Manly is equable, the heat in summer being tempered by the cool sea breezes, while the winter season is mild and enjoyable.

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

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

There are excellent fishing grounds in the harbour, where black and red bream, trevally, mackerel, &c., are found; and on the neighbouring ocean beaches fine fish are caught, such as schnapper, groper, red and black rock cod, jewfish, rainbow fish, parrot fish, and many others. Many schnapper fishing grounds, where good sport is obtainable, are convenient to the city. More distant grounds along the coast are visited by steamers, regular trips being made in the winter season.

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

The Illawarra and South Coast Districts.

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

The railway line from Sydney passes at the head of Botany Bay, where Kurnell, on the southern headland, is notable as the landing-place of Captain Cook, and crosses George's River at Como, a favourite fishing resort. At Sutherland passengers leave for Cronulla, a beautiful watering place possessing a fine surfing beach, and Port Hacking, a well-known fishing ground. The National Park, a pleasure ground of 33,700 acres, with a frontage of 7½ miles to the Pacific Ocean, extends from the shore of Port Hacking into the mountainous Illawarra district to the south. The reserve consists mostly of high tablelands intersected by deep glens and gorges; ferns, shrubs, and wild flowers abound along the banks of the numerous streams.

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

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

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

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

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

The Blue Mountains.

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

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

Immediately after crossing this river the line begins to ascend, and an extensive panoramic view may be obtained of the Emu Plains and the Nepean River. The first mountain station is Glenbrook; thence the line passes through a number of splendid health and holiday resorts, where the bracing atmosphere provides a beneficial change from the climate of the coastal plains. From Glenbrook to Lawson, 17 miles, the beauty spots consist mainly of rustic walks leading to ferny glades, gullies, and waterfalls, but further west the scenery assumes the more impressive grandeur of precipitous gorges and ravines, with numerous view-points overlooking the Jamieson, Megalong, and Kanimbla Valleys 2,000 feet below.

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

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

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

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

Jenolan and Other Limestone Caves.

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

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

Yarrangobilly Caves.

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

Wombeyan Caves.

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

Other Caves.

There are other limestone caves of less importance, such as the Abercrombie, about 30 miles from Newbridge, on the Main Western railway; the Wellington, near the town of the same name; the Belubula, within easy reach of the railway town of Carcoar; and the Bungonia, in the southern district. By reason of distance from the main tourist routes, these caves do not attract many tourists, and are visited mainly by residents of the surrounding districts. At Abercrombie there is a very fine natural arch; and near Bungonia there is a natural mineral spring, from which an excellent aerated table water is obtained.

Kosciusko and the Alpine Snowfields.

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

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

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

The Southern Highlands.

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

Picton, 53 miles from Sydney, is charmingly situated in a basin formed by the surrounding hills. One of the most interesting sights of this district is the famous "sunken" Burragorang Valley, hollowed out by the agency of running water to a depth of over 2,000 feet. The Wollondilly flows through the valley, which contains also the Yerranderie silver field; the road from Picton or Camden passes through wild, magnificent scenery. Thirlmere, Mittagong, Bowral, and Moss Vale are popular health resorts, noted for a pleasant climate. At Thirlmere and Mittagong there are chalybeate springs of great medicinal value. The surrounding country does not possess the ruggedness of the Blue Mountains, but there is some very beautiful

scenery. From these towns it is possible to reach the South Coast Railway at Kiama—by way of Robertson and Jamberoo, or at Albion Park and Dapto, by traversing the picturesque Macquarie Pass.

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

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

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

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

Hawkesbury River.

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

The Main Northern Railway crosses the Hawkesbury River about 36 miles from Sydney, and 7 miles from the mouth—Broken Bay. Probably the best way for the tourist to enjoy the scenic beauties of this stream is to hire a boat, take a light camping outfit, and spend a few days in exploration. By doing so he will be able to visit many places of interest out of the ordinary track, such as the numerous rock caverns, some of which are decorated with ancient aboriginal drawings. Then, the botanist will find on the ridges near the river, wild flowers of wonderful form and hue; for the sportsman there is plenty of game of various kinds. As regards fishing, the Hawkesbury and its tributaries offer exceptional facilities, and constitute one of the finest fishing-grounds within easy reach of the metropolis.

Some of the creeks running into the Hawkesbury are of great beauty, their bright blue waters and golden beaches standing out in marked contrast

to the dark green of the wooded hills surrounding them. Berowra Creek winds amongst rugged sandstone hills, and affords charming views of water and woodland; the picturesque Cowan Creek is a most popular resort; its gigantic basin between the hills affords shelter for yachts, skiffs, and house-boats; it is reached most easily from Berowra railway station, 28 miles from Sydney.

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

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

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

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

Northern Lakes.

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

Lake Macquarie, about 8 miles south of Newcastle, offers a variety of attractions to the tourist. The lake has 300 miles of shore line, and, unlike the Tuggerah, has a navigable entrance to the ocean. Its numerous bays and promontories, with their grassy banks, are strikingly beautiful, and excellent facilities for fishing, shooting, and sailing are available. The principal settlement on its shores is Toronto.

The tourist who wishes to visit Lake Macquarie leaves the train at Fassifern, 88 miles from Sydney, whence a tram runs to the lake shore. To the north of Newcastle a trip which is rapidly gaining popularity is the Great Lakes Tour along an extensive chain of lakes and rivers lying between the valleys of the Hunter and Hastings Rivers. The itinerary includes Port Stephens, with its branching waterways, the Karuah and Myall Rivers, the Broadwater, the Myall Lakes, Smith's Lake, Lake Wallis, and the Manning River. The Myall Lakes are a series of lagoons extending through rugged country for 30 miles along the course of the Myall River. The scenic charm of the district is enhanced by the diversions of excellent fishing and shooting, and the comfort of the tourist is assured by good accommodation and an efficient service of steamers and launches. The North Coast Railway has been opened to Taree, on the Manning River, and from this point its construction is rapidly progressing.

New England Highlands.

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

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

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

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

North Coast District.

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

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.

PUBLIC FINANCE.

System of Revenue and Expenditure Accounts.

The introduction of what is known as the "Cash basis" system of keeping the public accounts of New South Wales was effected in the year 1895, when the Audit Act Amendment Act of 1895 was passed, under which all appropriations from the Consolidated Revenue Account lapse at the close of the financial year to which they relate. From the 1st day of July, 1895, the cash receipts within the financial year have been considered as the actual income, and the cash payments during the same period the actual outlay. The balance of the Consolidated Revenue Account current on 1st July, 1902, was fixed by the Audit Act, 1902, which consolidated and amended the law relating to the collection and payment of public moneys, the audit of the Public Accounts, and purposes connected with the control and management of the Public Finances of the State.

Prior to the adoption of the cash basis system, the expenditure for the services of a year and the actual expenditure during that year could be shown only by two different methods of accounts. When a specific appropriation was made for any service, the expenditure incurred under such authorisation would be charged against the year for which the vote was taken, irrespective of the date when the payments were made; and, therefore, the public accounts for any year could not be closed until all appropriations were expended, or were written off. The consequence was that when the expenditure exceeded the income, there were frequent differences of opinion between the incoming and outgoing Treasurers as to the propriety of charging items, sometimes of large amount, to particular years, with the result that conflicting statements were made, to the confusion of the inexpert and to the detriment of the public credit.

Even under the present circumstances, some trouble may be experienced in comprehending a most carefully prepared statement of the finances of the State, as the term "expenditure" in the official statement does not possess always the same meaning, owing to the inclusion of advances, &c., which cannot be classed as "Expenditure proper."

During the years 1905-1913 the expenditure of the State was £125,675,922, while the actual revenue obtained was £124,811,595, the total excess of expenditure during the nine years being £864,327. The figures are exclusive of advances made and repaid; but for the last seven years the statements of expenditure include transfers in aid of the Public Works Fund, and during the years 1907-10 transfers in aid of Closer Settlement Fund:—

Year ended 30th June.	Revenue.	Expenditure.	Excess of Revenue over Expenditure.	Excess of Expenditure over Revenue
	£	£	£	£
1905	11,336,918	11,195,075	141,843	.....
1906	12,283,082	11,386,864	896,218	.....
1907	13,392,435	12,799,797	592,638	.....
1908	13,960,763	13,700,072	260,691	.....
1909	13,625,071	14,692,168	.....	1,067,097
1910	14,540,073	14,184,327	355,746	.....
1911	13,839,139	14,443,691	.....	604,552
1912	15,776,816	15,915,730	.....	138,914
1913	16,057,298	17,358,198	.....	1,300,900

General Banking Account.

The following table indicates each of the main accounts under which the Government conducts its financial business, the subsidiary accounts being included under one or other of the headings enumerated. The Audit Act provides that the Treasurer may agree with any bank or banks for the transaction of the general 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 Banking Account on 30th June, 1913, will be found in the following statement :—

Head of Account.	Ledger Balances on 30th June, 1913.		
	Invested in Securities.	Credit Cash Balances.	Total.
Special Deposits Account—	£	£	£
Commonwealth Government Fixed Deposit Account ..	.....	2,150,000	2,150,000
Government Savings Bank Deposits Account	.....	2,065,292	2,065,292
,, ,, Advances Deposit Account ..	.....	230,000	230,000
State Debt Commissioners' Trust Account	.....	117,788	117,788
Deposit Account..	.....	170,411	170,411
Fixed Deposits Account	.....	527,222	527,222
Other	34,037	528,617	562,654
Railways Loan Account	.....	2,079	2,079
Closer Settlement Account	.....	301,488	301,488
Public Works Account	.....	250,413	250,413
Special Accounts—Colonial Treasurer's Supreme Court Moneys	.....	310,700	310,700
Total .. .. £	34,037	6,744,010	6,778,047
Less Debit Balance— £			
Consolidated Revenue Account.. 1,167,017			
General Loan Account 2,087,685			
Loans Expenditure Suspense Account .. 668,745	.....	5,700,898	5,700,898
Railway Store Suspense Account 123,855			
London Remittance Account 1,653,596			
Total Credit Balance in Sydney.. .. £	34,037	1,043,112	1,077,149
Add—London Bank Account.. .. .. £	.....	1,653,596	1,653,596
Total .. .. £	34,037	2,696,708	2,730,745

The distribution of the cash balance on 30th June, 1913, 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, 1913—			
Special Deposits Account—Bank of New South Wales ..	3,056,928		
,, ,, ,, Commercial Banking Company of Sydney (Ltd.)	2,732,402		
		5,789,330	
Closer Settlement Account—Commercial Banking Company of Sydney (Ltd.) ..	.....	391,488	
Public Works Account—Bank of New South Wales ..	.....	250,413	
Special Accounts—Bank of New South Wales	.....	310,700	
Railways Loan Account—Bank of New South Wales ..	1,981		
,, ,, ,, Commercial Banking Company of Sydney (Ltd.)	98		
		2,079	
Total .. .. .. Cr.			6,744,010
Less Debit Balances—			
Consolidated Revenue Account—Bank of New South Wales	619,075		
,, ,, ,, Commercial Banking Company of Sydney (Ltd.)	574,352		
,, ,, ,, Cash in hands of Receiver *Cr.*	26,410		
		1,167,017	
General Loan Account—Bank of New South Wales ..	1,027,117		
,, ,, ,, Commercial Banking Company of Sydney (Ltd.)	1,071,967		
,, ,, ,, Cash in hands of Receiver.. *Cr.*	11,399	2,087,685	
Loans Expenditure Suspense Account—Bank of New South Wales	345,749		
,, ,, ,, ,, Commercial Banking Company of Sydney (Ltd.) ..	322,996		
		668,745	
Railway Store Suspense Account—Bank of New South Wales	61,855		
,, ,, ,, ,, Commercial Banking Company of Sydney (Ltd.)	62,000		
		123,855	
London Remittance Account—Bank of New South Wales..	901,140		
,, ,, ,, Commercial Banking Company of Sydney (Ltd.) ..	752,456		
		1,653,596	
Total .. .. .. Dr.			5,700,898
Total Cash in Sydney .. .. £	.....	.....	1,043,112
Total Cash in London .. . £	.....	.....	1,653,596
Total .. .. .. Cr. £	.....	.....	2,696,708

Prior to 1906 the Public Accounts included all the invested assets of the Government Savings Bank. Upon the passing of the Government Savings Bank Act, 1906, these assets were vested in the Commissioners appointed under that Act, and are no longer included in the statements relating to the Public Accounts.

Consolidated Revenue Fund.

Although the system of keeping accounts on a cash basis is properly in operation, it is still necessary, in estimating the financial position of the State, to consider the Old Deficiency Account and the New Account under the Audit Act Amendment Act, which form the Consolidated Revenue Account, as well as the Loans Account and the various Trust Accounts not forming part of the Consolidated Revenue Account. The Old Deficiency Account proper began in 1885; but it was only in 1897, when the last obligation under the old system of account-keeping was met, that the position of this account for each year could be accurately stated.

The following table shows the Accumulated Deficiency on the Consolidated Revenue Account for each of the years since 1901. 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 beginning of Year.	Cash Balance at end of Year.		Actual Accumulated Deficiency.
		Credit.	Overdraft.	
	£	£	£	£
1902	1,872,447	.....	236,781	2,714,407
1903	2,477,626	.....	484,356	2,711,982
1904	2,227,626	.....	524,064	2,501,690
1905	1,977,626	.....	336,891	2,064,517
1906	1,727,626	896,124	.....	918,392
1907	1,814,516	1,471,344	.....	90,288
1908	1,561,632	1,676,924	.....	*462,408
1909	1,214,516	637,678	.....	276,838
1910	914,516	989,707	.....	*330,370
1911	659,337	401,505	.....	13,011
1912	414,516	61,363	.....	53,153
1913	114,516	.....	1,167,017	1,167,017

* Accumulated Surplus.

The "Treasury Bills Deficiency Act, 1905," by which authority was given for the issue of Treasury Bills to liquidate the overdraft on the Consolidated Revenue, provides that, in the event of a surplus on the year's transactions of the Consolidated Revenue, the Treasurer shall pay to the State Debts Commissioners the sum of £50,000, with a view to extinguishing the liability of the Bills. This amount is in addition to that of £250,000 already made a charge on the revenue, for a similar purpose, by prior enactments.

Revenue and Expenditure.

The gross and net revenue proper, as well as the net expenditure since 1904, 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.
1904	11,453,745	205,417	11,248,328	7 17 10	11,319,888	7 18 11
1905	11,514,324	177,406	11,336,918	7 16 1	11,195,075	7 14 2
1906	12,471,473	188,391	12,283,082	8 5 6	11,386,864	7 13 5
1907	13,570,380	177,945	13,392,435	8 16 7	12,799,797	8 8 10
1908	14,195,357	234,594	13,960,763	8 19 9	13,700,072	8 16 5
1909	13,844,642	219,571	13,625,071	8 12 6	14,692,168	9 6 1
1910	14,689,973	149,900	14,540,073	9 0 11	14,184,327	8 16 6
1911	13,977,777	138,638	13,839,139	8 8 9	14,443,691	8 16 2
1912	15,920,758	143,942	15,776,816	9 6 4	15,915,730	9 7 11
1913	16,283,732	226,434	16,057,298	9 0 6	17,358,198	9 15 2

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.

The apparently large increase in expenditure during the last five years is due to the grants in aid and transfers from the Consolidated Revenue Fund to the Public Works Fund and the Closer Settlement Fund.

Heads of Revenue and Expenditure.

With a view of obtaining a proper conception of the sources from which the revenue is derived, and the objects upon which expenditure is made, the subjoined table has been prepared for the last four financial years.

In the table a separation has been effected between receipts and expenditure for purely Government purposes and for the business undertakings of the State. The figures are exclusive of advances made and repaid :—

	1910.	1911.	1912.	1913.
REVENUE.				
Governmental.	£	£	£	£
Revenue returned by Commonwealth	3,347,616	1,942,245	2,046,993	2,178,683
Taxation—				
Stamp Duties	872,922	625,811	1,104,490	599,190
Land Tax	9,066	7,438	6,479	5,738
Income Tax	219,977	269,142	644,571	662,625
Licenses	121,556	125,098	130,113	137,807
Total Taxation .. .. £	1,223,521	1,027,519	1,885,653	1,405,360
Land Revenue—				
Alienation	944,162	1,028,531	962,198	999,363
Occupation	640,638	633,916	625,143	646,725
Miscellaneous	145,540	176,470	178,118	189,860
Total .. .. £	1,729,740	1,838,917	1,765,459	1,835,948
Services rendered (other than Business Undertakings)	313,381	333,039	381,981	412,727
General Miscellaneous	358,550	318,971	553,000	495,331
Industrial Undertakings	.....	.....	20,281	32,885
Total Governmental .. .. .. £	6,972,808	5,460,691	6,653,367	6,360,934
Business Undertakings of the State.				
Receipts, Corporate Bodies—				
Railways and Tramways	6,664,236	7,412 127	8,067,597	8,544,376
Sydney Harbour Trust	337,454	374,280	412,410	452,244
Metropolitan Board of Water Supply and Sewerage	512,615	537,355	584,654	633,599
Hunter District Water Supply and Sewerage Board	52,960	54,686	58,788	66,145
Total Business Undertakings .. .. £	7,567,265	8,378,448	9,123,449	9,696,364
Grand Total .. .. £	14,540,073	13,839,139	15,776,816	16,057,298
EXPENDITURE.				
Governmental.				
Interest on Public Debt and on Trust Funds (excluding proportion chargeable to the four corporate bodies)	807,929	801,754	888,354	950,895
Old-age and Invalidity and Accident Pensions and Administration	140,228	49,570	.....	.....
Other Pensions and Retiring Allowances	191,896	191,623	200,552	190,066
Elections Act Expenses (Electoral Office included in other services of the State)	16,183	35,504	24,207	35,078
Parliamentary Allowances and Postage	31,337	30,102	33,232	43,175
Local Government—				
Endowments to Municipalities	7,763	8,872	6,996	6,591
Endowments to Shires	274,052	286,842	334,269	274,713
Administration, &c. (excluding salaries)	1,125	11,914	1,675	2,038
Agricultural, Pastoral, and Horticultural Societies	19,611	21,889	23,638	19,463
Hospitals and Charities	353,331	373,470	390,908	405,813
Lunacy (including Master-in-Lunacy)	164,990	177,486	187,163	238,156
Public Instruction (including Reformatories and Grants to Educational and Scientific Institutions)	1,145,038	1,206,942	1,395,114	1,490,205
Industrial Undertakings of the State	.....	.....	23,242	30,677
All other Services of the State	2,509,098	2,558,954	2,906,829	3,163,427
Total Governmental .. .. .. £	5,662,581	5,754,922	6,416,179	6,850,297
Business Undertakings of the State.				
Working Expenses—				
Railways and Tramways	4,292,070	4,808,991	5,428,085	6,390,420
Sydney Harbour Trust	108,192	119,531	114,681	124,970
Metropolitan Board of Water Supply and Sewerage	162,268	181,270	194,153	217,964
Hunter District Water Supply and Sewerage Board	17,902	20,951	24,509	26,889
£	4,580,432	5,130,743	5,761,431	6,760,243
Interest on Capital—				
Railways and Tramways	1,839,584	1,950,951	2,073,139	2,129,995
Sydney Harbour Trust	178,020	187,722	199,459	207,869
Metropolitan Board of Water Supply and Sewerage	336,364	351,513	365,103	372,714
Hunter District Water Supply and Sewerage Board	20,135	22,338	24,769	26,780
£	2,374,103	2,512,524	2,662,470	2,737,358
Total Business Undertakings .. .. £	6,954,535	7,643,267	8,423,901	9,497,601
Sinking Funds Instalments—Total	421,034	409,349	436,921	450,602
Public Works Fund—Transfers in Aid	911,177	636,153	638,729	559,698
Closer Settlement Fund—Transfers in Aid	235,000	.....	.....	.....
Grand Total .. .. £	14,184,327	14,443,691	15,915,750	17,358,198

The headings of Revenue and Expenditure shown on the previous page for the years ended 30th June, 1910 to 1913, are repeated here, and against each is given the rate per head of population:—

Heading.	Per Inhabitant.			
	1910.	1911.	1912.	1913.
REVENUE.				
Governmental.				
Revenue returned by Commonwealth	£ s. d. 2 1 11	£ s. d. 1 3 9	£ s. d. 1 4 1	£ s. d. 1 4 6
Taxation—				
Stamp Duties	0 10 11	0 7 8	0 13 0	0 6 9
Land Tax	0 0 1	0 0 1	0 0 1	0 0 1
Income Tax	0 2 9	0 3 3	0 7 7	0 7 6
Licenses	0 1 7	0 1 6	0 1 6	0 1 6
Total Taxation	0 15 4	0 12 6	1 2 2	0 15 10
Land Revenue—				
Alienation	0 11 10	0 12 6	0 11 5	0 11 2
Occupation	0 8 0	0 7 9	0 7 5	0 7 4
Miscellaneous	0 1 10	0 2 2	0 2 1	0 2 1
Total	1 1 8	1 2 5	1 0 11	1 0 7
Services rendered (other than Business Undertakings)	0 3 11	0 4 1	0 4 6	0 4 7
General Miscellaneous	0 4 6	0 3 11	0 6 5	0 5 8
Industrial Undertakings	.....	.....	0 0 3	0 0 4
Total Governmental	4 7 4	3 6 8	3 18 4	3 11 6
Business Undertakings of the State.				
Receipts, Corporate Bodies—				
Railways and Tramways	4 3 6	4 10 6	4 15 0	4 16 1
Sydney Harbour Trust	0 4 3	0 4 7	0 4 10	0 5 1
Metropolitan Board of Water Supply and Sewerage	0 6 5	0 6 6	0 6 11	0 7 1
Hunter District Water Supply and Sewerage Board	0 0 8	0 0 8	0 0 8	0 0 9
Total Business Undertakings	4 14 10	5 2 3	5 7 5	5 9 0
Grand Total	9 2 2	8 8 11	9 5 9	9 9 6
EXPENDITURE.				
Governmental.				
Interest on Public Debt and on Trust Funds (excluding proportion chargeable to the four corporate bodies)	0 10 2	0 9 10	0 10 6	0 10 8
Old-age and Invalidity and Accident Pensions and Administration	0 1 9	0 0 7	.....	.....
Other Pensions and Retiring Allowances	0 2 5	0 2 4	0 2 5	0 2 2
Elections Act Expenses (including Electoral Office)	0 0 2	0 0 5	0 0 8	0 0 4
Parliamentary Allowances and Postage	0 0 5	0 0 5	0 0 5	0 0 5
Local Government—				
Endowments to Municipalities	0 0 1	0 0 1	0 0 1	0 0 1
Endowments to Shires	0 3 5	0 3 6	0 3 11	0 3 1
Administration, &c.	.....	0 0 2	.....	.....
Agricultural, Pastoral, and Horticultural Societies	0 0 3	0 0 3	0 0 4	0 0 5
Hospitals and Charities	0 4 5	0 4 6	0 4 7	0 4 7
Lunacy (including Master-in-Lunacy)	0 2 1	0 2 2	0 2 2	0 2 8
Public Instruction (including Reformatories and Grants to Educational and Scientific Institutions)	0 14 4	0 14 9	0 16 5	0 16 9
Industrial Undertakings of the State	.....	.....	0 0 3	0 0 4
All other Services of the State	1 11 5	1 11 3	1 14 2	1 15 7
Total Governmental	3 10 11	3 10 3	3 15 6	3 17 1
Business Undertakings of the State.				
Working Expenses—				
Railways and Tramways	2 13 9	2 18 9	3 3 11	3 11 10
Sydney Harbour Trust	0 1 4	0 1 5	0 1 4	0 1
Metropolitan Board of Water Supply and Sewerage	0 2 0	0 2 3	0 2 4	0 2 5
Hunter District Water Supply and Sewerage Board	0 0 3	0 0 3	0 0 3	0 0 4
	2 17 4	3 2 8	3 7 10	3 16 0
Interest on Capital—				
Railways and Tramways	1 3 0	1 3 9	1 4 5	1 3 11
Sydney Harbour Trust	0 2 3	0 2 4	0 2 4	0 2 4
Metropolitan Board of Water Supply and Sewerage	0 4 3	0 4 4	0 4 5	0 4 2
Hunter District Water Supply and Sewerage Board	0 0 3	0 0 3	0 0 3	0 0 4
	1 9 9	1 10 8	1 11 5	1 10 9
Total Business Undertakings	4 7 1	4 13 4	4 19 3	5 6 9
Sinking Fund Instalments—Total	0 5 4	0 5 0	0 5 2	0 5 1
Public Works Fund—Transfers in Aid	0 11 5	0 7 9	0 7 6	0 6 3
Closer Settlement Fund—Transfers in Aid	0 2 11	....	.....	.....
Grand Total	8 17 8	8 16 4	9 7 5	9 15 2

Closer Settlement Fund.

The Closer Settlement Fund was established under Act No. 9 of 1906. Most of the contributions have been received from the surplus moneys of the Consolidated Revenue Fund, and from Loans, and the balance at credit of the Assurance Fund Real Property Act, which was transferred at the inauguration of the Fund.

The subjoined statement shows the receipts and ependiture for the financial year ended 30th June, 1913:—

Receipts—	£	£	Expenditure—	£	£
Grant in aid from Revenue	Nil.		Purchase of Estates and contingent expenses...	33,226	
Transfer from Loans ...	300,000		Interest on Loans ...	22,115	
Assurance Fees—Real Property Act ...	11,101		Under Real Property Act	266	
Repayment by Settlers	92,014				55,607
		403,115			
Balance brought forward from previous year		43,981	Balance, 30th June, 1913 ...		391,489
		£447,096			£447,096

Public Works Account.

The Public Works Account, which was opened in the year 1906, under the authority of the same statute which provided for the Closer Settlement Fund, is entitled to two-thirds of the net proceeds of sales of Crown lands less 20 per cent. as credited to the Consolidated Revenue Fund, and the proceeds of land sales under the Public Instruction Act. Grants in aid are also obtainable yearly from the revenue, and the transactions for the year ended 30th June, 1913, are shown below:—

Receipts.	Amount.	Disbursements.	Amount.
	£		£
Repayments to credit of Votes ..	34,581	Railways and Tramways..	6,903
Proportion of proceeds from sales of Crown lands	359,698	Public Buildings and other Services ..	155,236
Grants in aid	490,065	Fire Brigades	22,756
Sales of land, Public Instruction Act..	868	Hospitals, &c.	61,921
		Water Supply and Sewerage	20,425
		Public Instruction	117,332
		Roads and Bridges	29,556
		Resumption of Foreshores	66,411
		Grants to Shires and Municipalities ..	6,863
		Agriculture	21,221
		Forestry	3,601
		Harbours and Rivers—Dredge Service	63,572
		Sydney Harbour Trust	29,610
		Total Works, Services, &c.	605,412
	885,212	Advances repaid	290,065
Balance from previous year	260,678	Balance carried forward to 1914 ..	250,413
Total .. .. .. £	1,145,890		1,145,890

TAXATION.

License Fees, Land and Income Taxes, and Stamp Duties represent the various forms of taxation in the State. The subjoined statement shows the gross revenue derived from each source during the period 1910-1913:—

Head of Revenue.	1910.	1911.	1912.	1913.
Licenses:—				
To retail fermented and spirituous liquors	£ 85,494	£ 85,355	£ 85,839	£ 89,136
Other	36,621	40,382	44,680	49,113
Total, Licenses ...	122,115	125,737	130,519	138,249
Income Tax	226,928	276,305	650,923	761,796
Land Tax	9,865	7,553	6,489	5,889
Total, Land and Income Tax ...	236,793	283,858	657,412	767,685
Stamp Duties:—				
Impressed and adhesive stamps ...	174,846	224,067	232,941	222,928
Probate, Settlement, and Companies' Death Duties	650,202	357,750	849,405	365,250
Bank-note composition	33,960	38,982	16,563	3,743
Other	17,238	12,682	15,816	21,247
Total, Stamp Duties ...	876,186	633,481	1,114,725	613,168
Gross Revenue from Taxation ...	1,235,094	1,043,076	1,902,656	1,519,102
Refunds	11,573	15,557	17,003	113,742
Net Revenue from Taxation	1,223,521	1,027,519	1,885,653	1,405,360

The control of Customs and Excise having passed to the Commonwealth Government on 1st January, 1901, the foregoing statement does not include any figures relating to the taxation thereunder. In a publication of this character, however, it is desirable that the actual amount to which the people of the State are subjected by way of taxation, whether direct or indirect, should be clearly set forth. In the following statement is shown in detail the net revenue derivable from each source of taxation for the ten years ended 30th June, 1913, after deducting refunds, but not allowing for cost of collection:—

Year ended 30th June.	Indirect Taxation.		Direct Taxation.					Total Taxation.
	Customs.	Excise.	Licenses.	Income Tax.	Land Tax. State.	Land Tax. Commonwealth.	Stamp Duties.	
	£	£	£	£	£	£	£	£
1904	2,604,048	625,738	122,137	193,240	322,246	.....	462,570	4,329,979
1905	2,390,735	642,882	122,606	195,252	323,267	.....	473,283	4,148,025
1906	2,563,552	670,370	121,387	266,233	329,998	.....	580,158	4,531,698
1907	2,845,786	727,527	118,819	283,422	345,497	.....	633,567	4,954,618
1908	3,672,072	842,590	118,120	215,283	178,889	... ..	565,242	5,592,196
1909	3,465,950	797,756	117,383	202,369	80,794	.....	506,703	5,170,955
1910	3,789,467	706,035	121,556	219,977	9,066	.....	872,922	5,719,023
1911	*3,895,700	*917,400	125,098	269,142	7,438	*758,000	625,841	6,598,619
1912	*4,488,100	*980,200	130,113	644,571	6,479	*733,900	1,104,490	8,087,853
1913	*4,906,400	*937,500	137,807	662,625	5,738	*707,100	599,190	7,956,360

* Estimated.

The Commonwealth Government has not since 1910 recorded the Customs and Excise collections in each State separately. The figures relating thereto in the last three years have been estimated on the assumption that the average collections in the whole Commonwealth also applied in New South Wales.

There was a noticeable decrease in the revenue derived from Income, Land, and Stamp Duty Taxation between the years 1907 and 1909. This was due to amending legislation under Acts Nos. 7 and 8 of 1907, so far as Income Tax and Stamp Duties are concerned, whereby, from the 1st January, 1908, any income won by personal exertion, up to £1,000 a year, was exempt from direct taxation, but owing to new legislation, imposing a tax on incomes exceeding £300 per annum, the income tax shows a large increase in 1912. 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, and as several large estates were entered for probate, the revenue from this source was increased from 1909 to 1912.

The decline in revenue from the State land tax is attributable to the operation of the Taxation Amending Acts of 1905 and 1906, and the Sydney Corporation (Amendment) Act of 1908, which provide for the allotment to Shires and Municipalities of land taxation collected within their area. These taxation Amending Acts are a necessary corollary to the Local Government Extension Act of 1906. As shown in succeeding pages, a land tax was levied by the Commonwealth Government as from 1st July, 1910.

Taxation per Inhabitant.

The previous figures would be incomplete without corresponding information respecting the taxation per head of population, which is set forth hereunder, but in this statement the taxation shown under Customs and Excise, after the year 1910, represents the per capita rate for the whole Commonwealth, it being assumed that the same average prevails in the State of New South Wales. The Commonwealth Government, since the year named, has not recorded the collections from Customs and Excise for individual States:—

Year ended 30th June.	Indirect Taxation.			Direct Taxation.				Total Taxation.
	Customs.	Excise.	Licenses.	Income Tax.	Land Tax.		Stamp Duties.	
					State.	Commonwealth.		
	£ s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	£ s. d.
1904	1 16 7	8 9	1 9	2 8	4 6	.....	6 6	3 0 9
1905	1 12 11	8 10	1 8	2 8	4 5	.....	6 6	2 17 0
1906	1 14 7	9 0	1 7	3 7	4 5	.....	7 10	3 1 0
1907	1 17 7	9 6	1 6	3 9	4 7	.....	8 4	3 5 3
1908	2 7 4	10 10	1 6	2 9	2 4	.....	7 3	3 12 0
1909	2 3 11	10 1	1 6	2 7	1 0	.....	6 5	3 5 6
1910	2 7 2	8 9	1 6	2 9	0 1	.....	10 11	3 11 2
1911	*2 7 7	*11 2	1 6	3 3	0 1	*9 3	7 8	4 0 6
1912	*2 12 10	*11 7	1 6	7 7	0 1	*8 8	13 1	4 15 4
1913	*2 15 2	*10 6	1 6	7 6	0 1	*8 0	6 9	4 9 6

* Estimated.

Revenue from Licenses.

The amount received from licenses during the year ended 30th June, 1913, under the different heads, was as follows:—

Licenses.	Amount.	Licenses.	Amount.
	£		£
To retail fermented and spirituous liquors, including wine, cider, and perry	89,136	Motor Traffic Act	10,693
Wholesale spirit dealers	5,541	Gaming and Betting Act ...	1,216
Billiard and bagatelle	8,844	Theatres and Public Halls Act	2,803
Auctioneers	7,233	All other	1,125
			136,249
Hawkers, pedlars, and pawnbrokers	3,063	Refunds	442
Explosives Act	1,347		
Sale of tobacco, cigars, and cigarettes	3,646	Total Net Receipts ...£	137,807
Metropolitan Traffic Act	3,602		

Land occupation licenses and licenses in regard to mining occupation, also licenses issued under the Fisheries and Forestry Acts, are not included in the table.

Land and Income Taxation.

The land tax of the State is levied on the unimproved value at the rate of 1d. in the £. A sum of £240 is allowed by way of exemption, and where the unimproved value is in excess of that sum a reduction equal to the exemption is made; but where several blocks of land within the State are held by a person or company, only one amount of £240 may be deducted from the aggregate unimproved value. In cases where land is mortgaged, the mortgagor is permitted to deduct from the tax payable a sum equal to the income tax paid by the mortgagee on the interest derived from the mortgage of the whole property, including improvements. The lands exempt from taxation comprise Crown lands not subject to the right of purchase, or held under special or conditional lease, or as homestead selections; other lands vested in the Crown; lands vested in the Railway Commissioners; lands belonging to or vested in local authorities; public roads, reserves, parks, cemeteries, and commons; lands occupied as public pounds, or used exclusively for or in connection with public hospitals, benevolent institutions, and other public charities, churches, and chapels; the University and its affiliated colleges, the Sydney Grammar School, and mechanics' institutes and schools of art; and lands dedicated to and vested in trustees and used for zoological, agricultural, pastoral, or horticultural show purposes, or for other public or scientific purposes.

Under the Local Government Act, 1906, when the Council of a shire or municipality makes and levies a general rate, not less than 1d. in the £ on the unimproved value of land within its area, land tax ceases to

be collected by the State therein. A similar provision was extended to the City of Sydney under the operation of the Sydney Corporation (Amendment) Act, 1908.

Land tax is, therefore, now levied only on the unincorporated portion of the Western Division of the State.

Up to the year 1911, when new legislation was passed, an income tax of 6d. in the £ was imposed upon so much of every income as was in excess of £1,000, if the income was derived by personal exertion, otherwise the exemption was only £200. Incomes were altogether exempt which were derived from the ownership or use or cultivation of land upon which land tax was payable. The exemptions included the revenues of local authorities, the income of life assurance societies, and of other societies and companies not carrying on business for purposes of profit or gain, and not being income derived from mortgages; the dividends and profits of the Savings Bank of New South Wales and the Government Savings Bank; the funds and income of registered friendly societies and trades unions; the incomes and revenues of all ecclesiastical, charitable, and educational institutions of a public character; and income accruing to foreign investors from Government Stock. The regulations provided that, in the case of every company, its income should be taken as the income of the company in New South Wales and from investments in the State. Public companies were not allowed the exemption of £200.

The variations in regard to the number and amount of incomes which were liable to taxation are shown in the following table, which relates to the last thirteen years :—

Year.	Number of Incomes.	Net Income.	Year.	Number of Incomes.	Net Income.
		£			£
1899	19,775	11,123,343	1906	23,832	14,937,906
1900	20,051	12,140,569	1907	24,091	16,410,484
1901	19,991	12,065,842	1908	5,933	8,851,026
1902	20,299	12,127,129	1909	5,442	7,753,851
1903	22,234	13,415,760	1910	5,810	9,566,920
1904	22,299	12,482,094	1911	5,846	11,095,863
1905	22,814	13,769,828			

The number of incomes taxed in the last four years is very much reduced, for the reason given above, and the figures quoted for these years in the statement are exclusive of incomes from personal exertion under £1,000, which, under an Act passed in 1907, were exempt from taxation.

A distribution of the incomes subject to taxation according to the amounts taxable is set forth in the following statement. The particulars are based on the experience of the nine years ended 30th June, 1907, the subsequent years being excluded, as the source of taxation was restricted considerably. These, however, represent only a portion of the incomes

derived from New South Wales, as incomes derived from land, or the use and occupancy of land, are not taxable. The net earnings are given in the table:—

Categories.	Average of Nine Years.		Proportion in each category.	
	Number of Incomes.	Amount of Incomes.	Of Number of Incomes.	Of Amount of Incomes.
		£	per cent.	per cent.
£200 and under £250...	6,371	1,430,269	29·60	11·00
250 ,, 300...	4,074	1,109,310	18·93	8·54
300 ,, 400...	4,140	1,416,527	19·23	10·90
400 ,, 500...	2,028	904,974	9·42	6·96
500 ,, 700...	1,949	1,126,764	9·06	8·67
700 ,, 1,000...	1,200	984,712	5·57	7·58
1,000 ,, 1,200...	392	426,930	1·82	3·29
1,200 ,, 2,000...	708	1,068,940	3·29	8·23
2,000 ,, 5,000...	462	1,354,765	2·15	10·43
5,000 ,, 10,000...	122	819,303	·57	6·31
10,000 ,, 20,000 ..	47	643,381	·22	4·95
20,000 and upwards ...	31	1,707,889	·14	13·14
Total	21,524	12,993,764	100·00	100·00

A comparison of the incomes assessed for the years 1908 and 1911 is afforded in the subjoined statement, in which the amounts are given in various grades:—

Grade.	1908.		1911.	
	Number.	Net Income.	Number.	Net Income.
		£		£
£1 to £1,000	4,723	1,042,468	4,261	1,118,623
1,001 ,, 1,200	139	151,849	173	190,698
1,201 ,, 2,000	364	562,069	462	718,943
2,001 ,, 5,000	378	1,168,614	542	1,660,591
5,001 ,, 10,000	180	1,235,745	213	1,474,850
10,001 ,, 20,000	89	1,203,870	114	1,613,656
20,001 and upwards... ...	60	3,486,411	81	4,318,502
Total	5,933	8,851,026	5,846	11,095,863

Income Tax Act, 1911.

The Act relating to income tax was amended in 1911 by the enactment of the Income Tax Act, 1911. Under its provisions a tax is payable by all persons other than companies on incomes, exceeding £300 per annum, derived from all sources within New South Wales. In the case of companies, the total incomes are taxable. 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. 2d. in the £, and the rates per £ for persons other than companies are as follows :—

So much of income chargeable—

As does not exceed £700	6d.
As exceeds £700 and does not exceed £1,700	7d.
,, £1,700 ,, £2,700	8d.
,, £2,700 ,, £4,700	9d.
,, £4,700 ,, £6,700	10d.
,, £6,700 ,, £9,700	11d.
,, £9,700	12d.

In each case an addition of one-third of tax is made to tax where person liable is an absentee, and of one-third on such income as is not derived from personal exertion.

The following incomes are exempt from income-tax, viz. :—

(*a*) The revenues of municipal corporations or other local authority.

(*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 not resident in New South Wales from Government debentures, inscribed stock, and Treasury bills.

These exemptions do not extend to the salaries and wages of persons employed by any such corporation, company, society, or institution, although the same be paid wholly or in part out of the income, revenues, or funds thereof.

Revenue from Land and Income Taxes.

The revenue from land and income taxes since 1896, the year in which they were first imposed, is shown hereunder. The amounts exclude refunds rendered necessary through correction of errors by the taxpayer or adjustments by the Department, but include refunds brought about through the income of the year of assessment falling short of the amount of income of the preceding year on which the assessment was made; a provision which was repealed by the "Land and Income Tax Amendment Act, 1904" :—

Year.	Land Tax.	Income Tax.	Year.	Land Tax.	Income Tax.
	£	£		£	£
1896	.....	27,658	1905	323,267	195,252
1897	139,079	295,537	1906	329,998	266,233
1898	364,131	166,395	1907	345,497	283,422
1899	253,901	178,032	1908	178,889	215,283
1900	286,227	183,460	1909	80,794	202,369
1901	288,369	215,893	1910	9,066	219,977
1902	301,981	203,625	1911	7,438*	269,142
1903	314,104	214,686	1912	6,479*	644,571
1904	322,246	193,240	1913	5,738*	662,625

* Exclusive of Federal land tax.

The fluctuations shown in the first three years are due to the difficulties inseparable from the introduction of a system of direct taxation; the returns for 1899 and subsequent years, however, are under normal conditions, which have been varied recently, as already shown, by the increased exemption for the majority of taxpayers, in the case of the income tax, and by the transfer to shires and municipalities of the land tax.

Federal Land Tax.

The Federal Government has levied a graduated tax on the unimproved value of the lands of the Commonwealth, as from the 1st July, 1910. In the case of owners who are not absentees, an amount of £5,000 is exempt, and the rate of tax ranges from 1d. for the first £1 of value in excess of that amount, and increases 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 are 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. is payable. 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 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 1911-12:—

Classification.	Residents.	Absentees.	Total.
	£	£	£
Values assessed :—			
Town Lands—			
Improved	52,301,717	3,370,998	55,672,715
Unimproved	26,992,227	1,945,160	28,937,387
Tax	226,449	22,470	248,919
Country Lands—			
Improved	115,332,124	1,641,578	116,993,702
Unimproved	53,442,694	804,926	54,247,620
Tax	476,554	15,295	491,849
Total—			
Improved	167,653,841	5,012,576	172,666,417
Unimproved	80,434,921	2,750,086	83,185,007
Tax	703,003	37,765	740,768
	Acres.	Acres.	Acres.
Area of Land assessed in New South Wales	33,118,450	437,972	33,556,422

The total figures for the Commonwealth show that the land tax for residents was £1,361,244; absentees, £84,016; total, £1,445,260.

The area of land in New South Wales included in taxable returns was 33,556,422 acres, or 52·7 per cent. of the taxable land in the Commonwealth.

The number of resident and absentee taxpayers during the year 1912-13 is shown below, for each State of the Commonwealth, classified according to the taxable values of their properties. The taxpayers who own land in more than one State are shown under the heading "Central":—

Taxable Value.	Central.		N.S.W.		Victoria.		Q'land.		S. Aust.		W. Aust.		Tas.		Total.
	R	A	R	A	R	A	R	A	R	A	R	A	R	A	
£															
1-1,000	126	74	598	190	930	381	149	123	292	149	43	145	89	71	3,360
1,001-2,000	107	42	513	53	626	116	84	27	280	32	48	19	44	21	2,012
2,001-3,000	92	23	360	26	429	62	84	13	174	21	35	15	58	9	1,401
3,001-4,000	48	14	315	27	325	53	73	13	140	13	43	20	26	3	1,113
4,001-5,000	56	12	238	31	243	20	51	6	106	17	23	6	28	5	842
5,001-6,000	53	15	207	20	177	9	40	9	92	3	27	2	20	5	679
6,001-7,000	52	8	161	12	133	12	25	3	58	4	23	1	19	1	512
7,001-8,000	45	11	150	17	113	12	32	1	45	2	16	5	19	..	468
8,001-9,000	41	1	120	7	90	13	21	2	50	2	13	7	7	3	377
9,001-10,000	32	2	107	7	89	11	11	..	16	2	23	3	11	1	315
10,001-15,000	127	8	375	38	244	19	51	8	71	10	39	8	52	3	1,053
15,001-20,000	78	9	206	12	122	6	38	6	38	3	33	1	12	3	567
20,001-30,000	100	3	225	11	161	13	35	..	33	2	16	3	13	1	616
30,001-40,000	58	4	131	7	61	3	23	2	22	..	14	..	5	..	330
40,001-50,000	49	2	63	6	31	3	6	1	10	1	9	2	2	..	190
50,001-60,000	28	1	62	3	31	2	3	..	6	2	7	..	3	..	148
60,001-70,000	15	3	34	2	24	..	1	..	5	..	2	..	1	..	87
70,001-80,000	11	..	23	2	14	..	2	..	2	1	2	..	1	..	58
80,001-90,000	10	1	19	1	9	..	2	..	1	..	2	..	2	..	47
90,001-100,000	7	..	13	1	3	1	..	..	..	..	1	..	2	..	28
100,001-110,000	10	..	10	1	2	1	1	..	2	..	..	..	..	..	27
110,001-120,000	4	..	7	..	3	..	..	..	4	..	..	..	..	..	18
120,001-130,000	4	..	5	1	2	..	..	..	..	..	1	..	..	..	13
130,001-140,000	5	..	4	1	..	1	..	..	..	..	..	..	..	..	11
140,001-150,000	2	..	3	..	2	..	1	..	1	..	..	..	..	..	9
150,001-160,000	2	..	3	..	..	..	..	..	1	..	..	..	..	..	6
160,001-170,000	4	..	3	..	..	..	..	..	..	..	..	..	..	..	7
170,001-180,000	2	..	2	..	..	..	1	..	1	..	..	..	..	..	6
180,001-190,000	2	..	..	..	..	..	..	..	..	..	..	..	..	..	2
190,001-200,000	3	2	2	..	1	..	..	..	1	..	..	..	..	..	9
200,001-210,000	..	..	2	..	..	..	..	..	..	..	..	..	..	..	2
210,001-220,000	1	..	..	..	1	..	..	..	..	..	..	..	..	..	2
220,001-230,000	..	..	2	..	..	..	..	..	..	..	..	..	..	..	2
230,001-240,000	2	..	1	..	..	..	..	..	..	..	..	..	..	..	3
240,001-250,000	1	..	1	..	..	..	1	..	..	..	..	..	..	..	3
250,001-260,000	1	..	..	..	..	..	..	..	..	..	..	..	..	..	1
270,001-280,000	1	..	..	..	..	..	..	..	..	..	1	..	..	..	2
280,001-290,000	..	..	1	..	..	..	..	..	..	..	..	..	1	..	2
310,001-320,000	..	..	1	..	..	..	..	..	..	..	..	..	..	..	1
320,001-330,000	2	..	2	..	..	..	..	..	..	..	..	..	..	..	4
340,001-350,000	1	..	..	..	..	..	..	..	..	..	..	..	..	..	1
350,001-360,000	..	..	..	..	1	..	..	..	..	..	..	..	..	..	1
370,001-380,000	2	..	..	..	..	..	..	..	..	..	..	..	..	..	2
380,001-390,000	3	..	..	..	..	..	..	..	..	..	..	..	..	..	3
390,001-400,000	1	..	..	..	..	..	..	..	..	..	..	..	..	..	1
440,001-450,000	..	..	1	..	..	..	..	..	..	..	..	..	..	..	1
460,001-470,000	..	..	1	..	..	..	..	..	..	..	..	..	..	..	1
520,001-530,000	..	..	..	..	..	..	..	..	1	..	..	..	..	..	1
540,001-550,000	1	..	..	..	..	..	..	..	..	..	..	..	..	..	1
700,001-710,000	1	..	..	..	..	..	..	..	..	..	..	..	..	..	1
840,001-850,000	..	..	1	..	..	..	..	..	..	..	..	..	..	..	1
880,001-890,000	1	..	..	..	..	..	..	..	..	..	..	..	..	..	1
1,110,001-1,120,000	1	..	..	..	..	..	..	..	..	..	..	..	..	..	1
Total ..	1,192	235	3,977	476	3,867	738	735	214	1,452	264	421	237	415	126	14,349

NOTE.—"R" indicates Resident, and "A" indicates Absentee.

An absentee is a taxpayer who does not reside in Australia. The term is not applicable to a taxpayer who, for reasons connected with health, business, or recreation, leaves Australia for a time, intending to return thereto.

The Federal Land Tax was designed for the dual purpose of producing revenue and of promoting the subdivision of large estates. The sales of land in the Commonwealth during the year ended 30th June, 1912, by payers of the tax numbered 14,068, the total unimproved value of the land represented being £13,914,138; the purchases numbered 1,911, and unimproved value of land £4,690,181. The State of New South Wales is included in these figures to the extent of 5,368 sales; unimproved value of land, £6,459,487; purchases, 761; unimproved value of land, £2,029,088.

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 53⅓ 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 1909 to 1913:—

Head of Revenue.	1909.	1910.	1911.	1912.	1913.
Alienation—					
Sales, etc. :—	£	£	£	£	£
Auction sales	79,576	77,055	83,058	83,764	63,001
Other	13,077	11,263	15,935	15,852	29,854
Total	92,653	88,318	98,993	99,616	92,855
Conditional Purchases :—					
Deposits and improvements	93,060	64,236	135,392	70,930	62,303
Instalments and interest ...	551,141	538,175	537,226	595,805	660,703
Interest (under Act of 1861)	25,194	22,200	21,614	18,894	17,094
Balances	183,861	174,495	186,592	146,593	138,013
Homestead Selections ...	72,856	71,624	62,917	48,577	40,768
Total	926,112	870,730	943,741	880,799	918,881
Total, Alienation	1,018,765	959,048	1,042,734	980,415	1,011,736
Occupation—					
Pastoral :—					
Pastoral leases	829	756	749	706	720
Conditional leases ...	207,918	204,965	199,214	201,450	207,043
Occupation licenses ...	35,080	31,533	29,871	26,952	25,051
Homestead leases	2,226	1,555	1,688	1,771	1,551
Annual and Snow, Inferior and Scrub leases.	53,254	48,541	44,193	43,400	40,607
Settlement leases	109,076	115,561	106,736	85,331	79,147
Improvement leases ...	51,997	50,712	49,501	49,644	46,203
Western Land Division leases	74,758	79,517	82,265	83,364	89,613
Other leases	26,850	39,255	33,840	34,107	36,533
Total	561,988	572,395	548,057	526,725	526,468
Mining :—					
Mineral leases	17,347	20,706	17,490	17,739	18,796
Leases of auriferous lands	1,680	2,310	2,544	1,892	1,837
Miners' rights	3,259	3,184	2,913	2,777	3,004
Royalty on minerals ...	66,542	59,373	77,613	89,423	103,851
Other	9,495	10,689	10,019	8,629	9,945
Total	98,323	96,262	110,579	120,460	137,433
Total, Occupation	660,311	668,657	658,636	647,185	663,901
Miscellaneous Land Receipts—					
Survey fees	45,177	28,883	30,823	24,297	27,428
Rents, special objects ...	36,265	40,485	43,490	43,064	44,546
Timber licenses, royalty, &c.	55,041	60,508	84,460	94,560	96,929
Quit rents and other receipts	37,432	35,009	35,964	32,213	35,459
Total	173,915	164,885	194,737	194,134	204,362
Gross Revenue from Lands	1,852,991	1,792,590	1,896,107	1,821,734	1,879,999
Refunds	74,989	62,850	57,190	56,275	44,051
Net Revenue from Lands...	1,778,002	1,729,740	1,838,917	1,765,459	1,835,948

The revenue derived by the alienation and occupation of public lands from 1904 to 1913 was as follows:—

Year ended 30th June.	Alienation.		Occupation.		Gross Revenue from Public Lands.	Refunds.	Net Revenue from Public Lands.
	Auction and Special Sales.	Conditional Purchases and Homestead Selections, including Survey Fees.	Pastoral, including Miscellaneous Receipts, except Survey Fees and Timber Licenses.	Mining, Timber Licenses, etc.			
	£	£	£	£	£	£	£
1904	117,518	1,058,345	661,904	98,194	1,935,961	75,391	1,860,570
1905	102,316	1,005,889	636,057	101,255	1,845,467	84,440	1,761,027
1906	95,582	1,049,796	546,904	128,318	1,820,600	87,526	1,733,074
1907	104,780	1,098,716	600,885	154,990	1,959,371	75,315	1,884,056
1908	101,034	965,949	632,652	161,073	1,860,708	76,314	1,784,394
1909	92,653	971,289	635,685	153,364	1,852,991	74,989	1,778,002
1910	88,318	899,613	647,889	156,770	1,792,590	62,850	1,729,740
1911	98,993	974,564	627,511	195,039	1,896,107	57,190	1,838,917
1912	99,616	905,096	602,002	215,020	1,821,734	56,275	1,765,459
1913	92,855	946,309	606,473	234,362	1,879,999	44,051	1,835,948

The land policy of the State, though largely connected with public finance, has been more fully discussed in the part of this work dealing with Land Settlement.

The reappraisement 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 reappraisement of conditional purchases and conditional leases, made under the Crown Lands (Amendment) Act of 1899, the revenue from these lands also has been considerably reduced.

Trading Concerns of the State.

The subjoined table shows the transactions of the State trading concerns during the year ended 30th June, 1913:—

Service.	Total Capital Expenditure From Loans, Public Works Fund, and Consolidated Revenue.	Revenue.	Expenditure.			Net Revenue.
			Working Expenses.	Interest and Sinking Fund.	Total.	
	£	£	£	£	£	£
Railways and Tramways	66,629,860	3,544,376	6,890,420	2,364,070	8,754,490	(-) 210,114
Sydney Harbour Trust	6,194,231	452,244	124,970	264,267	389,237	63,007
Water Supply & S.—Metropolitan	11,949,171	633,599	217,964	414,284	632,248	1,351
Hunter District	836,045	66,145	26,889	29,705	56,594	9,551
Observatory Hill, Resumed Area (Rocks), &c.	1,212,696	53,131	13,880	39,452	53,332	(-) 201
Brickworks—Homebush Bay ..	58,668	29,935	27,232	4,505	31,737	(-) 1,802
,, Botany	26,748	592	1,491	* 171	1,662	(-) 1,070
Metal Quarries (incl. steamer) ..	29,104	38,195	33,692	2,498	36,191	2,004
Timber & Joinery Works—Rozelle	66,489	127,228	120,892	4,261	125,153	2,075
State Clothing Factory	12,769	17,264	17,610	542	18,152	(-) † 788
Housing Fund—Daceyville.. ..	75,000	1,090	150	1,208	1,358	(-) 268
Lime Quarries..	12,538	645	4,800	* 456	5,256	(-) 4,611
Stone Quarry (Maroubra)	3,060	391	401	* 111	512	(-) 121
Total	87,156,379	9,964,935	6,980,391	3,125,581	10,105,922	(-) 140,987

* Approximate. (—) Net expenditure. † Half-yearly only.

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 during the year 1907-1913:—

Year ended 30th June.	Capital Expenditure.	Revenue.	Expenditure.			Net Revenue.	Proportion of Net Revenue to Capital Expenditure.
			Working Expenses.	Interest.	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

* Including Sinking Funds, which were not taken into account in previous years. (−) 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, connecting the mines with the main lines, all railways and tramways within the State belong to, and are controlled by, the Government.

Receipts for Services rendered.

Information in detail for the year ended 30th June, 1913, as to the amount collected for services rendered by the State, other than for trading concerns, is shown in the following statement:—

Heading.		Gross Revenue.	Refunds.	Net Revenue.
Fees and charges—		£	£	£
Agricultural Colleges and Farms		7,386	63	7,323
Pilotage, Harbour Dues, and Fees—	£			
Pilotage	50,883			
Harbour and Light Rates	47,926			
Harbour Dues	9,032			
Navigation Department—Fees, &c.	5,078			
		112,919	334	112,585
Mint Receipts		10,747	.....	10,747
Fees for Escort and Conveyance of Gold		222	.....	222
Public Instruction Department—				
Fees		311		
Registration of Brands		1,396		
Fees of Office —				
Registrar-General		84,505	685	173,079
Courts of Petty Sessions		26,786		
District Courts		1,913		
Supreme Court		25,637		
Shipping Masters		6,990		
Fees for Registration of Dogs		16,768		
Other Fees		9,458		
Rent for Public Watering-places, &c.		7,000	5,055	108,771
For the support of Patients in Hospitals for Insane		39,090		
Store Rent and carriage of Explosives		10,071		
For Work performed by Prisoners in Gaol		5,002		
Collections by Government Printer		7,480		
For the support of Children in the Industrial Schools, and Inmates of Benevolent Asylums, Hospitals, &c.		11,403		
Fumigation and Inspection Fees		6,573		
Other Receipts		27,207		
Total Receipts for Services Rendered	£	418,864	6,137	412,727

Up to 30th June, 1906, public school fees amounted annually to about £80,000. In October, 1906, fees in primary and superior public schools were abolished under the Free Education Act; and from January, 1911, the tuition in High Schools has also 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, 1913, as also the balance of revenue collected within New South Wales by the Commonwealth Government and returned, is shown in the subjoined statement:—

Head of Revenue.	Gross Revenue.	Refunds.	Net Revenue.
Rents, &c. (exclusive of Land)—	£	£	£
Wharfage and Tonnage Rates, &c. (Outports)	5,952	179	20,563
Government Buildings and Premises	13,006		
Rent and Way-leave Port Kembla Jetty	1,784		
Darling Harbour Resumed Area	51,380	73	51,307
Public Service Superannuation Act, No. 8 of 1903	14,082	1	14,081
Interest on Public Moneys—			
Interest on Advances under Country Towns Water Supply and Sewerage Act	35,535	89	35,446
Interest on Bank Deposits and other Temporary Investments of Public Moneys	55,628	.....	55,628
Interest on Water and Drainage Works, &c.	7,654	.....	7,654
,, Sale of Wire-netting	2,894	.....	2,894
,, Value of properties Transferred to Commonwealth	165,313	.....	165,313
,, Other	5,695	.....	5,695
Fines and Forfeitures—			
Sheriff	1,204	461	32,938
Courts of Petty Sessions	29,823		
Confiscated and Unclaimed Property	22		
Industrial Arbitration Court	1,653		
Other Fines	697		
Repayments—			
Repayment to Credit of Votes—Previous years	32,663	4,205	103,812
Value of Materials issued by Government Stores Department	1,565		
Seed Wheat—Previous years	1,118		
Annandale Garbage Destructor	238		
Balances not required	8,000		
Exchange on Cheques	934		
Sale of Government Property	10,960		
Receipts under Fisheries Act	7,675		
Pastures Protection Act—Contributions towards administering	2,327		
Sydney Abattoirs—Surplus Revenue	7,000		
Flemington Sale Yards—Surplus Revenue	6,000		
Costs Recovered in Various Actions	2,214		
Centennial Park Land Sales	6,000		
Wentworth Irrigation Area—Rent, Water Rates, &c.	1,202		
Water Conservation and Irrigation Commission	8,360		
Unclaimed Moneys	2,108		
Balances—Curator of Intestate Estates	5,221		
Other Unclassified Receipts	4,432		
Total General Miscellaneous Receipts	500,339	5,008	495,331
Balance of Revenue collected within the State by the Commonwealth Government and returned £	2,178,683	.....	2,178,683

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 the services referred to is also 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 eight years ended 30th June, 1913, and the rates per inhabitant, are as follow:—

Year ended 30th June.	Total Net Expenditure.							
	Governmental.				Business Undertakings.			
	Public Instruction.	Interest and Redemptions.*	Other Services.	Total.	Railways and Tramways.	Water Supply and Sewerage.	Sydney Harbour Trust.	Total.
	£	£	£	£	£	£	£	£
1906	938,640	938,398	4,188,350	6,065,388	4,616,305	443,916	261,255	5,321,476
1907	946,044	907,026	5,272,776	7,125,846	4,938,523	471,133	264,295	5,673,951
1908	1,038,620	730,043	5,863,535	7,632,198	5,285,058	504,073	278,743	6,067,874
1909	1,088,328	755,058	6,342,400	8,185,786	5,698,801	524,254	283,327	6,506,382
1910	1,145,038	807,929	5,276,825	7,229,792	6,131,654	536,669	286,212	6,954,535
1911	1,206,942	801,754	4,791,728	6,800,424	6,759,942	576,072	307,253	7,643,267
1912	1,395,114	888,354	5,208,361	7,491,829	7,501,224	608,534	314,143	8,423,901
1913	1,490,205	950,895	5,419,497	7,860,597	8,520,415	644,347	332,839	9,497,601
	Net Expenditure per Inhabitant.							
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
1906	0 12 8	0 12 8	2 16 5	4 1 9	3 2 3	0 5 11	0 3 6	3 11 8
1907	0 12 6	0 12 0	3 9 6	4 14 0	3 5 2	0 6 2	0 3 6	3 14 10
1908	0 13 5	0 9 5	3 15 5	4 18 3	3 8 1	0 6 6	0 3 7	3 18 2
1909	0 13 9	0 9 7	4 0 4	5 3 8	3 12 3	0 6 7	0 3 7	4 2 5
1910	0 14 3	0 10 1	3 5 8	4 10 0	3 16 4	0 6 8	0 3 6	4 6 6
1911	0 14 9	0 9 9	2 18 5	4 2 11	4 2 6	0 7 1	0 3 8	4 13 3
1912	0 16 6	0 10 6	3 1 5	4 8 5	4 8 7	0 7 3	0 3 8	4 19 6
1913	0 16 9	0 10 8	3 1 0	4 8 5	4 15 9	0 7 3	0 3 9	5 6 9

*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, as 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. The expenditure per head of population on account of some of these services, viz., educational and others of less importance, had either been stationary or declining until the year 1906-7, when there was a considerable increase in the cost of public instruction. The increase in other services during the last five years, as previously explained, is due to the transfers from the Consolidated Revenue in aid of the Public Works and Closer Settlement Accounts.

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 operated upon in conjunction with the general finances of the State. To show the importance of the Account, the following table has been compiled:—

Year ended 30th June.	Amount.	Year ended 30th June.	Amount.	Year ended 30th June.	Amount.
	£		£		£
*1871	213,340	1901	10,823,128	1908	1,867,442
*1876	854,571	1902	11,720,889	1909	2,575,757
*1881	1,671,183	1903	10,564,026	1910	2,743,156
*1886	2,702,486	1904	10,191,160	1911	4,522,915
*1891	4,997,055	1905	10,562,513	1912	5,547,741
1896	7,657,741	1906	10,007,626	1913	6,134,067
1900	10,103,940	1907	2,359,665		

* Year ended 31st December.

The decreased amounts shown from 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, 1913, was £6,134,067—£5,823,367 as Special Deposits Account and £310,700 as Special Accounts. Of the Special Deposits Account, the largest items were:—Commonwealth Government Fixed Deposit Account, £2,150,000; Government Savings Bank Deposit Account, £2,065,292; Government Savings Bank Advances Deposit Account, £230,000; State Debt Commissioners' Deposit Account, £170,411; State Debt Commissioners' Trust Accounts, £117,788; Government Dockyards and Newcastle Workshops, Store Advance Account, £24,134; Public Works and Railway Construction, Store Advance Account, £24,017; Public Works Department, Security Deposit Trust Account, £11,457; Fixed Deposits Account, £527,221; Sundry Deposits Account, £212,601; Municipal Council of Sydney Sinking Funds, £86,800; Government Railways Superannuation Account, £51,119; Housing Fund, £12,211; Treasury Guarantee Fund, £20,532; Treasury Fire Insurance Fund, £22,618; Sobraon Fund, £10,000; Water and Drainage Loan Redemption Fund, £16,020. The balance of £71,146 consists of items which are each under £10,000 in amount. The Special Accounts were Supreme Court moneys, which amounted to £310,700.

The existence of a large account upon which the Treasury 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 would have been charged for accommodation from the banks.

Of the total sum of £6,134,067 at the credit of the Trust Funds on 30th June, 1913. £34,037 was invested in securities; £5,664,139 was uninvested, but used in Advances and on Public Account at interest; while the remainder, £435,891, was similarly used, but without interest charge.

With the exception of the sum deposited in the Treasury by the Savings Bank of New South Wales, which was invested at 3½, 3¾, and 4 per cent., a general rate of 4 per cent. was allowed to 31st December, 1894, on all funds entitled to interest. On 1st January, 1895, the rate was reduced to 3 per cent. on all accounts except those on which the old rates could not be altered till the terms of the existing arrangements had expired. The rate of interest paid on 30th June, 1913, was 3 per cent., with the following exceptions:—Crown Leases Security Deposit Account, 3½ to 3¾ per cent.; Government Savings Bank Deposit Account, 3½ to 4 per cent; Government Savings Bank Advances Account, 3½ to 3¾ per cent.; Commonwealth Government Fixed Deposit Account, 2½ to 3½ per cent.; Fixed Deposits Account, 1 to 3¾ per cent.; the Sinking Funds of the Municipal Council of Sydney (50 Vic., No. 13), 4 per cent.; the State Debt Commissioners' Deposit Account, 1 per cent.; the Master in Equity and Master in Lunacy Accounts, 1 per cent. From 1st July, 1912, however, the interest allowed on the two accounts last mentioned was increased to 3 per cent.

On 30th June, 1913, the Trust Funds in the custody of the State Treasurer were held thus:—

In Banks—	£
Special Deposits Account	5,789,330
Special Accounts	310,700
In New South Wales Funded Stock	14,500
In miscellaneous securities	19,537
Total	£6,134,067

The total amount of interest received by the Treasury during the year ended June, 1913, on bank deposits and other temporary investments of public moneys was £55,628, of which part was earned by moneys belonging to the Trust Account.

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 to the Treasury, to administer, from 1st July, 1905, various Trust Accounts and balances at credit of certain Special Accounts. The Sinking Funds created by the Loan Acts of 1894 (No. 2), 1895, 1896, 1897, 1898, and 1899 were also transferred to, and are administered by, the Commissioners.

Trustees Audit Act.

The Trustees Audit Act, 1912, empowers the Auditor-General, at the request of the Treasurer or of any Minister of the Crown, to cause to be examined and audited 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. Following such examination or audit a report is presented by the Auditor-General, and if it appears that any money has been improperly dealt with, or the provisions of Acts contravened, he may surcharge and disallow such sums of money, which sum if not repaid may be deducted from future subsidies or may be recovered in manner provided for in the Acts or regulations.

Loan Appropriations.

All items of expenditure to be met by loan are authorised under an Appropriation Act, in the same manner as the ordinary expenditure chargeable to the general revenue, and under the Inscribed Stock Act of 1883 (46 Vic. No. 12), the passing of the Loan Appropriation Act confers the power of raising the money required. There is a restriction to the expenditure of money, whether from loans or revenue, in the operation of the Public Works Act of 1888. Under the provisions of this Act, the question of the propriety of constructing all works estimated to cost more than £20,000, except those connected with the maintenance of Railways, is referred by resolution of the Legislative Assembly to the Parliamentary Standing Committee appointed during the first Session of each Parliament. The Committee investigates and reports to Parliament, and the Assembly declares whether it is expedient to carry out the proposed work. If the declaration be favourable, a Bill based thereon must be passed before the authorisation is absolute.

The principle of redemption from revenue was applied, under the Loan Acts of 1894 to 1899, to expenditure on works whose value will disappear by the time the loan, out of the proceeds of which they were constructed, falls due.

The Loan Appropriations, in quinquennial periods since 1875, are given in the subjoined table, the amounts proposed to be expended on Public Works being distinguished from those required for redemption of previous loans:—

Year.	Amount authorised—		
	For Public Works and Services.	For Redemption of Loans.	Total.
	£	£	£
1875–9	10,708,768	.....	10,708,768
1880–4	26,457,803	.....	26,457,803
1885–9	11,123,394	2,113,800	13,237,194
1890–4	15,927,993	2,910,800	18,838,793
1895–9	13,661,046	2,275,200	15,936,246
1900–4	17,690,893	2,841,612	20,532,505
1905	968,430	.....	968,430
1906	1,130,800	550,000	1,680,800
1907	2,470,981	1,500,000	3,970,981
1908	2,690,167	2,566,354	5,256,521
1909	3,249,212	2,863,700	6,112,912
1910	4,883,000	.....	4,883,000
1911	3,868,970	.....	3,868,970
1912	6,375,170	2,549,350	8,924,520
1913	.....	.....	*

* No Loan Appropriation Act, passed.

Railways Loan Account.

The Railways Loan Account was opened on 1st September, 1910, under the authority of the Loan (Railways) Act. The maximum amount which can be borrowed under the Act is £2,000,000, the whole amount of which must be applied to meet the cost of duplicating portions of the main trunk lines of railways and other works in that connection.

The proceeds of the Funded Stock credited to the Railways Loan Account during 1912-13 amounted to £355,988, the whole of which was obtained in Sydney. With the credit balance of the previous year the amount was still not sufficient to meet the expenditure on railway works, amounting to £918,396; it became necessary, therefore, to supplement the balance with an advance of £75,000 from the Consolidated Revenue Account. The following is the return for the year 1912-13 :—

Receipts—	£	Net Expenditure—	£
Balance brought foward from 1911-12	489,487	Duplications—	
Proceeds of Sales—		Main Suburban Line	21,703
Funded Stock, Sydney ...	355,988	Southern Line	237,704
Advance (net) from Consolidated Revenue Account ...	75,000	Western Line	156,574
		Northern Line	130,783
		South Coast Line	371,632
			918,396
		Credit Balance carried forward to 1913-14	2,079
	£920,475		£920,475

Loan Accounts.

The following figures show the amount of loans raised from the commencement of the Loan Account, in 1853, to 30th June, 1913, 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, 1913		£154,464,715
Discount, interest bonus, and charges		4,526,790
Net amount raised		£149,937,925
Add net amount transferred from Consolidated Revenue to make good amount short-raised		176,767
		£150,114,692
Less Treasury Bills in aid of Revenue not placed to Loan Account		4,769,653
Les proceeds of old loans not included in Loan Accounts		724,733
Less Municipal Debentures taken over and still outstanding ...		30,000
Loss amounts over-raised and not placed to Loan Account ...		48,760
		5,573,146
Net amount available for works, &c.		£144,541,546

As the above statement shows, a sum of £154,464,715 has been raised by loan to 30th June, 1913, in connection with which the discount, interest, bonus, and other charges amounted to £4,526,790, leaving £149,937,925 available for expenditure. The effective value of this latter amount was reduced by the sum of £5,573,146 (utilised as shown above); so that taking into account £176,767 transferred from Consolidated Revenue, the net amount available for works, &c., was £144,541,546.

At 30th June, 1913, £48,293,967 had been redeemed, £9,519,705 being a charge on the Consolidated Revenue, leaving £106,170,748 outstanding at the

close of the last financial year. The aggregate amount of interest paid by the State on its loans to 30th June, 1913, was £81,710,576, of which the charge during the last financial year was £3,516,233.

The uses to which the available sum of £144,541,546 was applied are shown in the following table. The sum of £38,774,262 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 £146,990,670, in which the original loans, as well as the redemption loans, were included:—

Expended on—	£	£
Reproductive Works:—		
Railways	59,448,339	
Tramways	7,174,696	
Water Supply	8,159,128	
Sewerage	6,321,133	
Sydney Harbour Trust	6,164,620	
Darling Harbour Wharves Resumptions	1,212,696	
Industrial Undertakings	204,605	
		88,685,217
Partly Productive Works:—		
Conservation of Water, Artesian Boring, &c.	3,012,516	
Harbours and Rivers—Navigation	4,445,704	
Roads and Bridges	1,839,076	
Housing Fund	75,000	
		9,372,296
Public Buildings and Sites	5,606,023	
Immigration	*569,930	
Public Works in Queensland prior to separation	49,856	
		6,225,809
Commonwealth Services—		
Construction of Telegraph and Telephone Lines	1,297,583	
Post and Telegraph Offices	464,262	
Fortifications and Defence Works	1,457,536	
Lighthouses	144,288	
Customs Buildings	48,879	
Quarantine Buildings	18,099	
Government Dockyard—Cockatoo Island	502,439	
		3,933,086
		£108,216,408
Redemptions:—		
Loans repaid under various Acts	20,131,362	
Treasury Bills for Loan Services repaid	18,642,900	
		38,774,262
		£146,990,670
Add Credit Balance of Railways Loan Account on 30th June, 1913		2,079
		146,992,749
Less Debit Balance of General Loan Account on 30th June, 1913		2,087,685
Total		£144,905,064

The sum actually expended from loans on public services was, therefore, £108,216,408, the balance to make up the total of £146,990,670 being represented by redemptions. The difference above the sum available for expenditure is accounted for by taking into consideration the amount of credit balance of the Railways Loan Account and the debit balance of the General Loan Account at 30th June, 1913, and other adjustments. Analysing the above amounts, the following shows the allocation of the items of expenditure:—

Reproductive Works	82 per cent.
Partly productive Works	9 ,,
Other	6 ,,
Commonwealth Services	3 ,,
	100

* 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, 1913, of £1,294,663.

The loan expenditure on account of the various services during the last four years has been as follows:—

Head of Service.	1910.	1911.	1912.	1913.
	£	£	£	£
Railways	2,064,026	2,127,412	2,850,791	3,614,306
Tramways	407,259	420,260	597,335	1,004,661
Water Supply and Sewerage—				
Water Supply	200,229	232,285	371,824	517,146
Sewerage...	173,378	225,621	403,919	445,774
Water Conservation and Irrigation ...	204,503	272,913	568,492	632,173
Harbours and Rivers, Navigation and Docks	159,913	235,275	415,579	682,502
Public Works, Buildings, &c.	9,248	21	28,119	351,886
Roads and Bridges	.....	.....	.....	1,451
Public Abattoirs, Homebush	11,973	65,825	120,284	58,205
Closer Settlement	.....	350,000	.....	300,000
Loans to Pastures Protection Boards for wire netting	23,246	.....	210	3,012
State Brickworks	.....	.....	43,808	37,565
,, Metal Quarries, including steamer ...	.....	.....	23,904	13,972
,, Lime Quarry	.....	.....	4,982	6,472
,, Joinery Works, Rozelle	.....	.....	.....	10,000
,, Cement Works	.....	.....	.....	23
,, Quarry, Maroubra	.....	.....	.....	3,060
Superintendent of Public Works	.....	.....	.....	28,019
Housing Act, 1912	.....	.....	75,000	.....
Total Expenditure on Public Works, &c. £	3,253,775	3,929,612	5,504,247	7,710,227
Less Excess Repayments to Credit of Votes over Expenditure	7,135	7,854	13,144	6,633
£	3,246,640	3,921,758	5,491,103	7,703,594
Loans repaid by New Loans (including Treasury Bills)	3,499,744	3,088,462	35,925	3,940,778
Total ... ... £	6,746,384	7,010,220	5,527,028	11,644,372

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	43 17 6
1896-1900	8,832,106	6 15 0	64,471,255	47 7 4
1901-1905	16,297,655	11 12 11	80,768,910	54 12 9
1906	1,367,022	0 18 5	82,135,932	55 6 11
1907	1,094,238	0 14 5	83,230,170	54 17 8
1908	1,965,329	1 5 4	85,195,499	54 17 2
1909	2,906,507	1 16 10	88,102,006	55 15 9
1910	3,246,640	2 0 5	91,347,723	56 16 9
1911	3,921,758	2 7 10	95,269,537	58 2 0
1912	5,491,103	3 4 10	100,482,821	59 6 9
1913	7,703,594	4 6 7	108,216,408	60 16 7

Although the public debt of the State on 30th June, 1913, was £106,170,747, there has been actually an expenditure of £108,216,408 on public

services, the balance, £2,045,661, being the difference between the face value of the stock and the net amount received, together with the amount of Treasury Deficiency Bills outstanding:—

The 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	1870	9,681,130	1900	65,332,993
1845	97,900	1875	11,470,637	1905	82,321,998
1850	132,500	1880	14,903,919	1910	92,525,095
1855	1,000,800	1885	35,564,259	1911	95,523,926
1860	3,830,230	1890	48,383,333	1912	100,052,635
1865	5,749,630	1895	58,220,933	1913	106,170,747

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.	Treasury Bills, Debentures, and Stock at close of each year—						
	Authorised.	Sold.	Redeemed.			Public Debt.	
			From Consolidated Revenue and Sinking Fund.	From General Loan Account, including Renewals.	Total.	Total.	Per Inhabitant.
	£	£	£	£	£	£	£ s. d.
1904	123,047,542	100,793,398	5,750,987	15,008,830	20,759,817	80,033,581	55 13 6
1905	125,615,192	105,455,015	6,000,987	17,132,030	23,133,017	82,321,998	56 1 10
1906	128,660,513	110,860,251	6,250,987	18,967,530	25,218,517	85,641,734	57 1 2
1907	130,341,313	113,686,633	6,728,771	21,350,030	28,078,801	85,607,832	55 12 9
1908	139,512,294	120,029,343	7,425,887	24,967,630	32,393,517	87,635,826	56 0 0
1909	140,192,315	126,241,736	7,725,887	28,208,430	35,934,317	90,307,419	56 16 0
1910	146,305,227	132,465,258	8,231,066	31,709,097	39,940,163	92,525,095	57 2 4
1911	153,188,227	138,797,372	8,475,887	34,797,559	43,273,446	95,523,926	57 11 0
1912	159,512,197	143,662,006	8,775,887	34,833,484	43,609,371	100,052,635	57 16 10
1913	169,186,717	154,464,714	9,519,705	38,774,262	48,293,967	106,170,747	59 13 7

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.	£
1904	63,649,350	79·53	16,384,231	20·47	80,033,581
1905	64,007,550	77·75	18,314,448	22·25	82,321,998
1906	65,914,850	76·97	19,726,884	23·03	85,641,734
1907	63,914,150	74·66	21,693,682	25·34	85,607,832
1908	64,600,860	73·71	23,034,966	26·29	87,635,826
1909	67,073,905	74·27	23,233,514	25·73	90,307,419
1910	67,154,805	72·58	25,370,290	27·42	92,525,095
1911	65,555,605	68·63	29,968,321	31·37	95,523,926
1912	67,525,305	67·49	32,527,330	32·51	100,052,635
1913	73,740,413	69·45	32,430,334	30·55	106,170,747

From the above figures it will be noted that the amount of liabilities held locally at the close of the financial year 1912-13 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 1904:—

Year ended 30th June.	Interest.	Redemptions.	Expenses connected with management of Inscribed Stock.	Commission paid to Financial Agents in England and New South Wales.	Annual Interest and Charges.	
					Total.	Per Inhabitant.
	£	£	£	£	£	£ s. d.
1904	2,745,348	369,412	20,637	2,479	3,137,876	2 4 0
1905	2,856,872	319,413	20,640	1,766	3,198,691	2 4 1
1906	2,941,059	360,016	20,643	3,137	3,324,855	2 4 10
1907	3,047,618	405,090	21,143	1,645	3,475,496	2 5 10
1908	2,986,844	406,145	21,143	5,641	3,419,773	2 4 0
1909	3,039,539	478,791	20,501	3,046	3,541,877	2 4 10
1910	3,117,472	421,034	18,894	4,621	3,562,021	2 4 4
1911	3,227,315	409,349	19,095	4,159	3,659,918	2 4 8
1912	3,430,096	436,921	19,088	2,918	3,889,023	2 5 11
1913	3,516,233	450,602	19,990	1,511	3,988,336	2 4 10

The average rate of interest on the whole debt at the end of the financial year 1913 was 3·64 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, short-dated loans. Originally the term "funded" was applied only to interminable stocks, the amount of which, £530,189, is, as compared with the total debt, unimportant; but it is now the practice to apply this term also to redeemable debts. The amounts outstanding on 30th June, 1913, under each class, and the total debt, were as follows:—

Description of Stock.	Amount outstanding, 30th June, 1913.	Annual Interest payable.
Funded Debt—		
Debentures—	£	£
Matured, which have ceased to bear interest	2,650	.....
Still bearing interest	6,633,800	265,379
N. S. Wales 4 per cents. (Interminable) ...	530,189	21,208
,, Matured, which have ceased to bear interest	9,270	.....
,, 1924 Stock...	198,065	5,942
,, 1925 ,, ...	222,255	6,668
Inscribed and Funded Stock	... 97,824,518	3,457,646
Total, Funded Debt... ...	£105,420,747	£3,756,843
Unfunded Debt—		
Treasury Bills—		
For Public Works	750,000	*.....
Total, Unfunded Debt ...	£750,000	.....
Total, Public Debt	£106,170,747	£3,756,843

* Discounted for twelve months at 4 per cent.

The following table shows the total amount of stock under each rate of interest; there were, however, overdue debentures to the amount of £2,650, and inscribed and funded stock to the amount of £9,270, outstanding on 30th June, 1913:—

Interest—Per cent.	Amount of Stock.	Annual Interest payable.
	£	£
5	*4,050	135
4	†24,549,225	951,547
3¾	13,514,098	506,778
3½	51,056,302	1,786,971
3	17,047,072	511,412
Total	£106,170,747	£3,756,843

* Includes £1,350 matured debentures. † Includes £1,300 matured debentures, £9,270 matured inscribed and funded stock, and £750,000 Treasury Bills, currency one year, which were discounted at 4 per cent.

The 3 per cents. comprise Inscribed Stock floated in London, Funded Stock raised locally, and Treasury Bills representing Trust Funds in the hands of the Government, and invested.

Dates of Maturity.

The dates of repayment extend from 1914 to 1962; the sums repayable in the different years vary considerably in amount. There is a large amount maturing in 1915, but it should be noted that most of it has been raised in the local market, and the conditions as to redemption are not so rigid as those attached to the London issues; in 1918, however, nearly £12,800,000 of stock will be due in London.

The following table shows the due dates and the amount repayable in each year:—

Class of Security.	Interest Rate.	Amount raised in— London.	Amount raised in— Sydney.	Total Outstanding.	Year when Due.
		£	£	£	
Debentures	5	1,250	100	1,350	Overdue.
,, ...	4	500	....	500	Overdue.
,, ...	4	800	....	800	Overdue.
Inscribed and Funded Stock	4	....	9,270	9,270	Overdue.
,, ,, ,, ...	3¾	....	1,500,000	7,275,158	1912.*
,, ,, ,, ...	3½	....	1,768,456		
,, ,, ,, ...	3	....	4,006,702		
,, ,, ,, ...	4	....	1,000,000	3,881,081	1915.
,, ,, ,, ...	3½	....	499,981		
Debentures	4	....	131,100		
Inscribed and Funded Stock	4	2,000,000	....		
,, ...	3½	....	250,000		
Inscribed Stock	4	....	1,224,350	1,224,350	1917.
,, ,, ...	3½	12,826,200	....	12,826,200	1918.
,, ,, ...	3¾	....	11,083,945	11,203,995	1919.
,, ,, ...	3	....	120,050		
,, ,, ...	3½	....	2,999,758	4,872,843	1921.
,, ,, ...	3½	....	1,873,085		
Debentures	4	4,500,000	....	4,500,000	1922.
Inscribed Stock	3½	....	1,874,015	4,735,691	1923.
,, ,, ...	3¾	....	1,144,960		
,, ,, ...	4	....	1,716,716		
,, ,, ...	3½	16,500,000	....	16,698,065	1924.
N.S.W. 1924 Stock	3	....	198,065		
,, 1925 ,, ...	3	....	222,255	222,255	1925.
Inscribed Stock	4	9,686,300	....	9,686,300	1933.
,, ,, ...	3	12,500,000	....	12,500,000	1935.
,, ,, ...	3½	12,250,000	....	12,250,000	1950.
,, ,, ...	4	3,000,000	....	3,000,000	1962.
Funded Stock	4	....	530,189	530,189	Interminable.
Permanent Debentures	5	....	2,700	2,700	Permanent.
Funded Debt	£	73,265,050	32,155,697	105,420,747	
Treasury Bills—					
Public Works	4	750,000	....	750,000	1914.†
Unfunded Debt	£	750,000	....	750,000	
Total Public Debt on 30th June, 1913..	£	74,015,050	32,155,697	106,170,747	

* Redeemable after 28th October, 1912, at option of Government.
† Discounted for one year from 30th May, 1913.

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 the London and Westminster Bank. The former charges ¼ 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 ¼ per cent. and £150 per million respectively for similar services. In Sydney the Bank of New South Wales and the Commercial Banking Company of Sydney (Limited), transact all Government banking business. The former acts as Financial Agent for the State in Victoria, and also undertakes the payment of the half-yearly dividends on Local Debentures and Funded Stock. The Treasury, however, in local loan issues, directly conducts the operations connected with the issue of New South Wales Funded Stock and Treasury Bills, and no local loan has been underwritten.

The subjoined statement gives the charges for negotiation of the last three debenture loans, and of the inscribed and funded stock loans floated during the period from 1895 to 1913:—

Year when Floated.	Amount of Principal.	Gross Proceeds.	Charges, etc.					Expenses per £100 of Gross Proceeds.
			Stamp Duty.	Bank Commission.	Paid to Investors—Interest Bonus and Discount Bonus.	Brokerage, Underwriting, Postage, and Petty Expenses.	Total.	
	£	£	£	£	£	£	£	£ s. d.
Issued (in London) as Debentures.								
1904-5	1,000,000	1,990,000	2,500	5,000	737	30,272	38,509	1 18 8
1904-5	1,000,000							
1912-3	4,500,000	4,425,000	5,625	11,250	4,300	68,743	89,978	2 0 8
Issued (in Sydney) as Debentures.								
1904-5	131,100	131,100	nil.	nil.	nil.	nil.	nil.	nil.
Issued (in Sydney) as Funded Stock.								
1905-6	1,328,346	1,328,346	.....	.....	.....	2,735	2,735	0 4 1
1906-7	2,826,382	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
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	1,506,269	9,375	7,500	5,207	4,441	26,523	1 15 4
1901	4,000,000	3,760,000	25,000	20,000	9,735	60,347	115,082	3 1 2
1902	3,000,000	2,835,000	18,750	15,000	28,451	45,608	107,809	3 16 1
1905-6	2,000,000	1,990,000	12,500	5,000	19,102	30,491	67,093	3 7 5
1907-8	3,000,000	3,000,000	18,750	7,500	40,143	45,858	112,251	3 14 10
1908-9	1,500,000	1,462,500	9,375	3,750	12,230	23,302	48,657	3 6 7
	3,000,000	2,955,000	18,750	7,500	29,691	45,398	101,339	3 8 7
1909-10	2,750,000	2,667,500	17,187	6,875	22,154	42,131	88,347	3 6 3
1912-13	3,000,000	2,985,000	18,750	7,500	4,545	46,220	77,015	2 11 7

A comparison of the Sydney and London market shows that the interest rates in Sydney are lower than those in London.

The sales at Sydney take place at the Treasury on the basis of £100 cash for every £100 of stock sold, and brokerage of ½ 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 1¼ per cent. underwriting charges, have reached £4 1s. 11d. per cent. The range of the annual interest paid, allowing for

redemption at £100 sterling at date of maturity, on issues in the Sydney and London markets during the years of the period 1892-1913, is shown below:—

Security.	Issues.	Range of cost per cent. to Government	Security.	Issues.	Range of cost per cent. to Government
London.	£	£ s. d. £ s. d.	*Sydney.*	£	£ s. d. £ s. d.
Inscribed Stock	31,082,000	3 1 8¼ to 4 4 8½	Funded Stock	35,629,643	3 0 5½ to 4 1 11½
Debentures	6,500,000	4 6 11½ to 4 11 9	Treasury Bills (other than Deficiency Bills)	6,239,790	3 9 11½ to 4 5 10½
Treasury Bills (other than Deficiency Bills)	13,490,000	3 14 7½ to 4 10 2½			
			Total	41,869,433	
Total	51,072,000		Grand Total ..	92,941,433	3 0 5½ to 4 11 9

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 made 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 Commissioners of the Debt 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 whole amount of £400,000, however, is not available for general purposes, inasmuch as a sum of £300,000 is required yearly to retire matured Revenue Deficiency Bills in accordance with the terms of the Acts under which they were issued. The residue (£100,000), together with credits, interest on stocks, fixed deposits in banks of issue, and any balance brought forward from the previous period constitutes the amount available for application to redemptions in any one year. The transactions under the Act for the financial year ended 30th June, 1913, were as follow:—

Receipts.	£	£
Annual Contribution from Consolidated Revenue Fund		350,000
Contribution under Treasury Bills Deficiency Act, 1905		36,890
Repayments—		
Country Towns Water Supplies		3,043
Country Towns Sewerage		391
Bogan Scrub Loan Act		7,314
Sydney Harbour Trust Loan Sinking Fund		56,398
Interest on Bank Fixed Deposits		8,626
Fixed Interest on Funded Stock		6,937
Interest on Deposit with Colonial Treasurer		2,131
Total Receipts...		471,730
Balance brought forward from 1911-12		653,981
		£1,125,711
Expenditure.	£	£
Redemptions—		
Treasury Deficiency Bills—Act, 59 Vic. No. 22	77,626	
Act No. 30 of 1905	36,890	
N.S.W. Funded Stock Act, 56 Vic. No. 1	629,302	
Total Expenditure		743,818
Balance carried forward—		
Invested in N.S.W. Funded Stock	211,418	
On Deposit with Colonial Treasurer	170,411	
On Account Current	64	
		381,893
Total		£1,125,711

Under the provisions of the "State Debt and Sinking Fund Act, 1904," various balances at credit of Special Accounts established by the Treasury Bills Deficiency Act, 1889, were transferred to and administered by the State Debt Commissioners from 1st July, 1905. The Special Accounts were as follows:—The Treasury Bills Deficiency Act of 1895; the Treasury Bills Deficiency Act, 1900; the Treasury Bills Deficiency (Amendment) Act, 1901; the Railway Loan Redemption Act of 1889; and the Sinking Funds constituted by the Loan Acts of 1894 (No. 2), 1895, 1896, 1897, 1898, and 1899.

Character of Stock Issued.

As previously stated, loans have been raised by Treasury bills, debentures, and stock.

The Treasury bills are of a temporary character, and will in the course of a few years disappear from the statement of the public debt, either by substitution of ordinary stock when the temporary purpose for which they were issued has been served, or by redemption on maturity. The practice of issuing Treasury bills, either in anticipation of, or to make good, deficiencies in revenue, is of long standing; but, as will be seen later on, they have been made to serve another purpose, and money has been raised by their sale to meet certain obligations for public works and redemptions when the money market has been disturbed. The amount of Treasury bills current on 30th June, 1913, was £750,000 for Public Works discounted for one year from 30th May, 1913, at 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, 1913, these were as follow:—

Public Debt—Debentures and Inscribed Stock	£105,420,747
Treasury Bills	750,000
Total Public Debt	£106,170,747

The total amount of Public Debt might reasonably be lessened by the sum of £1,360,969 shown below, representing the amount spent on services, which is to be repaid in annual instalments of principal and interest by the parties benefited by the expenditure:—

Country Towns Water Supply	£900,455
Country Towns Sewerage	169,393
Water Trusts	180,119
Drainage Trusts	68,065
Other Advances	42,937
Total	£1,360,969

There is also the property transferred to the Commonwealth, on which interest is paid by the Commonwealth at 3½ per cent. per annum. The value of this property is £3,933,086, and in 1912-13 £165,313 was received by the State as interest on such. The total amount by which the Public Debt might be reduced is, therefore, nearly £5,300,000.

The principal assets of the State are its trading concerns (railways, water supply, &c.), and the public lands, of which 124,354,945 acres are leased for pastoral or mining purposes, and 17,307,305 acres sold on deferred payments. The revenue derived from the public lands of the State in the year ended 30th June, 1913, was £1,879,999, distributed under the following headings:—Alienation, £92,855; Conditional purchases, £918,881; Pastoral Leases, £526,468; Mining Leases, &c., including royalty on minerals, £137,433; Miscellaneous Land Receipts, £204,362. The balance of purchase money outstanding on 31st December, 1912, in regard to conditional purchases, amounted to £10,034,868.

The following statement shows how the public debt has been expended, and gives an approximate valuation of the resources on which the State may rely as security for the public creditors. The debt has been incurred principally on works of a reproductive character—82 per cent. being on reproductive works, 9 per cent. on partly productive works, 6 per cent. on public buildings, &c., and 3 per cent. on Commonwealth services.

The value of the securities has been calculated by taking, first, the actual average net return of the business undertakings for the three years ended 30th June, 1913, and capitalising it at 3½ per cent. The value of the public lands has been estimated on the basis only of the annual revenue, capitalised at 3½ per cent., and the amount still outstanding on land alienated (conditional purchases). The 17 million acres neither alienated nor leased have not been taken into account, as no valuation has been made by the Lands Department; and the trading concerns (brickworks, quarries, &c.) have also been excluded. There is, therefore, little doubt that the value quoted is greatly under-estimated. Finally, the actual amount of the Sinking Fund and the cash in hand and on deposit on 30th June, 1913, have been included:—

Public Debt.		Estimated Value of Securities.	
Reproductive Works—	£	Business Undertakings—	£
Railways	59,448,339	Railways	63,702,000
Tramways	7,174,696	Tramways	6,742,000
Water and Sewerage	14,480,261	Water and Sewerage	12,090,000
Sydney Harbour Trust	6,164,620	Sydney Harbour Trust	8,379,000
Darling Harbour Resumptions	1,212,696	Darling Harbour Resumptions	1,036,000
Industrial Undertakings	204,605		£91,949,000
	£88,685,217		
Partly Productive Works—			
Conservation of Water, &c.	3,012,516	Public Lands—	
Roads and Bridges	1,839,076	Leased	13,835,000
Harbours and Rivers	4,445,704	Amount outstanding on C.P.'s	10,035,000
Housing Fund	75,000		£23,870,000
	£9,372,296		
Unproductive Works—			
Public Buildings and Other Works	4,180,148	Cash in hand and on deposit	2,697,000
Commonwealth Services taken over	3,933,086	Sinking Fund	382,000
	£8,113,234		£3,079,000
Total Debt	£106,170,747	Total Estimated Value of Securities	£118,898,000

Thus the value of the securities exceeds the debt by nearly 13 millions, or by 18 millions sterling, if there be taken into account the properties already mentioned, on which interest is paid to the Government. State properties can hardly be valued on the basis of private business undertakings, as they are not expected to earn as a maximum a much higher net return than is necessary to meet the interest on the capital expended. When the results are much in excess of the interest due, public opinion at once demands that reductions be made in the rates and charges.

It should also be borne in mind that, in valuing the securities, account has not been taken of works not directly producing revenue, such as harbour works, roads, bridges, and others, although these works have been of great service in developing the country. Latent power of taxation forms a further and inestimable security.

Expenditure on Immigration.—1832 to 1913.

In view of the interest taken in the matter of expenditure towards promoting immigration and advertising the State, the following statement has been prepared to show the amount spent since the year 1832:—

Year.	Amount.	Year.	Amount.	Year.	Amount.
	£		£		£
1832 to 1850	1,192,193	1872	8,006	Dec., 1894	2,109
1851	95,816	1873	3,759	June, 1895 (half-year).	695
1852	149,107	1874	18,190	June, 1896	547
1853	146,574	1875	14,962	1897	486
1854	242,656	1876	27,010	1898	186
1855	165,783	1877	75,008	1899	147
1856	120,649	1878	95,585	1900	27
1857	139,604	1879	103,766	1901	.....
1858	90,460	1880	45,602	1902	245
1859	81,605	1881	45,966	1903	.....
1860	29,001	1882	46,301	1904	.....
1861	20,034	1883	112,319	1905	.....
1862	63,357	1884	132,176	1906	1,226
1863	83,487	1885	107,596	1907	8,079
1864	25,987	1886	35,397	1908	13,184
1865	34,150	1887	32,251	1909	22,436
1866	23,225	1888	7,854	1910	26,815
1867	14,037	1889	8,073	1911	32,786
1868	11,203	1890	5,916	1912	59,186
1869	2,396	1891	4,564	1913	69,656
1870	1,104	1892	2,333		
1871	3,648	1893	3,106		

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.

Financial Relations between States and Commonwealth.

One of the most difficult problems to be solved in formulating a constitution for the Commonwealth of Australia was met in the determination of the relative shares of the Commonwealth and States respectively in the proceeds of taxation from Customs and Excise. Each of the two governing powers was invested with authority to levy direct taxation, consequently no difficulty arose in this respect, but the power to impose tariffs through Customs and Excise duties was vested in the Commonwealth Parliament. Hence it became necessary to decide some proportion of the revenue derivable from these sources of indirect taxation which should constitute by legal right the share of the States quo States in these imposts.

By the Act under which the Commonwealth Constitution was founded it was decided by section 87, popularly known as the "Braddon" section, that during the first ten years of the existence of the newly-created Australian Commonwealth there should be returned to the States three-fourths of the net revenue from Customs and Excise; also, that such proportion should continue to be returnable after the ten-year period until the Commonwealth Parliament should decide what other disposition of these revenues should be made.

It was perceived prior to the foundation of the Commonwealth that this conventional arrangement, assigning one-fourth of the Customs and Excise duties to the Commonwealth and three-fourths to the States, would prove not only cumbersome in practical working, but would create most difficult conditions in the Federal financial arrangements, so that it would be necessary, in levying indirect taxation at any future period, to raise in reality £4 whenever £1 might be required, thus taking from the citizens £3 on each occasion, which might in general be unnecessary.

After the inception of the Commonwealth, it also became clear, by practical experience, first, from the Commonwealth standpoint, that of the total revenue, which the public policy of the Commonwealth declared to be the limit of indirect taxation which it was desirable to place on the people, the amount represented by one-quarter of the impost was insufficient for performing the functions of the Federal Government.

Secondly, from the State standpoint, it was found that for the State Treasurers a very disturbing factor constantly existed, inasmuch as it was impossible to forecast within reasonable time for their annual financial arrangements the estimate of the money-value of their three-quarter share of the Federal taxation. The Federal and State systems of finance were so intertwined and interdependent as to provide a ready and practically certain means of friction between two powers each with clearly distinct functions, which in all other respects it should be possible to control and perform without interference or disputation the one with the other.

During the early years of the experience of the Commonwealth the question of the policy to be pursued at the expiry of the period of ten years named in the Braddon section was not immediately pressing, because (1) the needs of the Federation had not become sufficiently urgent to cause a necessity for appropriating the full quarter allocated for Commonwealth requirements, and (2) the fact that a term of years had yet to ensue before a fresh arrangement could be made under the Constitution tended to the postponement of the determination of a question which was fully recognised to be intricate and difficult of solution.

The following statement will serve to show the degree in which one-fourth of the Customs and Excise taxation served to fulfil the

Commonwealth requirements, and how, with the progression of time, and the development of national needs, the amount available became insufficient for such purposes :—

Year ended 30th June.	Net Revenue, Customs and Excise. (1)	One-fourth of net Customs and Excise revenue. (2)	Portion of one-fourth of net Revenue needed for Commonwealth Expenditure. (3)	Balance of the one-fourth not used by Commonwealth, and returned to States. (4)=(2)−(3)	Three-fourths due to States under Constitution. (5)	Total returned to States. (6)=(4)+(5)
	£	£	£	£	£	£
1902	8,633,996	2,158,499	1,269,757	888,742	6,475,497	7,364,239
1903	9,412,442	2,353,110	1,207,876	1,145,234	7,059,332	8,204,566
1904	8,844,195	2,211,049	1,465,716	745,333	6,633,146	7,378,479
1905	8,543,310	2,135,827	1,400,541	735,286	6,407,483	7,142,769
1906	8,739,298	2,184,825	1,354,915	829,910	6,554,473	7,384,383
1907	9,386,097	2,346,524	1,540,523	806,001	7,039,573	7,845,574
1908	11,368,220	2,842,055	2,511,315	330,740	8,526,165	8,856,905
1909	10,573,860	2,643,465	2,643,465	Nil.	7,930,395	7,930,395
1910	11,323,207	2,830,801	2,830,801	Nil.	8,492,406	8,492,406
Total	86,824,625	21,706,155	16,224,909	5,481,246	65,118,470	70,599,716

From the above table it is apparent that during the first seven years the Commonwealth was entitled to receive as its share more than sufficient for its declared needs, and that since 1908 there have been commitments devolving on the Federal authorities exceeding the moneys at their disposal. Consequently, it had become seriously evident towards the close of the ten-year period that more revenue would be required in the future than had been available in the past to enable the Federal Government to fulfil its assigned functions.

During the period of negotiation amongst the States antecedent to the creation of the Commonwealth, attempts were made to devise an acceptable plan relating to the allocation of the Customs and Excise revenue, and the compromise known as the Braddon section was adopted tentatively to avoid the risk of failure in the formative stages of the Federation. During the succeeding years a number of conferences were held by the Premiers of the several States to endeavour to secure finality, but until the year 1909 no definite agreement was reached. In that year a Conference of Premiers met at Melbourne in conjunction with the Prime Minister of the Commonwealth, and after prolonged discussion an agreement was signed by all the parties to the following effect :—

"In the public interests of the people of Australia, to secure economy and efficiency in the raising and the spending of their revenues, and to permit their Governments to exercise unfettered control of their receipts and expenditure, it is imperative that the financial relations of the Federal and State Governments—which, under the Constitution, were determined only in part, and for a term of years—should be placed upon a sound and permanent basis.

"It is, therefore, agreed by the Ministers of State of the Commonwealth and the Ministers of the component States in conference assembled, to advise:—

"1. That to fulfil the intention of the Constitution by providing for the consolidation and transfer of State debts, and in order to ensure the most profitable management of future loans by the establishment of one Australian stock, a complete investigation of this most important subject shall be undertaken forthwith by the Governments of the Commonwealth and the States. This investigation shall include the question of the actual cost to the States of transferred properties as defrayed out of loan or revenue moneys.

"2. That in order to give freedom to the Commonwealth in levying duties of Customs and Excise, and to assure to the States a certain annual income, the Commonwealth shall, after the first day of July, one thousand nine hundred and ten, pay monthly to the States a sum calculated at the rate of one pound five shillings per annum per head of population according to the latest statistics of the Commonwealth.

"3. That in recognition of the heavy obligations incurred in the payment of Old-Age Pensions, the Commonwealth may, during the current financial year, withhold from the moneys returnable to the States such sum (not exceeding six hundred thousand pounds) as will provide for the actual shortage in the revenue at the end of the said year. If such shortage amounts to six hundred thousand pounds the basis of contribution by the States shall be three shillings per head of population in the Pension States (viz., New South Wales, Victoria, and Queensland), and two shillings per head of population in the Non-Pension States (viz., South Australia, Western Australia, and Tasmania). If such shortage be less than six hundred thousand pounds the contributions shall be reduced proportionately per head of population as between the Pension and Non-Pension States.

"4. That in view of the large contribution to the Customs revenue *per capita* made by the State of Western Australia, the Commonwealth shall (in addition to the payment provided for in paragraph No. 2) make to such State special annual payments, commencing at two hundred and fifty thousand pounds in the financial year one thousand nine hundred and ten and one thousand nine hundred and eleven, and diminishing at the rate of ten thousand pounds per annum. The Commonwealth shall in each year deduct on a *per capita* basis from the moneys payable to the States of the Commonwealth an amount equal to one-half of the sum so payable to the State of Western Australia.

"5. That the Government of the Commonwealth bring before the Parliament during this session the necessary measure to enable an alteration of the Constitution (giving effect to the preceding paragraphs, Nos. 2, 3, and 4) to be submitted to the electors."

The necessary steps were taken by the Prime Minister of the Commonwealth to give effect to the agreement, which was done by the passage in the Commonwealth Parliament of the "Constitution Alteration (Finance) Act." This measure was passed by the Federal Parliament in December, 1909, but was rejected by the electors at a referendum taken during the Federal General Election in April, 1910.

This proposal to alter the Constitution was negatived in three States, New South Wales, Victoria, and South Australia, as well as in the Commonwealth as a whole. It therefore devolved on the Federal Parliament to determine the amount of revenue to be returned to each State, and the Surplus Revenue Act of 1910 was passed. In accordance with this Act, the Commonwealth will, during a period of ten years, commencing on the 1st July, 1910, and thereafter until Parliament otherwise provides, pay to each State, or apply to the payment of interest on debts of the State taken over by the Commonwealth, an annual sum of 25s. per head of the number of the people of the State. The State of Western Australia is to receive an additional sum, amounting in the first year to £250,000, and diminishing in each succeeding year by £10,000—one half of these payments to be deducted proportionately from the amounts payable to all the States. The Treasurer must also pay to the several States all surplus revenue in hand at the end of each financial year. The Act provided that during the six months January to June, 1911, the Commonwealth might deduct from the amount payable the sum of £450,000, the estimated shortage in the Commonwealth revenue for the year 1910-11. The following statement shows the amounts deducted from each State, as set forth in the Schedule of the Act:—

	£
New South Wales	178,973
Victoria	143,092
Queensland	63,788
South Australia	30,529
Western Australia	20,113
Tasmania	13,505
Total	£450,000

During the first six months of the financial year, 1911, the Commonwealth was required to return to the States three-fourths of the Customs and Excise revenue; but the Surplus Revenue Act provided that if the amounts paid during this period were to exceed 12s. 6d. *per capita*, the amounts during the next six months should be correspondingly reduced, so that the payments during the whole year should not exceed 25s. *per capita*, less the sum of £450,000 mentioned above.

The following statement shows the amounts paid to each State during the year ended 30th June, 1913, in accordance with the present arrangement:—

State.	Amounts payable to States at 25s. per head of population at 31st December, 1912.	Deduct Proportion of moiety of special payment to Western Australia.	Amounts paid to States.
	£	£	£
New South Wales ...	2,221,918	43,235	2,178,683
Victoria	1,725,701	33,580	1,692,121
Queensland	795,531	15,480	780,051
South Australia	537,613	10,462	527,151
Western Australia ...	612,661*	7,446	605,215
Tasmania	246,506	4,797	241,709
Total	6,139,930	115,000	6,024,930

* Including £230,000, special payment to Western Australia.

At the Federal General Election in 1910 a referendum was also taken in connection with the transfer of State debts to the Commonwealth. In accordance with the Constitution, the Commonwealth was empowered to

take over only such debts as had been incurred prior to Federation. An alteration was proposed, and ratified by means of this referendum, to enable the Commonwealth to take over all debts incurred by the States. A majority in favour of the resolution was recorded in all the States except New South Wales.

Relative Magnitude of Functions of State and Commonwealth Government.

The relative proportion of the cost of the functions of Government assigned by the Federal Constitution to the Commonwealth and to the States has, consequent upon comparatively recent legislation, been considerably altered. In the year 1907 it was found that 13·14 per cent. of the functions of the government of Australia were under the control of the Commonwealth and 86·86 per cent. under the control of the States. At the present time the proportions are 25·21 per cent. and 74·79 per cent. respectively.

Before the expiration of the "Braddon" clause of the Constitution Act on 31st December, 1910, the Commonwealth returned to the States not less than 75 per cent. of the net Customs and Excise Revenue, but at the present time the return from the Commonwealth to the States from this source is approximately only 40 per cent.

The Commonwealth, therefore, receives 60 per cent. of the Customs and Excise Revenue, although as shown in the following table it is charged with only 25·21 per cent. of the cost of Government.

In this connection it may also be said that the States have to spend large sums annually on capital account for reproductive works and for the development of the country.

The following statement shows the relative magnitude of the functions of Government of the States and of the Commonwealth as indicated by the expenditure from Consolidated Revenue, on the functions and obligations of States and Commonwealth respectively during the year ended 30th June, 1913:—

	£
Combined expenditure by the States of Australia—	
Interest on Public Debt, Redemptions, Sinking Funds	3,984,363
Education	3,728,694
Hospitals and Charities	1,857,908
Police and Law	2,472,399
Lands, Mines, Agriculture, Forestry	2,175,797
Roads, Bridges, Harbours, Rivers, &c.	1,890,628
All other expenditure on Services of the State	4,854,098
Business and Industrial Undertakings (*i.e.*, Railways and Tramways, Water Supply and Sewerage, &c.), Working Expenses, and Interest on Capital Expenditure	23,322,228
Total combined expenditure by the States	£44,286,615
Expenditure by the Commonwealth—	
Interest	468,331
Pensions	2,749,679
Defence	3,748,402
Post Offices, Telegraphs, Telephones	5,584,446
All other expenditure	2,379,322
Total Expenditure by the Commonwealth	£14,930,180
Grand Total Expenditure by States and by Commonwealth	£59,216,795
	Per cent.
Proportion of Grand Total expended by States	74·79
Proportion of Grand Total by Commonwealth	25·21
	100·00

PRIVATE FINANCE.

Currency and Coinage.

Under the Commonwealth Coinage Act, 1909, "every transaction, dealing, matter, and thing whatever relating to money, or involving the payment of, or the liability to pay any money, shall be made, executed, entered into, done, and had, according to the coins which are current and are legal tender under the Act." Previously the coins current in New South Wales corresponded to the British Monetary System, and were issued by the Royal Mint of England through its Sydney Branch.

Authority is vested in the Commonwealth Treasurer to issue silver and bronze coin made to his order, of specified denominations; and in addition, a nickel coinage is authorised, the denominations, fineness, and weight of which will be specified by proclamation.

A tender of payment, made in coins of British or Australian issue, is legal, if made in gold coins, for any amount; in silver coins, for a maximum amount of forty shillings; and in bronze, to a maximum of one shilling. Australian notes are legal tender throughout the Commonwealth.

Consequent upon the passage of the Commonwealth Coinage Act, 1909, an Order-in-Council and a Proclamation were issued in England revoking the order of 1896, by which certain parts of the Imperial Coinage Act, 1870, and its subsequent amendments, were made applicable to the several colonies of Great Britain.

Standard Coinage.

The standards of weight and fineness of the coins denominated in the Schedule of the Coinage Act, 1909, are as follows:—

Denomination of Coin.	Imperial Weight.	Metric Weight.	Remedy Allowance. Weight per piece.	
			Imperial	Metric
Gold—	grains.	grams.	grains.	grams.
Five pounds	616·37239	39·94028	1·00	0·06479
Two „	246·54895	15·97611	·40	·02592
Sovereign	123·27447	7·98805	·20	·01296
Half-sovereign	61·63723	3·99402	·15	·00972
Silver—				
Florin	174·54545	11·31036	·997	·0646
Shilling	87·27272	5·65518	·578	·0375
Sixpence	43·63636	2·82759	·346	·0224
Threepence	21·81818	1·41379	·212	·0138
Bronze—				
Penny	145·83333	9·44984	2·91666	·18899
Halfpenny	87·50000	5·66990	1·75000	·11339

In the case of British coin in circulation, the current weight is as specified in the law of the United Kingdom applicable to the coin.

The principal variation of the Australian from the British system lies in the elimination of the half-crown from the Australian silver coinage.

For gold coins, the standard fineness is $\frac{11}{12}$ fine gold, $\frac{1}{12}$ alloy, or millesimal fineness, 916·6; for silver coins, $\frac{37}{40}$ fine silver, $\frac{3}{40}$ 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. $11\frac{5}{11}$d. per oz., but the gold contained in deposits sent to the Sydney Branch of the Royal Mint, for melting, assaying, and coining, is valued at the rate of £3 17s. 10½d. per oz. standard or sovereign gold, and there is thus no premium on gold.

Standard silver, owing partly to the greatly increased output, and still more to its demonetisation in a large part of Europe, and the restrictions placed upon its free coinage in countries which still have a double standard of coinage, has decreased in value by over 51 per cent. since 1875. The average price of standard silver in the London market for various years since that year is given in the annual reports of the Deputy Master and Comptroller of the Royal Mint as follows:—

Year.	Price per standard oz.	Year.	Price per standard oz.	Year.	Price per standard oz.
	d.		d.		d.
1875	$56\frac{3}{16}$	1900	$28\frac{6}{16}$	1909	$23\frac{11}{16}$
1880	$52\frac{1}{4}$	1905	$27\frac{13}{16}$	1910	$24\frac{11}{16}$
1885	$48\frac{5}{8}$	1906	$30\frac{7}{16}$	1911	$24\frac{9}{16}$
1890	$47\frac{7}{8}$	1907	$30\frac{3}{16}$	1912	$28\frac{1}{16}$
1895	$29\frac{7}{8}$	1908	$24\frac{3}{8}$		

It will be noticed that the average price for 1912 showed a rise of 3½d. per oz. as compared with the previous year; the advance was due mainly to large purchases by the Indian Government, and to the Chinese loan negotiations. The fluctuations in value during 1912 are shown in the following table of average monthly prices:—

Month.	Price per standard oz.	Month.	Price per standard oz.	Month.	Price per standard oz.
	d.		d.		d.
January	$25\frac{1}{8}$	May	$28\frac{3}{16}$	September ...	$28\frac{3}{16}$
February ...	$26\frac{7}{8}$	June	28	October... ...	$29\frac{1}{2}$
March	$27\frac{1}{8}$	July	$28\frac{3}{16}$	November ...	$28\frac{7}{8}$
April	$26\frac{3}{4}$	August	$27\frac{7}{8}$	December ...	$29\frac{1}{16}$

The nominal value of one ounce of silver coined into eleven sixpences is 5s. 6d., and of one pound (avoirdupois) of bronze coined into pence is 4s., and into halfpence or farthings 3s. 4d.

Minting.

The Royal Mint of England has four branches, viz., one each at Sydney, Melbourne, Perth, and Ottawa (Canada). The earliest established of the Australian Branches was the Sydney Branch, opened on 14th May, 1855, the Melbourne Branch being opened in 1872, and the Perth in 1899.

Only gold coins have been struck at Sydney Mint, but silver and bronze of English coinage also were issued. By arrangement, the Australian coins issued up to the present date have been struck at the London Mint, and forwarded to the Sydney Branch, whence they were distributed at the order of the Commonwealth Treasurer.

Gold Coinage.

The total weight of gold sent for coinage to the Sydney Mint in the period from its foundation to 31st December, 1912, was 35,728,342 oz., valued at £132,013,640. Of this quantity New South Wales produced 11,526,766 oz., of the value of £42,770,813, the amount from each source being as follows:—

Where produced.	Weight.	Value.
	oz.	£
New South Wales	11,526,766	42,770,813
Victoria	1,447,109	5,939,130
Queensland (including Papua) ...	17,078,177	60,782,941
South Australia	98,202	336,986
Tasmania	149,803	494,835
New Zealand	5,033,085	20,151,527
Other Countries	79,095	275,537
Coin.	325,105	1,261,871
Total	35,728,342	132,013,640

Nearly the whole of the gold mined in New South Wales and Queensland, and a big proportion of the output of the other States and New Zealand, is received at the Sydney Mint for coinage. The value of gold coin and bullion issued up to the end of 1912 was £131,789,172, of which £125,307,500 represented coin, the value of sovereigns and half-sovereigns being as follows:—

Year.	Sovereigns.	Half-sovereigns.	Total.
	£	£	£
1855 to 1902	96,501,500	2,909,500	99,411,000
1903	2,806,000	115,500	2,921,500
1904	2,986,000	.....	2,986,000
1905	2,778,000	.....	2,778,000
1906	2,792,000	154,000	2,946,000
1907	2,539,000	.....	2,539,000
1908	2,017,000	269,000	2,286,000
1909	2,057,000	.....	2,057,000
1910	2,135,000	237,000	2,372,000
1911	2,519,000	126,000	2,645,000
1912	2,227,000	139,000	2,366,000
Total... £	121,357,500	3,950,000	125,307,500

The gold bullion issued from the Mint includes pure gold in small quantities for the use of jewellers, chemists, and others, but the bulk consists of small bars of fine gold for export to India. The amount of gold bullion issued during 1912 was valued at £38,136, the total from 1855 to the end of 1912 being 1,570,676·02 ounces, valued at £6,481,672.

The issues of gold coin from the various branch Mints in Australia and Canada during 1912 compare as follows:—

Branch Mint.	Sovereigns.	Half-sovereigns.	Total.
	£	£	£
Sydney	2,227,000	139,000	2,366,000
Melbourne	2,469,257	...	2,469,257
Perth	4,278,144	...	4,278,144
Ottawa	515	...	515
Total £	8,974,916	139,000	9,113,916

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 value of the British coins issued is shown in the following table:—

Year.	Silver Coin.							Bronze Coin.
	Crowns and Double Florins.	Half-crowns.	Florins.	Shillings.	Six-pences.	Three-pences.	Total.	
	£	£	£	£	£	£	£	£
1868 to 1902	1,300	242,800	188,600	197,000	79,600	103,500	812,800	64,810
1903	.....	2,400	4,200	2,800	1,400	5,200	16,000	3,720
1904	.....	23,600	6,800	200	5,600	7,000	43,200	2,320
1905	.....	3,800	.....	.....	3,600	3,400	10,800	2,000
1906	.....	35,000	15,000	12,000	8,600	8,000	78,600	4,000
1907	.....	68,000	55,000	30,000	14,800	10,000	177,800	10,000
1908	.....	7,000	22,600	20,000	7,000	10,800	67,400	5,600
1909	.. ...	5,000	2,400	6,000	3,200	4,200	20,800	5,000
1910	.....	6,000	.. ...	.....	3,000	3,000	12,000	9,000
Total... £	1,300	393,600	294,600	268,000	126,800	155,100	1,239,400	106,450

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 1912 were valued at £357,450, made up as follows:—

Coin.	1910.	1911.	1912.	Total.
Silver—	£	£	£	£
Florins	61,500	22,950	51,000	135,450
Shillings	42,200	39,900	4,700	86,800
Sixpences	28,100	22,200	7,400	57,700
Threepences	10,500	37,400	6,500	54,400
Bronze—				
Pence	.....	7,840	9,060	16,900
Halfpence	.....	2,750	3,450	6,200
Total ... £	142,300	133,040	82,110	357,450

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 1912 was 2s. $4\frac{1}{16}$d., the difference, 3s. $1\frac{15}{16}$d., representing the seigniorage or gross profit. Allowance being made for mint expenses and the loss incurred by the purchase of worn silver at its nominal value, the British Government has derived a substantial profit from the silver coin issued in Australia. The profit on the local silver currency now 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.
	£	£
1910	66,845	.....
1911	182,661	4,398
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 recoined free of charge, but depositors are required to bear the loss by abrasion. Worn gold coins have been received at the Sydney Mint for recoinage since 1876, silver coins since 1873. The nominal value of gold coin withdrawn from circulation during 1912 was £11,044, and for the whole period since the opening of the Mint, £1,081,210.

Worn British silver coin of the value of £18,956 was withdrawn from circulation, through the Sydney Mint, during 1912; the aggregate value withdrawn to the end of 1912 was £297,489, this being forwarded to London for recoinage. British silver coin, not exceeding a nominal value of £50,000 in any one year, may be withdrawn at Sydney. Such coin is exported for re-issue in other parts of the British Empire, and replaced by Australian silver coin of equivalent value and denomination. 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 hitherto profits on sale of silver. Payment is made for all silver contained in deposits in excess of 8 per cent., of the gross weight, at a rate fixed by the Deputy Master from time to time. On 12th May, 1902, the rate was proclaimed at 1s. 6d. per oz. fine, and this is still ruling.

For assaying and coining gold, the charge is 1d. per ounce standard, and for melting and refining on all gold insufficiently refined and toughened for direct conversion into coin, a charge is made, the maximum being at the rate of 3d. per ounce gross, and the minimum 1d., with 1s. per ounce for all base metal extracted, on deposits containing more than 5 per cent. of base metal. The minimum charge on any one deposit is 6s., except in the case of deposits containing more than 5 per cent. of base metal, when the minimum charge is 10s. 6d.

The total receipts of the Sydney Mint since its establishment are shown below:—

Year.	Mint Charges.	Profit on Sale of Silver.	Fees for Assays and Crushings, and Proceeds of Sweep.	Total Mint Receipts (paid into Consolidated Revenue).
	£	£	£	£
1855 to 1902	501,554	119,503	90,376	711,433
1903	8,793	8,499	2,116	19,408
1904	11,145	8,869	1,725	21,739
1905	10,158	8,196	1,068	19,422
1906	9,083	7,846	2,565	19,494
1907	6,836	4,884	2,136	13,856
1908	6,484	3,440	922	10,846
1909	6,149	4,141	698	10,988
1910	6,143	3,926	643	10,712
1911	6,320	3,496	455	10,271
1912	5,764	4,648	524	10,936
Total £	578,429	177,448	103,228	859,105

The cost of maintenance of the Sydney Branch of the Royal Mint is borne by the State Government, £15,000 being set apart annually for that purpose. Special additional votes for limited amounts for construction, repairs, and furniture have also been made. The expenditure from Consolidated Revenue during 1912 amounted to £14,936.

Paper Currency.

Bank Notes.

Prior to 1910 the control of paper currency was vested in several private banking institutions which had used their right to issue bank notes, but note circulation in New South Wales, in conformity with the general tendency throughout the financial world, has not expanded during recent years, in proportion either to population or to the volume of business transactions, the principal cause operating to curtail such circulation being the increase of facilities for operating on deposits by cheques, as evidenced by the growing volume of business in the Banks Exchange Settlement Office. In New South Wales, note currency issued by banks was subject to a note tax at the rate of 2 per cent. per annum, by which the State benefited to the extent of £33,900 for the year 1909-10, but which has now been replaced by a 10 per cent. Commonwealth tax. The result of this tax has been to force the banks' notes out of circulation.

Of the banks operating in New South Wales, three have had no note issue whatever, being simply trading banks of discount and deposit; of the remainder the note circulation in proportion to the deposit liability has been little more than 3 per cent., being almost a negligible quantity in the total liabilities. Against this note liability no special reserve was required by law, but in cases of institutions registered under the Companies Act, 1899, as limited companies, a specific provision renders such companies as issue notes subject to unlimited liability in respect thereof.

The following figures relating the total liability as regards notes and bills of banking institutions operating in New South Wales to the population, show the stationary position in regard to note circulation, prior to the issue of Australian notes and the imposition of the 10 per cent. tax, and the large decrease in the ratio after the imposition of the tax:—

Year.	Circulation in—		Total.	Per capita.
	Notes.	Bills.		
	£	£	£	£
1860	949,849	62,505	1,012,354	2·95
1870	695,366	50,515	745,881	1·52
1880	1,260,772	51,698	1,312,470	1·80
1890	1,557,805	127,442	1,685,247	1·53
1900	1,447,641	209,905	1,657,546	1·22
1910	2,243,128	370,199	2,613,327	1·60
1911	400,784	411,792	812,576	0·48
1912	171,199	413,411	584,610	0·33

The purpose of the note issue was primarily to obviate the necessity for keeping gold reserves in branch banks, the circulation being confined practically to country districts; the lowest value for which notes were issued was £1.

Australian Notes.

As a consequence of the Australian Notes Act passed in 1910 by the Federal Parliament, the Commonwealth Treasurer was authorized to issue notes, which are legal tender throughout the Commonwealth, and are redeemable in gold at the seat of Federal Government. These notes may be issued in the following denominations:—10s., £1, £5, £10, and any multiple of £10; against the note liability the Treasurer was bound in terms of the Act to hold in gold coin a reserve of not less than one-fourth of the notes in circulation up to £7,000,000, and a pound for pound equivalent of notes issued in excess of £7,000,000. By an amending Act passed in 1911, and devised to operate from July, 1912, this pound for pound reserve above £7,000,000 was repealed, and a minimum 25 per cent. reserve fixed against all issues.

Queensland was the only State affected by the prohibition of a State issue, its note issue not redeemed representing at 31st December, 1912, £47,172, for which Australian notes are being substituted gradually.

On December, 1910, the value of bank notes in circulation in Australia was nearly £6,000,000; on 24th December, 1912, the Australian notes issued and unredeemed represented £10,012,275; and on 25th March, 1914, £9,825,535. The increase of between three and four millions sterling does not represent an increased circulation, but the amount that is held by the banks as "till money" in place of their own notes. 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.	25th Mar., 1914.
	£	£	£	£
10s.	.....	.....	18,413	23,473
£1	3,511,163	3,191,100	3,144,170	3,008,747
£5	3,263,445	3,414,695	3,438,055	3,395,045
£10	1,724,210	1,771,300	1,657,970	1,702,790
£20	397,740	405,780	325,360	365,280
£50	890,700	819,400	916,000	817,500
£100	369,100	410,000	479,600	512,700
Total £	10,156,358	10,012,275	9,979,568	9,825,535
Gold Reserve ...	4,949,422	4,465,339	4,512,599	4,358,566

Against this issue the Federal Treasurer held in gold coin a reserve amounting as at 25th March, 1914, to £4,358,566, which is equal to 44·36 per cent. of the amount of notes issued. Under the Act of 1910, the balance of the reserve, or any part thereof, may be invested by deposit in a bank, or in securities of the United Kingdom, of the Commonwealth, or of a State. Further, as cover for the notes additional to the gold reserve, Treasury bills to the total amount of the notes may be issued by the Treasurer, within or beyond the limits of the Commonwealth.

A maximum penalty of £100 may be imposed for any attempt to copy the Australian notes.

Money Orders and Postal Notes.

Exchange by means of the money order and postal notes is conducted by the Post and Telegraph Department of the Commonwealth. By money order, remittances may be forwarded from the principal post offices of New South Wales to other parts of the world, the orders being sent either direct to the place of payment if within the Commonwealth, or through intermediary agencies to places outside Australia. The postal-note system enables exchanges to be effected throughout the Commonwealth, its original object being to afford means of transmitting small amounts of less than £1 to places within the State. So far as small remittances within the State are concerned, the money-order and postal-note systems are both effective; but as public convenience is met by the postal note, the money-order system is in fact confined almost entirely to amounts exceeding £1.

Money Orders.

The money-order system was initiated in January, 1863. In that year there were 3 orders issued for every hundred persons in the State, and the total value of the orders was £53,682; in 1912 the number was 770,724, or 44 per hundred inhabitants, and the total value £3,259,012. The growth of the business has been due mainly to the extension of the sphere of operations

in and beyond the State, and to greater appreciation of the system. Appended is a statement of the business transacted in 1912 by means of money orders:—

Country.	Issued in New South Wales.		Paid in New South Wales.	
	Notes.	Value.	Notes.	Value.
	No.	£	No.	£
Commonwealth of Australia—				
New South Wales	531,445	2,530,659	522,010	2,521,837
Victoria	42,013	172,168	21,559	99,064
Queensland	17,709	85,277	37,184	169,121
South Australia	13,172	57,445	9,641	43,386
Western Australia	4,161	23,953	12,672	73,885
Tasmania	5,757	23,247	7,133	29,377
Other Countries—				
United Kingdom	128,739	276,178	22,951	97,121
Canada	644	2,144	1,143	5,089
Union of South Africa	911	3,013	2,455	9,431
Ceylon	228	741	170	446
Fiji	273	948	4,217	11,601
Germany	1,676	5,311	519	2,924
German New Guinea	12	157	251	2,655
Hong Kong	732	2,644	250	599
India	1,782	12,867	655	2,087
Italy	1,506	8,407	82	642
Marshall Islands	1	1	44	528
Mauritius	49	72	13	39
New Zealand	13,949	41,133	35,394	98,796
Noumea	41	135	..	..
Papua	51	135	750	3,439
Samoa	24	173	359	2,816
Straits Settlements	51	131	103	333
Tonga	55	225	384	5,226
United States of America	5,793	11,848	2,433	9,161
Total	770,724	3,259,012	682,372	3,190,503

The following table distinguishes orders drawn on New South Wales from those drawn on other countries. The amount of money transmitted to countries outside New South Wales was exceeded by the money received from other countries in every year of the last decennium, with the exception of 1912, when the amount drawn on other countries was the larger; this result was due mainly to the increase in the amount transmitted to the United Kingdom, which was £276,178, as compared with £164,449 in 1911. The value of money orders issued and paid in the State at intervals since 1895 is shown in the following table:—

Year.	Issued in New South Wales.			Paid in New South Wales.		
	Drawn on New South Wales.	Drawn on 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
1906	1,915,896	351,241	2,267,137	1,910,183	440,115	2,350,298
1907	2,015,332	418,565	2,433,897	2,012,735	493,699	2,506,434
1908	2,106,085	433,180	2,539,265	2,110,765	535,285	2,646,050
1909	2,295,187	450,977	2,746,164	2,289,273	551,366	2,840,639
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

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 ¼ to 1 per cent., and a similar allowance is made to the State by countries doing a return business. The revenue received during 1912 in respect of commission on the money orders issued was £26,221, as compared with £19,109 in 1902, being an increase of 37 per cent. in the ten years. As compared with the Commonwealth revenue from this source, New South Wales business furnishes about 40 per cent. of the total.

The total amount of commission collected from the public for the intervening years quoted above, and the excess of receipts over payments, are recorded as follows:—

Year.	Gross Commission Collected from the Public.	Net Receipts from Other Countries.	Net Commission received by New South Wales.
	£	£	£
1895	14,863	(-) 234	14,629
1900	16,296	51	16,347
1905	19,313	419	19,732
1906	19,377	438	19,815
1907	20,251	316	20,567
1908	20,839	350	21,189
1909	21,121	316	21,437
1910	20,962	220	21,182
1911	21,677	83	21,760
1912	26,654	(-) 433	26,221

The maximum amount allowable for a single order is £40, but no single order is issued for more than £20 to be paid in the Commonwealth of Australia and Papua, in Finland, Cuba, Guam, Hawaii, Mauretania, Philippines, Turkey in Europe, United States of America, and Mexico. To Russia the maximum is £30, to Angola, Mauritius, British North Borneo, Cape Verde Islands, Portuguese Guinea, Rodrigues Island, St. Thomas, and Principe the limit is £10.

The rates of commission on money orders payable in the Commonwealth and Papua are respectively 6d. and 9d. for every £5. The charges on those payable in New Zealand and Fiji are:—Not exceeding £2, 6d.; £2 to £5, 1s.; £5 to £7, 1s. 6d.; £7 to £10, 2s.; and in the same proportion up to £40. The commission on orders payable in the United Kingdom, other British Possessions, and foreign countries, is at the rate of 6d. for any amount up to £2, and 3d. for each additional pound or fraction thereof. In case of remissions to foreign countries through London, a second commission of 3d. for each £5 or fraction thereof is charged, this commission being added to the amount of the order. In cases where there is no direct exchange through London the business is transacted through the agency of a foreign office, which deducts its commission, ranging from ¼ per cent. to 1 per cent., from the amount of the order.

Within Australasia remittances may be made by telegraph to and from money order offices, which are also telegraph or telephone offices, and a charge is made for the telegram of advice, in addition to the ordinary commission.

Postal Notes.

Postal notes were first issued in New South Wales on 1st October, 1893. The transactions for intervening years were as follow:—

Year.	Postal Notes issued in New South Wales.			Postal Notes issued in other Australian States and 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
1906	710,053	98,706	808,759	36,672	34,616	10,092	10,347	6,193	97,920
1907	776,931	117,343	894,274	37,282	38,177	11,893	11,083	6,694	105,129
1908	817,213	113,911	931,124	39,162	41,409	12,337	11,014	7,184	111,106
1909	851,166	148,146	999,312	42,794	45,919	14,645	11,167	7,737	122,262
1910	910,136	181,999	1,092,135	45,725	49,873	14,211	11,831	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	49,708	52,512	15,818	11,358	8,613	138,009

The total number of notes issued in New South Wales during 1912 was 3,402,910, of which 2,799,713 were paid in the State, in addition to 346,659 notes issued in other States, and paid in New South Wales.

The poundage collected on postal-note issues in New South Wales during the same years was as follows:—

Year.	Poundage.	Year.	Poundage.
	£		£
1895	6,817	1908	18,116
1900	11,859	1909	19,980
1905	14,262	1910	21,309
1906	15,992	1911	22,389
1907	17,615	1912	24,906

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 institutions were in operation in New South Wales during 1912, the Government Savings Bank of New South Wales and the Savings Bank of New South Wales. The former bank is under the control of Commisssioners appointed, the latter of Trusteees nominated, by the Government of the State, and it will be seen from the balance-sheets of the institutions that in both cases the bulk of the funds is invested with the Government in various ways. An Act, to commence on 1st May, was passed in April, 1914, for the amalgamation of these two institutions. On 13th January, 1913, the Savings Bank Department of the Commonwealth Bank commenced operations in New South Wales.

Prior to Federation the Government Savings Bank was worked as the Post-Office Savings Bank, and up to 31st December, 1912, was operated in conjunction with the post-offices. On the determination of the Commonwealth Government to establish a Savings Bank with branches at the post-offices in New South Wales, the State Government was given notice to remove its agencies from the post-offices as from 1st January, 1913, and separate branches and agencies have been, therefore, provided throughout the State.

In both institutions sums over 1 shilling may be deposited; but, with the exception of the funds of charitable institutions and friendly societies—in which cases interest on the full deposit is allowed—deposits exceeding £500 do not bear interest on such excess in the Government Savings Bank; in the Savings Bank of New South Wales the maximum interest-bearing deposit which can be made by any one individual is £200. The rate of interest allowed by the Government Savings Bank was 3 per cent. to 30th June, 1912, but from that date the rates were—ordinary depositors, 3½ per cent. to £300, and 3 per cent. from £300 to £500; friendly societies and similar institutions, 3½ per cent. to £500. During the year 1912 the Savings Bank of New South Wales allowed interest at the rate of 4 per cent.

The following statement shows the number of depositors and amount of deposits at the end of each year since 1860 for the Savings Bank of New South Wales, and since 1880 for the Government Savings Bank, together with the average amount per depositor :—

Year ended 31st December.	Government Savings Bank of New South Wales.		Savings Bank of New South Wales.		Total.		Average Amount per Depositor.
	Depositors.	Deposits.	Depositors.	Deposits.	Depositors.	Deposits.	
	No.	£	No.	£	No.	£	£ s. d.
1860	Not open.		12,027	557,197	12,027	557,197	46 6 7
1870			23,570	939,465	23,570	939,465	39 14 7
1880	24,602	586,496	36,929	1,489,360	61,531	2,075,856	33 14 9
1890	83,312	1,875,905	60,514	2,854,564	143,826	4,730,469	32 17 10
1900	198,014	6,045,622	84,629	4,855,760	282,643	10,901,382	38 11 5
1905	*270,982	*8,883,651	101,383	5,545,367	372,365	14,429,018	38 15 0
1906	283,401	9,322,923	108,649	5,997,609	392,050	15,320,532	39 1 7
1907	305,265	11,128,495	116,663	6,401,662	421,928	17,530,157	41 10 11
1908	314,284	12,118,574	121,745	6,686,508	436,029	18,805,082	43 2 7
1909	334,381	13,303,421	125,870	6,847,154	460,251	20,150,575	43 15 8
1910	368,306	15,190,820	130,352	7,263,104	498,658	22,453,924	45 0 7
1911	407,011	17,595,695	137,012	7,765,643	544,023	25,361,338	46 12 4
1912	460,382	20,128,598	143,581	8,243,488	603,963	28,372,086	46 19 6

*At 30th June, 1906.

The State business in connection with loans to landholders previously administered by the Advances to Settlers' Board was transferred to the control of the Commissioners of the Government Savings Bank on 1st January, 1907; particulars will be found in the chapter relating to Agriculture.

At 31st December, 1912, the liabilities of the Government Savings Bank amounted to £20,388,522, of which £20,128,598 represented deposits, £92,418 Advance Department deposit at call, and £10,330 balance of profit and loss account; the reserve fund amounted to £151,000, and other liabilities £6,176. The investments made on behalf of the bank, and other assets, including accrued interest, were as follows:—

	£
Government Stock—	
New South Wales, Funded	12,842,412
Other States	109,945
Deposits at New South Wales Treasury	2,480,981
Debentures—	
Advance Department	2,036,641
Municipal	790,494
Fixed Deposits at various Banks	403,521
Mortgage Securities, including accrued interest	1,693,710
Bank Premises	253,984
Sundry accounts due to Bank	2,607
Commercial Banking Co. of Sydney, Ltd.	125,072
Cash at Branches, Agencies, and in transit	230,216
Balances due from other Saving Banks	18,849
Total	£20,388,522

The Commissioners are obliged, in terms of the Government Savings Bank Act, 1906, to retain at least 15 per cent. of the assets of the bank on call or at short notice.

The following statement shows the classification of depositors' balances at the Government Savings Bank for the years 1911 and 1912:—

Classification.	1911.		1912.	
	Depositors.	Deposits.	Depositors.	Deposits.
	No.	£	No.	£
£20 and under	276,760	985,122	369,092	1,121,003
Over £20 to £50	49,198	1,566,645	57,451	1,838,414
,, £50 to £100	30,471	2,117,891	35,600	2,482,553
,, £100 to £200	23,936	3,294,101	27,918	3,820,871
,, £200 to £300	10,658	2,562,161	12,111	2,910,515
,, £300 to £400	5,851	2,009,429	7,029	2,373,117
,, £400 to £500	4,151	1,854,373	4,539	2,034,299
,, £500	5,986	3,205,973	6,642	3,547,826
Total...	407,011	17,595,695	460,382	20,128,598

The average amount of deposit has increased from £32 17s. 11d. in 1906 to £43 4s. 8d. in 1911, and £43 14s. 5d. in 1912.

A Reciprocity Agreement exists between the various Savings Banks in Australia for the transfer of money for depositors, the amount transferred from the Government Savings Bank of New South Wales to the other States in 1912 being £173,619, while the transfers from the other States amounted to £309,209. Under similar arrangement with the United Kingdom, the amount of £33,095 was transferred to the Government Savings Bank of New South Wales, and £28,596 from that bank to the Post-Office Savings Bank of the United Kingdom.

The Savings Bank of New South Wales was originally administered by nine trustees; under the Savings Bank Act, 1902, and its amendment, the maximum was eighteen, and the trustees were authorised to appoint a managing trustee, who, if not already a trustee, became so *ex-officio*. The number of trustees at the end of 1912 was thirteen, exclusive of the managing trustee. The funds of this institution are applicable to investments of a general nature, such as mortgages, Government and municipal securities, and deposits with banks of issue and the Treasury. The amount invested under each head, including interest accrued, at the close of 1912, was as follows:—

Investment.	Amount.
	£
Mortgages	1,351,238
New South Wales Government Stock	3,904,940
Municipal Debentures	1,623,524
Fixed Deposits in various Banks	1,243,707
Bank of New South Wales—Working Account	129,252
Deposit with Colonial Treasurer	254,810
Land and Banking-houses	91,519
Tellers' Cash in hand	14,258
Cash received after 31st December, 1912	42,071
Total... ... ... £	8,655,319

At 31st December, 1912, the liabilities amounted to £8,655,319, consisting of deposits, £8,243,408; balance of profit and loss account, £11,448; reserve fund, £341,150; mortgages and general investments depreciation account, £51,782; and other liabilities, £7,531.

The classification of the deposits at the Savings Bank of New South Wales on 31st December, 1911 and 1912, was as folllows:—

Classification.	1911.		1912.	
	Depositors.	Deposits.	Depositors.	Deposits.
	No.	£	No.	£
£20 and under	74,570	305,436	77,482	321,972
Over £20 and under £50 ...	17,842	575,118	18,854	610,579
£50 and under £100	13,163	924,926	14,137	995,409
£100 ,, £200	14,488	2,054,691	15,110	2,140,155
£200 ,, £300	16,007	3,395,191	16,906	3,600,074
£300 and upwards	942	510,281	1,092	575,219
Total...	137,012	7,765,643	143,581	8,243,408

The average deposit in 1912 was £57 8s. 3d., as compared with £56 13s. 7d. in 1911, and £55 4s. in 1906.

Connected with the Savings Bank of New South Wales are five penny-savings banks established in various districts. The aggregate deposits at December, 1912, were £1,174, and this amount is included in the figures previously shown concerning the bank's operations.

Similarly, deposits in the school savings banks of the State are transferred to the Government Savings Bank when they amount to £1.

A comparison of the respective positions of the two institutions at December, 1912, may be obtained from the following statement. The comparison, however, is affected by the fact that by the Act under which it operates the Savings Bank of New South Wales may not pay interest on sums greater than £200; in the Government Savings Bank the amount is limited to £500.

Bank.	Branches and Agencies.	Accounts open.	Deposits.	Withdrawals.	Balance of Depositors' Accounts.
	No.	No.	£	£	£
Government Savings Bank... ...	612	460,382	20,960,605	18,981,275	20,128,598
Savings Bank of New South Wales	28	143,581	5,045,858	4,854,326	8,243,408

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, 1913:—

State.	Depositors.	Amount of Deposits in all Savings Banks.	Average Amount	
			Per Depositor.	Per Inhabitant.
	No.	£	£ s. d.	£ s. d.
New South Wales ...	*647,124*	*29,568,282*	*45 13 10*	*16 6 6*
Victoria	703,084	22,232,197	31 12 5	15 19 10
Queensland	168,438	8,463,504	50 4 11	12 17 11
South Australia... ...	252,131	8,506,090	33 14 9	19 8 11
Western Australia ...	117,913	4,560,896	38 13 7	14 10 7
Tasmania...	72,525	2,131,881	29 7 11	10 19 2
Total	1,961,215	75,462,850	38 9 7	15 14 2

Of the aggregate amount, £75,462,850, deposited in the savings banks of Australia, over 70 per cent. is reinvested by the controlling bodies in Government and municipal securities.

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 Treasury, the Commonwealth Bank may not issue bank notes.

The capital of the bank is fixed at £1,000,000, to be raised by the sale and issue of debentures. The management is entrusted to the Governor of the bank, appointed by the Governor-General of Australia for a term of seven years. In addition to ordinary banking business the Governor is empowered to establish a department for the transaction of savings bank business.

The Commonwealth Bank was established on 15th July, 1912, by the opening of the Postal Savings Bank Department in Victoria. A savings department was commenced in Queensland on 16th September; in the Northern Territory on 21st October, 1912; and in New South Wales, South Australia, and Western Australia on 13th January, 1913; in Tasmania the State Savings Bank was transferred to the Commonwealth Bank on 1st January, 1913. The rate of interest for deposits is fixed at 3 per cent. up to a maximum of £300.

On 20th January, 1913, operations were commenced with regard to ordinary banking business.

The following statement of the Savings Department shows the number of depositors and the amount at their credit as at 30th September, 1913:—

	Depositors.	Amount at Credit of Depositors.
	No.	£
New South Wales	22,272	664,366
Victoria	21,364	804,775
Queensland	17,547	589,723
South Australia	5,395	189,039
Western Australia	5,781	164,134
Tasmania	29,998	832,903
Northern Territory	281	15,668
Papua	80	4,394
London	182	10,090
Total	102,900	£3,275,092

Trading Banks.

Banking institutions transacting ordinary banking business within the State during 1912 numbered sixteen; the Commonwealth Bank of Australia, as stated above, commenced operations in Sydney in January, 1913. Four institutions have their head offices in Sydney, four in Melbourne, two in Brisbane, one in Wellington (N.Z.), four in London, and one in Paris. Of the four local banks, three have branches outside the State, but the fourth confines its operations to New South Wales. Two of the local banks—the Bank of New South Wales and the City Bank of Sydney—carry on business under the provisions of special Acts of Incorporation, and in each case the reserve liability attaching to the shares is equivalent to the amount originally subscribed; the Commercial Banking Company of Sydney

(Limited) and the Australian Bank of Commerce (Limited) are registered as limited companies under the Companies Act, 1906, the latter bank having registered in September, 1909, and commenced operations on 1st January, 1910; previously it was registered and operated as the Australian Joint Stock Bank (Limited). Including branches and head offices, New South Wales is served by 651 banking establishments.

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 sixteen banks doing business in New South Wales in 1912 was stated as £24,970,880, of which £2,281,754 carried a preferential claim on the profits of the companies.

In the following table is a statement of the ordinary and preferential capital of each bank at the date shown, with the amount of the reserve fund of the institution. In the case of some of the companies which were reconstructed, certain reserves, of which no account has been taken in the table, are held in suspense pending realisation of assets:—

Bank.	Offices, in New South Wales.	Date of Balance-sheet.	Capital Paid up.			Reserve Fund.
			Ordinary.	Preferential.	Total.	
Head Office, Sydney.	No.		£	£	£	£
Bank of New South Wales	167	Mar., 1913	3,253,540	....	3,253,540	2,250,000
Commercial Banking Co. of Sydney (Limited)	175	June, 1913	1,750,000	....	1,750,000	1,580,000
Australian Bank of Commerce (Limited)	63	June, 1913	1,195,399	....	1,195,399	25,000
City Bank of Sydney	45	June, 1913	400,000	....	400,000	23,500
Head Office, Melbourne.						
Commercial Bank of Australia (Limited)	18	June, 1913	1,371,135	....	1,371,135	Nil.
Royal Bank of Australia (Limited) ..	1	Mar., 1913	300,000	....	300,000	190,000
National Bank of Australasia (Limited)..	8	Mar., 1913	1,192,440	305,780	1,498,220	405,000
Colonial Bank of Australasia (Limited) ..	1	Mar., 1913	135,236	304,044	439,280	200,000
Head Office, Brisbane.						
Queensland National Bank (Limited) ..	1	June, 1913	413,418	....	413,418	130,000
Bank of North Queensland (Limited) ..	6	June, 1913	162,059	....	162,059	32,500
Head Office, Wellington.						
Bank of New Zealand	1	Mar., 1913	500,000	1,500,000	2,000,000	1,375,000
Head Office, London.						
Bank of Australasia	48	Oct., 1912	1,600,000	....	1,600,000	2,010,000
Union Bank of Australia (Limited) ..	36	Feb., 1913	1,500,000	....	1,500,000	1,500,000
London Bank of Australia (Limited) ..	32	Dec., 1912	376,462	171,930	548,392	170,000
English, Scottish, and Australian Bank (Limited)	48	June, 1912	539,487	....	539,487	230,000
Head Office, Paris.						
Comptoir National d'Escompte de Paris	1	Dec., 1912	8,000,000	....	8,000,000	1,480,057
Total	651	....	22,689,126	2,281,754	24,970,880	11,601,057

In addition to the paid-up capital shown above, an amount of £5,406 had still to be paid in respect of calls made on the shareholders of three banks—Australian Bank of Commerce (Limited), £3,135; Queensland National Bank (Limited), £1,830; and Bank of North Queensland (Limited), £441.

The following table shows the amount of the paid-up capital and reserve funds of all banks operating in the State, at intervals since 1890:—

Year.	Banks.	Capital Paid up.		Total.	Reserve Funds.
		Ordinary.	Preferential.		
	No.	£	£	£	£
1890	17	.....	.....	13,929,326	7,832,047
1895	13	14,610,177	5,094,780	19,704,957	4,175,912
1900	13	12,212,120	4,594,940	16,807,060	4,529,109
1905	13	9,870,871	4,095,060	13,965,931	5,474,199
1906	13	10,084,856	4,095,060	14,179,916	5,818,412
1907	14	16,615,104	4,095,060	20,710,164	7,498,130
1908	14	17,672,047	1,977,710	19,649,757	7,681,208
1909	15	21,084,062	1,977,710	23,061,772	9,017,659
1910	16	21,911,796	2,281,754	24,193,550	9,909,711
1911	16	22,280,807	2,281,754	24,562,561	10,769,574
1912	16	22,689,126	2,281,754	24,970,880	11,601,057

Liabilities and Assets of Banks.

The aggregate liabilities to the public of the banks enumerated were £247,815,234, against which there were assets representing £286,350,822. The following table gives the liability for each institution, notes in circulation and deposits being separated from other liabilities. In some cases small items which should be classed with "other liabilities" are included with deposits, as they cannot be distinguished in the balance-sheets, and in the case of the Commercial Bank of Australia (Limited), the accounts of the Assets Trust of the old bank have been excluded:—

Bank.	Notes in Circulation.	Deposits* (approximate).	Other Liabilities.	Total.
	£	£	£	£
Bank of New South Wales	300,129	34,514,842	8,164,080	42,979,051
Commercial Banking Co. of Sydney (Limited)	30,707	20,013,372	957,594	21,001,673
Australian Bank of Commerce (Limited)	2,541	4,262,274	349,142	4,613,957
City Bank of Sydney	8,973	1,934,587	..	1,943,560
Colonial Bank of Australasia (Limited)	22,054	4,093,053	311,828	4,426,935
Commercial Bank of Australia (Limited)	13,167	6,321,902	1,093,798	7,428,867
National Bank of Australasia (Limited)	46,529	10,559,054	944,241	11,549,824
Royal Bank of Australia (Limited)	1,256	2,163,549	611,216	2,776,021
Queensland National Bank (Limited)	Nil.	9,521,416	313,975	9,835,391
Bank of North Queensland (Limited)	Nil.	865,840	61,149	926,989
Bank of New Zealand	994,680	16,414,640	1,367,081	18,776,401
Bank of Australasia	184,056	17,906,493	2,722,182	20,812,731
Union Bank of Australia (Limited)	201,327	22,170,879	1,707,766	24,079,972
London Bank of Australia (Limited)	11,208	5,571,753	1,032,044	6,615,005
English, Scottish, and Australian Bank (Limited)	5,007	8,588,549	588,173	9,181,729
Comptoir National d'Escompte de Paris	Nil.	52,329,337	8,537,791	60,867,128
Total £	1,821,634	217,231,540	28,762,060	247,815,234

* Includes other liabilities in some cases.

The assets which each bank showed against its liabilities to shareholders and the public are given in the following table:—

Bank.	Coin and Bullion and Cash Balances.	Australian Notes.	Advances.	Other Assets.	Total.
	£	£	£	£	£
Bank of New South Wales..	9,247,332	1,213,416	25,383,215	12,884,213	48,728,176
Commercial Banking Co. of Sydney (Limited).	3,462,814	517,135	13,993,999	6,552,096	24,526,044
Australian Bank of Commerce (Limited).	503,641	237,107	3,864,629	1,250,910	5,856,287
City Bank of Sydney	425,785	70,043	1,601,900	286,935	2,385,263
Colonial Bank of Australasia (Limited) ..	919,916	....	2,851,559	1,314,009	5,085,484
Commercial Bank of Australia (Limited).	1,523,715	....	5,189,481	2,126,242	8,839,438
National Bank of Australasia (Limited)..	2,236,386	....	8,818,171	2,467,133	13,521,690
Royal Bank of Australia (Limited) ..	522,710	....	1,690,189	1,070,581	3,283,480
Queensland National Bank (Limited) ..	2,030,239	318,605	6,226,920	1,839,259	10,415,023
Bank of North Queensland (Limited) ..	217,260	43,340	738,814	127,625	1,127,039
Bank of New Zealand	3,148,930	....	10,757,329	8,353,260	22,259,519
Bank of Australasia	4,358,502	....	17,225,792	3,002,985	24,587,279
Union Bank of Australia (Limited) ..	4,048,398	....	16,229,308	6,951,269	27,228,975
London Bank of Australia (Limited) ..	1,194,570	....	4,554,302	1,640,067	7,388,939
English, Scottish, and Australian Bank (Limited).	1,320,954	....	6,175,082	2,530,719	10,026,755
Comptoir National d'Escompte de Paris.	4,997,230	....	64,038,784	2,055,417	71,091,431
Total .. .. £	40,158,382	2,400,246	189,339,474	54,452,720	286,350,822

The values of Australian notes held by the banks with headquarters in Melbourne and in London have not been distinguished from the value of coin, &c. In all cases, the assets and liabilities quoted represent the total of the various banks, wherever situated, not merely those in New South Wales, which are treated subsequently. The difference between the assets and liabilities shown in the table amounts to £38,535,588, and consists of the paid-up capital and reserves (£37,089,355), and dividends paid (£1,446,233).

Local Business of Banks.

To render comparable the figures of the various banks, necessary adjustments have been made by excluding from the assets of two of the banks the balances due, by branches and agencies outside New South Wales, to the head office in Sydney. The following table shows the assets and liabilities and the surplus assets of the banks, at intervals since 1860. 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
1906	13	44,457,957	41,416,737	3,041,220
1907	14	49,345,915	44,937,466	4,408,449
1908	14	51,428,158	46,140,027	5,288,131
1909	15	51,914,494	48,330,893	3,583,601
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

In New South Wales the excess of the assets over liabilities reached the highest point in 1891 and 1892; in the latter year the excess was shown as £16,146,513. From this date it was reduced in 1901 to £8,359,727, and in 1906 to £3,041,220. There has been some fluctuation since, and the amount in 1912 was £5,017,542.

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 16·8 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 75·8 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 98·6 per cent. of liabilities (exclusive of shareholders), while advances are 75·8 per cent. of assets, as quoted above. These items call for more extensive discussion in the returns.

The assets show coin and bullion separately, but 90 per cent. of the other assets are placed together under the term "notes and bills discounted, and all other debts due to the bank."

The following statement shows the average liabilities within New South Wales, exclusive of liabilities to shareholders:—

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
1906	1,564,670	22,585,802	16,834,690	39,420,492	431,575	41,416,737
1907	1,756,696	24,034,857	18,729,709	42,764,566	416,204	44,937,466
1908	1,759,020	25,958,298	17,951,589	43,909,887	471,120	46,140,027
1909	1,758,913	25,926,547	20,198,450	46,124,997	446,983	48.330,893
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

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
1906	7,507,363	34,415,596	1,819,417	715,581	44,457,957
1907	9,552,085	37,244,216	1,746,940	802,674	49,345,915
1908	9,600,866	39,213,472	1,793,518	820,302	51,428,158
1909	10,717,751	38,485,738	1,814,351	896,654	51,914,494
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

Under the heading of "other assets" are grouped notes and bills of banks, including Queensland Government Treasury notes, balances due from other banks, and, for 1910 to 1912, 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 eight 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	133,186	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

From preceding tables it is apparent that the deposits in banks have increased very rapidly, while the advances made, though larger from year to year, have not increased in the same proportion; thus, in 1881 the excess of deposits over advances was little more than half a million pounds; from 1890 to 1905, advances were considerably in excess of deposits; since 1905 deposits have increased 54 per cent. and advances 47 per cent. Considerable sums of money of Australian origin are held on deposit in London, and these amounts form a source of profit to the institutions, though they cannot be used for investment locally.

Metallic Reserves of Banks.

The proportion of metallic reserves which banking institutions should keep constantly in stock is not fixed by any enactment. Compared with the total liabilities, and with deposits at call and note circulation, the amount of coin and bullion has varied very considerably from year to year, as indicated below:—

Year.	Coin.	Bullion.	Total.	Proportion of Metallic Reserves—	
				To Total Liabilities.	To Deposits at Call and Note Circulation.
	£	£	£	per cent.	per cent.
1860	1,578,424	90,052	1,668,476	25·7	*
1870	1,291,177	86,744	1,377,921	19·1	*
1880	3,488,554	75,008	3,563,562	18·3	49·5
1890	5,619,111	87,659	5,706,770	15·3	49·1
1900	5,933,076	193,050	6,126,126	18·0	44·8
1905	8,624,083	199,177	8,823,260	22·7	54·2
1906	7,247,347	260,016	7,507,363	18·1	40·8
1907	9,342,631	209,454	9,552,085	21·3	46·6
1908	9,350,942	249,924	9,600,866	20·8	48·7
1909	10,521,262	196,489	10,717,751	22·2	48·8
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

* Amount of deposits at call unobtainable.

In the foregoing table the figures represent the weekly average amounts during the quarter ended 31st December in each year; the Comptoir National d'Escompte de Paris is included since 1907, and the Royal Bank of Australia (Limited) and the Colonial Bank of Australasia (Limited) since 1910.

Advances by Banks.

Under the head of advances are included notes and bills discounted, and all other debts due to the banks. The bulk of the advances are secured by the mortgage of real estate or by the depositing of deeds over which the lending institutions acquire a lien; but the extent of the discounting of trade bills is not apparent. A most interesting summary is supplied in the following table:—

Year.	Advances.	Ratio of Advances to Deposits.	Advances per cent. of Total Assets.	Amount of Advances per Inhabitant.
	£	per cent.		£ s. d.
1860	5,780,700	111·9	71·8	16 17 6
1870	7,814,116	127·9	79·2	15 18 11
1880	17,210,205	96·2	79·5	23 12 4
1890	43,009,559	121·3	84·7	39 0 8
1900	34,385,388	101·2	79·9	25 4 0
1905	32,447,659	87·5	74·3	22 1 9
1906	34,415,596	87·3	77·4	22 19 4
1907	37,244,216	87·1	75·5	24 6 3
1908	39,213,472	89·3	76·2	25 2 9
1909	38,485,738	83·4	74·1	24 2 1
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

Deposits in Banks.

The total amount of money deposited with the sixteen banks operating in New South Wales during 1912 was, approximately, £217,231,540, of which sum £57,155,402 was received locally. The excess of the total over local deposits was employed in the various countries to which the banks' business extended, some, of course, being used in New South Wales; but from the nature of the transactions of the banks, it is not possible to ascertain the amount so used. Dealing only with local deposits, the following statement shows the average amount of money deposited at various periods commencing with 1860; the distinction between interest-bearing deposits and those at call was first made in 1875:—

Year.	Deposits bearing Interest.	Deposits not bearing Interest.	Total Deposits.	Proportion of Deposits not bearing Interest to Total Deposits.	Proportion of Deposits to Liability (to Public).
	£	£	£	per cent.	per cent.
1860	.....	.....	5,164,011	...	79·7
1870	.....	.....	6,107,999	...	84·8
1880	11,948,383	5,934,641	17,883,024	33·2	91·8
1890	25,395,600	10,064,518	35,460,118	28·4	95·2
1900	20,009,081	12,224,510	32,233,591	37·9	94·9
1905	22,211,627	14,859,427	37,071,054	40·1	95·4
1906	22,585,802	16,834,690	39,420,492	42·7	95·2
1907	24,034,857	18,729,709	42,764,566	43·8	95·2
1908	25,958,298	17,951,589	43,909,887	40·9	95·2
1909	25,926,547	20,198,450	46,124,997	43·8	95·4
1910	27,824,972	24,068,552	51,893,524	46·4	94·9
1911	30,089,470	27,050,686	57,140,156	47·3	97·9
1912	30,291,713	26,863,689	57,155,402	47·0	98·6

The deposits reached their highest level in December, 1912, when there was entrusted to the banks an average total of £57,155,402. In 1891 the deposits amounted to £35,659,690, but in the subsequent ten years fully £5,000,000 were withdrawn, the reduction being entirely in interest-bearing deposits. Since 1894 there has been a tendency to restrict fixed deposits, and to extend the operations in current accounts, which have increased from 9¼ millions to 27 millions during the interval; fixed deposits now show an increase of nearly 5 millions on the high-water mark of 1890. A feature of the movement in deposits is the rapid advance of current accounts since 1908.

Interest, Discount, and Exchange Rates.

The interest offered for fixed deposits is 3 to 3½ per cent. for sums deposited for twelve months; for six months' deposits the interest allowed is at the rate of 1½ per cent., occasionally rising to 2 per cent.; for periods of two years the interest rate rises to 3½ per cent. The practice of allowing interest on money fixed for less than six months was discontinued in May, 1894. The rates quoted are low, and the strength of deposits show that money equal to requirements is freely offered. The following is a statement of the average rates for twelve months' deposits from 1860 onwards. The figures do not include interest payable on deferred deposits, by reconstructed banks:—

Year.	Bank Interest on Deposits for twelve months.	Year.	Bank Interest on Deposits for twelve months.
	per cent.		per cent.
1860	5	1907	3
1870	5	1908	3
1880	5	1909	3
1890	4½	1910	3
1900	3	1911	3
1905	3 to 3½	1912	3 to 3½
1906	3 to 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 during interval years from 1890 to 1912 were as follow:—

Year.	Overdraft Rates.	Discount Rates.	
		Bills at 3 months.	Bills over 3 months.
	per cent.	per cent.	per cent.
1890	9	7	8
1895	7 to 8	6 to 6½	7
1900	6 ,, 7	5 ,, 5½	5½ to 6½
1905	6 ,, 7½	5½ ,, 6	6 ,, 6½
1906	6 ,, 7½	5½ ,, 6	6 ,, 6½
1907	6 ,, 8	5 ,, 6	6 ,, 7
1908	6 ,, 8	5 ,, 6	6 ,, 7
1909	6 ,, 7½	5 ,, 6	6 ,, 7
1910	6 ,, 7½	5 ,, 6	6 ,, 7
1911	6 ,, 7½	5 ,, 6	6 ,, 7
1912	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 1912 were:—

Year.	Exchange rate on London at 60 days' sight.	
	Buying.	Selling.
	per cent.	per cent.
1890	99⅜ to 100	100⅜ to 101¼
1895	99⅛ ,, 99⅜	100⅛ ,, 100¼
1900	98¾ ,, 99½	100¼ ,, 100⅝
1905	99⅛ ,, 99½	100⅛ ,, 100½
1906	99⅛ ,, 99½	100⅛ ,, 100½
1907	98¾ ,, 99⅛	99⅝ ,, 100
1908	98⅜ ,, 99⅝	99⅝ ,, 100¼
1909	98¾ ,, 99¼	99⅝ ,, 100⅛
1910	98⅜ ,, 99	99⅝ ,, 99⅞
1911	98⅝ ,, 99	99⅝ ,, 99⅞
1912	99⅛ ,, 99¼	99¾ ,, 100⅛

Profits of Banks.

The results of the transactions of each bank for the latest period for which information is available are given in the following table. With the exception of the Bank of New Zealand, the English, Scottish, and Australian Bank (Limited), the London Bank of Australia (Limited), and the Comptoir National d'Escompte de Paris, for which the figures relate to twelve months' operations, the amounts given cover a period of six months. The dates of the balance-sheets are as shown previously: —

Bank.	Balance brought forward.	Net Profits for half-year.	Total.	Half-yearly Dividend.		Amount transferred to Reserve Fund, &c.	Amount carried forward.
				Rate per cent. per annum.	Amount.		
	£	£	£		£	£	£
Bank of New South Wales	94,853	236,732	370,585	10 6	156,339 87,742	125,000	87,504
Commercial Banking Company of Sydney (Limited)	60,249	134,122	194,371	10	87,383	50,000	56,988
Australian Bank of Commerce (Limited)	3,619	28,312	31,931	3	17,932	10,000	3,999
City Bank of Sydney	2,617	15,586	18,203	5	10,000	5,500	2,703
Colonial Bank of Australasia (Limited)	6,267	29,002	35,269	7	15,375	16,000	3,894
Commercial Bank of Australia (Limited)	6,360	68,076	74,436	3	31,760	35,000	7,676
National Bank of Australasia (Limited)	14,413	98,633	113,046	7	52,438	44,400	16,208
Royal Bank of Australia (Limited)	4,407	23,052	27,459	8	12,000	10,000	5,459
Queensland National Bank (Ltd.)	Nil.	48,274	48,274	..	†36,274	12,000	..
Bank of North Queensland (Ltd.)	4,614	8,376	12,990	7	5,446	7,500	44
Bank of New Zealand	40,588	242,530	1283,118	Pref., 10 Ord., 6 Bonus, 3	65,000	175,000	43,118
Bank of Australasia	18,244	216,304	234,548	Div'nd. 14 Bonus, 3	136,000	70,000	28,548
Union Bank of Australia (Limited)	43,349	155,654	199,003	Div'nd. 10 Bonus, 2	105,000	50,000	44,003
London Bank of Australia (Ltd.)	25,043	112,720	137,763	Pref., 7 Ord., 5	30,449	82,221	25,093
English, Scottish, and Australian Bank (Limited)	31,504	88,330	114,974	8	43,153	39,385	32,434
Comptoir National d'Escompte de Paris	94,274	715,709	809,983	8	640,000	65,737	104,246

* Interest on capital paid in advance. † To Private Deposits Repayment Fund. ‡ Exclusive of interest on guaranteed stock, £40,000, interim dividend, £60,000, and £43,000 for reduction of premises, &c., not in balance-sheet.

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 being notified to the secretary of the Banks' Exchange Settlement, who establishes the daily credit of each bank with the "pool," which is under the control of three trustees, and consists of £700,000 in gold; this money is deposited in the vaults of three of the banks, and may not be circulated or disturbed. The contributions to the "pool" are according to the volume of the operations of each bank. The secretary notifies each bank daily of the amount of its credit with the "pool," and it is not permissible for any balance to remain below 25 per cent. of the fixed contribution. In the event of its credit reaching this margin, the bank is required to make up its deficiency with gold; this payment, however, is not made to the "pool," but to such other banks as may happen to have at their credit with the "pool" a larger sum than is required by the agreement. This arrangement retains intact the £700,000 comprising the "pool."

The growth in the volume of exchanges is shown in the following table:—

Year.	Amount of Exchanges.	Year.	Amount of Exchanges.
	£		£
1895	108,509,980	1908	220,860,512
1900	144,080,314	1907	234,169,822
1901	167,676,707	1908	227,736,243
1902	178,637,708	1909	240,645,737
1903	180,961,406	1910	274,343,666
1904	177,797,325	1911	304,488,435
1905	189,826,351	1912	330,621,122

The transactions of this office have grown steadily since its establishment; the large annual increases during the last seven years indicate a remarkable activity in trade due to a succession of good seasons, and to the consequent general prosperity throughout the State.

Registration of Firms.

The Registration of Firms Act, which came into force 1st January, 1903, required that within six months of that date every firm carrying on business or having any place of business in New South Wales under a firm-name which did not consist of the full or the usual names of all the partners without any addition, and every person carrying on business or having any place of business in New South Wales under any firm-name consisting of or containing any name or addition other than the full or the usual name of that person, should register with the Registrar-General the name under which their or his business was conducted. Other firms and persons required to be registered now register before they commence business.

The following return shows the transactions under the Act during the last five years:—

Transactions.	1908.	1909.	1910.	1911.	1912.
Statements, including original Registrations and subsequent charges.	1,715	1,602	1,430	1,477	1,601
Declarations by Agents and Attorneys to accompany Statements.	22	21	15	15	12
Certified extracts from Register	31	30	21	34	19
Searches and Inspections	1,447	3,068	3,476	2,672	3,713
Inquiries by Letter	14	10	8	5	13
Total Fees ... ... £	363	565	489	529	593

Incorporated Companies.

The legislation relating to incorporated companies in New South Wales is contained principally in the Companies Act, 1899, consolidating earlier statutes, the amending Acts of 1900, 1906, and 1907, and the Companies (Death Duties) Act, 1901. These enactments follow the general provisions of Imperial Acts relating to companies up to 1877, with deviations embodying the results of local experience. With the object of preparing the way for co-ordination of the laws which govern the formation, management, and winding-up of joint stock companies in different parts of the British Empire and so securing a practical basis for uniformity of mercantile law, in this respect the question of company law was made a subject for consideration at an Imperial Conference held in London in 1907, at which date the Statutes then operative numbered seventeen for the United Kingdom, seventy-five for Canada (embodying nine different systems of company law), forty-six for Australia (embodying six different systems), twenty-one for South Africa (embodying five systems), and two statutes each for India and New Zealand.

A later analysis of company law for the Imperial Conference of 1911 showed that as the result of fresh or of consolidating enactments the law affecting companies was contained in one enactment for the United Kingdom; in sixty-seven Acts and ordinances, comprising eleven different systems, for Canada; in forty-three statutes for Australia, comprising six different systems; in South Africa the number of statutes was reduced to sixteen; in India and New Zealand the position remained the same as in the earlier year. At the 1911 Conference a resolution was carried unanimously that it is in the best interests of the Empire that there should be more uniformity throughout the centres and dependencies in the law of copyrights, patents, trade-marks, and companies.

Under the Companies Act, 1899, of New South Wales, the liability of members of limited companies may be limited either by shares, or by guarantee; unlimited companies are those in which no limitation is placed on the liability of members. A special feature of the Act is the embodiment of provisions for the formation and registration of companies in connection with the mining industry under the "No-Liability System," as previously defined in the No-Liability Mining Companies Act, 1896. Societies worked only for the mutual benefit and advantage of the subscribing members are registered under the Building and Co-operative Societies Act, 1901. From the date of passing of the Companies Act, 1899, the formation of a company, association, or partnership of more than ten persons in a banking business, or of twenty in other businesses trading for profit is prohibited, except such company, association, or partnership be registered under the Act, or formed or incorporated in pursuance of some other enactment, or of a royal charter or letters patent. Special provision is made for associations formed for the purpose of promoting commerce, art, science, religion, charity, or other useful object, rather than of making profit for the members. Companies existing at the passing of the Act, and having a minimum of seven members, may register under the Act, particular provision existing to enable joint stock companies, having a permanent paid-up or nominal capital of fixed amount divided into shares of fixed amount, or held and transferable as stock, and having for members only holders of such shares or stock, to register as companies with liability limited by shares.

The trend of recent legislation in England has been to render available information concerning joint stock companies, on the ground that publicity is the best safeguard for the protection of creditors and of investors, and that, moreover, the privilege of limited liability confers a right to demand publicity and disclosure of material facts, which can make it possible for creditors or investors to form a sound opinion. In New South Wales the

particulars required to be filed in regard to companies registered include the following:—Address of the registered office; memorandum and articles of association; and in the case of companies not having a capital divided into shares, a list of directors; particulars are required also as to contracts, capital, nominal, subscribed, and paid-up, with a list of shareholders; copies of special or extraordinary resolutions, and of winding-up orders have to be filed. In the United Kingdom, India, British Columbia, the Transvaal, and in Victoria, an annual balance-sheet is filed; and in the United Kingdom and in other parts of the British Empire, *e.g.*, in New Zealand, details are required regarding the prospectus, or the statement in lieu of the prospectus, and allotments, mortgages, charges, or debentures.

In regard to limited companies in New South Wales, the following particulars are recorded for the past ten years:—

Year.	New Companies registered.	Nominal Capital.	Members (associations not for profit. Sec. 52).	Summary and List of Members received.	Increase of Capital authorised.	Amount of Aggregate Increase.	Statements, &c., that Companies are defunct.	Winding-up.	Liquidators' Return.	Total Fees received.
		£				£				£
1903	154	4,933,105	515	598	13	125,100	32	56	23	2,099
1904	127	2,755,777	1,557	648	12	1,210,600	1	64	44	1,567
1905	170	3,185,390	2,357	730	10	340,300	22	53	36	1,901
1906	189	4,528,900	1,800	801	10	149,500	67	67	33	2,239
1907	189	3,777,307	4,100	903	17	1,760,795	34	62	26	2,302
1908	196	3,850,175	3,250	973	29	1,360,500	26	63	24	2,487
1909	251	6,791,157	915	1,042	20	548,700	22	68	40	3,064
1910	329	6,975,691	590	1,218	41	1,234,055	29	73	33	4,107
1911	400	10,627,217	3,670	1,347	72	4,713,300	13	82	41	5,427
1912	432	13,896,231	1,965	1,550	78	4,065,446	2	118	38	5,898

Of mining companies registered as with "no-liability," the following particulars are recorded in the same period:—

Year	New Companies	Nominal Capital.	Balance sheets filed.	Increase of Capital.	Amount of Increase.	Statements, &c., that Companies are defunct.	Winding-up.	Liquidators' Return.	Total Fees received.
		£			£				£
1903	29	237,160	77	2	8,900	22	19	6	98
1904	14	160,765	57	3	17,800	3	9	6	59
1905	23	225,725	91	5	10,500	33	10	6	84
1906	51	571,629	67	6	18,300	22	8	7	135
1907	65	493,510	95	9	71,210	31	17	5	179
1908	30	238,195	73	4	5,125	2	23	12	105
1909	49	573,705	48	9	35,110	1	14	4	132
1910	30	273,520	56	5	18,425	1	16	9	95
1911	24	359,500	52	2	12,000	..	13	7	80
1912	21	250,575	44	7	43,600	1	11	4	68

Certain of these companies carry on bank deposit business in addition to their ordinary business; but the number of such companies and the extent of their deposit business is steadily declining. The number of such deposit companies is eleven, and their liabilities, assets, and paid-up capital for the quarter ended June, 1913, were as follows:—

Companies.	Number.	Liabilities (excluding Shareholders).			Assets.			Paid-up Capital.
		Deposits.	Other Liabilities.	Total.	Landed Property.	Other Assets.	Total.	
		£	£	£	£	£	£	£
Investment	8	152,345	121,510	273,855	301,241	573,826	875,067	573,504
Trading	3	73,903	1,830,870	1,904,773	642,883	4,921,988	5,564,871	3,600,000
Total	11	226,248	1,952,380	2,178,628	944,124	5,495,814	6,439,938	4,173,504

Under the Companies (Death Duties) Act, 1901, every company incorporated outside New South Wales for the purpose of mining, or of carrying on an agricultural industry in New South Wales, is obliged to have a registered office in the State, and is liable to the Government of the State for the payment of death duties on the decease of a member of the company, wherever such member may have been domiciled. This latter obligation, however, operates only where the value of shares held by the member at time of his death exceeds £1,000.

Co-operative Trading Societies.

Registration under that section of the Building and Co-operative Societies Act, 1901, which relates to co-operative societies, number 133, of which only forty were still on the register at the end of 1912. There is, however, evidence of increased activity in the co-operative movement, as denoted by the number of new societies formed, viz., twenty-nine in the five years 1905-1909, ten in 1910, and four in each of the last two years.

The working of the co-operative societies during the last five years will be seen below:—

	1908.	1909.	1910.	1911.	1912.
Number of Societies	39	40	49	40	40
Number of Members	*	*	*	23,083	26,767
	£	£	£	£	£
Liabilities—					
Share capital	90,690	97,891	121,241	138,201	156,534
Reserves and Net Profits... ...	75,010	81,356	96,963	101,471	103,707
Other liabilities	48,479	73,140	66,580	86,672	130,729
Total Liabilities ... £	214,179	252,387	284,784	326,344	390,970
Assets—					
Land, Building, Plant, &c. ...	45,624	71,254	80,430	101,290	133,387
Stock	107,660	117,865	132,609	144,972	172,282
Other Assets	60,895	63,268	71,745	80,082	85,301
Total Assets ... £	214,179	252,387	284,784	326,344	390,970

*Not Available.

In the period from 1908 to 1912 the share capital of the societies has increased by 73 per cent. The predominant rate of interest allowed to shareholders on the subscribed capital is 5 per cent., and the dividend on purchases amounted, in 1912, to an average of 1s. 6d. in the £. This dividend is, however, below the actual allowance to shareholders, as it includes dividends on non-shareholders accounts at a rate somewhat less than half that allowed to shareholders.

Considering the small amount of capital invested, the results obtained were surprisingly good, and afford liberal inducements for the further development of these institutions. The majority of existing societies are engaged in general trading, but individual societies are engaged in the produce trade, in baking, dispensing, timber-cutting. Societies established outside the metropolitan and suburban districts are, almost without exception, in the mining districts.

During the year 1912 the sales amounted to £1,306,250, and the expenses, including interest and depreciation, to £209,621, equal to 16 per cent. on the amount of sales. The balances of profit amounted to £113,820, but in five cases there were losses amounting to £649. The profit on sales was at the rate of 8·7 per cent. A summary of the results of 2,331 societies in the United Kingdom shows that the proportion of expenses and of profit to sales were 8·27 per cent., and 9·83 per cent., respectively.

Benefit Building and Investment Societies.

The provisions of the Building and Co-operative Societies Act, 1901, enable any number of persons to form themselves into a benefit building and investment society for the purpose of subscribing money to enable members to erect or purchase dwellings, &c., by loans secured to the society by mortgage until the amount of the shares has been fully paid. These institutions are established solely for the benefit and advantage of the subscribing members, and their receipts are confined, as a rule, to the subscriptions. At the close of 1912 the building societies which had been registered under the Act numbered 233, of which only 107 remained in existence at that date, 89 being Starr-Bowkett, and 18 Permanent Building Societies. Of the remainder, some, being terminating societies, had ceased to exist; others had become Limited Companies under the Companies Act, and consequently ceased to operate under the Building Societies Act; and a large proportion had become defunct.

Returns from the existing institutions show the aggregate liabilities and assets, &c., of these societies at the date of their latest balance-sheets as follows:—

Societies.	Number.	Liabilities.				Assets.			Profit and Loss Credit.
		Deposits.	Subscriptions and Shares.	Other Liabilities.	Total.	Advances.	Other Assets.	Total.	
		£	£	£	£	£	£	£	£
Starr-Bowkett ..	89	....	518,065	15,604	533,669	516,090	59,942	576,032	42,363
Land, Building, and Investment.	18	504,650	334,454	132,840	971,944	783,056	224,103	1,007,159	35,215
Total	107	504,650	852,519	148,444	1,505,613	1,299,146	284,045	1,583,191	77,578

During the past eight years the societies of the Starr-Bowkett type, which are usually terminating societies working by ballot and sale of advances, have increased from 17 to 89; the Permanent Building Societies have decreased by one, but the volume of business has shown satisfactory expansion.

Since 1907 the number of Starr-Bowkett societies has doubled, while the assets have increased from £195,364 to £576,032; advances to members have increased in the same period from £162,618 to £516,090.

Particulars relating to Starr-Bowkett Societies for the years 1908 to 1912 are shown below:—

	1908.	1909.	1910.	1911.	1912.
Number of Societies	50	56	66	82	89
Liabilities—	£	£	£	£	£
Members Subscriptions	192,864	254,130	324,452	419,500	518,065
Other Liabilities	23,299	29,313	36,057	27,616	15,604
Balance of Profit	19,202	24,478	28,608	37,065	42,363
Total ... ... £	235,365	307,921	389,117	484,181	576,032
Assets—					
Advances	202,427	264,980	331,653	414,108	516,090
Other Assets	32,938	42,941	57,464	70,073	59,942
Total	235,365	307,921	389,117	484,181	576,032

Of 56 Starr-Bowkett societies formed during the last five years, 34 were established in Sydney and suburbs.

Life and Endowment Assurance.

The statutes relating to insurance in New South Wales include the State enactment, Life, Fire, and Marine Insurance Act of 1902, which consolidated previous Acts relating to insurance; the section relating to marine insurance was superseded by the Commonwealth Marine Insurance Act of 1909. The amount of assurance payable on the death of children is limited by a Commonwealth Act passed in 1905.

Particulars relating to life assurance institutions are obtained from the reports published and circulated by the companies, not from official returns, and unfortunately their statements do not sufficiently separate local from foreign business. During 1912 there were eighteen institutions operating in the State. Of these, nine were local, four had their head offices in Victoria, one in New Zealand, one in the United Kingdom, and three in the United States of America. The volume of the local business of the English and American societies, proportionately to the total, is, however, small, and the business outside Australasia has been omitted from the summary tables relating to such offices. Several companies, uniting life with other classes of insurance, have local branches or agencies, but their transactions in life-risks in this State are unimportant.

Of local institutions, the Australian Mutual Provident Society is incorporated under a special Act; and the following were registered under the Companies Act:—The City Mutual Life Assurance Society (Limited), in 1879; the People's Prudential Assurance Company (Limited), in 1896; the Standard Life Association (Limited), in 1899, and amalgamated in 1911 with the Colonial Mutual Life Assurance Society (Limited); the Phœnix Mutual Provident Society (Limited), registered in 1902; and the Mutual Life and Citizens' Assurance Company (Limited), formed by amalgamation of two local companies in January, 1908, and further fortified by the amalgamation

with it, in 1910, of the Australian Widows' Fund Life Assurance Society (Limited); the Assurance and Thrift Association (Limited), registered in 1910; and the Co-operative Assurance Company (Limited) and the Australian Provincial Assurance Association (Limited), in 1911.

The Phœnix Mutual Provident Society (Limited), a local institution, transacts only industrial business.

The results of the latest actuarial investigation of each society are given in detail in Part "Private Finance" of the New South Wales Statistical Register.

Nine of the companies are mutual, and the remainder are "mixed"—that is, proprietary companies, dividing profits with the policy-holders. In addition to life assurance, nine of the institutions transact industrial business; two, accident and invalidity insurance; the Australian Alliance Assurance Company, fire, marine, and guarantee insurance; the Liverpool, London, and Globe, fire and accident insurance; the Assurance and Thrift Association, house purchase, thrift, and general insurance; and the Australian Provincial Assurance Association, house purchase, fire, and accident insurance. Most of the offices have representatives in all the Commonwealth States and New Zealand; four of the Australasian institutions have extended their operations to the United Kingdom, and two also to South Africa.

Ordinary Branch.

The following table gives the total business in force in the ordinary branch in detail, for each society at the close of 1912. The item "Sums assured" means the sums payable, exclusive of reversionary bonuses, at death, or on attaining a certain age, or at death before that age:—

Institution.	Policies in Force.	Sums Assured.	Bonus Additions.	Total, excluding Annuities.	Annual Premium Income.
Head Office in New South Wales.	No.	£	£	£	£
Australian Mutual Provident Society	273,090	76,564,783	15,369,203	91,933,986	2,445,912
Mutual Life and Citizens' Assurance Company (Ltd.)	119,680	22,506,634	1,789,317	24,295,951	773,255
City Mutual Life Assurance Society (Ltd.)	20,539	2,909,345	140,396	3,049,741	122,160
Australian Metropolitan Life Assurance Company (Ltd.)	2,991	307,093	4,347	311,440	13,677
People's Prudential Assurance Company (Ltd.)	3,119	170,625	3,090	173,715	8,675
Australian Provincial Assurance Association (Ltd.)	123	21,000	....	21,000	840
Assurance and Thrift Association (Ltd.)	696	142,968	179	143,147	8,190
Co-operative Assurance Company (Ltd.)	280	55,129	....	55,129	2,771
Head Office in Victoria.					
Australian Alliance Assurance Company	410	143,605	14,518	158,123	3,279
National Mutual Life Association of Australasia (Ltd.)	105,883	26,261,771	1,864,685	28,126,456	919,322
Colonial Mutual Life Assurance Society (Ltd.)	63,660	15,299,333	564,289	15,863,622	538,905
*Australasian Temperance and General Mutual Life Assurance Society (Ltd.)	42,175	4,413,671	123,127	4,536,798	170,097
Head Office in New Zealand.					
Provident Life Assurance Company	1,664	239,757	‡	239,757	7,852
Head Office in United Kingdom.					
†Liverpool, London, and Globe Insurance Company	359	158,913	‡	158,913	4,648
Head Office in United States.					
† Equitable Life Assurance Society of the United States	7,269	2,504,484	24,060	2,528,544	83,066
† Mutual Life Insurance Company of New York	3,911	1,506,637	‡	1,506,637	46,772
† New York Life Insurance Company	6,228	2,407,338	‡	2,407,338	88,634
Total	652,086	155,613,086	19,897,211	175,510,297	5,238,055

* 30th September, 1912. † Australasian business only. ‡ Information not available.
‡ Included in previous column.

The business in force at the end of 1912 in the State of New South Wales only, under headings similar to those of the preceding table, is given below:—

Institution.	Policies in Force, exclusive of Annuities.	Amount Assured, exclusive of Bonuses.	Bonus Additions.	Total.	Annual Premium Income.
	No.	£	£	£	£
Australian Mutual Provident Society	76,215	22,161,495	4,486,172	26,647,667	795,996
Mutual Life and Citizens' Assurance Company (Ltd.)	33,173	6,485,949	521,814	7,007,763	217,860
City Mutual Life Assurance Society (Ltd.)	8,695	1,206,372	†	1,206,372	†
Australian Alliance Assurance Company	Nil.	Nil.	Nil.	Nil.	Nil.
National Mutual Life Association of Australasia (Ltd.)	17,066	3,837,146	†	3,837,146	136,924
Colonial Mutual Life Assurance Society (Ltd.)	11,432	2,028,467	56,590	2,085,057	72,481
*Australasian Temperance and General Mutual Life Assurance Society (Ltd.)	9,363	937,761	25,994	963,755	36,193
Australian Metropolitan Life Assurance Company (Ltd.)	1,415	147,592	2,106	149,698	6,483
Equitable Life Assurance Society of the United States	1,606	603,209	6,831	610,040	17,505
Mutual Life Insurance Company of New York	2,182	958,479	†	958,479	29,323
New York Life Insurance Company...	2,234	905,982	‡	905,982	34,315
Liverpool and London and Globe Insurance Company	151	57,461	†	57,461	1,790
People's Prudential Assurance Co. (Ltd.)	3,119	170,625	3,090	173,715	8,675
Provident Life Assurance Company ...	44	6,300	†	6,300	199
Australian Provincial Assurance Association (Ltd.)...	123	21,000	...	21,000	842
Assurance and Thrift Association (Ltd.)	301	69,698	179	69,877	3,420
Co-operative Assurance Company (Ltd.)	280	55,129	...	55,129	2,771
Total	167,399	39,652,665	5,102,776	44,755,441	1,274,797

* 30th September, 1912. † Information not available. ‡ Included in previous column.

Industrial Branch.

In addition to the ordinary life transactions, a large industrial business has grown up during recent years. The policies in this class are usually for small amounts, and the premiums, in most cases, are payable weekly or monthly. The assurances may be effected on the lives of infants and adults, and the introduction of this class of business has proved of great benefit to the industrial population.

Eight of the Australasian companies combine industrial with ordinary business, while one limits its operations to industrial and medical benefit transactions. The balance-sheets of the companies, however, do not admit of a satisfactory comparison of the business transacted, as the two branches

are not always treated separately. For the year 1912 the total and local business of the nine companies showing transactions in the industrial branch are contrasted in the following table:—

Institution.	Total Business.			Local Business.		
	Policies in Force.	Amount Assured.	Annual Premium Income.	Policies in Force.	Amount Assured.	Annual Premium Income.
	No.	£	£	No.	£	£
Australian Mutual Provident Society	90,481	†3,685,635	193,708	28,922	948,599	62,101
Mutual Life and Citizens' Assurance Company (Ltd.)	240,484	4,575,709	247,314	76,652	1,439,551	80,162
*Australasian Temperance and General Mutual Life Assurance Society (Ltd.)	147,094	†3,026,891	193,824	29,096	613,367	40,547
Colonial Mutual Life Assurance Society (Ltd.)..	56,353	1,472,451	83,751	18,368	429,025	24,984
Provident Life Assurance Company ..	25,603	672,800	38,777	2,207	54,627	2,859
Australian Metropolitan Life Assurance Company (Ltd.)	20,516	†667,930	28,523	11,444	†265,852	15,898
‡People's Prudential Assurance Company (Ltd.)	5,259	110,231	8,088	5,259	110,231	8,088
‡§Phœnix Mutual Provident Society (Ltd.)	130	2,454	199	130	2,454	199
Co-operative Assurance Company (Ltd.)	1,865	54,354	3,962	1,865	54,354	3,962
Total	593,785	13,458,858	797,646	173,941	3,918,060	238,800

*30th Sept., 1912. †Includes Bonus additions. ‡Sick Benefit Business is excluded. §31st Dec., 1911.

Summary—Ordinary and Industrial.

A summary of the local business, ordinary and industrial, of the institutions operating in the State, in comparison with their total business, is shown below. In regard to the English and American offices, the business outside Australasia has not been included:—

Branch.	Total Business.			Local Business.		
	Policies.	Amount Assured.	Annual Premium Income.	Policies.	Amount Assured.	Annual Premium Income.
	No.	£	£	No.	£	£
Ordinary ...	652,086	155,613,086	5,238,055	167,399	39,652,665	1,274,797
Industrial ...	593,785	13,458,858	797,646	173,941	3,918,060	238,800
Total ...	1,245,871	169,071,944	6,035,701	341,340	43,570,725	1,513,597

In the ordinary branch the policies in force in New South Wales represent 25·7 per cent., and the amount assured 25·5 per cent. of the total ordinary business. In the industrial branch the proportions in New South Wales are—policies, 29·3 per cent.; amount assured, 29·1 per cent.

Local Business.

The next statement shows the ordinary and industrial business in force in New South Wales in each year since 1906:—

Year	Ordinary Branch.			Industrial Branch.		
	Policies.	Amount Assured.	Annual Premium Income.	Policies	Amount Assured.	Annual Premium Income.
	No.	£	£	No.	£	£
1906	123,072	30,352,302	1,000,260	104,236	2,338,987	129,662
1907	130,296	31,592,379	1,038,828	116,795	2,631,476	146,356
1908	137,852	32,993,481	1,080,236	125,476	2,881,417	155,260
1909	147,632	34,446,756	1,166,697	129,180	2,782,868	160,348
1910	155,531	35,972,590	1,164,948	143,209	3,123,666	194,607
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

A feature of this table is the steady increase in industrial insurance; since 1906 the increase in the number of these policies amounted to 67 per cent., and in the amount assured 68 per cent.

The number of ordinary and industrial policies per 1,000 of population at 31st December, 1912, was 192, as compared with 152 in 1906, and the total sum assured advanced from £21 16s. 3d. to £24 9s. 10d. 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

New Assurances.

The new business, ordinary and industrial, effected in New South Wales during the last two years is compared in the following table. There was an increase of 5 per cent. in the amount of new assurances in the ordinary branch, and of 4 per cent. in the industrial:—

Ordinary Branch.

Institution.	1911.			1912.		
	Policies.	Amount Assured.	Annual Premiums.	Polices.	Amount Assured.	Annual Premiums.
	No.	£	£	No.	£	£
Australian Mutual Provident	5,732	1,679,351	53,407	6,128	1,821,854	58,196
Mutual Life and Citizens' Assurance	3,500	721,460	23,500	3,346	789,356	24,444
City Mutual Life Assurance	1,057	170,975	7,829	1,245	202,493	9,344
Assurance and Thrift Association (Ltd.)	....	....	....	167	36,369	1,638
Co-operative Assurance Company (Ltd.)	....	....	....	311	55,805	2,528
Australian Alliance Assurance	Nil.	Nil.	Nil.	Nil.	Nil.	Nil.
National Mutual Life of Australasia	2,282	530,687	20,074	2,089	521,928	19,534
Colonial Mutual Life Assurance	3,385	603,775	20,141	2,219	443,365	15,219
Australasian Temperance and General Mutual Life Assurance	2,205	208,770	8,058	2,295	214,104	8,430
Australian Metropolitan Life Assurance	362	36,716	1,559	386	41,409	1,776
Equitable Life Assurance of the United States	3	300	17	3	2,200	222
Mutual Life Insurance of New York	45	25,850	1,176	41	24,033	982
New York Life Insurance	82	37,274	1,620	89	57,165	2,015
Liverpool and London and Globe Insurance	Nil.	Nil.	Nil.	Nil.	Nil.	Nil.
People's Prudential Assurance (Ltd.)	1,171	77,512	3,269	1,045	67,725	3,095
Provident Life Assurance	7	1,150	35	13	1,250	45
Australian Provincial Assurance Association (Ltd.)	....	....	....	123	21,000	840
Total	19,831	4,093,820	140,685	19,500	4,300,576	148,908

Industrial Branch.

Institution.	1911.			1912.		
	Policies.	Amount Assured.	Annual Premiums.	Policies.	Amount Assured.	Annual Premiums.
	No.	£	£	No.	£	£
Australian Mutual Provident	8,954	304,992	20,544	9,167	319,188	21,845
Mutual Life and Citizens' Assurance	9,396	189,213	12,783	10,181	226,201	14,741
Co-operative Assurance Company, Ltd.	..	..	..	4,935	162,868	11,832
Australasian Temperance and General Mutual Life Assurance	13,437	350,916	21,155	11,545	277,819	17,993
Colonial Mutual Life Assurance	12,809	312,861	19,705	8,091	230,329	14,059
Provident Life Assurance	868	25,490	1,357	861	23,202	1,192
Australian Metropolitan Life Assurance	4,950	138,195	7,366	4,778	132,689	7,289
*People's Prudential Assurance	4,267	97,152	7,365	4,243	104,318	7,713
†Phœnix Mutual Provident	19	348	29	19	*348	*29
Total	54,755	1,419,167	90,304	53,820	1,476,965	96,693

* Exclusive of Medical business. † Figures for 1911.

The returns of the total new business of the institutions show an increase of nearly 8 per cent. in the amount of new assurances in the ordinary branch, while the increase in the industrial branch was 6 per cent.

The following is a comparison of the total and local new business during the last two years:—

		Total New Business.		New Business in New South Wales.	
		1911.	1912.	1911.	1912.
Ordinary—					
Policies	No.	79,040	81,296	19,831	19,500
Amount Assured ...	£	17,201,752	18,531,371	4,093,820	4,300,576
Annual Premiums ...	£	592,540	638,123	140,685	148,908
Industrial—					
Policies	No.	184,905	187,554	54,755	53,820
Amount Assured ...	£	4,894,825	5,203,194	1,419,167	1,476,965
Annual Premiums ...	£	308,680	325,230	90,304	96,693

Receipts and Expenditure—Australasian Societies.

The receipts of the societies are represented chiefly by the collections from premiums on policies and by interest arising from investments of accumulated funds; the payments on account of policies matured and surrendered, cash bonuses, and expenses of management constitute the bulk of the disbursements.

The excess of receipts over expenditure represents the annual additions to the reserves. The general direction of business of the Australasian societies is shown in the following table; the figures for 1910 include the Standard Life Association (Limited), but combined with the society with which it amalgamated early in 1911:—

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
1906	14	*776,970	5,780,943	3,959,541	1,821,402	2·34
1907	14	*857,364	6,143,067	4,070,350	2,072,717	2·42
1908	13	*915,452	6,376,051	4,323,264	2,052,787	2·24
1909	13	*972,467	6,947,941	4,550,195	2,397,746	2·46
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

* Includes Industrial business.

The aggregate receipts and disbursements for the Australasian institutions for 1912 were as follow, ordinary and industrial branches being included:—

Receipts.	£	Expenditure.	£
Premiums—		Claims	3,061,314
New	643,533	Surrenders	543,572
Renewal*	5,084,862	Annuities	109,208
Consideration for Annuities ...	124,185	Cash Bonuses and Dividends ...	134,634
Interest	2,261,970	Expenses	1,255,464
Other Receipts (Rents, &c.) ...	37,843	Amount written off to Depreciation, Reserves, &c. ...	109,830
Total ... ... £	8,152,393	Total ... ... £	5,214,022

* Includes new Industrial premiums.

Accumulated Funds—Australasian Societies.

The additions to the funds from year to year have shown a considerable increase. The amount of funds and the interest received thereon were as follows:—

Year.	Accumulated Funds.		Interest.	
	Additions during year.	Total Amount.	Amount received.	Average Rate realised.
	£	£	£	per cent.
1890	1,404,215	14,580,210	827,909	5·97
1895	1,057,942	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
1906	1,821,402	37,486,144	1,565,611	4·32
1907	2,072,717	39,558,861	1,679,440	4·36
1908	2,052,787	41,611,648	1,764,845	4·24
1909	2,397,746	43,226,872	1,877,593	4·47
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

The decrease in earning power over the period reviewed is noticeable; but comparison with the bank rate of interest on fixed deposits, given on a previous page, shows that diminished rates are general, and that the fall in interest earned by the insurance companies is in steady proportion to the general decline.

Expenses of Management—Australasian Societies.

The expenses of management for 1912 in the aggregate represent 15·40 per cent. of total receipts, or 21·60 per cent. of premium income. The ratio between management expenses and premium income must necessarily vary with the volume of new business transacted and the age of the society, quite apart from the intensity of competition for the new business. The following figures show the cost of management per policy and per cent. of premium income and gross income:—

Year.	Management Expenses.	Premium Income.	Gross Receipts.	Policies.	Management Expenses.		
					Per Policy.	Per cent. of—	
						Premium Income.	Gross Receipts.
	£	£	£	No.	£		
1895	438,524	2,380,167	3,392,423	268,242	1·635	18·42	12·93
1900	565,380	2,799,512	4,093,376	331,868	1·703	20·19	13·81
1905	*858,741	3,500,448	5,437,589	756,585	1·130	24·53	15·79
1906	*878,299	3,840,504	5,780,943	776,970	1·133	22·87	15·19
1907	*941,695	4,330,701	6,143,067	857,364	1·098	21·74	15·33
1908	*992,771	4,554,211	6,376,651	915,452	1·084	21·80	15·57
1909	†1,022,932	4,788,506	6,947,941	972,467	1·052	21·36	14·72
1910	†1,016,153	5,074,204	7,131,250	1,056,173	·962	20·03	14·25
1911	*1,137,165	5,417,202	7,650,230	1,138,955	·998	20·99	14·86
1912	*1,255,464	5,812,581	8,152,309	1,228,104	1·022	21·60	15·40

*Includes Industrial business. †Includes Industrial and Accident and Invalidity business.

The expenses of the industrial branch are necessarily very high in proportion to the receipts on account of the house-to-house method of collection, which is considered an essential feature of the system.

The total receipts and disbursements relating to the industrial branch as derived from the latest balance-sheets in 1912 are given below. Particulars relating to the industrial branch of the People's Prudential Assurance Company (Limited) and the Co-operative Assurance Company (Limited) are incorporated with the ordinary business, and are not included in the following table:—

Institution.	Receipts.	Expenditure.		Excess (Reserves Additions).	Management Expenses per cent. of Gross Receipts.
		Management.	Total.		
	£	£	£	£	per cent.
Australian Mutual Provident Society	187,912	74,401	81,675	106,237	39·59
Mutual Life and Citizens' Assurance Company (Ltd.)	281,597	107,422	181,360	100,237	38·15
Colonial Mutual Life Assurance Society (Ltd.)	77,516	54,980	72,045	5,471	70·93
Australasian Temperance and General Mutual Life Assurance Society (Ltd.)	194,650	71,308	127,813	66,837	36·63
Australian Metropolitan Life Assurance Company (Ltd.) ...	28,111	16,721	22,509	5,602	59·48
†Phœnix Mutual Provident Society (Ltd.)	2,806	1,067	2,545	261	38·03
*Provident Life Assurance Company	46,696	24,215	37,431	9,265	51·86
Total	819,288	350,114	525,378	293,910	42·73

* Includes ordinary business. † Year ended December, 1911.

From information given above it is apparent that expenses of management represent 66·6 per cent. of the total expenditure, including claims, surrenders, and cash dividends, or 42·7 per cent. of receipts. On the average, an amount of 11s. 11d. per policy was spent during 1912 by the institutions shown above in collecting and handling the total premium income of £1 7s. 10d. per policy.

Assets and Liabilities—Australasian Societies.

The aggregate assets and liabilities are shown in the subjoined table:—

Year.	Societies.	Liabilities.			Assets.		
		Paid-up Capital and Accumulated Funds.	Other Liabilities.	Total.	Loans on Mortgages, Policies, &c.	Securities, Freehold Property, &c.	Total.
	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
1906	14	37,486,144	88,272	37,574,416	24,618,651	12,955,765	37,574,416
1907	14	39,015,198	638,889	39,654,087	25,710,088	13,943,999	39,654,087
1908	13	40,710,897	1,035,323	41,746,220	27,071,098	14,675,122	41,746,220
1909	13	43,226,872	777,556	44,004,428	28,642,726	15,361,702	44,004,428
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

Loans on mortgage and on the policies of the societies represent 67 per cent. of the total assets. In former years insurance companies sought only these forms of investment, but recently attention has been given to Government securities, loans to municipalities, and investments in shares, and considerable sums are deposited with banks, or in freehold and leasehold property. Investments on personal security are unusual, advances being generally combined with life policies. In some of the States, companies are obliged by law to deposit certain sums with the Treasury as a guarantee of good faith, and the amount so lodged is included in their balance-sheets, under the head of Government securities or of deposits. The ratio of loans on mortgages, policies, &c., to total liabilities over the years quoted in the previous table is as follows:—

1895 ...	... 72·57 per cent.	1908 ...	... 64·85 per cent.
1900 ...	... 69·21 ,,	1909 ...	... 65·09 ,,
1905 ...	... 61·54 ,,	1910 ...	... 65·94 ,,
1906 ...	... 65·52 ,,	1911 ...	... 67·21 ,,
1907 ...	... 64·83 ,,	1912 ...	... 66·85 ,,

Accident and Invalidity Insurance.

Since the Workmen's Compensation Act, 1910, came into operation the majority of societies doing business in New South Wales have extended their operations to cover the liabilities of employers in the industries specified as insurable, but no records are yet available to show the extent of the business done under this head.

Fire, Marine, and General Insurance.

The Fire Brigades Act, 1909, which commenced to operate on 1st January, 1910, embraces a wider area than the earlier Act, which was applied only to the metropolitan area of Sydney, though it was permissible to extend its provisions to any borough or municipal district of New South Wales. The present Act applies to the city of Sydney, 128 suburban and country municipalities, and 13 townships, grouped in Fire Districts numbering 81. 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, their property, real and personal, vesting automatically in the Board of Fire Commissioners, subject to any trusts and liabilities attaching to such property. The Board is charged with the establishment and maintenance of permanent fire brigades, and the authorisation and subsidising of volunteer brigades, for which purposes the funds of the Board are maintained by contributions of one-third each of estimated requirements for each district by insurance companies, municipalities, and the Government; and responsibility for a *pro rata* contribution is cast upon each owner of property assured in any company, as defined, which is not registered within the State. To ensure efficient operation of these provisions returns are required periodically by the Board from municipalities, insurance companies, and property owners.

The estimates of necessary revenue adopted by the Board for 1912 amounted to £90,864, being £60,300 for Sydney Fire District, and £30,564 for the 80 Country Fire Districts; and for 1913 to £111,645—Sydney District, £76,758; and Country Districts, £34,887.

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 1912 contributions amounting to £30,048

were received from insurance companies, and in addition contributions amounting to £240 were received from individual firms who insured goods with companies not registered in New South Wales.

Excluding companies transacting marine insurance only, there were 61 fire and general insurance companies operating in New South Wales during 1912, but in six cases no information was available. Fifteen have their head offices in the Commonwealth, 4 in New Zealand, 1 in Canada, 1 in India, 33 in the United Kingdom, and 3 outside the British Empire. The life assurance figures of those institutions which combine fire and life business have been excluded where possible from the following statement of receipts and disbursements:—

Receipts.	£	Disbursements.	£
Premiums (less reinsurances) ...	47,821,003	Claims paid	24,858,200
Interest, rent, fees, &c. ...	2,716,876	Expenses of management, &c....	17,309,962
Total	50,537,879	Total	42,168,162

The total liabilities and assets of the same companies were as follows:—

Liabilities.	£	Assets.	£
Paid-up Capital	19,470,645	Investments, including accrued interest	125,896,599
Reserve Funds, &c.	49,040,737	Real Estate	15,055,156
Other Liabilities	122,521,832	Other Assets	61,850,181
Balance of Profit and Loss Account	11,768,722		
Total	202,801,936	Total	202,801,936

Marine insurance in Australia is subject to the Commonwealth Marine Insurance Act of 1909. The companies transacting marine insurance only numbered sixteen; the following particulars of their transactions during 1912 are exclusive of two companies, of which no information was available:—

Receipts.	£	Disbursements.	£
Premiums (less reinsurances) ...	4,591,122	Claims paid...	2,764,091
Interest, rent, fees, &c. ...	321,479	Expenses of management, &c.	493,343
Total	4,912,601	Total	3,257,434

Liabilities.	£	Assets.	£
Paid-up Capital..	2,243,500	Investments, including accrued interest	9,106,944
Reserve Funds, &c.	6,314,584	Real Estate	409,548
Other Liabilities	2,433,556	Other Assets	2,278,850
Balance of Profit and Loss Account	803,702		
Total	11,795,342	Total	11,795,342

Bankruptcy.

Transactions in insolvency were conducted by the Commissioner of Insolvent Estates till 1888, but under the Bankruptcy Act of 1887, and subsequent amending Acts, which were consolidated under the Act of 1898, the law is administered by a Supreme Court Judge in Bankruptcy. The following statement shows the number of bankruptcy petitions for each of the last seven 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

A fairly consistent decrease in the number of sequestrations has taken place since 1893, and, studied in conjunction 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 time the Act has been in force number 2,892, including 107 for 1912, being 15 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, 85 are unable, or too indifferent, to take the necessary steps to free themselves from bankruptcy. The property of an uncertificated bankrupt, even if acquired subsequently to sequestration, is liable to seizure on behalf of unsatisfied creditors, and as applications for certificates of discharge are apparently the exception rather than the rule, it would appear that the great majority of bankrupts do not attain a position in which they are likely to be disturbed by unsatisfied creditors. The number of sequestrations for the years the Act has been in force is 18,587, and of these 15,820 remain uncertificated.

During 1912 on a total of 359 sequestrations, the liabilities, according to bankrupts' schedules, were £210,504, and the assets amounted to £153,633. The qualification "according to bankrupts' schedules" is necessary, as the return of assets and liabilities established after investigation by the Court differ widely from those furnished by bankrupts:—

Quinquennial Period.	Sequestrations.	Nominal—		
		Liabilities.	Assets.	Ratio of Assets per £1 of Liability.
	No.	£	£	s. d.
1888–1892	5,730	5,682,689	2,644,382	9 4
1893–1897	6,235	5,760,282	3,406,148	11 10
1898–1902	2,864	2,159,659	994,303	9 3
1903–1907	2,084	1,359,121	781,108	11 6
1908	332	322,850	185,507	11 6
1909	360	168,189	82,563	9 10
1910	325	176,088	119,377	13 7
1911	292	109,359	49,390	9 0
1912	359	210,504	153,633	14 7
Total	18,587	15,948,721	8,416,911	10 7

The dividend rates paid on the amount of proved liabilities of estates which have been wound-up are not given, as it would involve an investigation of the transactions in each estate; and even this operation would not result in complete returns, as there are estates which remain unsettled during many years.

Official assignees assist the Court in winding-up the estates, each paying all money received by him to the Registrar in Bankruptcy, who places the amount to the credit of the Bankruptcy Estates Account, from which all charges, fees, and dividends are met. The official assignees are required to furnish quarterly statements of the transactions in each estate.

District Registrars in Bankruptcy have been appointed throughout the State, the positions being filled generally by Police Magistrates or other court officials. District Registrars have the same powers and jurisdiction as the Registrar in respect to examinations of bankrupts and the technical business of the court. In this connection reference should be made to the chapter relating to the procedure of the Law Courts.

Transactions in Real Estate.

The Real Property Act, commonly known as "Torrens Act," passed in 1862 to regulate the procedure in regard to land transfers, was modelled on the lines of legislation in South Australia, adopted at the instance of Sir R. R. Torrens. The main features of the Act which were embodied in the Real Property Act, 1900, consolidating the original Act and its amendments, were the transfer of real property by registration of title instead of deeds; the absolute indefeasibility of the title when registered; and the protection afforded to owners against possessory claims, as a title issued under the Act stands good notwithstanding any length of adverse possession. From the passing of "Torrens" Act all lands sold by the Crown have been conveyed to the purchasers under its provisions, the provisions of the old law being restricted to transactions in respect of grants issued prior to 1862, and governed by the Deeds Registration Act, 1843. The area for which such grants were issued was 7,478,794 acres; of these grants, 2,148,285 acres have since been brought under the provisions of "Torrens" Act, so that the area still held under the earlier Act is 5,330,509 acres.

Lands may be placed under the Real Property Act or "Torrens" Act only when the titles are unexceptional; and as thousands of acres are brought under the Act during the course of every year, it is merely a question of time when the whole of the lands of the State will be under a uniform system. The areas of Crown lands conveyed, and of private lands brought under the Real Property Act during the decade ended 1912, were as follows:—

Year.	Area.			Value.		
	Crown Lands.	Private Lands.	Total.	Crown Lands.	Private Lands.	Total.
	acres.	acres.	acres.	£	£	£
1903	1,403,994	56,492	1,460,486	1,181,102	1,045,780	2,226,882
1904	1,557,667	38,890	1,596,557	1,109,688	907,371	2,017,059
1905	1,834,802	55,251	1,890,053	1,390,255	725,508	2,115,763
1906	1,743,210	98,722	1,841,932	1,486,489	968,449	2,454,938
1907	1,750,597	54,205	1,804,802	1,552,049	1,349,351	2,901,400
1908	1,604,062	85,917	1,689,979	1,502,640	1,173,042	2,675,682
1909	1,227,312	54,903	1,282,215	1,147,768	1,093,796	2,241,564
1910	864,857	74,986	939,843	775,211	1,300,661	2,075,872
1911	820,728	79,778	900,506	769,723	1,488,238	2,257,961
1912	749,076	60,541	809,617	725,011	1,771,354	2,496,365

For the whole period during which the "Torrens" system has been in operation, 34,262,423 acres, valued at £34,092,089 have been conveyed under its provisions; and 2,148,285 acres, valued at £36,963,351, have been brought under it, the deeds under the old Act having been cancelled.

The transfers and conveyances of private lands which take place during ordinary years indicate in some measure the condition of business in real estate; the volume of these transactions, however, in some years cannot be relied upon as giving more than an indication of speculation or inflation. In the following table, which covers ten years, the money consideration paid on sales of private lands during each year is shown, excluding, of course, lands sold on long terms. During 1888 land to the value of £11,068,873 changed hands, but in 1905 the amount had fallen to £6,865,053; in 1912, the total for the year was £23,882,472, this being the maximum value transferred in any year. The records of recent years, as shown below, indicate that there is an upward tendency in transactions in real estate of a permanent character.

Year.	Conveyances or Transfers.		
	Under Deeds Registration Act.	Under Real Property (Torrens) Act.	Total.
	£	£	£
1903	3,316,360	4,025,286	7,341,646
1904	2,524,799	4,138,994	6,663,793
1905	2,197,031	4,668,022	6,865,053
1906	2,820,456	7,346,558	10,167,014
1907	3,342,526	9,366,063	12,708,589
1908	2,879,955	9,880,177	12,760,132
1909	2,312,529	9,416,875	11,729,404
1910	4,057,760	11,958,783	16,016,543
1911	4,602,322	16,425,982	21,028,304
1912	5,502,502	18,379,970	23,882,472

As already mentioned, the Real Property Act provides that on the issue of a certificate the title of the person named on the certificate is indefeasible. Provision is made, however, for error in transfer, by which persons might be deprived of their property; as, should the transfer be made to the wrong person, the holder of the certificate cannot be dispossessed of his property unless he has acted fraudulently. To enable the Government to compensate persons who, through error, may have been deprived of their properties, an assurance fund was created by means of a contribution of one half-penny in the pound on the declared capital value of property when first brought under the Act, and upon transmission of titles of estates of deceased proprietors. It is a sterling testimony of the value of the Act, and of the facility of its working, that payments from the assurance fund to 31st December, 1907, in respect of titles improperly granted, amounted to £16,326 only.

In 1907 the assurance fund, as a separate account, was closed, and the balance at credit, £157,569, 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 1912 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.	£	£	£
1908	5,160	9,726	14,886	6,062,147	10,490,957	16,553,104
1909	5,126	10,380	15,506	5,578,095	9,517,116	15,095,211
1910	5,084	11,329	16,413	6,629,211	10,436,733	17,065,944
1911	5,818	13,042	18,860	8,137,625	13,580,750	21,718,375
1912	6,846	15,766	22,612	9,537,888	16,424,624	25,962,512

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, though 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 1912 was £192,629, so that the net amount lent on lien was £382,784.

Classification.		1908.	1909.	1910.	1911.	1912.
Wool—						
Liens	No.	1,755	1,778	1,600	1,423	1,416
Sheep	„	3,750,145	4,197,519	3,625,589	3,010,173	2,856,961
Consideration ...	£	799,172	947,858	657,215	658,517	575,413
Growing Crops—						
Liens	No.	921	1,115	798	785	953
Consideration ...	£	111,320	134,500	94,804	111,904	158,182
Live Stock—						
Mortgages	No.	3,318	2,984	3,142	3,265	3,166
Sheep	„	3,014,031	3,053,456	3,488,617	3,395,547	2,882,917
Cattle	„	137,003	113,416	125,588	149,131	117,874
Horses	„	18,926	16,057	19,894	24,222	24,382
Consideration ...	£	1,952,210	1,737,047	1,404,957	1,133,489	1,228,065

Discharges of Mortgages on Live Stock.

The number of discharges registered amounted to one-third of the number of mortgages of live stock registered during last year; the difference is partly due to the fact that in many cases one discharge covers several mortgages. The figures for the ten years ended 1912 were:—

Year.	Discharges.	Amount.	Year.	Discharges.	Amount.
	No.	£		No.	£
1903	397	522,368	1908	873	838,609
1904	410	402,398	1909	912	684,714
1905	568	644,569	1910	1,038	1,232,079
1906	768	1,189,201	1911	1,092	1,144,461
1907	814	1,238,705	1912	1,004	623,539

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, &c. 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 Vessels.		Sailing Vessels.		Steam Vessels.	
	No.	Amount.	No.	Amount.	No.	Amount.	No.	Amount
		£		£		£		£
1908	4	1,705	14	7,906	3	4,001	16	15,712
1909	11	1,832	12	19,500	5	2,363	8	10,504
1910	...	.....	18	37,320	1	.....	1	.....
1911	1	245	15	21,350	1	1	18	6,213
1912	1	600	30	124,129	1	1	10 3/64	11

* Information not available.

Bills of Sale.

All mortgages on personalty other than ships and shipping appliances, wool, live stock, and growing crops, are filed at the Supreme Court under the Bills of Sale Act, 1855, and its amendments, as consolidated by the Bills of Sale Act, 1898, which was also amended in 1903 to secure that a bill of sale shall be ineffective as to certain household furniture unless the consent of the wife or husband of the maker or giver of the bill is endorsed thereon. The Act provides that each document shall be filed within thirty days after it is made or given, otherwise the transaction is illegal; also, that the registration shall be renewed every twelve months; and to prevent fraud and imposition the records are open to the inspection of the public. The total amount of advances made annually on the bills of sale is not readily available; but, judging from the number of bills filed, the sum must be considerable. All classes of the community participate in the advantages of the Act, but brewers and money-lenders appear conspicuously among the transferees. 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 1912 are as follow: —

Year.	Registrations.		Renewals under Bills of Sale Act of 1898.
	Filed in Supreme Court.	Satisfied or orders for discharge made.	
1908	2,481	253	1,725
1909	2,212	285	1,779
1910	2,335	282	1,713
1911	2,430	352	1,689
1912	2,861	370	1,748

Public Trust Office.

Under the Public Trustee Act, 1913, a Public Trust Office has been established in New South Wales and the office of Curator of Intestate Estates abolished, and his powers and duties transferred to the Public Trustee, who may act as a trustee, executor or administrator, collector of estates, agent or attorney, with all the same powers, duties, rights, and immunities as a private person acting in the same capacity. The Public Trustee may not accept the administration of an insolvent estate, nor any trust exclusively for religious or charitable purposes, or under a deed of arrangement for the benefit of creditors. The Public Trustee may be appointed trustee of a will or settlement, and may be granted probate or letters of administration of a will or estate; any executor or administrator who has obtained probate or letters of administration may transfer the estate to the Public Trustee for administration; and where there is reasonable ground to suppose that any person has died intestate, the Public Trustee may obtain an order to administer the estate.

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 speaking, is greater at death than at any period during life.

A table is annexed showing the number of estates and amount on which stamp duty was paid during the years ended 30th June, 1904, to 1913:—

Year ended 30th June.	Estates.	Amount.	Year ended 30th June.	Estates.	Amount.
	No.	£		No.	£
1904	2,750	5,205,045	1909	3,239	7,215,018
1905	2,712	5,297,552	1910	3,187	10,417,169
1906	2,802	6,066,182	1911	3,303	7,827,275
1907	2,797	6,400,392	1912*	4,372	13,445,639
1908	3,172	6,655,673	1913*	4,749	8,509,070

* Includes estates administered by the Curator of Intestate Estates, particulars of which are not available for previous years.

According to these figures, stamp duty was paid during the ten years ended 30th June, 1913, on 33,093 estates, valued at £77,039,015. This gives an average value per estate of £2,328.

In the next table, information, collected for the first time in 1911, is given concerning the property left during 1911 and 1912 by deceased persons classified according to age at death. From this table it is possible to obtain

the average amount of property left by each person who died during the two years; and on the assumption that each person living possessed the same average amount of property as those dying at the same age, it would be possible to estimate the value of the private wealth of the people. It is felt, however, that such an estimate based on the results of two years would very probably be misleading, because the values of estates fluctuate from year to year, as will be seen from the preceding table, and it has been thought better to wait until the experience of four or five years is available. The table shows in various age-groups the number and value of estates of deceased persons of each sex, in respect of which probate was granted during 1911 and 1912. The values given represent the net values of estates for stamp duty purposes:—

Age Group.	Males.				Females.			
	No. of Estates.	Value of Estates.	Average Value—		No. of 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.
		£	£	£				
Under 15	13	3,939	303	1	9	4,390	488	1
15—20	40	9,196	230	18	8	1,840	230	4
21—29	300	69,021	230	60	68	14,044	207	13
30—39	476	276,219	580	195	194	120,298	620	102
40—49	803	952,644	1,186	500	239	184,657	773	160
50—59	1,046	1,716,494	1,641	678	380	266,021	700	197
60—69	1,199	2,967,985	2,475	1,073	499	586,972	1,176	337
70—79	1,316	3,899,046	2,963	1,188	550	770,674	1,401	375
80—89	511	4,271,132	8,358	2,940	253	1,335,443	5,278	1,265
90 and over	57	130,587	2,291	725	29	79,317	2,735	407
Not stated	224	708,291	3,162	.....	76	552,974	7,276	.....
Absentees	351	2,013,934	5,738	.....	122	451,014	3,697	.....
Total ...	6,336	17,018,488	2,686	711	2,427	4,367,644	1,800	262

The total number of deaths in 1911 and 1912 was 21,106 males and 14,959 females. It appears, therefore, that of the males who died in the State, 28 per cent. left property, and of the females 15 per cent. Taking only adults of the males who died, 40 per cent. left property, and of the females 23 per cent.

The above statement, on the whole, bears out the remark made previously that as the age increases, wealth increases; the average value of estates increased up to age 80, and then declined.

The average value of estates in relation to the total number of persons who died was £711 per male, and £262 per female. Taking only persons leaving property, the estates of males were valued on the average at £2,686, and of females at £1,800.

Comparing the above statement with one prepared similarly in Victoria, it is found that among males up to age 70 the Victorian estates on the average were of higher value than in New South Wales. At ages 70 years and over, the New South Wales estates had the higher value; and also the general average was higher in New South Wales. Among females, at ages

30-49 and 60 and over, the New South Wales estates were higher than the Victorian; the general average also was much higher in New South Wales. The figures relating to the years 1911 and 1912 are stated below:—

Age Group.	New South Wales.				Victoria.			
	Males.		Females.		Males.		Females.	
	Total Number of Estates.	Average Value of Estates.	Total Number of Estates.	Average Value of Estates.	Total Number of Estates.	Average Value of Estates.	Total Number of Estates.	Average Value of Estates.
		£		£		£		£
Under 15	13	303	9	488	4	270	3	465
15—20	40	230	8	230	21	416	4	822
21—29	300	230	68	207	176	435	59	657
30—39	476	580	194	620	328	761	204	471
40—49	803	1,186	239	773	664	1,513	351	699
50—59	1,046	1,641	380	700	830	2,431	450	1,202
60—69	1,199	2,475	499	1,176	936	2,626	618	997
70—79	1,316	2,963	550	1,401	1,425	2,565	910	1,373
80—89	511	8,358	253	5,278	960	2,812	470	978
90 and over	57	2,291	29	2,735	82	2,100	58	2,714
Not stated	224	3,162	76	7,276	.....	.....	.....	.....
Absentees	351	5,738	122	3,697	440	2,258	206	1,250
Total ...	6,336	2,686	2,427	1,800	5,866	2,274	3,333	1,100

In Victoria and in South Australia, wealth is apparently more widely diffused than in New South Wales, as will be apparent from the following statement, the results in which are based on the experience of five years, 1908-12:—

State.	Estates of Deceased Persons.		Average Deaths of Adults.	Adults at Census, 1911.	Estates per 1,000 Deaths of Adults.	Average Estate per Adult Dying.	Average Value per Estate.
	Mean Number.	Mean Value.					
		£			No.	£	£
New South Wales	3,411	9,458,467	11,560	921,731	295	818	2,773
Victoria	4,060	7,608,415	11,211	752,486	362	679	1,874
Queensland ...	715	1,935,493	4,109	329,091	174	471	2,708
South Australia...	1,119	2,353,851*	2,947	232,625	380	799*	2,104*
Western Australia	499	889,950	1,840	166,813	271	484	1,783
Tasmania ...	389	824,715	1,301	100,895	299	634	2,119

*Gross value.

Of the adults who died in New South Wales, rather less than one-third were possessed of property with regard to which it was necessary to obtain probate. In South Australia the proportion was nearly two-fifths, and in Victoria it was slightly lower. It was lowest in Queensland, where the proportion was less than one-fifth. It should be remembered, however, that the populations of Victoria and South Australia are older than in the other States, and that the proportions, at ages over 50, after which age, judging from New South Wales and Victoria, the values of estates increase quickly, are higher than in New South Wales, and much higher than in Queensland and Western Australia. For instance, in Victoria the proportion of the population aged 50 and over is 15·0 per cent.; in South Australia 14·9 per cent.; in New South Wales and Tasmania 13·5 per cent.; in Queensland 12·7 per cent.; and in Western Australia 10·4 per cent.

As complete figures regarding estates administered by the Curator of Intestate Estates are not available, they have been excluded from this statement; but if such estates were taken into consideration the proportion of persons dying possessed of property would be higher than shown above, and as they are usually of small value, the average value would be much lower.

Estates of Deceased Persons.

In the following table a comparison is afforded for quinquennial periods since 1880 of the proportion of persons dying possessed of property per hundred of the total deaths in each quinquennium. The figures shown in this and the succeeding tables for the years prior to 1911 are exclusive of estates administered by the Curator of Intestate Estates. In 1911, such estates numbered 654, and in 1912, 1,052:—

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		

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

Information regarding the ages of persons leaving property was not ascertained until 1911; therefore it was not possible to exclude from the above calculations the estates of persons under 21 years of age. In 1911, of the adult males who died in New South Wales, 37·6 per cent. were possessed of property, and the proportion of adult females was 23·4 per cent.; in 1912 the proportions were 42·9 per cent. and 23·4 per cent. respectively.

The same weakness exists in these figures as in the case of those previously given in regard to the values, for approximately three in every hundred estates concerning which probate or letters of administration are granted prove to be without assets, so that the proportions must be somewhat reduced.

The statement that there is a wide distribution of property in New South Wales must be taken relatively. The following table is of interest as showing the distribution of property amongst the persons who died during the ten years ended June, 1913. The figures are exclusive of estates administered by the Curator of Intestate Estates except for the last two years:—

Category.	Number of Persons with Property, Deceased.	Proportion per cent. in each Group.	Value of Estates of Deceased.	Proportion per cent. in each Group.
			£	
£50,000 and over ...	179	·54	27,531,448	35·74
£25,000 to £50,000 ...	268	·81	9,170,948	11·90
£12,500 to £25,000 ...	486	1·47	8,319,304	10·80
£5,000 to £12,500 ...	1,364	4·12	10,611,738	13·78
£200 to £5,000	19,552	59·08	20,471,939	26·57
Under £200	11,244	33·98	933,638	1·21
Total	33,093	100·00	77,039,015	100·00

Absentees.

Analysis of the returns collected by the Stamp Office in Sydney shows that 95 per cent. of estates represented persons domiciled in New South Wales, leaving only 5 per cent. as absentees, that is, persons who died outside the State leaving property in New South Wales. In 1911 and 1912, the number of estates of male absentees was 351, and the average value £5,738; there were 122 estates of female absentees of an average value of £3,697.

INCOMES ASSESSED FOR TAXATION.

Prosperity as indicated by the number and amount of incomes assessed for income tax during the four years 1908-11 is illustrated below:—

Annual Income.	1908.		1909.		1910.		1911.	
	No.	Net Income.	No.	Net Income.	No.	Net Income.	No.	Net Income.
£		£		£		£		£
Under 1,000...	4,723	1,042,468	4,274	997,592	4,406	1,105,645	4,261	1,118,623
1,001— 1,200...	139	151,849	147	162,986	145	159,971	173	190,698
1,201— 2,000...	364	562,069	343	569,226	423	659,684	462	718,943
2,001— 5,000...	378	1,163,614	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 the Income Tax Act, 1911, all persons, other than companies, in receipt of £300 per annum or over became 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. It is anticipated that much valuable information will result from an analysis of the returns under this Act; up to the present, however, it has not been possible to do this, as owing to the heavy pressure of work caused by the new Act the Taxation Commissioners have been unable to collate any statistical information.

On the Road to Tweed Heads, North Coast District, N.S.W.

AGRICULTURE.

THE advantages derivable from a wide range of climate, and from fertile soils of varying characteristics, are such as render possible the cultivation in New South Wales of plants indigenous to cold, temperate, and even tropical regions.

Very few parts of the State are so barren or unwatered as to be thereby unsuitable for cultivation; but the country which is essentially suitable for farming operations is situated in the Eastern and the Central land divisions, the whole area in those divisions, with the exception of portions of the mountain chain, being capable of profitable agricultural development. The rainfall within this region is such as to admit of the successful cultivation of about 50,000,000 acres under ordinary conditions; and that area might be extended by the application of modern scientific methods relating to intense cultivation.

The rainfall of the Great Western Plains land division is so uncertain that no reliance can be placed on payable results accruing from agricultural pursuits; moreover, from the grazier's aspect as to cost, results, and markets, the pastoral industry presents superior attractions in this part of the State.

AREA UNDER CULTIVATION.

During the year ended 31st March, 1913, an area of 4,889,718 acres, including grassed lands, was under cultivation, of which the area under crops was 3,737,269 acres, and the area sown with grasses was 1,152,449 acres.

The progress of cultivation in quinquennial periods since 1881 is shown in the following table:—

Period (year ended 31st March).	Average area under—		Acres per inhabitant under—	
	Cultivation, including grasses.	Crops.	Cultivation.	Crops.
	acres.	acres.		
1881–85	746,017	662,085	·91	·81
1886–90	1,011,567	835,367	·99	·82
1891–95	1,398,199	1,048,554	1·18	·88
1896–1900	2,252,649	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	4,889,718	3,737,269	2·75	2·10

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 till March, 1893. During the next six years 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 year ended March, 1913, the area amounted to 3,737,269 acres, an advance of 355,348 acres, or 10·5 per cent., during the last two years. The recent increase is due mainly to the favourable ploughing seasons, to the high prices of agricultural produce, and to the subdivision of large estates.

The area actually in cultivation reached 1 acre per inhabitant in March, 1890. During the next ten years the industry had so far developed that in 1900 the rate was slightly in excess of 2 acres per head; but since that year, until quite recently, the cultivation per capita has remained practically stationary. The average during each of the last three years has been about 2¾ acres per head. The following statement shows, in decennial periods to 1910, and for the period 1910-12, the relative increases in population and in area under crop:—

	1870-80.	1880-90.	1890-1900.	1900-10.	1910-12.
Increase per cent. in population ...	50·0	50·0	21·6	20·1	8·7
Increase per cent. in area under crop	98·1	35·5	186·8	38·3	10·5

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 two years of the period reviewed the rate of increase of the crop area was 21 per cent. greater than the population rate.

The following statement of the area under crops in the years ended 31st March, 1903, 1908, and 1913, shows the districts in which the greatest advances have been made:—

Division.	Actual Area under Crops.			Index Numbers. (1903 = 100).	
	1903.	1908.	1913.	1908.	1913.
Coastal—	acres.	acres.	acres.		
North Coast	113,095	91,781	95,628	81	85
Hunter and Manning	110,399	104,166	98,260	94	89
Cumberland	46,991	42,822	38,253	91	81
South Coast	58,050	46,470	43,362	80	75
Total	328,535	285,239	275,503	87	84
Tableland—					
Northern	74,765	60,468	79,405	81	106
Central	197,120	198,361	257,629	101	131
Southern	57,230	48,893	61,752	85	108
Total	329,115	307,722	398,786	93	121
Western Slopes—					
North	180,955	273,794	429,289	151	237
Central	262,754	402,090	549,680	153	209
South	338,186	404,293	722,434	119	214
Total	781,895	1,080,177	1,701,403	138	218
Western Plains—					
North	7,823	7,975	14,608	102	187
Central	157,575	231,001	287,989	147	183
Total	165,398	238,976	302,597	144	183
Riverina	627,409	645,801	1,049,634	103	167
Western Division	13,487	12,222	9,346	91	69
All Divisions	2,245,839	2,570,137	3,737,269	114	166

It is evident from these figures that, between 1903, and 1913, there has been a general increase throughout the State, with the exception of the coastal districts and Western Division.

The largest aggregate increase as compared with 1903, has taken place in the South-western Slope, and amounts to 384,248 acres. Taken as a whole. the Western Slope shows an advance of 919,508 acres. The districts which show the heaviest proportions of the total cultivation are the Riverina, with 28·1 per cent., and the Western Slopes, with an aggregate of 45·5 per cent., in its three divisions. The remaining 26·4 per cent. of the total cultivation is distributed over the Coastal, Tableland, Western Plains, and Western Division, less than 0·3 per cent. of the area under crop being in the last-named.

The great extension of cultivation since 1893 has been fostered by wheat-growing on large estates formerly devoted almost exclusively to grazing, by the added security against bad seasons afforded by wool and wheat-farming in conjunction, also by the adoption of the system of farming on shares, and, more recently, by the subdivision of large holdings for closer settlement.

Cultivation in each Division.

In order that the figures relating to cultivation may be fully appreciated, the following table has been prepared, showing the area under crops, in conjunction with the total area, and the area in occupation, in each division during the year ended 31st March, 1913:—

Division.	Total area of Division.	Area under—			Proportion of area under crops to—	
		Occupation in holdings of 1 acre and over.	Crops.	Sown grasses.	Total area.	Area under occupation.
Coastal—	acres.	acres.	acres.	acres.	per cent.	per cent
North Coast	5,409,370	4,020,770	95,628	811,078	1·8	2·4
Hunter and Manning ...	10,390,920	5,979,395	98,260	110,092	·9	1·6
Cumberland	1,070,989	543,027	38,253	4,164	3·6	7·1
South Coast	5,484,122	2,386,175	43,362	181,084	·8	1·6
Total	22,355,401	12,929,367	275,503	1,106,418	1·2	2·1
Tableland—						
Northern	8,928,487	7,613,347	79,405	15,295	·9	1·0
Central	8,989,259	6,387,897	257,629	5,443	2·9	4·0
Southern	7,913,500	6,625,787	61,752	2,710	·8	·9
Total	25,831,246	20,627,031	398,786	23,448	1·5	1·9
Western Slopes—						
North	9,813,555	8,764,032	429,289	5,923	4·4	4·9
Central	6,252,567	5,150,227	519,680	938	8·3	10·7
South	8,185,759	7,240,851	722,434	5,543	8·8	10·0
Total	24,251,881	21,155,110	1,701,403	12,404	7·1	8·0
Western Plains—						
North	10,030,901	7,980,286	14,608	80	·1	·2
Central	16,029,880	15,280,737	287,989	3,570	1·3	1·9
Total	26,060,781	23,261,023	302,597	3,650	1·2	1·3
Riverina	19,767,073	18,531,407	1,049,634	6,274	5·3	5·7
Western Division	80,368,498	78,073,900	9,346	255	...	...
All Divisions	198,634,880	174,577,828	3,737,269	1,152,449	1·9	2·1

Only 1·9 per cent. of the total area of New South Wales is actually devoted to the growth of agricultural produce; and if the small extent of land upon which grasses have been sown for dairy-farming purposes be added to the area under crops, the proportion reaches only 2·5 per cent., and represents about 2·75 acres per head of population. The proportion of the cultivation area on alienated holdings is only 6·4 per cent. of the total area of alienated rural lands in holdings of 1 acre and over; of the area in occupation, 54,290,188 acres are alienated and 120,287,650 acres are leased from the Crown. The area of Crown Lands cultivated amounted to only 274,346 acres.

Purely agricultural settlements are confined to limited areas in the alluvial lands of the lower valleys of the coastal rivers, and to parts of the southern and central divisions of the tableland; and the cultivation of crops is conducted, to a large extent, conjointly with grazing operations. Tenant occupancy, so general in the United Kingdom, is but little known in New South Wales; of the total area under crop, 3,218,771 acres, or 86·1 per cent., were cultivated by owners, and 518,498 acres, being 13·9 per cent., were cultivated by tenant occupiers, including Crown land lessees.

In addition to the area shown as cultivated and under sown grasses, 65,388,641 acres were ringbarked and partly cleared; and 2,265,601 acres were ready for cultivation on alienated holdings, consisting of 1,426,212 acres which had been cropped previously, 414,526 acres of new land cleared and prepared for ploughing, and 424,863 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 1912-13 accounted for 59·6 per cent. of the total; the area for hay was 25·3 per cent., maize 4·7 per cent., for green food 4·1 per cent., and oats 2·3 per cent. The following statement shows the cultivated area for each of the principal crops, at intervals since 1881, and the relative importance of each crop :—

Crop.	Area.				Proportion per cent.			
	1881.	1901.	1911.	1913.	1881.	1901.	1911.	1913.
	acres.	acres.	acres.	acres.				
Wheat	253,137	1,530,609	2,128,826	2,231,514	40·2	62·6	62·9	59·6
Maize	127,196	206,051	213,217	176,471	20·2	8·4	6·3	4·7
Barley	8,056	9,435	7,082	16,916	1·3	·4	·2	·5
Oats	17,922	29,383	77,991	85,175	2·9	1·2	2·3	2·3
Hay	131,153	466,236	638,577	947,062	20·9	19·1	18·9	25·3
Green food	21,383	78,144	179,382	154,535	3·4	3·2	5·3	4·1
Potatoes	19,095	29,408	44,452	34,124	3·0	1·2	1·3	·9
Sugar-cane	10,971	22,114	13,763	13,914	1·7	·9	·4	·4
Vines	4,800	8,441	8,321	8,163	·8	·3	·2	·2
Orchards	24,565	46,234	47,354	49,057	3·9	1·9	1·4	1·3
Market-gardens ...		7,764	9,813	9,847		·3	·3	·3
Other crops ...	10,902	12,948	17,239	14,048	1·7	·5	·5	·4
Total ...	629,180	2,446,767	3,386,017	3,740,826	100	100	100	100

The figures for the years 1901, 1911, and 1913 include the areas double-cropped, viz., 1,203 acres, 4,096 acres, and 3,557 acres respectively.

The area devoted to wheat has always exceeded that given to other crops, and from the year 1881 the proportion, though fluctuating, has remained high; it now stands at nearly three-fifths of the whole area under cultivation. During the same time the proportion under maize has decreased from 20 per cent. to 4·7 per cent.; other crops have not varied materially.

Cultivated Holdings.

The number of holdings on which the various crops were cultivated during the last five years is shown below. The figures relating to oranges, lemons, and other fruits since 1909-10 are not comparable with those of the preceding years, as they have been compiled on a slightly different basis, holdings on which only a few trees are grown now being included:—

Crop.	Number of Holdings.				
	1908-9.	1909-10.	1910-11.	1911-12.	1912-13.
Wheat	16,810	18,432	18,261	18,263	19,469
Maize	18,647	20,142	20,951	18,472	18,187
Barley	2,225	1,973	1,447	1,445	1,869
Oats	13,396	14,193	13,187	12,754	13,483
Potatoes	7,609	8,083	8,081	7,271	6,865
Tobacco	66	90	94	115	148
Sugar Cane	858	1,022	927	1,168	764
Grapes	1,657	1,611	1,679	1,514	1,437
Fruit—Citrus	2,709	4,010	4,799	4,735	4,827
Other	6,902	8,572	9,325	9,110	8,960
Market Garden Produce	3,462	3,808	3,598	3,368	3,581
Total Cultivated Holdings	46,051	48,692	49,323	47,810	48,943

Although the wheat area is far in excess of the maize, the number of holdings on which maize is grown is nearly the same, many dairy-farmers crop small areas of maize for use on the farms, while much of the wheat acreage—possibly one-fifth—is cultivated under the "shares" system by which a number of growers cultivate one holding.

The steady increase of tobacco-growers is a noticeable feature of the comparison shown above.

Value of Production.

The average value of the principal crops, with the proportion of each to the total value, during the last three years, is shown in the following table; the values are based on prices realised on the farm and not on the Sydney market:—

Crop.	Value.			Proportion per cent.		
	1911.	1912.	1913.	1911.	1912.	1913.
	£	£	£			
Wheat	4,303,310	4,113,400	5,238,580	45·3	42·2	44·3
Maize	791,050	901,470	873,300	8·3	9·2	7·4
Barley	13,370	28,170	61,400	·1	·3	·5
Oats	177,360	173,270	223,210	1·9	1·8	1·9
Hay and straw	1,915,290	2,084,740	3,260,810	20·2	21·4	27·6
Green food	358,800	417,130	360,380	3·8	4·3	3·0
Potatoes	658,030	500,150	338,710	6·9	5·1	2·9
Sugar-cane	156,500	143,620	140,920	1·7	1·5	1·2
Grapes	56,350	77,170	90,010	·6	·8	·8
Wine and brandy	58,880	66,590	63,670	·6	·7	·5
Fruit—Citrus	199,300	289,140	239,040	2·1	3·0	2·1
,, Other	272,290	374,140	305,660	2·9	3·8	2·6
Market-gardens	333,690	357,230	369,480	3·5	3·6	3·1
Other crops	198,840	222,600	251,620	2·1	2·3	2·1
Total	9,493,060	9,748,820	11,816,790	100	100	100

The value of agricultural production in the year ended March 1913, was the highest on record, and was due to increased production rather than to the enhanced values of products.

It is apparent that the agricultural wealth of New South Wales at present depends mainly on the return from wheat and hay, the value of these crops in 1913 being £8,499,390, or 71·9 per cent. of the total. The return of wheat for the year ended March, 1913, shows a total crop of 32,487,336 bushels, valued at £5,238,580. The value of maize is next in importance, but at a considerably lower level; the value of fruit, and the returns from market gardens, green food, potatoes, vines, and sugar-cane are comparatively of much smaller value.

The next statement shows the areas cultivated and the value of the production from agriculture, as well as the average value per acre over five-year periods since 1881 :—

Period. (Year ended 31st March.)	Area 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

The highest relative value received in any year was in 1881-2, when the return was £4,215,268, or £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 year ended March, 1905, to £3 8s. 9d. in 1910, when it was the highest since 1893. During the succeeding two years the average value per acre decreased considerably, but for 1912-13 the increased production of agricultural products generally caused a much improved return, and the average value per acre has been exceeded only once during the last twenty years.

Average Value per Acre.

The average value per acre of various crops during the years 1911-13 are shown below in comparison with the average for the last ten years:—

Crop.	Average Values per Acre.			Average value for 10 years, 1904-13.
	1911.	1912.	1913.	
Grain—	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Wheat	2 0 5	1 14 7	2 7 0	1 18 2
Maize	3 14 2	5 7 5	4 19 0	4 3 2
Oats	2 5 6	2 8 9	2 12 5	2 5 7
Hay	2 19 0	3 2 11	3 8 2	3 8 8
Potatoes	14 16 1	11 11 10	9 18 6	10 19 8
Sugar Cane	27 19 4	27 7 9	22 19 3	20 11 2
Vineyards	14 17 3	19 10 0	20 14 7	16 5 9
Orchards	12 8 5	17 19 9	14 8 3	10 7 8
Market Gardens	34 0 1	37 12 3	37 10 6	30 1 7

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 year ended March, 1913, the area under wheat for grain was 2,231,514 acres, which was 60 per cent. of the whole area under cultivation. The year 1897-8 may be said to mark the beginning of the present era of wheat-growing in the State, for it was in that year that the production for the first time exceeded the consumption, and left a surplus available for export. The following statement shows the area under wheat in the various districts in the years ended March, 1908 and 1913 in comparison with 1898:—

Division.	Area under Wheat for Grain.			Proportion in each District.		
	1898.	1908.	1913.	1898.	1908.	1913.
	acres.	acres.	acres.	per cent.	per cent.	per cent.
Coastal	16,192	4,940	4,788	1·6	·4	·2
Tableland—						
Northern ...	20,686	6,362	5,980	2·1	·4	·3
Central	80,318	62,587	83,795	8·1	4·5	3·7
Southern ...	22,421	4,990	8,145	2·2	·4	·4
Total	123,425	73,939	97,920	12·4	5·3	4·4
Western Slopes—						
North	59,330	172,907	276,885	6·0	12·4	12·4
Central	102,136	273,025	379,842	10·3	19·6	17·0
South	198,268	274,950	492,465	19·9	19·9	22·1
Total	359,734	720,882	1,149,192	36·2	51·9	51·5
Western Plains ...	31,589	142,979	206,521	3·2	10·3	9·3
Riverina	460,474	445,537	772,097	46·4	32·0	34·6
Western Division ...	1,936	1,894	996	·2	·1	.....
All Divisions ...	993,350	1,390,171	2,231,514	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 1913, however, the proportions in each district changed considerably. The Tablelands, for instance, now include only 4·4 per cent. of the whole area, as against 12·4 per cent. in 1898, and the Riverina 34·6 per cent., as against 46·4 per cent., while the Western Slopes have increased from 36·2 per cent. to 51·5 per cent., and the Western Plains from 3·2 per cent. to 9·3 per cent. The largest relative increase in area has been in the Western Plains, where it is now nearly seven times the area of 1898; closely following is the North-western Slope; then Central-western and South-western Slopes. On the Northern and Southern Tablelands wheat-growing is declining in favour. The great bulk of the wheat is grown on the Western Slopes and in the eastern part of the Riverina, these districts together contributing over 86 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.			
	1898.	1908.	1913.	1898-1908	1898.	1908.	1913.
	bushels.	bushels.	bushels.	bushels	bushels	bushels	bushels
Coastal	329,274	23,996	68,691	12·4	20·3	4·9	14·3
Tableland—							
Northern ...	300,215	90,728	108,691	13·8	14·5	14·3	18·2
Central ...	933,296	479,404	1,424,329	11·6	11·6	7·7	17·0
Southern ...	242,556	42,176	138,199	11·9	10·8	8·5	16·9
Total... ...	1,476,067	612,308	1,671,219	11·9	12·0	8·3	17·0
Western Slopes—							
North	1,208,859	1,070,344	3,056,994	12·1	20·4	6 2	11·0
Central ...	1,398,967	2,033,284	5,851,087	11·1	13·7	7·4	15·5
South	1,849,521	2,482,004	8,213,470	10·1	9·3	9·0	16·7
Total... ...	4,457,347	5,585,632	17,121,551	10·9	12·4	7·7	14·9
Western Plains ...	563,066	611,852	2,702,887	8·4	17·8	4·3	13·1
Riverina	3,725,421	2,306,188	10,917,507	8·3	8·1	5·2	14·2
Western Division	8,936	15,908	5,481	5·5	4·6	8·4	5·6
All Divisions...	10,560,111	9,155,884	32,487,336	9·8	10·6	6·6	14·6

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 1908 and 1913, the following table shows the index numbers of those years in relation to 1898, which is taken as a basis, and is equal to 100:—

Division.	Wheat Acreage.		Yield.	
	1908.	1913.	1908.	1913.
Coastal	30·5	29·6	7·3	20·9
Tableland—				
Northern	30·7	28·9	30·2	36·2
Central...	77·9	104·3	51·4	152·6
Southern	22·6	36·3	17·3	57·0
Total	59·9	79·3	41·5	113·2
Western Slopes—				
North	291·4	466·5	88·5	252 9
Central...	267·3	371·9	145·3	418·2
South	138·7	248·4	134·2	444·1
Total	200·4	319·5	125·3	384·1
Western Plains	452·1	653·8	108·8	480·0
Riverina	96·8	167·7	101·9	293·1
Western Division ...	97·8	51·4	178·0	61·3
All Divisions	139·9	224·6	86·7	307·6

A great proportion of the immense area of the State, hitherto devoted exclusively to pastoral pursuits, consists of land which could be profitably utilised for agriculture, much of it being more suitable for the cultivation of wheat than some of the land now under crop; and the returns show that wheat-growing, which was formerly confined to small farmers, is now engaging the attention of a number of the large landholders, who cultivate areas of thousands of acres in extent, and use the most modern and effective implements and machinery for ploughing, sowing, and harvesting.

Wheat—Share Farming.

A considerable portion of the new area which is being brought under wheat in New South Wales is cultivated on the shares system, especially in the southern portion of the State. Under this system, the owner leases his land 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, and the tenant the labour; and up to a specified yield, the parties to the agreement take equal shares of the produce, any excess going to the farmer as a bonus. The system, however, is subject to local arrangements. The number of acres farmed on the shares system in each of the last ten years is shown below:—

Year ended March.	Area.	Year ended March.	Area.
	acres.		acres.
1904	304,415	1909	307,750
1905	340,015	1910	364,579
1906	402,234	1911	473,079
1907	429,543	1912	616,607
1908	348,444	1913	618,333

Of the area cultivated on the shares system in 1912-13, 376,857 acres were in the Western Slopes and 171,190 acres in the Riverina Division.

Extension of Wheat Cultivation.

The progress of wheat-growing for many years was slow and irregular. Prior to 1867 the area under crop had remained almost stationary—at a little more than 125,000 acres; but in 1867 the acreage increased to 175,000. Eleven years later the area reaped for grain was practically the same, although during the intervening period it had fluctuated somewhat. Then more land was laid under the cereal, and in 1879 the area increased to 233,252 acres. In 1891, twelve years later, the acreage stood at 333,233 acres, although, during the interval, it had reached as high as 419,758 acres. From 1893 onwards progress was more regular. A great impetus was given to the industry in 1897, when the area increased to 866,112 acres; in 1901 it had advanced to 1,530,609 acres, and in 1906 to 1,939,447 acres. During the next three years the area decreased on account of unfavourable ploughing seasons, but it has since increased, and in 1912 the area—2,380,710 acres—was the highest yet recorded.

The area harvested for grain in 1913 exhibits a falling-off of 149,196 acres. This was due entirely to the largely increased area cut for hay on account of the enhanced prices ruling, as a result of dry weather and depleted fodder supplies.

The following statement shows the area under wheat for grain at intervals since 1876, together with the total production and average yield per acre—

Year ended 31st March.	Area under Wheat for Grain.	Yield.		Year ended 31st March.	Area under Wheat for Grain.	Yield.	
		Total.	Average per acre.			Total.	Average per acre.
	acres.	bushels.	bushels.		acres.	bushels.	bushels.
1876	133,609	1,958,640	14·66	1907	1,866,253	21,817,938	11·69
1881	253,137	3,717,355	14·69	1908	1,390,171	9,155,884	6·59
1886	264,867	2,733,133	10·45	1909	1,394,056	15,483,276	11·11
1891	333,233	3,649,216	10·95	1910	1,990,180	28,532,029	14·34
1896	596,684	5,195,312	8·71	1911	2,128,826	27,913,547	13·11
1901	1,530,609	16,173,771	10·56	1912	2,380,710	25,088,102	10·54
1902	1,392,070	14,808,705	10·64	1913	2,231,514	32,487,336	14·56
1903	1,279,760	1,585,097	1·24				
1904	1,561,111	27,334,141	17·51	Average for 30 years ended 1913			11·09
1905	1,775,955	16,464,415	9·27	,, 10 years ,, 1893			12·96
1906	1,939,447	20,737,200	10·69	,, ,, ,, 1903			8·79
				,, ,, ,, 1913			12·06

Despite the vicissitudes of the climate it will be seen from the above table that lack of capacity to produce a payable average has not been the cause of the tardiness in development of wheat cultivation. During the last thirty years the average annual yield has been 11·09 bushels to the acre; the average for 1913 was much above this figure. The highest averages recorded have been 17·51 in 1904,, and 17·37 in 1887. The lowest was 1·24 bushels in the year 1903. During the whole period there were only seven seasons when the yield fell below 10 bushels per acre, the failure in each case being due to drought conditions.

In spite of the lower averages of certain years, it may be said that from equal qualities of soil a better yield is now obtained than was realised twenty years ago—a result due largely to extension of agricultural education, the use of fertilizers, and of more economical harvesting appliances; also to the fact that rust, smut, and other forms of disease in wheat have been less frequent and less general in recent years.

During the month of June in each year inquiries as to the area under wheat are made at the Bureau of Statistics, the particulars for each grower being entered in specially prepared books, which contain details of the actual area under, and the production of, wheat for the previous season. The area likely to be harvested for grain is stated, together with particulars of the extent of new and fallowed land placed under crop. Additional information is also required as to the proportion of early, mid-season, and late crops. Reports are furnished for each district concerning the condition of the crops, rainfall, and prospects for the season. After being tabulated the results are published, and the books are returned to the collectors during October for revision and amendment if necessary. Additional particulars are entered as to the actual or anticipated yields of grain and hay for each holding; and from the information obtained in this manner an estimate as to the probable wheat harvest is issued about the middle of December.

The question of issuing progress reports during the wheat-growing season is receiving attention, and it is probable that the present system of crop reporting will be extended.

Principal Wheat-growing Countries.

A comparison of the production of this cereal in the principal wheat-growing countries is supplied in the following table:—

State.	Production.	Country.	Production.
	bushels.		bushels.
New South Wales	32,487,336	Russia	798,993,000
Victoria	26,223,104	United States	708,064,000
Queensland	1,975,505	British India	358,389,000
South Australia	21,496,216	France	325,075,000
Western Australia	9,168,594	Austria-Hungary	252,149,000
Tasmania	630,315	Canada	199,236,000
		Argentine	198,360,000
Total, Australia ...	91,981,070	Italy	165,675,000
		Germany	160,180,000
		Spain	109,753,000
New Zealand	5,179,626	Roumania	86,176,000
		Bulgaria	63,732,000
		United Kingdom	57,402,000
		Chile	38,581,000
		Egypt	37,933,000
		Algeria	27,164,000
		Japan	25,690,000

Area Suitable for Wheat-growing.

The area suitable for wheat-growing is defined roughly as that part of the State which has sufficient rainfall—(*a*) to admit of ploughing operations being carried out at the right time of the year; (*b*) to cover the growing period of the wheat plant—April to October, inclusive; and (*c*) to fill the grain during the months of September and October, or, in the case of districts where the rainfall in these months is light, to counteract the deficiency by the increased falls in the earlier or later months.

September and October are the most critical months as regards rainfall, being the time for the filling of the grain. Heavy soils require more rain than light soils, especially if the latter possess retentive subsoils. The nature of the soil, and considerations of elevation, temperature, evaporation, &c., have an important bearing on the moisture needed for wheat culture, and one of the most important considerations in determining the area of profitable wheat-growing is the seasonal distribution of the rainfall. Heavy falls early in the season may induce too vigorous growth, which would require correspondingly heavy rains in the spring or early summer. On the other hand, comparatively light showers, in addition to encouraging surface-rooting, would result in a larger proportion of evaporation than the falls giving about one inch at a time.

The average rainfall gradually diminishes towards the western limits of the State, the figures ranging from a mean of about 50 inches on the seaboard to 10 inches on the western boundary.

In the early days of the industry wheat-growing was confined to the coastal districts, but its cultivation in these areas has been practically abandoned on account of the prevalence of rust, caused by excessive moisture, combined with the discovery that the drier districts are more suitable because the crop can be more easily and more cheaply grown.

In some of the northern districts much of the land is unsuitable for wheat-growing, as it consists of stony, hilly country, too rough for cultivation, and of black-soil plains, which bake and crack, and present mechanical difficulties in tillage. The rich soils of river flats must also

be omitted from good wheat-growing areas, as such land has a tendency to produce excessive straw growth, although excellent hay can be grown in those localities.

Until recently land with an average rainfall of less than 20 inches has also been excluded from the area which is considered safe for profitable wheat-growing. With the exceptions of the coastal districts and unsuitable northern districts, it has been estimated that the area with an average annual rainfall of not less than 20 inches, suitable for wheat-growing, covers from 20 to 25 millions acres.

The South Australian farmers place the annual rainfall limit at 16 inches; but in that State the fall in many districts, though low, is more regular and more opportune than in New South Wales, though much is undoubtedly due to the more general application of advanced methods of cultivation in South Australia. Assuming that wheat could be profitably grown in New South Wales in areas with an annual fall of 16 inches, another 10,000,000 acres would be added to the wheat belt.

As previously stated, however, the seasonal distribution of the rainfall is an important factor, and it has been found that wheat can be cultivated successfully in parts of Australia with an average of 10 inches, provided that the falls occur during the growing period.

On the map attached to this "Year Book" are shown the experience lines of profitable wheat cultivation, that is, the western boundaries of the area in which wheat has been successfully cultivated, as determined in 1904 and in 1912; the western boundary of the area over which the average rainfall is not less than 10 inches during the wheat-growing period is also defined.

Considerable improvement has been manifested during recent years in the methods of wheat culture. The old system has been altered gradually to accord with modern ideas, and the adoption of scientific methods has enabled farmers—especially in the districts of scanty rainfall—to secure profitable returns with a precipitation much less than that required formerly. It is not surprising, therefore, that the boundary of successful wheat production, as laid down in 1904, has been extended further westward.

It is estimated that the wheat belt has been increased by about 13,430,000 acres since 1904, and this has been made possible by the adoption of scientific methods of cultivation. The greatest extension has taken place in the southern wheat areas, especially in the Riverina division, where the spring rainfall is more suitable than on the north-western plain for filling and maturing the grain.

South of the Murrumbidgee from 65 to 70 per cent. of the annual average rain falls between the beginning of April and the end of October; in the central wheat areas, *i.e.*, the central western slopes and parts of the western plains, the percentage of the annual means drops to between 50 and 60, and in the northern wheat country to a range from 45 to 55 only.

In determining the present wheat experience line, due consideration has been given to low yields attributable to bad farming and other preventable causes. This is a very necessary precaution, as the average wheat yields for the various districts do not always accurately disclose the possibilities of the districts. Notwithstanding the improvement made during recent years in cultural methods generally, still the majority of the farmers do not obtain from their land anything like the results which are possible under good treatment. The conservation of moisture by fallowing and by subsequent cultivation has not received sufficient attention, and the use of artificial manures should be much more general.

The conservation of moisture in the subsoil, by fallowing and proper treatment of the fallows, may carry over an equivalent of from 5 to 8 or 10 inches of rain to supplement the falls during the growing season; and the risk of failure, in the drier western districts especially, may be greatly diminished, if not entirely eliminated, by these means.

It must not be concluded that the wheat line as now laid down will remain stationary. There are still large areas, especially in northern and western Riverina, admirably suited to wheat production. With the advance of settlement, the subdivision of large estates, and the extension of railway communication, there is every reason to believe that the area now known as the wheat belt will be extended considerably in the early future, provided the farmers are prepared to adopt the latest approved methods of cultivation.

Dry-farming.

The term "dry-farming," in its general significance, is applied to any method founded on scientific principles for the production of crops without irrigation in arid or semi-arid districts.

Dry-farming methods have been practised for many years in New South Wales, Victoria, and South Australia. The last-mentioned State is specially noted for the amount of grain produced in districts of scanty rainfall; in the mallee districts of Victoria, with an annual rainfall of 12 to 16 inches, wheat-growing has been conducted with most successful results; and the prosperous condition of many towns in the dry western areas furnishes undoubted evidence of the success of dry-farming in New South Wales. It must be admitted that the advanced methods have not been generally adopted in this State, but conditions are steadily improving, and the problem of effective utilisation of the dry districts is now attracting considerable attention in agricultural and scientific circles.

In July, 1910, a conference was arranged by the Department of Agriculture, in conjunction with the Farmers and Settlers' Association, to which prominent farmers from the wheat-growing districts of this State were invited, to meet the experts of the Department and to discuss the subject of wheat-growing with special reference to dry-farming. The report of the conference, which has been issued as a Departmental Bulletin, contains discussions on the three main factors for successful farming in dry districts, viz., the production of suitable varieties of wheat, the conservation of fertility by the proper use of fertilisers and rotation of crops, and the conservation of soil moisture. The fixing of the wheat standard and transportation methods were also discussed, and many interesting comparisons with conditions in other wheat-producing countries were placed before the conference.

According to present indications with regard to the western portion of the State, the best results will be obtained by combining wheat-culture with sheep-raising. But the Department emphasises a warning to intending growers that successful wheat culture under arid conditions requires a thorough knowledge, and a strenuous application, of the most modern methods. Experiments in dry-farming were conducted for a number of years at Coolabah Experiment Farm, and since 1909 at a more accessible site—the Nyngan Demonstration Farm. The results of the experiments and practical advice are readily available to interested persons on application to the Department of Agriculture.

At the instance of the Minister for Agriculture of South Australia, the first Interstate Dry-farming Conference was held at Adelaide in

March, 1911. Representatives of New South Wales, Victoria, Queensland, and South Australia attended, and the following recommendations were passed:—

1. The appointment of an Agricultural Board of Advice to consist of three official representatives of each Australian State.
2. That such Board decide on a common basis of scientific investigation and a common plan of experiment.
3. That the data collected by the Board and the results of experiments be published by the respective Governments.
4. That the above resolutions be conveyed to the State Governments, and each be urged to make necessary arrangements to carry them into effect.

The recommendations of the conference are still under consideration.

Varieties of Wheat.

Since 1897 Goverment agricultural experts have been trying to determine the varieties of wheat most suitable for the various districts, and to secure new types which will return the best milling results under local conditions. It is gratifying to record that their efforts have been attended with marked success.

In connection with this branch of agricultural science the name of the late William J. Farrer, Wheat Experimentalist of the Department of Agriculture of New South Wales has become world-famous. His efforts were directed towards the production of new varieties of greater milling value and more resistant to rust than the old. Farrer wheats, which rank amongst the most prolific grain varieties, are largely cultivated throughout the State; and he and his successors have proved that Australia can produce strong white wheat equal in flour production to the old varieties, and equal in strength to the famed standard Manitoba wheat which had hitherto been imported for blending with Australian soft wheats. Such importation has been abandoned in this State, and it is the intention of the Sydney Chamber of Commerce to make a special standard under the name of "New South Wales Strong White," so that New South Wales is likely to become an exporter rather than an importer of strong wheat.

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. At Nyngan tests are made to determine the suitability of the different varieties for cultivation in dry areas. The work at each farm consists of:—

1. Pedigree plots of the main varieties grown on the farm.
2. Crossbreds in course of fixation for local conditions of soil and climate.
3. A "Stud Variety Trial," including all standard varieties, newly-introduced wheats, and samples sent for identification.
4. "Stud Bulks" to provide seed for planting the farm areas which supply seed wheat for sale.

Milling Qualities of New South Wales Wheat.

The Department of Agriculture has recently published the results of an investigation regarding the variations in the strength and gluten-content of New South Wales wheats during the last thirteen 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, Jonathan, Cedar, and similar varieties, as well as Departmental crosses not at present in general cultivation.
2. *Farrer wheats, weak flour varieties,* including Federation, Bunyip, Jade, Bayah, Plover, and other varieties, as well as Departmental crosses not in general cultivation.
3. *Local soft wheats.*—farmers' wheats, of the Purple Straw and Steinweidel type, which are being gradually replaced by the stronger varieties, but which still constitute the bulk of the wheat produced in New South Wales, as will be seen on comparison with the F.A.Q. wheats.
4. *Wheats at the Royal Agricultural Society's Show—strong white class*—which are confined practically to the two Farrer wheats—Bobs and Comeback—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 soft wheats (No. 3 Supra) and the Farrer weak-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 eight years ended March, 1913; the average relates to the period 1900-13, except for the wheat at the Royal Agricultural Society's Show, 1905-12, and the f.a.q. 1906-13. The grain produced during the seasons 1908-10 was exceptionally high in both strength and gluten, and for this reason the averages have been inflated in all cases.

Class of Wheat.		1906.	1907.	1908.	1909.	1910.	1911.	1912.	1913.	Average 1900-13.
Farrer wheats, strong flour Varieties.	Strength	52·2	50·9	52·6	54·5	51·9	53·2	52·5	53 3	52·61
	Gluten	16·1	11·5	15·6	16·9	14·1	13·2	13·8	14·5	14·28
Farrer wheats, weak flour Varieties.	Strength	46·5	47·3	47·1	49·5	47·5	47 1	46·8	47·0	47·15
	Gluten	12·8	10·2	15·0	17·8	12·1	13·3	12·6	12·2	13·18
Farrer wheats, all kinds	Strength	49·7	49·8	50·8	53·4	49·7	49·9	49·8	48·4	50·37
	Gluten	14·7	11·1	15·4	17·1	13·4	13·3	13·2	14·6	13·98
Local soft wheats	Strength	45·8	46·9	46·5	48·7	49·1	45·8	44·9	45·0	46·21
	Gluten	10·2	9·2	13·4	12·3	14·2	11·3	10·4	11·8	11·21
Wheats at R. A. S. Show Strong white.	Strength	48·5	48·4	52·5	53·5	50·0	53·4	52 7	53·1	50·96
	Gluten	11·0	9·3	12·2	11·9	13·8	12·5	13·4	15·3	12·04
Wheats at R. A. S. Show Soft white.	Strength	45·7	45·4	46·4	49·2	47·8	47·0	45·2	47·0	46·54
	Gluten	9·8	8 3	10·2	8·6	12·1	11·0	10·6	11·2	10·16
F.A.Q. for New South Wales ..	Strength	45·5	46·1	48·5	48·0	48·0	45·0	45·0	46·0	46·51
	Gluten	10 2	9·4	10·6	12·2	10·4	10·2	11·9	11·9	10·85
Millers' flour	Strength	47·4	48·0	49·9	49·9	48·6	46·7	47·9	47·4	48.23
	Gluten	9·7	9·9	14·6	15·6	10·2	9·8	11·4	11·4	10·98

Increase in the Wheat Yield.

It has been shown that the area under wheat for grain is 2,231,514 acres, which is a very insignificant portion of the total area available; and even this small area is not worked as profitably as it might be. Compared with the principal wheat-growing countries of the world, an average yield of 14·56 bushels per acre is very small, as will be seen from the table below. The average shown are based on the latest available returns:—

Country.	Average yield per acre.	Country.	Average yield per acre.
	bushels.		bushels.
United Kingdom	29·13	India	12·12
Germany	33 68	Italy	14·10
France	20·03	Russia	10·23
Hungary	19·27	Argentine	11·61
United States	15·46	Canada	20·42

A bare statement of average is, however, not entirely conclusive, as the relative cost of production should also be taken into consideration.

Moreover, in the older countries, the efforts of farmers are more concentrated, and more intense cultivation is necessary. In New South Wales, wherever agriculturists have confined their operations to a restricted area, and have made systematic efforts to till the soil completely, their returns have been much greater than those obtained by imperfect cultivation of areas which are beyond the capacity of the holder's teams and implements.

The crude methods of farming practised on many of the outlying districts are steadily improving, and it is reasonable to expect that the yield will be considerably increased. The lack of system in farming is almost necessarily prevalent amongst pioneers in new countries. In many instances the settlers have begun with insufficient capital and with very little practical knowledge; and there are probably very few places where persons without capital could have succeeded so well as in this State.

The possibilities of New South Wales are great; and if only a quarter of the area favourable for growing wheat were cultivated on scientific lines there would be a much greater surplus available for export, after satisfying all local demands. There is a very large market for breadstuffs in the United Kingdom, the average annual import during the last five years having been 212 million bushels, of which, on the average, only between 5 and 6 million bushels per annum have been received from this State. Were the farmers to grow the wheats most in demand in Great Britain, there should be very little of the year's crop unsold, and little risk of the local price falling so low as to be unprofitable. There is also an increasing demand for Australian wheat in the markets of the East.

Fallowing.

The last five seasons have furnished excellent object lessons as to the benefits to be derived from a proper system of fallowing, from the intelligent working of the land, and from the judicious use of fertilisers. From almost every district reports indicate that, notwithstanding the dry conditions prevailing during practically the whole period of growth, the

average yield on fallowed and properly cultivated land has ranged from 20 to 43 bushels per acre. The general average yield suffers by reason of the large proportion of poor crops on stubble land, and farmers generally should adopt other methods of cultivation since it has been proved by practical experience that fallowed and properly-worked land will give far better results than a much larger area of stubble land.

Striking examples are shown in the subjoined comparison of results obtained per acre in various districts during 1913-14:—

District	Highest Yield—Farmers' Experiment Plots.	General Average Yield for district.
	bush. lb.	bush. lb.
Craboon (Leadville)	43 8	12 14
Gulgong	34 6	11 5
Mudgee	31 52	14 11
Boggabri	31 7	11 52
Grong Grong	30 49	11 9
Milbrulong (Lockhart)	30 33	15 33
Germanton	28 49	10 28
Ringwood (Corowa)	37 20	16 50

Perhaps no better illustration of the necessity for fallowing can be given than the results of the experiment at Nelungaloo, in the Bogan Gate district. In this case half of the area was fallowed in accordance with rules laid down by the Department of Agriculture, the other half being ploughed just prior to seeding, a practice, unfortunately, only too frequent in the State. The average yields obtained per acre are shown below for each variety of wheat grown:—

Variety of Wheat.	On Fallowed Areas.	On Non-Fallowed Areas.
	bush. lb.	bush. lb.
Rymer	27 9	15 15
Yandilla King	22 38	13 36
Bayah	22 2	12 57
Comeback	18 45	9 42
Bunyip	13 29	6 36
Marshall's No. 3...	23 21	14 25
Federation	23 35	13 2

It is hardly necessary to comment on the above figures. They show very clearly that a system of fallowing will ensure a good harvest even in a bad season.

Farmers' Wheat Experiment Plots have been conducted by the Department of Agriculture for the last five seasons, so that a comparison of the results obtained with the average yield for the State should prove of interest:—

Season.	State Average.	Average of Experiment Plots.
	bush. lb.	bush. lb.
1909-10	14 20	24 23
1910-11	13 7	18 45
1911-12	10 32	20 17
1912-13	14 34	24 8
1913-14	11 52	21 3
Average for 5 years	12 44	21 43

Prices of Wheat.

The price of wheat is subject to continuous fluctuation, as shown in the following table, which gives the average rates ruling in the Sydney market in the months of February and March of each year since 1865. These figures exhibit clearly the tendency to a gradual reduction in the value of the cereal down to 1895, when the price was the lowest of the series. In 1896, however, owing to a decrease in the world's supplies, the price rose considerably, and led to an extension of cultivation in Australasia. Until a few years ago, with a deficiency in the local production, the price in Sydney was generally governed by the rates obtained in the neighbouring Australian markets where a surplus was produced. These, again, are now determined by the figures realised in London, which are usually equal to those ruling in Sydney, plus freight and charges. The prices in the following table are for an imperial bushel of 60 lb., and, being for new wheat, are slightly below the average for the year:—

Year.	February.	March.	Year.	February.	March.	Year.	February.	March.
	per bushel.	per bushel.		per bushel.	per bushel.		per bushel.	per bushel.
	s. d.	s. d.		s. d.	s. d.		s. d.	s. d.
1865	9 6	9 7½	1882	5 5	5 6	1898	4 0	4 0
1866	8 4½	8 0	1883	5 1½	5 2	1899	2 7½	2 9
1867	4 3	4 4	1884	4 3	4 3	1900	2 9	2 8
1868	5 9	5 9	1885	3 10½	3 7½	1901	2 7	2 7
1869	4 9	4 10	1886	4 3½	4 5	1902	3 2	3 2¾
1870	5 0	5 1½	1887	3 10	3 11	1903	*	*
1871	5 7½	5 9	1888	3 6	3 6½	1904	3 0½	3 0¾
1872	5 0½	5 3	1889	4 9	5 3	1905	3 4½	3 3⅝
1873	5 1	5 8½	1890	3 6	3 6	1906	3 1⅝	3 2¼
1874	6 9	6 1½	1891	3 7½	3 10	1907	3 0⅞	3 1½
1875	4 7½	4 6	1892	4 9	4 9	1908	4 4	4 5½
1876	5 1½	5 6	1893	3 6½	3 6	1909	4 0¾	4 6½
1877	6 1½	6 6	1894	2 11	2 8	1910	4 1¾	4 1
1878	6 1½	5 7½	1895	2 7	2 7	1911	3 7¾	3 5
1879	5 0	4 9½	1896	4 4½	4 5	1912	3 9½	3 8½
1880	4 8	4 9	1897	4 8	4 6½	1913	3 6½	3 7
1881	4 1	4 3						

*No sales.

As to recent years prices did not vary greatly in 1899, 1900, and 1901; there were no quotations in 1903, owing to the almost universal failure of the 1902-3 crop; in 1908 and 1909 the prices were higher than in any year since 1897; in 1910 they were lower than in 1909, but otherwise were better than in any year since 1898. During the period 1911-13 the prices were much lower than those of the previous three years.

The average values of English and imported wheat for the years 1910, 1911, and 1912 are shown below :—

Country.	Average Value per Quarter.		
	1910.	1911.	1912.
	s. d.	s. d.	s. d.
Australia	37 2	34 10	38 5
Canada	36 9	34 10	35 2
United States	37 3	34 9	35 9
India	35 5	33 7	37 0
Argentine	34 11	33 4	35 6
Russia	35 7	33 4	37 6
United Kingdom	31 8	31 8	34 9

The comparison shows that the price of Australian wheat was generally higher than that of any other country from which large consignments were received.

Cost of Growing and Exporting Wheat.

The cost of raising wheat depends upon the size of the holding, as a large farm with first-class agricultural appliances can be worked at a very much lower proportionate cost than a small area. An estimate of the cost of growing wheat should include rent, or interest on purchase-money of land, and carriage to the market. Careful inquiries show that in New South Wales, taking into account the producing factors, such as the proportion of lands variously prepared and sown, the proportion of crops harvested by different methods, average railway and other freights, but excluding interest on capital, rent, &c., the cost of landing wheat in Sydney may be assumed at 1s. 7d. to 2s. per bushel with a 10-bushel crop. With the increased use of improved machinery, the average cost may be much reduced, and the cost of harvesting a 10-bushel crop with a harvester is less than 6d. per bushel if carried out by contract labour. The freight to Sydney and other freight and selling charges to the Sydney market are assessed at 4½d. per bushel.

As estimated for wheat farms on large areas with a minimum expenditure per acre, the average cost includes initial expenses for seed, for ploughing, harrowing, sowing, rolling, &c.; then the cost of gathering the crop, stripping, winnowing, bagging, &c.; the cost of these operations averages from 20s. to 21s. per acre, to which must be added the expenditure for transporting the crop from the farm to the market, including road haulage and train transport. These initial charges would naturally vary with conditions—with the size of the farm, the type of machinery, and distance from market—but for a 10-bushel crop might be approximately assessed at £1 5s. per acre.

But apart from these initial charges is to be considered the cost of placing the product on the London market, for since wheat is a world product with a world market, of which London is the pivot, this cost affects selling prices. It includes charges for freight, transhipment, insurance, selling charges, and varies also with the type of vessel and other conditions, but always assists to raise the cost by another 1s. per bushel, approximately.

Grading, Handling, and Marketing Wheat.

The development of the wheat industry is largely dependent upon the facilities for economical transportation to the world's markets; and at the present time, when combined efforts are being made by scientists and practical farmers to extend the cultivation and improve the quality of the wheat, the co-operation of the commercial and transport agencies by the introduction of improved methods of grain handling is necessary for the success of the industry.

Grading.

Australian wheat for export is marketed on the basis of a single standard known as f.a.q.—that is, fair average quality. In New South Wales the standard is fixed annually by a committee of members of the Sydney Chamber of Commerce and two Government representatives. Samples obtained from each of the wheat districts are weighed on McGuirk's Patent Scale, and an average struck, which is used as a standard in all wheat export transactions.

The proportion of six different grades of wheat, as well as the amount of broken and pinched grain, oats, whiteheads, etc., in a standard bushel from the wheat-producing districts of New South Wales for the last four harvests, were as follows:—

Grade.	Harvest.			
	1910-11.	1911-12.	1912-13.	1913-14.
	lb. oz.	lb. oz.	lb. oz.	lb. oz.
3·25 millimetre mesh ...	1 12·5	0 5·5	0 0	0 0
3·00 ,, ,, ...	5 10·25	2 6·5	0 11·75	1 7
2·75 ,, ,, ...	13 0	12 9·4	7 0	10 8·5
2·50 ,, ,, ...	14 11·5	18 13·1	22 1·5	20 14·75
2·25 ,, ,, ...	20 15·5	19 8·8	24 15·75	23 2·25
2·00 ,, ,, ...	2 15	5 2·9	5 3	5 0
Broken and pinched grain..	2 0	2 1·2	1 8	2 8
Oats, whiteheads, &c. ...	1 3·25	0 8·6	0 12	0 7·5
	62 4	61 8	62 4	64 0

The f.a.q. standard of New South Wales for the 1913-14 harvest has been fixed at 64 lb. per bushel; of Victoria, at 62½ lb.; of South Australia, at 61½ lb.; and of Western Australia, 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	1906-1907	24th Jan., 1907	62¼
1899-1900	23rd ,, 1900	61	1907-1908	24th ,, 1908	62½
1900-1901	21st ,, 1901	61	1908-1909	22nd ,, 1909	61½
1901-1902	27th Jan., 1902	61½	1909-1910	31st ,, 1910	62
1902-1903	None fixed—drought.		1910-1911	13th Feb., 1911	62¼
1903-1904	28th Jan., 1904	61	1911-1912	1st ,, 1912	61½
1904-1905	19th ,, 1905	59½	1912-1913	31st Jan., 1913	62¼
1905-1906	24th Jan., 1906	62	1913-1914	19th Jan., 1914	64

Methods of Transport.

Under the present system of transport the wheat is bagged on the farm and brought to the nearest railway station, whence, if for export, it is carried in bags by rail to Sydney for shipment. At some of the stations the Railway Department has erected sheds, and a small charge is made to the farmers for storage. At Darling Harbour, Sydney, where all the grain ships are loaded, grain sheds and bag elevators have been provided.

This system has many disadvantages, apart from the cost of bags and the great amount of labour required for handling grain in bags. In the event of a large yield considerable loss is caused by delays at country railway stations, especially where the shed accommodation is insufficient and the stacks are exposed to damage by rain as well as pests; and the supply of rolling-stock is inadequate, as the space at Sydney is too limited for the speedy manipulation of the trucks.

A contrast to these methods is found in the United States, Canada, Russia, and Argentine, 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. The grain elevators and warehouses in operation in Canada under Government license during the year ended 31st August, 1913, numbered 2,356. In the Western Grain Division there were 2,273 public country elevators and 37 warehouses capable of holding 70,923,650 bushels, and 23 terminal and milling elevators with a capacity of 31,080,000 bushels; in the Eastern Division there were 23 transfer elevators of a capacity of 25,220,900 bushels, making a total of 2,356 elevators capable of holding 127¼ million bushels of grain. The rapid expansion of the elevator system may be seen by a comparison with the figures for the year 1900-1, when there were only 523 elevators, with a total capacity of less than 19 million bushels.

In the United States the elevator system is used for grain shipped from the Atlantic Coast, but in the Pacific Coast region the grain is still handled in bags. A great obstacle to the introduction of the elevator system in the latter region, as in Australia, has been the difficulty regarding marine insurance, as it has not been considered safe to load a vessel with bulk grain for the long sea voyage to Europe. The distance is about the same as from Australia, but will be considerably shortened by the opening of the Panama Canal.

In 1910, however, a project was reported for the establishment in the Pacific Coast region of a line of elevators for coastwise trade, which is rapidly increasing, while the foreign exports have declined. The explanation for this change in the direction of the trade is as follows:—The four States which constitute the Pacific Coast region are Washington, Oregon, Idaho, and California. In California grain production is giving place to other forms of agriculture, and many grain ranches which formerly produced large quantities of wheat have been divided into small fruit and vegetable farms. In consequence of this diversity of industry and the rapid growth of population, a large and increasing proportion of the surplus grain of the other three States is required for consumption in California, and the quantity available for foreign export has decreased.

In California the grain is handled in sacks; and of the production in the adjacent States only a comparatively small proportion is as yet handled by the elevator system, the greater part being bagged as in California. As a general rule it may be stated that elevators have been adopted to the east, and the sack system applies west, of the Rocky Mountains. There is no part of the country where the systems are worked in conjunction.

In comparing the systems of Canada and the United States with the Australian it must be noted that in America, on account of the great distances of the wheat areas from the commercial and shipping centres,

the grain must be handled several times and conveyed by rail from 1,200 to 3,000 miles; whereas in Australia the wheat districts are, in most cases, in proximity to the coast. The advantage of Australia in this respect, however, is modified by the longer sea distance from the European markets.

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.
	s. d.	s. d.		s. d.	s. d.
United States—			Russia—		
San Francisco ...	23 2	.....	Odessa	13 2	9 10
New York	10 9	8 11	India—		
Argentine—			Bombay	21 5	17 9
Upper River Plate ...	24 5	18 10	Karachi	20 6	17 3
Lower River Plate...	22 9	16 11	Australia	29 3	31 3
Bahia Blanca ...	22 6	21 1			

This statement emphasises the necessity of adopting in Australia the most economical method of handling grain to compensate for the high cost of ocean transport as compared with the cost to other wheat-producing countries. The rates from all the ports shown above are much lower than from Australia, and the cost of insurance is also less in proportion to the length of the sea journey.

Bulk Handling in Australia.

The question of introducing the bulk-handling system has been the subject of many inquiries and investigations in Australia, but up to the present no satisfactory plan has been arranged.

In 1909 a report was presented to the Parliament of South Australia by a Commission appointed to inquire into the marketing of wheat in that State. As regards bulk-handling, the Commissioners found a considerable diversity of opinion. The chief advantages claimed were—saving in use of bags; cheaper handling between farm and wharf; expeditious loading of boats and cheaper sea freights; expeditious use of railway rolling-stock; prevention of waste; higher prices through grading and better cleaning. The principal objections against the adoption of this system were — its great initial cost; unsuitability of vessels used for carrying wheat; uncertainty as to whether grain can be carried satisfactorily in bulk from Australia; insufficient quantity exported to justify the installation of the system; hostile attitude of shippers; and the limited number of foreign ports possessing facilities for handling wheat in bulk.

After weighing the evidence placed before them, the Commissioners found that they would not be justified in recommending its immediate installation on account of the unfriendly attitude of the shippers, the fact that the securing of adequate shipping provisions would take a considerable time, and the need for completely demonstrating that no substantial difficulty would arise with regard to insurance, conveyance on the ocean, condition of the grain, rates of sea freights, delivery

at the other end, and the price obtainable for graded wheat. They recommended, however, that a small equipment be provided at the Outer Harbour, Port Adelaide, to facilitate the conduct of experimental shipments by the Government and by private exporters. This would enable the interested parties to become familiarised with the advantages of the system, and prepare the way for its gradual extension or complete adoption, as might seem advisable. The installation of these facilities is now proceeding, and the experiments will be watched with interest throughout the Commonwealth.

The matter of initial cost, or, more correctly, the uncertainty as to whether there would be a substantial saving after paying working expenses and interest on capital, has undoubtedly been the main factor against the introduction of bulk-handling. It is interesting to note, in connection with this phase of the question, that the South Australian Commission estimated that, apart from other advantages, the saving to the farmers in the use of bags alone would range from £40,000 to £60,000 on the basis of a harvest of 20 million bushels. It is contended, however, that the value of the bags is taken into consideration by the buyers, and that bagged wheat commands a higher price.

As regards the construction of terminal elevators, New South Wales possesses an advantage over South Australia inasmuch as all the wheat in this State is shipped at one port—Sydney—while in South Australia oversea vessels were loaded at as many as thirteen ports in the 1910 season. The cost of land for a terminal elevator and the requisite shunting area for the speedy manipulation of railway rolling-stock would be enormous in a city like Sydney; but in evidence before the Decentralisation Commission, in 1911, it was pointed out that if the system were installed in conjunction with the decentralisation of railway traffic, land could be acquired at a new centre at a comparatively low cost.

The provision of railway rolling-stock suitable for carrying bulk grain would be a large item in the initial cost. In Australia, wool and live stock constitute a very large proportion of the goods traffic; for these classes of goods grain cars would be useless, and the construction of separate cars for each industry would considerably augment the railway expenditure. It has been suggested, therefore, that for the first few years of the initiation of bulk handling, bags should be used on the farm and for the carriage of grain by rail.

In reference to the unsuitability of vessels, a noticeable feature of the wheat export trade, during the period which has elapsed since the South Australian report was made, has been the substitution of steamers for sailing vessels, which are not practicable for cargoes in bulk. The proportion of wheat now carried in sailing vessels in very small; and in the construction of a large number of steamers which have entered the Australian trade during recent years, shipowners have evinced remarkable readiness to provide for special requirements. For these reasons this objection should not prove a serious obstacle to the installation of bulk-handling. Experiments have been conducted to determine whether grain can be carried satisfactorily in bulk to Europe, and a number of trial shipments by steamer from Sydney have arrived in England in excellent condition.

The Department of Agriculture of New South Wales is continuously collecting information regarding the various aspects of this important question; and during 1910 inquiries were made regarding marine insurance of bulk shipments. Information obtained from the individual insurance companies in Sydney showed that the companies generally were reluctant

to cover the risk of bulk cargoes per sailing ships, but there would be no difficulty in obtaining insurance against ordinary sea risk of grain shipped per steamer.

With regard to facilities for bulk-handling at ports to which our wheat is sent, information was obtained by the Agent-General for New South Wales in 1908, which showed that all the English ports to which wheat is shipped, receive it 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. On the other hand, the railway possessed no facilities for handling grain in bulk, and wheat requiring railway transport had to be bagged at the port. The quantities of imported wheat handled by the railways, however, was comparatively small. Shipowners preferred wheat to be sent in bulk on account of the economy of space and the more rapid discharge, but the merchants preferred the system of shipping in bags. Their chief reason was, apparently, that wheat in bags is weighed in small lots of about 4 bushels, and on each occasion the merchant gets the benefit of the draft required to turn the scale; whereas bulk wheat is weighed in lots of 1 ton or more. However, no objection had been made by merchants handling Argentine wheat, which has somewhat similar characteristics to the Australian, and which is brought to England in bulk in large and increasing quantities. Wheat is also received in bulk from Russia, United States, and Canada. At several ports in Great Britain special railway waggons for bulk transportation have recently been built.

A Royal Commission was appointed in New South Wales in 1911 to inquire into the cost of living in relation to prices of the principal articles of food and in relation to production, transport, export trade, &c. Within the scope of this inquiry the subject of bulk-handling of grain has been included.

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 grains 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 his investigations, Mr. Burrell considers that an elevator system is essential for the welfare of the wheat-growers and the consumers. The yearly production cannot yet be compared with that of the United States or of Canada, but during recent years the annual output has increased rapidly, and owing to the good quality of the soil and the favourable weather conditions, large additional wheat tracts are being continually developed. Even now the output is far beyond the stage necessitating a bulk-handling system.

In order to inaugurate the system on an economic basis it was recommended that two terminal elevators be erected, one at Sydney and one at Newcastle. One thousand box cars of a similar type would be required to transport the grain from the country railway stations, at which it was suggested that elevators, ranging from 50,000 to 200,000 bushels in capacity, should be erected by the farmers on a co-operative basis. The approximate cost of initiating the system is as follows:—

	£
1 Terminal elevator at Sydney	163,000
1 „ „ Newcastle	70,000
1,000 Box cars	300,000
3,000 feet of belt galleries at Sydney	21,500
	£554,500

Should the Government decide to erect country elevators also, the cost would be increased by £300,000, made up as under:—

	£
5 Elevators—capacity, 200,000 bushels	88,000
10 „ „ 100,000 „	134,000
10 „ „ 50,000 „	78,000
	£300,000

Maize.

Maize ranks second in importance amongst the crops of New South Wales; but its cultivation is small in contrast to that of wheat, although thirty-seven years ago there was very little difference in the areas under each cereal. In 1881 the area under maize was half that under wheat; now it is less than one-twelfth.

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 table-land 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, 1912-13, with the production and average yield in each district:—

Division.	Area under maize for grain.		Yield.	
	Total.	Proportion in each district.	Total.	Per acre.
Coastal—	acres.	per cent.	bushels.	bushels.
North	61,613	34·9	2,261,946	36·7
Hunter and Manning	38,030	21·6	1,242,810	32·7
Cumberland	2,699	1·5	50,548	18·7
South	11,518	6·5	330,405	28·7
Total	113,860	64·5	3,885,709	34·1
Tableland—				
Northern	16,908	9·6	361,997	21·4
Central	12,147	6·9	175,207	15·0
Southern	1,406	·8	24,169	17·2
Total	30,461	17·3	561,373	18·4
Western Slopes...	31,377	17·8	654,456	20·9
Western Plains, Riverina, and Western Division...	773	·4	10,452	13·5
All Divisions...	176,471	100·0	5,111,990	29·0

The North Coast, the most important maize-growing district in the State, yielded in 1913 over 44 per cent. of the total production, the average yield being 36·7 bushels per acre. After the North Coast, the Hunter and Manning district shows the largest area under crop. The highest average yield in any county was in Hawes, in the Hunter and Manning district, with 43·1 bushels per acre. On the North Coast, the best counties were Dudley and Clarence, which gave 41·2 and 38·7 bushels per acre respectively. In 1912-13 the average yield on the tableland was only 18·4 bushels per acre, and on the western slopes 20·9 bushels; many crops in these districts failed for want of rain. At an early period in the history of the North Coast maize displaced wheat as a product, but latterly dairying has been replacing maize-growing, and a larger proportion of the maize is cut as green food for dairy stock.

The next statement gives a comparative review of the maize crop since the year 1894:—

Year ended 30th June.	Area under maize for grain.	Production.		Year ended 30th June.	Area under maize for grain.	Production.	
		Total.	Average per acre.			Total.	Average per acre.
	acres.	bushels.	bushels.		acres.	bushels.	bushels.
1894	205,885	7,067,576	34·3	1907	174,115	5,763,000	33·1
1895	208,308	5,625,533	27·0	1908	160,980	4,527,852	28·1
1896	211,104	5,687,030	26·9	1909	180,812	5,216,038	28·8
1897	211,382	5,754,217	27·2	1910	212,797	7,098,255	33·4
1898	209,588	6,713,060	32·0	1911	213,217	7,594,130	35·6
1899	193,286	6,064,842	31·4	1912	167,781	4,507,342	26·9
1900	214,697	5,976,022	27·8	1913	176,471	5,111,990	29·0
1901	206,051	6,292,745	30·5				
1902	167,333	3,844,993	23·0				
1903	202,437	3,049,269	15·1				
1904	226,834	6,836,740	30·1	Average for 20 years ended 1913			28·84
1905	193,614	4,951,132	25·6	,, 10 ,, 1903			27·62
1906	189,353	5,539,750	29·3	,, 10 ,, 1913			30·14

During the last twenty years there have been several fluctuations in the area under cultivation. The largest area—226,834 acres—was cropped in 1904, but the largest yield was produced in 1911. The yield per acre is somewhat variable, ranging from 15·1 bushels in 1903 to 35·6 bushels in 1911, but the average has a tendency to decrease, owing to the reduction of the area on account of the increasing attention given to dairying in the coastal districts, where the average yield is highest. In the most favourable localities yields of 80 to 100 bushels per acre have been obtained, and probably few places are better suited for the growth of maize than the coastal districts. The yields during the past two years have been below the average for the decennial period ended 1913, as a result of the scarcity of rain during the summer months.

Until 1890 the State produced more maize than could be consumed locally, and exported a small quantity to southern States, but in almost every year since there has been an excess of import. Practically nothing has been done to develop an oversea export trade, although the demand for maize is apparently increasing in the United Kingdom and Europe.

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. The falling tendency of the average yield in recent years shows also that the soil has been depleted of its fertility through constant cropping, and emphasises the need for systematic attention to proper rotation, manuring, cultivation, the introduction of new varieties, and careful selection of seed.

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 very considerable. The elevated districts of Monaro, Argyle, Bathurst, and New England contain large areas of land where the cultivation of oats could be maintained with good results.

This cereal is cultivated as a grain crop, principally in the wheat-growing districts; and as it is essentially a product of cold climates, it thrives best in those parts of the country which have a winter of some severity. The principal districts cultivated are the tableland, the South-western Slope and Riverina. The area under crop for grain in 1913 was 85,175 acres, which produced 1,674,075 bushels, being 19·7 bushels per acre. The southern tableland gave the best average, with 25·3 bushels per acre. In the whole tableland division 15,920 acres were under crop, and yielded 377,533 bushels, or 23·7 bushels per acre; on the South-western Slope, 26,543 acres gave 535,077 bushels, or 20·2 bushels per acre, while in the Riverina the production was 465,845 bushels from 28,939 acres, or 16·1 bushels per acre. These three divisions accounted for about 83 per cent. of the total production. In the remainder of the State there were only 13,773 acres under cultivation, which yielded 295,620 bushels.

The following table illustrates the progress in the cultivation of oats for grain during the last twenty years:—

Year ended 31st March.	Acres under oats for grain.	Production.		Year ended 31st March.	Acres under oats for grain.	Production.	
		Bushels.	Bushels per acre.			Bushels.	Bushels per acre.
1894	34,148	701,803	20·6	1906	38,543	883,081	22·9
1895	30,636	562,725	18·4	1907	56,431	1,404,574	24·9
1896	23,750	374,196	15·8	1908	75,762	851,776	11·2
1897	39,530	834,633	21·1	1909	59,881	1,119,558	18·7
1898	28,605	543,946	19·0	1910	81,452	1,966,586	24·1
1899	19,874	278,007	14·0	1911	77,991	1,702,706	21·8
1900	29,125	627,904	21·6	1912	71,047	1,155,226	16·3
1901	29,383	593,548	20·2	1913	85,175	1,674,075	19·7
1902	32,245	687,179	21·3				
1903	42,992	351,758	8·2				
1904	51,621	1,252,156	24·3	Average for 20 years ended 1913			19·2
1905	40,471	652,646	16·1	,, 10 ,, 1913			19·8

The area under oats for grain, with slight fluctuations, remained practically stationary until the year ended March, 1894, when over 13,000 acres were added; the rate has since increased, with variations due to the seasons; and in 1913 the area reached 85,175 acres. The average yield varies considerably, and in a fair season will exceed 20 bushels per acre, the average for the last ten years being nearly 20 bushels. The lowest average yield was 8·2 bushels per acre in 1903, when the crop almost failed, owing to the unfavourable season; and the highest was 24·9 bushels in 1907.

The market for oats is chiefly in the metropolitan district, and the demand depends mainly on the price of maize. The production is far from sufficient for the wants of the State, and large quantities are imported from Victoria, Tasmania, and New Zealand.

Much therefore remains to be done before the State can be independent of outside assistance; but there is strong reason to believe that this cereal will receive more attention when agricultural settlement is developed on the northern tableland.

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 1912-13 being 3,395 acres, from which the bulk of the produce was for malting purposes. The areas under crop in other districts are small, and do not call for special notice. For the State as a whole the following table shows the area under barley for grain, together with the production in each year since 1894:—

Year ended 31st March.	Area under barley for grain.	Production.		Year ended 31st March.	Area under barley for grain.	Production.	
		Total.	Average per acre.			Total.	Average per acre.
	acres.	bushels.	bushels.		acres.	bushels.	bushels.
1894	6,113	114,272	18·7	1906	9,519	111,266	11·7
1895	10,396	179,348	17·3	1907	7,879	152,739	19·1
1896	7,590	96,119	12·7	1908	11,890	75,148	6·3
1897	6,453	110,340	17·1	1909	9,507	166,538	17·5
1898	5,151	99,509	19·3	1910	15,091	272,663	18·1
1899	4,459	64,094	14·4	1911	7,082	82,005	11·6
1900	7,154	132,476	18·5	1912	10,803	129,008	11·9
1901	9,435	114,228	12·1	1913	16,916	289,682	17·1
1902	6,023	103,361	17·2				
1903	4,557	18,233	4·0				
1904	10,057	174,147	17·3	Average for 20 years ended 1913			15·2
1905	14,930	266,781	17·9	,, 10 ,, 1913			15·1

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. In the year 1895, for the first time, upwards of 10,000 acres were cultivated; then with great variations, down to 4,500 acres, it was not until nine years later that the area again reached the figures for 1895. A successful year was experienced in 1910, when the total suddenly expanded to 15,091 acres, which produced 272,663 bushels.

The decrease in the year ended March, 1911, was due to the unfavourable season in the North-western Slope Division, where the greater part of the barley is produced. A slight improvement took place in the following year, and in 1913, owing to favourable conditions and increased interest in this crop, the maximum, both in respect of acreage and production, was reached.

As to yield, great variations are to be found, ranging from 4 bushels per acre in 1903, when the crop practically failed, to the excellent rate of 21·9 bushels obtained in 1887. The average crop during the last ten years has been 15·1 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.

A remunerative price can be obtained from malsters for suitable grain, and if the farmers were to consult with the users as to requirements in threshing, &c., and to treat the grain accordingly, no doubt a mutually advantageous trade could be developed, displacing the importations at present necessary, which are derived mainly from New Zealand growers.

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 total area under this cereal during 1912-13 was 3,082 acres; the average yield during the last ten years was 12·3 bushels per acre, the best year being 1904, with an average of 16·3 bushels. The average for 1913 was 13·7 bushels.

Broom Millet.

Broom millet is a small but valuable crop, and during the last ten years the return from fibre alone gave an average of £25,000 per annum. In 1912-13 owing to the unfavourable season, the area under broom millet and the average production per acre were much smaller than in either of the three previous years, and 1,828 acres yielded 11,154 cwt. of fibre and 7,821 bushels of seed, valued at £13,660 and £1,560 respectively. The average yield of fibre during the last ten years was 7·1 cwt. per acre. In 1904, and in the years 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 years ended March:—

Type of Hay.	1908.	1909.	1910.	1911.	1912.	1913.
AREA.						
	acres.	acres.	acres.	acres.	acres.	acres.
Wheaten	365,925	490,828	380,784	422,972	440,243	704,221
Oaten	132,325	169,441	178,968	142,805	147,710	182,955
Barley...	937	1,566	1,844	1,014	1,246	1,708
Lucerne	43,574	54,061	68,995	70,559	63,824	56,420
Rye, &c.	.....	.....	73	1,227	1,126	1,762*
Total	542,761	715,896	630,664	638,577	654,149	947,066
PRODUCTION.						
	tons.	tons.	tons.	tons.	tons.	tons.
Wheaten	198,230	426,916	565,549	467,669	423,262	779,500
Oaten	99,865	186,243	255,781	193,064	155,653	212,266
Barley...	638	1,757	2,451	1,128	1,201	2,108
Lucerne	78,067	115,098	157,331	179,860	147,423	112,761
Rye, &c.	.....	.....	89	1,359	935	1,640
Total	376,800	730,014	981,201	843,080	728,474	1,108,275
AVERAGE PRODUCTION PER ACRE.						
	tons.	tons.	tons.	tons.	tons.	tons.
Wheaten	·54	·87	1·49	1·11	·96	1·11
Oaten	·75	1·10	1·43	1·35	1·05	1·16
Barley...	·68	1·12	1·33	1·11	·96	1·23
Lucerne	1·79	2 13	2·28	2·55	2·31	2·00
Rye, &c.	.....	.....	1·22	1·17	·83	·93
All varieties ...	·69	1·02	1·56	1·32	1·11	1·17

* Includes 4 acres of Hungarian millet, which yielded 4 tons.

About 74 per cent. of the total area under cultivation for hay is taken up by the area under wheaten hay. Until 1894 the area for wheaten hay increased at a much greater rate than that for grain, but during subsequent years there has been a greater development in the cultivation for grain.

In general, oat crops are grown in parts of the State which, on account of the climate, are unsuitable for maturing the grain, and preference is given to cultivation for hay; moreover, the prices obtainable for the hay are usually so profitable as to prevent any material development of the grain harvest.

The area under barley for hay is inconsiderable. Lucerne is always in good demand, and consequently realises remunerative prices. It gives the best return of all hay crops, the average yield during the last ten years having been over 2 tons per acre for lucerne, and slightly more than 1 ton each for oaten, barley, and wheaten hay. In favourable districts, if it has received careful attention, lucerne grows so rapidly that a series of crops may be secured. As many as eight cuttings have been procured, with an average result of 1 ton per acre for each.

The growing of hay is evidently receiving additional attention every year; but there is still a considerable margin between the amount required in the State and the local production.

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 year ended March, 1886:—

Year.	Area cultivated for green food.	Area sown with grasses.	Year.	Area cultivated for green food.	Area sown with grasses.
	acres.	acres.		acres.	acres.
1886	26,318	130,392	1906	95,058	627,530
1891	37,473	388,715	1907	122,914	697,631
1896	66,833	300,862	1908	260,810	736,080
1901	78,144	422,741	1909	235,539	807,924
1902	113,060	467,839	1910	118,960	888,937
1903	109,287	477,629	1911	179,382	1,055,303
1904	77,130	552,501	1912	211,874	1,119,764
1905	87,718	607,997	1913	154,535	1,152,449

The great advance in cultivation indicated by the table shows the appreciation by the farmers of the necessity for enriching the deteriorated pastures, and for replacing the grasses which have disappeared.

Lucerne is grown in considerable quantities on the Hunter River flats, and the cultivation of this fodder is extending throughout the country, principally along the banks of the rivers on the western slope of the Dividing Range. In the far western pastoral districts attempts have been made to cultivate lucerne under irrigation, and with marked success. During 1912-13 there were 51,945 acres grown for green food, and if these be added to the area previously shown as being under hay, viz., 56,420 acres, there were altogether 108,365 acres under this form of cultivation. In the United States and Argentine, where experiments have proved that it will succeed, lucerne is superseding the indigenous grasses.

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.				
	1908.	1909.	1910.	1911.	1912.
	tons.	tons.	tons.	tons.	tons.
Coastal	12,427	11,133	18,125	12,099	8,222
Tableland	3,339	3,414	2,328	1,649	608
Western Slopes	6,374	10,632	2,654	3,097	4,527
Western Plains and Riverina...	5,168	9,334	6,409	3,632	5,162
Western Division	160	334	100	.....	...
Total	27,468	34,847	29,616	20,477	18,519

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 1912, the quantity made was only 18,519 tons. This amount was made on 145 farms, and is valued at £25,670; 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, there were 15,629 acres under cultivation. One county, Bathurst, had 10,769 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—2·71 tons per acre—was returned for the North Coast. The following statement shows the area under cultivation and the production at intervals since 1886:—

Year ended 30th June.	Area under crop.	Production.		Year ended 30th June.	Area under crop.	Production.	
		Total.	Average per acre.			Total.	Average per acre.
	acres.	tons.	tons.		acres.	tons.	tons.
1886	15,166	38,695	2·55	1907	36,815	114,856	3·11
1891	19,406	52,791	2·72	1908	31,917	55,882	1·75
1896	24,722	56,179	2·27	1909	26,301	71,794	2·73
1901	29,408	63,253	2·15	1910	35,725	100,143	2·80
1902	26,158	39,146	1·50	1911	44,452	121,033	2·72
1903	19,444	30,732	1·58	1912	43,148	75,166	1·74
1904	20,851	56,743	2·72	1913	34,124	91,642	2·69
1905	23,855	48,754	2·04	Average for 10 years ended 1903			2·34
1906	26,374	50,386	1·91	,, 10 ,, 1913			2·43

There was a marked increase in cultivation in the year ended June, 1895, 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 2·43 tons per acre, and the highest 3·11 tons per acre, in 1907. At present New South Wales has to meet a considerable deficiency by importation from the other States, chiefly Victoria and Tasmania.

The average wholesale prices per ton of potatoes at Sydney during the season 1912-13 are shown below:—

Month.	Local.	Victorian.	Tasmanian.	Month.	Local.	Victorian.	Tasmanian.
1912.	£ s. d.	£ s. d.	£ s. d.	1913.	£ s. d.	£ s. d.	£ s. d.
July ...	8 10 0	11 2 0	9 18 9	January ...	5 5 0	8 2 6	6 19 3
August ...	10 11 0	12 13 0	11 18 3	February...	5 5 0	7 12 6	5 16 3
September...	10 10 0	14 2 6	13 14 0	March ...	6 13 0	8 9 6	7 11 6
October ...	11 3 0	15 12 6	13 15 0	April ...	6 8 0	8 3 0	7 11 3
November...	17 8 0	16 10 0	.....	May ...	5 8 0	7 6 3	6 2 6
December ...	10 17 6	11 6 9	9 10 0	June ...	5 2 0	7 18 6	5 8 3

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.

During 1911 an officer was appointed by the Department of Agriculture to give instructions to potato-growers, and to deal generally with this crop, with the object of selecting and evolving varieties which will be disease-resistent. Experimental work is being conducted, but before anything definite is known possibly another two years will elapse.

Minor Root Crops.

The cultivation of root crops other than potatoes requires brief notice, as, in addition to those included in market gardens, only 1,220 acres were planted with onions, turnips, mangel-wurzel, carrots, sweet potatoes, and artichokes. The area under turnips was 366 acres, which yielded 1,288 tons, or 3·52 tons per acre. The probable reason for the small attention paid to the growth of onions, of which there were 205 acres, yielding 846 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 627 acres, and the estimated yield 4,587 tons. In many cases the yield could only be stated approximately, as pigs were turned in on the crops. Of mangel-wurzel there were only 12 acres under cultivation, which yielded 30 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.

Originally the plant was cultivated chiefly in the agricultural districts of the county of Argyle and the Hunter River Valley, but in these localities its cultivation has been practically discontinued. With the exception of 65 acres in the Hunter River district, and 31 on the Murrumbidgee Irrigation area, tobacco culture is confined to the northern and southern portions of the western slope and the central tableland. The following statement shows the cultivation of tobacco during the last ten seasons:—

Season.	Area.	Production.		Season	Area.	Production.	
		Total.	Average per acre.			Total.	Average er acre.
	acres.	cwt.	cwt.		acres.	cwt.	cwt.
1903-4	407	5,320	13·1	1909-10	1,096	6,498	6·8
1904-5	752	5,015	6·7	1910-11	959	8,513	7·8
1905-6	809	7,327	9·1	1911-12	1,501	15,045	10·0
1906-7	601	5,371	8·9	1912-13	1,914	13,863	7·2
1907-8	533	3,438	6·5	Average for 10 years ended 1903			9·9
1908-9	618	3,838	6·2	,, 10 ,, ,, 1913			8·1

For seven or eight years prior to 1889 the area under cultivation grew steadily, until in that year it reached the maximum of 4,833 acres. As, however, the local product did not compare favourably with the American leaf, it could not be exported profitably, so that a large proportion of the crop remained upon the farmers' hands; and as the quantity sold realised very unsatisfactory prices, due mainly to the failure to produce a first-grade article, many growers abandoned tobacco in favour of other crops. With disappointing fluctuations the area had declined in 1908 to 533 acres. Since that year the area has increased to 1,914 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.

In 1910 an expert was engaged to visit the centres of tobacco growing to advise and assist growers in the operations of sowing, harvesting, and curing, and trial packets of seed were distributed in each district. The prospects of the tobacco industry are, however, not very favourable, owing to the over-production of second and third grade leaf, which cannot be utilised by the manufacturers, who use only 10 per cent. of locally-grown leaf to 90 per cent. of imported. The trouble in the past appears to have been due to faulty harvesting and curing, and the use of inferior seed. 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 impression that it is not possible to produce tobacco of high quality in New South Wales probably arose from experience of a product grown in unsuitable soil, and carelessly cultivated, but during recent years excellent tobacco has been grown at Ashford, in the Inverell district generally, and near Tumut, under the guidance of a departmental expert, proving that it is possible to grow in the State a tobacco well suited to the most fastidious taste; and if a regular supply were available, properly fermented and packed, a large trade might be developed.

The Commonwealth Government in 1907 provided for the payment of a bounty of 2d. per lb. up to £4,000 per annum for five years 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 may be regarded as 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 portions of the State. Although frosts are sometimes experienced in this region, the soil and climate of the valleys of the northern rivers are in most respects well adapted to successful cultivation, which is confined principally to the valleys of the Richmond, Tweed, and Clarence Rivers, where, 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.

As the results of good cultivation may extend the yield to 34 tons per acre, it is evident careful methods will reap a reward in an enhanced production.

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 was 12·72 tons, the yield for this State 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 year ended March, 1864, when only 2 acres were recorded as under cultivation. As sugar-cane is not productive within the season of planting, the area under cultivation has been divided, as far as practicable, into productive and non-productive, the former representing the number of acres upon which cane was cut during the season, and the latter the area over which it was unfit for the mill, or allowed to stand for another year. On the average the area cut for cane represents about one-half of the total area planted.

Year ended 31st March.	Area.			Production of cane.	
	Cut for crushing.	Not cut.	Total.*	Total.	Average per acre.
	acres.	acres.	acres.	tons.	tons.
1864	.....	.....	2	.....	.....
1865	.....	.....	22	.....	.....
1866	.....	.....	141	.....	.....
1871	1,475	2,607	4,082	.....	.....
1876	3,654	2,800	6,454	.....	.....
1881	4,465	6,506	10,971	121,616	27·22
1886	9,583	6,835	16,418	239,347	24·98
1891	8,344	12,102	20,446	277,252	33·23
1896	14,398	18,529	32,927	207,771	14·43
1901	10,472	11,642	22,114	199,118	19·01
1902	8,790	12,019	20,809	187,711	21·35
1903	8,734	11,492	20,226	183,105	20·97
1904	10,368	9,814	20,182	227,511	21·94
1905	9,772	11,753	21,525	199,640	20·43
1906	10,313	11,492	21,805	201,998	19·59
1907	10,378	10,202	20,580	221,560	21·34
1908	9,916	8,037	17,953	277,390	27·97
1909	6,951	10,030	16,981	144,760	20·83
1910	6,480	7,603	14,083	131,081	20·23
1911	5,596	8,167	13,763	160,311	28·65
1912	5,244	8,663	13,907	147,799	28·18
1913	6,137	7,777	13,914	140,914	22·83

* Exclusive of areas cut for green food or plants since 1910.

From the small beginnings of 1864 there was a continual increase of land put under cane until the year 1885. During succeeding years there was, however, a retrograde tendency, and the area in 1889 was less by 2,236 acres than that cultivated in 1885. 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 1890 there was a revival, with further increases in successive years until 1896, when the largest area on record, 32,927 acres, was

planted. In 1896 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 1896 the area under cane steadily declined for five years, until in 1901 there were only 22,114 acres under cultivation. From 1901 the area remained practically stationary for five years at a little over 20,000 acres; there has been a further diminution, and in 1913 there were only 13,914 acres.

In 1897 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 1896 and of 1885, the lowest on record. The cane-disease, prevalent principally on the Clarence, caused the low averages during the period 1895-97, and in 1896 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 1912-13 was 6,137 acres, with a total yield of 140,914 tons, or an average of 22·96 tons per acre. During the last ten years the average has been 22·83 tons per acre.

The county of Clarence is the principal centre of cultivation, containing 6,126 acres devoted to the production of sugar—an area equal to nearly half the total acreage in the State under cane crops. The yield obtained in 1913 from 2,776 acres of productive cane amounted to 66,657 tons, showing an average of 24·01 tons per acre. In the county of Rous cane is grown on 5,283 acres. 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 1912-13 on 750 holdings, 550 of which had areas ranging up to 25 acres; 170 plantations ranged from 26 to 50 acres, and 30 consisted of over 51 acres, on which only 2 had areas in excess of 100 acres. The yield in the county of Rous last season was 50,192 tons, or an average of 22·28 tons per acre, cut on an area of 2,253 acres. In the county of Richmond the area under sugar-cane was 2,505 acres, of which 1,108 acres were cut, giving a total yield of 24,065 tons of cane, or an average of 21·72 tons to the acre.

Sugar-cane is cut usually in the second year of its growth, the fields being replanted after they have given crops for three or four seasons; and as the cane has been planted at irregular intervals, the seasons of large production have sometimes been followed by small crops in the succeeding year. Sugar manufacturers invariably purchase the year's crop of cane standing, and cut it at their own cost. From plantations in full bearing the average weight of the cane cut varies from 25 to 32 tons, and the value received by the grower, exclusive of bounty on sugar grown by white labour, was, in 1912, about 10s. 11d. per ton of uncut cane. An additional 3s. 2d. per ton was paid for cutting, which, in most cases, was done by the growers. The field work on the sugar plantations of New South Wales has been performed generally by white labour, and even in 1901, when the Federal legislation in connection with the sugar industry was passed, the number of coloured labourers employed was not large.

The duty on imported cane sugar is £6 per ton, while the excise duty is fixed at £4 per ton; but from the beginning of the year 1907 a bounty of 6s. per ton of cane, calculated on cane giving 10 per cent. of sugar, was allowed on Australian sugar grown by white labour, the bounty being paid to the grower. The cost of growing may be assumed at 2s. 11d. to 3s. 5d. per ton of cane for white and black labour, respectively. The proportion of the total area which is cultivated by black labour has decreased from 10 per cent. in 1902-3 to 5 per cent. in 1912-13. The

following statement shows during the last ten years the area cultivated and the sugar produced by white and black labour, also the total amount of bounty paid each year in New South Wales:—

Year ended 31st March.	*Area cultivated by—			Sugar produced by—			Amount of Bounty.
	White labour.	Black labour.	Total.	White labour.	Black labour.	Total.	
	acres.	acres.	acres.	tons.	tons.	tons.	£
1904	22,076	2,503	24,579	19,236	2,561	21,797	40,154
1905	19,114	2,411	21,525	17,812	1,838	19,650	36,107
1906	19,612	2,193	21,805	18,019	1,964	19,983	36,234
1907	18,645	1,956	20,601	21,805	1,613	23,418	42,790
1908	15,164	1,613	16,777	28,247	934	29,181	78,080
1909	15,545	1,436	16,981	14,351	964	15,315	40,687
1910	13,899	1,038	14,937	13,839	815	14,654	36,834
1911	13,756	654	14,410	17,936	892	18,828	45,730
1912	13,672	703	14,375	16,412	887	17,299	41,911
1913	13,571	712	14,283	16,483	240	16,723	41,689

* Including areas cut for green food.

The figures in the above table are supplied by the Customs Department, 1913 being the last year for which the particulars will be available, owing to the repeal of the Sugar Bounty Act; but it will be seen that the transformation from coloured to white labour is now virtually complete.

The subjoined return of the number of sugar-cane farmers in New South Wales will be of interest:—

Year.	Employing White labour.	Employing Black labour.	Total Farmers.	Year.	Employing White labour.	Employing Black labour.	Total Farmers.
1906	1,405	122	1,527	1910	1,206	138	1,344
1907	1,387	192	1,579	1911	882	72	954
1908	1,378	164	1,542	1912	932	79	1,011
1909	1,397	156	1,553	1913	874	13	887

It will be noticed that farmers employing black labour in 1913 represented only 1·5 per cent. of the total.

In October, 1911, a Commission was appointed by the Commonwealth Government to inquire into and report upon the sugar industry in Australia, and more particularly in relation to (*a*) growers of sugar-cane and beet; (*b*) manufacturers of raw and refined sugar; (*c*) workers employed in the sugar industry; (*d*) purchasers and consumers of sugar; and (*e*) costs, profits, wages, and prices.

The report was issued on 2nd December, 1912, and contains the following recommendations:—

(*a*) (1) That the bounty and excise be abolished, provided that the Commonwealth Government, by co-operation with the States or otherwise, take whatever steps may be necessary to promote the white-labour policy, and to ensure the maintenance of a living wage in the sugar industry generally.

(2) That, pending the abolition of the bounty and excise, the amount of bounty be raised to the excise, this equalisation, if practicable, to date as from 1st July, 1912, in view of the Special Order of August last raising the wages.

(3) That the customs duty on sugar, raw or refined, should fluctuate in accordance with foreign market prices, falling as those prices rise, rising as those prices fall.

(4) That the amount of the duty should be the difference between foreign market price of sugar, of grade equal to 1A (as declared from time to time by the Department of Customs), and a standard price for Australian refined sugar fixed on the basis of not less than £21 10s. a ton (1A grade), as representative of Australian costs of production.

(5) That the import duty be the same for beet as for cane sugar.

(6) That an import duty be imposed on molasses at the rate of £1 10s. per ton.

(*b*) (1) That the Parliament of the Commonwealth should endeavour to acquire, by an amendment of the Constitution or otherwise, such powers as would enable Commonwealth authorities to control the prices of raw sugar and sugar-cane.

(2) Should such powers be acquired—

(*a*) That the price of raw sugar be fixed on a sliding scale by the Inter-State Commission;

(*b*) that the price of cane be fixed by a Board for each mill, consisting of a representative of the growers, a representative of the millers, and a chairman to be appointed by the Inter-State Commission.

(*c*) (1) That the minimum wage for adult workers in the sugar industry should be not less than 8s. per day of eight hours.

(2) That remuneration for overtime should be fixed on a basis which takes into due consideration the fact that a worker's keep is really part of his wage.

(3) That the matters relating to working-men's blocks, cheaper railway facilities, the control of the drink traffic, the accommodation of the workers, and the increase of facilities for recreation—being matters in which the amelioration of industrial conditions is necessarily in the hands of the States—be referred to the Governments concerned.

(*d*) That the existing system of rebate of sugar duty on export of manufactured products be retained.

In connection with the beet sugar industry, it is recommended that the Commonwealth Parliament consider the advisableness of passing an Excise Act imposing a special excise of £2 a ton on the manufacture of sugar from beet, subject to the proviso that the excise shall only be levied in any year when the total output of beet sugar within the Commonwealth shall exceed 10,000 tons.

Grape Vines.

In almost every part of the State, with the exception of the sub-tropical portion and the higher parts of the mountain ranges, grape-vines thrive well, and bear large crops, equal in size, appearance, and flavour to the products of France, the Rhinelands of Germany, and Spain. 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 ended 30th June.	Total area under vines.	Area under vines for wine-making only.	Production of Wine.		Season ended 30th June.	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.
1861	1,584	622	99,791	160	1905	8,840	5,298	928,160	175
1866	2,126	1,243	168,123	135	1906	8,754	5,279	831,700	157
1871	4,504	2,371	342,674	145	1907	8,521	4,951	1,140,000	230
1876	4,459	3,163	831,749	263	1908	8,483	4,644	778,500	168
1881	4,800	2,907	602,007	207	1909	8,251	4,472	736,262	165
1886	5,247	2,876	555,470	193	1910	8,330	4,561	808,870	177
1891	8,044	3,896	842,181	216	1911	8,321	4,354	805,600	185
1896	7,519	4,390	885,673	202	1912	8,231	4,260	850,210	200
1901	8,441	4,534	891,190	197	1913	8,163	4,403	719,100	163
1902	8,606	4,889	868,479	178					
1903	8,790	5,041	806,140	160	Average for 10 years ended 1903				179
1904	8,940	5,101	1,086,820	213	,, 10 ,, 1913				183

The total production has fluctuated much during the last ten years, and is now practically the same as it was twenty-five years ago, the total area planted being now 8,163 acres, of which 4,403 acres yielded 719,100 gallons of wine. The total number of vineyards in 1913 was 1,437.

The average area of each vineyard was 5½ acres, and the area planted with vines still in an unproductive state was 749 acres. Vignerons consider 250 gallons per acre a good yield; but the average yield for New South Wales reached this figure only in one year since the establishment of the industry, viz., in 1876, with 263 gallons. The average yield in 1913 was 163 gallons per acre, and during the last ten years 183 gallons. The best yield during the last twenty years was in 1907, when it was 230 gallons per acre. Wine produced in New South Wales during the year 1913 was valued at £59,920, and brandy distilled by vignerons for fortifying purposes at £3,750.

Notwithstanding the acknowledged excellence of the wines the export for the State has not yet reached an important figure. Among the causes which retard the acceptance of Australian wines in English markets may be mentioned the practice of shipping the product at too early an age, and the impossibility of obtaining from the shippers details respecting the vintage of any particular wine. Foreign experts also find fault with the method of casking; and there is no doubt that the success of New South Wales as a wine-exporting country will depend on the adoption of more advanced methods, and on the enterprise of vignerons in properly advertising the merits of their productions.

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 appointment of an expert, under whose direction inspectors have been engaged vigorously dealing with infected vineyards, and Viticultural Stations have been established at Howlong, near Albury, and at Raymond

Terrace, in the Hunter Valley, 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 Raymond Terrace was established to supply the demands of the clean districts. The institution has been started in an extremely sandy soil, in which vines are absolutely immune from this disease.

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 1913 included 2,574 acres, with a production of 3,672 tons of grapes, an average of 1·51 tons of fruit per acre.

Although there is a large local demand, and a possibility of an export trade for raisin fruits, no extensive effort has been made in that direction. In 1913 there were 437 acres cultivated for drying purposes, and the yield was 4,417 cwt. At the Wagga and Hawkesbury experiment vineyards, raisins and sultanas are dried every season and placed on the local market, where they are regarded as equal in every respect to the imported article.

The cultivation of vines is also conducted at the Yanco Irrigation Farm, which has been established for the education of settlers to be placed on the land within the operations of the Murrumbidgee irrigation scheme.

Orchards.

The cultivation of fruit does not receive much attention, although the soil and climate of large areas throughout the State are well adapted to fruit-growing. With these areas and with climatic conditions so varied, ranging from comparative cold on the high lands to semi-tropical heat in the north coast district, a large variety of fruits can be cultivated. In the vicinity of Sydney, oranges, peaches, plums, and passion-fruit are most generally planted. On the tableland, apples, pears, apricots, and all fruits from cool and temperate climates thrive well; in the west and south-west, figs, almonds, and raisin-grapes can be cultivated; and in the north coast district, pineapples, bananas, and other tropical fruits grow excellently.

Citrus Orchards.

The cultivation of citrus fruits has been undertaken largely in the districts adjacent to the metropolis. Orange groves were planted firstly 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 year 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 year ended 31st March, 1891, are shown in the subjoined statement:—

Year ended 31st March.	Area under cultivation.			Production.*	
	Productive.	Not bearing.	Total.	Total.	Average per acre.
	acres.	acres.	acres.	dozen.	dozen.
1891	8,737	2,551	11,288	11,562,000	1,058
1896	8,759	3,197	11,956	5,954,940	680
1901	11,013	3,952	14,965	6,486,276	589
1902	11,670	4,091	15,761	7,254,552	622
1903	12,550	3,657	16,207	5,092,392	406
1904	13,418	3,310	16,728	7,841,544	584
1905	14,486	2,918	17,404	7,918,380	547
1906	15,054	2,795	17,849	8,864,928	589
1907	15,173	2,582	17,755	7,837,488	516
1908	16,430	2,087	18,517	12,957,216	789
1909	16,570	2,040	18,610	7,847,580	474
1910	17,214	2,644	19,858	12,501,072	726
1911	17,465	2,643	20,108	14,783,064	847
1912	17,271	3,152	20,423	16,823,100	974
1913	17,213	3,360	20,573	16,735,680	972

* The production relates to the two main crops during the previous calendar year.

In 1891 the area under citrus fruit was 11,288 acres; in 1913 this had increased to 20,573 acres, of which 17,213 were productive. The latest production was equal to 972 dozen per acre, during the last ten years the average yield being 712 dozen. It is estimated that over 3,000 dozen of fruit to the acre can be obtained during an average season from fair-sized trees in full bearing, and it is, therefore, probable that the figures returned by the growers include the production of a considerable number of young trees. The number of orangeries cultivated during the year 1913 was 4,827, and of these the average area was 4·3 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 year's yield, since 1891:—

Year ended 31st March.	Area of productive fruit-gardens and orchards.	Area of fruit-gardens and orchards not bearing.	Total area cultivated for fruit-gardens and orchards.	Total value of the production of fruit-gardens and orchards.	Approximate average value per acre.
	acres.	acres.	acres.	£	£ s. d.
1891	16,081	6,274	22,355	213,934	13 6 0
1896	20,635	8,145	28,780	130,735	6 7 0
1901	25,766	5,503	31,269	270,081	10 10 0
1902	27,044	5,302	32,346	155,579	5 15 0
1903	27,161	4,216	31,377	173,535	6 8 0
1904	27,576	4,012	31,588	211,318	7 13 0
1905	26,196	3,740	29,936	162,670	6 4 0
1906	25,189	3,577	28,766	189,195	7 10 0
1907	24,708	3,714	28,422	230,135	9 6 0
1908	23,992	4,205	28,197	153,110	6 8 0
1909	23,170	4,100	27,270	231,370	10 0 0
1910	20,060	5,799	25,859	233,050	11 12 4
1911	20,498	6,748	27,246	271,930	13 5 4
1912	19,602	8,166	27,768	373,800	19 1 5
1913	19,375	9,109	28,484	305,660	15 15 6

There has been no increase in the area under orchards and fruit-gardens of recent years. Since 1891 the increase has been 6,129 acres; but since 1897 there has been a decrease, due to the subdivision of orchards for residential and other purposes. In other cases the trees on neglected and worn-out ground have been rooted out and destroyed, young trees being planted in their place.

About two-fifths of the area devoted to fruit culture is in the county of Cumberland, the actual acreage in 1913 being citrus, 11,986 acres; other, 8,525 acres. For the year 1913, production was valued at £15 9s. per acre, as compared with £14 17s. 9d. for the whole 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. Leaving out of consideration the large importations of tropical fruits from Fiji, the South Sea Islands, and Queensland, the introduction of fruit from abroad is still greatly in excess of the possibilities of local production.

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.	1911-12.			1912-13.		
	Number of Trees not yet Bearing.	Trees of Bearing Age.		Number of Trees not yet Bearing.	Trees of Bearing Age.	
		Number.	Yield.		Number.	Yield.
			bushels.			bushels.
Oranges	192,949	863,466	946,196	198,521	867,613	817,500
Lemons	32,442	242,220	256,433	30,554	239,096	276,400
Mandarins	48,037	415,593	475,121	57,043	408,323	438,000
Other citrus	884	4,490	4,560	1,693	2,283	2,100
Apples	312,053	527,186	582,638	355,484	524,284	548,801
Peaches and Nectarines ...	161,709	538,609	530,249	173,802	508,025	468,814
Pears	73,426	120,293	136,627	79,091	122,629	142,104
Cherries	58,106	118,379	210,895*	65,041	133,093	206,296*
Apricots	14,679	87,021	98,800	17,098	87,128	88,782
Plums	39,747	122,523	143,540	43,957	120,742	144,718
Quinces	5,134	41,922	62,651	6,385	41,370	61,310
Persimmons	2,721	8,224	9,313	936	6,483	8,445
Passion Fruit	.....	.....	38,623	.....	.....	38,809
All other	6,798	16,482	14,773	9,723	17,064	16,285

* 12lb. boxes.

The number of passion fruit vines has not been collected; 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 trees become productive.

The cultivation of the passion fruit could be considerably extended, as the present supply is not sufficient to meet the local demand; and there is little doubt that, by systematic advertisement, an enormous demand for the fruit could be created in the United Kingdom and America. A trial shipment sent to London met with only partial success, as buyers, not knowing its qualities, imagined the fruit worthless on account of its shrivelled appearance.

Market-Gardens.

In 1913 there were in the State 3,581 holdings, comprising 9,847 acres, cultivated as market-gardens, the average size of each garden being 2·7 acres. The value of the production for the year was £369,480. More than 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 year 1901 :—

Year ended 31st March.	Market-gardens.	Area.	Value of production.	
			Total.	Average per acre.
	No.	acres.	£	£ s. d.
1901	2,266	7,764	192,450	24 15 9
1902	2,215	7,834	213,462	27 5 0
1903	2,283	8,263	225,061	27 4 9
1904	2,559	8,754	219,040	25 0 5
1905	2,783	8,827	229,530	26 0 1
1906	2,842	9,119	248,678	27 5 5
1907	3,437	9,550	258,000	27 0 4
1908	3,324	10,052	262,786	26 2 10
1909	3,462	10,331	298,740	28 18 4
1910	3,808	10,254	311,580	30 7 9
1911	3,598	9,813	333,820	34 0 1
1912	3,368	9,498	357,230	37 12 3
1913	3,581	9,847	369,480	37 10 0

One branch of gardening—tomato culture—has not received sufficient attention. As this cultivation entails light labour, and is particularly remunerative, the vegetable could be grown by persons unaccustomed to heavier labour on farms, and it is surprising that the industry should have been so long neglected. In 1913 there were 644 acres, outside market gardens, under cultivation for tomatoes, which yielded 131,204 half-cases, or 204 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 gourd crops.

Pulse.—During the year 1913 there were 399 acres under crop for peas and beans, which gave a total yield of 15,765 bushels, being 39·6 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.

Gourd Crops.—The area devoted to pumpkins and melons during the year 1913 was 4,177 acres, and the yield 14,069 tons, being 3·4 tons per acre. The principal places of cultivation are the maize districts and the metropolitan county.

Pumpkins are grown for table use as vegetables, but are also used extensively as fodder for cattle and pigs. The number of acres under gourd-vines mentioned above is somewhat below the true figures, as crops of pumpkins and melons are sometimes raised in orchards and vineyards amongst the fruit-trees and vines, and in market gardens, and particulars respecting the production are not returned.

Other branches of agriculture have hardly been considered, although, no doubt, as the rural population increases, their importance will gain recognition. Little has been attempted in the cultivation of any of

the following, although experiment has proved that they can all be raised in the State:—Olives, castor-oil plant, flax, ramie fibre, hops, silk, coffee, and cotton. The varieties of the soil and of climate are so diverse that almost any kind of produce can be raised, and there is every reason for hope for future extension.

The olive has been grown successfully in South Australia, and could be cultivated in districts with suitable temperature in New South Wales. A number of trees have been planted recently at the Yanco Experiment Farm in the Murrumbidgee Irrigation Area.

The castor-oil plant grows luxuriantly in the humid coastal districts.

A most valuable crop is flax, and more persistent efforts should be made to introduce it.

Hops have been cultivated to a slight extent in the neighbourhood of Orange; other suitable districts are Armidale, Goulburn, and Cooma.

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 the previous issue of this Year Book a list of implements and machines used in each of the rural industries was shown.

The estimated value of the agricultural machinery in use in 1912 was £4,633,809, or an average of £1 4s. 9d. per acre cultivated.

Division.	Area farmed.	Value of machinery.	Value, per acre.
	acres.	£	£ s. d.
Coastal	275,503	560,919	2 0 6
Tableland	398,786	666,548	1 13 5
Western Slopes	1,701,403	1,917,881	1 2 6
Western Plains and Riverina ...	1,352,231	1,421,453	1 1 0
Western Division	9,346	67,008	7 3 5
Total	3,737,269	4,633,809	1 4 9

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	2,645,980	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

*The figures for years other than 1901 and 1911 include, in many cases, Agricultural 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 eight years. The apparent excess in the value of farming machinery in 1911 and 1912 is partly due to a stricter classification, which has been rendered possible by the collection of fuller particulars regarding the machinery used in each of the rural industries. In other years the agricultural machinery used on pastoral holdings was in many cases included with the pastoral machinery:—

Year.	Area farmed.	Value of Machinery.	Persons Employed.			Machinery, per acre.	Persons employed per acre.
			Males.	Females.	Total.		
	acres.	£				£	
1904	2,672,973	2,459,346	63,111	5,742	68,853	·92	·022
1905	2,838,081	2,557,262	62,419	5,008	67,427	·90	·024
1906	2,824,211	2,645,980	63,448	5,715	69,163	·94	·021
1907	2,570,137	2,599,156	57,327	5,385	62,712	1 01	·024
1908	2,713,971	2,851,974	55,324	5,409	60,733	1·05	·022
1909	3,174,864	3,042,364	59,541	4,770	64,311	·96	·020
1910	3,381,921	3,414,621	59,091	5,228	64,319	1·01	·019
1911	3,629,170	4,859,027	56,476	3,496	59,972	1·34	·017
1912	3,737,269	4,833,809	57,209	2,848	60,057	1·24	·016

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 Arbitration."

Fertilisers used on Land.

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 and magnesium.

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 phosphorus. Tests of manure conducted during the last five years 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 1912:—

Division.	Natural (Stable-yard, &c.).		Artificial (Superphosphates, Bone-dust, &c.).	
	Area.	Quantity used.	Area.	Quantity used.
Coastal—	acres.	loads.	acres.	cwt.
North Coast	25	251	242	507
Hunter and Manning	700	13,827	1,628	4,054
Metropolitan—County of Camberland	3,721	122,935	13,295	105,951
South Coast	2,095	12,921	4,448	11,682
Total	6,541	149,934	19,013	122,194
Tableland—				
Northern	60	1,794	137	74
Central	622	9,646	36,384	22,879
Southern	130	1,103	6,714	4,913
Total	812	12,543	43,235	27,866
Western Slopes—				
North	.....	.....	352	120
Central	8	360	121,141	42,564
South	103	2,549	543,150	242,449
Total	111	2,909	664,643	285,133
Western Plains and Riverina—				
North	.....	.....	.....	.....
Central	54	1,500	58,426	18,015
Riverina	124	2,756	850,546	325,778
Total	178	4,256	908,972	343,793
Western—				
East of Darling	14	520	260	206
West of Darling	9	150	.....	.....
Total	23	670	260	206
Total, New South Wales	7,665	170,312	1,636,123	779,192

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 1912 was only 44 per cent.; but, as the following table shows, a steady increase in the use of

fertilisers has taken place since 1907, when the proportion was only 16·5 per cent. This increase furnishes a reliable indication of improvement in methods of cultivation:—

Year.	Total Area cultivated.	Manures used—				Area Manured, per cent. of Total cultivated.
		Natural.		Artificial.		
		Area.	Quantity.	Area.	Quantity.	
	Acres.	Acres.	Loads.	Acres.	cwt.	
1907	2,570,137	14,419	144,021	403,259	276,120	16·5
1908	2,713,971	18,046	216,078	491,216	310,899	18·8
1909	3,174,864	13,635	189,008	812,562	433,187	26·0
1910	3,381,921	11,457	186,204	1,019,079	500,342	30·5
1911	3,629,170	7,967	178,689	1,399,886	676,409	38·8
1912	3,737,269	7,665	170,312	1,636,123	779,123	44·0

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.

Bee-keeping.

The bee-keeping industry is closely associated with agriculture, but 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 Hive.	Beeswax.
	Productive.	Unproductive.			
	No.	No.	lb.	lb.	lb.
1903	45,094	13,236	2,147,295	47·6	49,589
1904	53,043	11,687	3,023,468	57·0	58,610
1905	36,589	12,043	1,841,236	50·3	39,620
1906	37,306	11,964	1,907,744	51·1	34,690
1907	53,240	15,148	2,660,363	50·0	48,427
1908	53,612	16,347	3,064,526	57·2	58,697
1909	47,807	17,992	2,066,330	43·2	53,006
1910	55,958	14,308	2,765,618	49·4	72,617
1911	62,254	11,801	3,433,253	55·1	67,358
1912	50,285	13,023	2,410,000	47·9	49,734

Owing to the unfavourable season, a low yield resulted during 1909; and, although the average per 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 average being 47·9 lb. as compared with 51·2 lb. per hive for the last decennial period.

The estimated value of the production of honey and beeswax in 1912 was £33,810, the production for each division being as follows:—

Division.	Honey.	Beeswax.
	lb.	lb.
Coastal	916,108	20,742
Tableland	884,209	19,363
Western Slopes	524,919	8,033
Western Plains and Riverina	76,804	1,506
Western	7,960	90
Total	2,410,000	49,734

Water Conservation and Irrigation.

Since the 1st January, 1913, irrigation has been recognised in the State of New South Wales as of sufficient importance to warrant the formation of an entirely separate Department, the head of which is the Commissioner for Water Conservation and Irrigation.

The provision of an adequate water supply for other than domestic purposes is essential to the well-being of all primary industries, and particularly in a country which is liable to dry seasons which affect extensive areas. Much of the area of the State receives an adequate and regular rainfall, but over a considerable extent of country all the factors exist which are requisite to success in agricultural pursuits, except a constant water supply. The recognition of the fact that the area suitable for cultivation might be extended largely by a comprehensive system of water conservation and irrigation has led the State to undertake various schemes in detached groups, which will constitute portion of the ultimate irrigation system necessary to serve the whole State.

Murrumbidgee Irrigation Scheme.

The main features of the work include a storage dam across the Murrumbidgee to retain the floodwaters, which will be released for use lower down the river during the dry summer months; a movable diversion weir, about 220 miles below the dam, to turn the required amount of water from the river into the main canal; a main canal, leaving the river near the weir; a main branch canal; and a series of subsidiary canals and distributing channels through the area to be irrigated.

The site of the storage dam is at Burrinjuck, 3 miles below the confluence of the Murrumbidgee and Goodradigbee Rivers. The dam-wall is being constructed of cyclopean masonry and concrete, and when completed will have a maximum height of 240 feet, and will impound the waters in a lake covering 12,740 acres. Sufficient water is being stored to meet the requirements of the farms already occupied. The reservoir will have a capacity of 33,381 million cubic feet, the catchment area being about 5,000 square miles, drained by three principal streams—the Murrumbidgee, Goodradigbee, and Yass Rivers—up which the water will be backed, when the dam is full, to distances of 41 miles, 15 miles, and 25 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 28 miles.

The diversion weir being designed for irrigation purposes, the supply is regulated, in the first place, from Burrinjuck dam, and then at the weir, by means of sluices. The weir is situated at Berembed, about 40 miles by river and 19 miles in a direct line above the town of Narrandera. It is founded on a solid granite bar extending across the river, and has a length over all of 270 feet between abutments, divided into a sluiceway 40 feet wide in the clear; a lock chamber, 40 feet wide, capable of taking barges up to 100 feet in length; and 55 movable wickets, manipulated from a punt moored up-stream. The weir and regulating works have been completed.

The main canal branches from the river just above the weir, and, after passing through Narrandera, continues in a north-westerly direction, skirting the hills abutting on the plains, to a total length of about 132 miles. The course of the main branch canal constructed now to Whitton will run for a length of 34 miles towards Hay, parallel with the Narrandera-Hay railway.

The scheme as described above, applies only to the land on the northern side of the Murrumbidgee River. It was originally intended to provide a canal to supply the land on the southern side, but subsequently it was decided to apply all the water available from the Burrinjuck dam to the northern areas, these lands being eminently suitable for irrigation. For this reason the main canal is to be enlarged, and when complete will be capable of supplying an area of about 250,000 acres, which, in the opinion of the experts, may be worked profitably in small sub-divisions devoted to mixed farming, dairying, and stock raising, or fruit and vegetable growing, tobacco culture, &c. In addition there is an area of about a million acres to be set aside for use as "dry" lands in conjunction with those under irrigation. When the areas are fully settled it is estimated that there will be nearly 7,000 farms and 100,000 people. By means of irrigation the soils and climate of these areas are suitable for the production, with most profitable results, of apricots, peaches, nectarines, prunes, pears, walnuts, almonds, melons, cantaloupes, and citrus fruits, also wine and table grapes, raisins, sultanas, figs, olives, and most varieties of vegetables. Other products are tobacco, lucerne, and fodder crops, such as sorghum maize, and millet. Dairying, pig-raising, mixed farming, and ostrich farming are already being successfully undertaken.

The Murrumbidgee Irrigation Act, passed in December, 1910, constituted a trust for the administration of the scheme, and provided the necessary authority for the acquisition of land, construction of improvements, levying rates, and generally for administering the irrigation areas and work. This Act was repealed in December, 1912, and the whole scheme has been placed under the control of a Commissioner of Water Conservation and Irrigation.

The lands acquired for irrigation under the provisions of the Act include the North Yanco Estate, the Gogeldrie holding, and various holdings in the Brobenah and Mirrool Creek districts—the total area resumed to 30th June, 1912, being about 229,659 acres, at an estimated cost of £680,000.

The lands are subdivided into intensive and mixed farming blocks varying from 10 to 200 acres, according to location and to the nature of the soil, and every farm is large enough to afford the occupier a good living. The different areas are served by centrally situated towns laid out in accordance with the most modern town-planning methods, and smaller villages are interspersed throughout the areas. Horticultural blocks of 10, 20, and 30 acres are available near the townships where labour

for fruit picking is available. Groups of 2 and 5 acre blocks are provided for the homes of farm and other labourers in convenient positions for both employer and employee. The first area made available for settlement was in the vicinity of Yanco Siding, on the Hay railway line. The second, which is situated on the northern side of the Mirrool Creek, will be served by an extension of the railway from Barellan, which will be completed early in the year 1915. Areas of non-irrigable or "dry" lands in the proportion of double or three times the irrigable area taken up are available for the depasturing of stock, and may be acquired either as additional holdings for the individual, or as a commonage for the joint use of groups of settlers.

The conditions for the disposal of irrigation blocks are contained in the Crown Lands Consolidation Act of 1913 and the Crown Lands and Irrigation (Amendment) Act of 1914. Any person over the age of 16 years, if a male, or 18 years, if a female (other than a married woman not living apart from her husband under decree of judicial separation)—or two or more such persons jointly—may apply for a farm or block. The tenure is perpetual leasehold, rent being charged at the rate of 2½ per cent. of the capital value.

The improvement conditions attached to the farm holdings include fencing, planting of trees for wind-brakes, construction of dwellings, destruction of noxious plants, and the cultivation of a specified area in each year. Houses and sheds will be erected for settlers, the assistance granted in this way being repaid by a deposit of 10 per cent. of the total cost, and the balance in twenty-four half-yearly instalments, interest at 5 per cent. being charged. Building materials may be obtained on ten years' terms, the deposit being 5 per cent. On similar terms the settler may obtain a supply of fencing posts or material for a barn, and arrangements may be made for payment to an approved contractor in respect of grading, head ditching, and other agricultural work to the maximum value of £50 on the basis of £1 per acre, repayments extending over ten years. Horticultural stock may be purchased on terms—one-third deposit, balance by two annual instalments, with interest at 5 per cent., and implements may be hired at reasonable rentals. Cattle, specially selected by experts as suitable for local conditions, may be purchased at auction, the deposit being 30s. per head, and balance by monthly instalments of 10s. per head, the first instalment being due three months after date. The assistance granted may be altered from time to time.

Townships have been established at centres of the Yanco and Mirrool areas; the Commissioner is empowered to construct streets, and to provide water supply and other services. A butter factory is already in operation, and it is intended to provide a bacon-curing establishment. A demonstration fruit-canning and pulping plant has also been established at Leeton, the township for the first subdivision. A State demonstration farm and nursery are in operation, and various commercial crops are tested as to their suitability for local cultivation. The process of treatment and the preparation for market of the different products are fully investigated, and the experience thus gained is at the disposal of settlers, free information and instruction being afforded on all agricultural matters and irrigation methods. An electric power-house has been erected near Yanco Siding; electric light and power are supplied to the business people, and are available for settlers when the number of applicants warrant the connections.

From the date of the first subdivision in July, 1912, to 1st June, 1914, 663 farms have been granted, representing a total area of 27,500 acres, the settlers on which have a declared capital of £407,947.

In addition ninety-eight township and village blocks have been granted, and 205 miles of roads, 260 miles of reticulation channels, and 147 miles of drains have been constructed. In the matter of cultivation, the following particulars indicate the extent of the work performed by the settlers:—500 acres under stone fruits, 100 under vines, 100 under trees, 3,000 under lucerne, 8,000 under other fodder crops, and 200 acres under vegetables. The estimated population of the irrigation area is about 4,000 persons. The rents payable amount to £13,136, the annual total revenue, including £6,237 for water rates, being £19,373.

Other Irrigation Schemes.

The following proposals are under investigation by the Water Conservation and Irrigation Commission:—

Murray River.

The Burrinjuck Dam on the Murrumbidgee River in New South Wales and the storages on the Upper Goulburn River in Victoria are the only works at present in operation for regulating the flow of the Murray River.

In 1911 a Conference of Engineers representing the three States interested was appointed to report and make recommendations essential or conducive to the settlement by agreement of the question of the Murray River and its tributaries. This Conference, whose report was presented in July, 1913, recommended that a storage of about one million acre-feet capacity be provided on the Upper Murray, and that Lake Victoria be converted into a storage basin. The basis of an equitable agreement was formulated by the Victorian and New South Wales representatives with regard to the apportionment of the regulated water, and the foundations of the site of the proposed storage dam at Cumberoona are now being further investigated. Certain suggestions with regard to the navigation of the Murray River were submitted in a minority report by the South Australian representative and this matter formed one of the subjects of discussion at a Conference held on the 7th April, 1914, between the Prime Minister of the Commonwealth and the State Premiers. At this Conference certain resolutions were passed, having for their object the economical use of the waters of the Murray River and its tributaries for the purposes of irrigation and permanent navigation, and the reconciling of the interests of the Commonwealth and the riparian States. Pending the results of the investigation of the dam foundations of the proposed storage dam at Cumberoona, an officer of the Water Conservation and Irrigation Commission is making an examination of the whole of the lands on the New South Wales side of the Murray River, which are capable of irrigation from that stream. The lands suitable for irrigation are much in excess of the area which can be served by the volumes of water which will be available, and it is therefore necessary that the most suitable and high class land can be selected for that purpose.

Darling River.

A preliminary investigation has been made of the Darling River, which shows that the most suitable site for the storage of large volumes of water for irrigation purposes is in the Lake System to the East of the River, comprising Lakes Boolabooka, Ratcatcher's Lake and Victoria Lake, and a number of other lakes fed from the River in high floods from the Talyawalka Creek, which takes off from the river about 260 miles above Menindie. A large area of high-class land can be commanded from this storage, and this area will be served by the Condobolin-Broken Hill railway when constructed.

Lachlan River.

The construction of a storage reservoir at Wyangala below the confluence of the Abercrombie River has been investigated with the intention of affording water in the river channel for pastoral purposes and for the irrigation of small areas along the river banks by pumping. In view, however, of the unsatisfactory nature of the run-off from this catchment it is unlikely that the scheme will be further considered at present; but an alternative proposal is being investigated for the increase of the storage in Lake Cudgellico, which is fed from the Lachlan River, and for the pumping thence of the water for the irrigation of an area adjacent to the lake.

Macquarie River.

The construction of a storage reservoir has been proposed on this river at Burrendong, below the confluence of the Cudgegong River, for the purpose of affording water by gravitation for the irrigation of certain lands to the west of Narromine. A smaller scheme which has received consideration also is the construction of a storage dam on Campbell's River at Bathurst. The run-off from this catchment is too uncertain to permit of the construction of any large irrigation scheme, but perennial supplies can be made available for the use of individual irrigators by the contruction of storage works on this river and also on the Goulburn, Namoi, Gwydir, and McIntyre Rivers.

Hunter River.

A scheme has been prepared for supplementing the water supply of the Hunter River District, and providing water for irrigation, by means of pumping on the area adjacent to the Hunter River, which is one of the most fertile districts in the State and is capable of carrying a dense population under the conditions of intense culture by irrigation. Alternative proposals have been investigated for the construction of a storage dam either on the Upper Hunter or Goulburn Rivers, and it is probable that this matter will be considered shortly by the Public Works Committee.

Warragamba River.

The Warragamba project will serve the dual purpose of amplifying the Sydney Water Supply and irrigating the best lands in the Hawkesbury Valley. The percentage increase in the population of the metropolitan area during recent years, if maintained, will in a short space of time cause the consumption of water to overtake the capacity of the present catchment area of the Sydney Water Supply, and the next available source of supply will then be the Warragamba River, a scheme for the storage of water from which has been prepared. It is proposed to construct a large storage dam capable of supplying at least 80 million gallons daily for the domestic service, 30 million gallons daily for trade purposes, and 80 million gallons daily for irrigation purposes in the Hawkesbury Valley. The waters made available by this project will be so valuable that they can be applied only to the highest class lands for irrigation purposes, and the area to be served will accordingly be limited to probably about 30,000 acres, situated along the banks of the Nepean and Hawkesbury Rivers.

Irrigation Settlements.

Other irrigation settlements have been established at Hay and at Wentworth, and were, in 1912, placed under the control of the Commissioner for Water Conservation and Irrigation. In Wentworth Irrigation

Area, embracing 10,600 acres, 1,476 acres have been subdivided into 111 blocks; 1,300 acres are held under lease in ninety-seven blocks; the balance is still available for lease. During 1912-13, 1,000 acres were under cultivation, the greater part being devoted to fruit trees, oranges, grapes, sultanas, and currants. In this area is instituted a dual scheme of irrigation and intense cultivation of small areas, and the results of the experiment will be regarded with interest, as of exceptional value from the educational standpoint. The pumping machinery consists of a suction-gas plant, supplying two engines of about 55 brake horse-power each, working two centrifugal pumps, with an average combined capacity of about 4,600 gallons per minute. With eight pumpings during the 1912-13 season, 108,002,800 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 is leased for thirty years, the rent varying from 1s. to 5s. per acre; the rate for water varies from 10s. to 20s. per acre. Each lessee is entitled to receive a quantity of water equivalent to a depth of 30 inches per annum, limited to 4 inches in any one month.

The Hay irrigation area consists of about 3,842 acres, and previous to 1912 was controlled by a Trust, appointed in 1897. The area held and used for irrigation purposes is 908 acres by seventy holders, who lease the land for ninety-nine years at rentals varying from 5s. to 10s. per acre; the water rate is fixed half-yearly, the present rate being 10s. per acre. The pumping is by steam, and the total length of channels is about 11½ miles.

Artesian Water Supply.

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. Of the 512 bores which have been sunk, 391 are flowing, and give an aggregate discharge of 109,214,000 gallons per day; seventy-seven bores give a pumping supply, the balance of forty-four being failures; the total depth bored represents 835,404 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 40,750,000 gallons per day, watering an area of 4,245,316 acres by means of 2,520 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 1·61d. per acre, or, including the cost of maintenance and administration, 2·26d. per acre.

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.

There is no doubt that the watering of the north-western country has largely increased the carrying capacity of the land; but, in addition, it has made comparatively small pastoral settlement practicable in country previously confined almost entirely to the operations of companies holding immense areas.

A general yearly decrease in the flow from the bores has been recorded, consequently until the question is solved as to whether this observed decrease is due to loss in supply under pressure, or to local causes, such as lateral leakage, it would be unwise to allow a greater number of bores to be sunk than will adequately water the land for stock purposes. The

question of any large scheme of agriculture with the aid of bore water must await the solution of this problem, which is receiving special attention from the Government.

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.

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 Acts, 1907-1912, are shown hereunder. The bounty paid on sugar-cane has been discussed on a previous page:—

Products.	Period from 1 July, 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	,, ,, ...	1,000
Linseed (flax seed)	10	,, ,, ...	5,000
Rice, uncleaned	10	20s. per ton	1,000
Rubber	15	10% on market value...	2,000
Coffee, raw, as prescribed	8	1d. per lb.	1,500
Tobacco Leaf for manufacture of cigars, high grade	10	2d. per lb.	4,000
Fruits—			
Dates (dried)	15	1d. per lb.	1,000
Dried (except currants and raisins) or Candied, and exported ...	10	10% on market value...	6,000

Department of Agriculture.

The Department of Agriculture which was created in 1890 to advance the interests of the farmers and fruit-growers of New South Wales deals with all matters essential to agriculture, and its principal functions are to collect information by scientific investigation and practical experiments, to be placed at the disposal of the farming community, regarding the causes of failures, improved methods of cultivation, means of combating pests, effects of fertilisers, drainage and irrigation, the introduction of new plants, uses of new implements, surplus products, and the transport of produce to the best markets.

The Department, in conjunction with the Stock branch, and the Forestry Department, is administered by a Minister of the Crown. The scientific staff has been thoroughly organised, and experts have been

appointed to direct operations in agricultural chemistry, viticulture, entomology, botany, irrigation, fruit-growing, veterinary science, biology, poultry-farming, apiculture, dairying, cattle and sheep breeding, cold storage and export, and forestry; also there are a number of experimentalists, inspectors, and instructors. The Agricultural College and experiment farms are controlled by the Minister.

The Stock Branch conducts investigations in animal pathology, while similar investigations relating to plant diseases, and to bacteriology of soils, milk, cheese, wines, &c., are made by the Biological Branch.

Bulletins are issued for the guidance of various classes of rural workers, and most of the publications of the Department are supplied free to persons engaged in rural industry. The officials answer all inquiries for advice or assistance, and visit various parts of the country throughout the year to give demonstrations to the farmers, conduct experiments, and advise them generally regarding agricultural methods.

The *Agricultural Gazette*, the official organ of the Department, is issued monthly. It presents to the farmers of the State the results of scientific researches and investigations of the official experts, gives practical advice on the economic results dictated by these investigations, and supplies seasonable notes on matters of scientific, practical, and industrial interest.

Arrangements were made in 1910 to supply for publication in the country newspapers weekly notes of the investigations and educational operations of the Department regarding improved methods of agriculture, dairying, stock-raising, &c. Since 1911-12 efforts have been made by means of these notes to encourage fallowing in connection with wheat cultivation; rotation in cropping and the cultivation of maize have also been specially treated.

The revenue and expenditure of the Department of Agriculture for the year ended 30th June, 1913, were as follows:—

Revenue.	£
Agricultural College, Experiment Farms, &c.	26,826
Repayments for Seed-wheat	899
Fees for fumigation, &c.	6,540
Botanic Gardens, &c.	252
Irrigation Areas	3,031
Miscellaneous	22
Stock Branch	5,163
Forestry	96,146
	138,879
Less Refunds	252
Total	£138,627

Expenditure.	£
Departmental	43,576
Subsidies and Grants	16,963
Miscellaneous	3,918
Agricultural College, Experiment Farms, &c.	94,365
	158,822
Less Refunds	5,222
	153,600
Forestry	41,434
Stock and Brands, Pastures Protection	43,020
Botanic Gardens, &c.	26,435
Export and Cold Storage	751
Commercial Agents	3,179
Total	£268,419

Experiment Farms.

In order to obtain a thorough knowledge of local conditions and to afford an education in agriculture on scientific bases, the Government has established agricultural colleges, experiment farms, and farmers' experiment plots; and has engaged agricultural lecturers and experts to guide and assist the farmers.

The Government agricultural and experiment farms consist of the Hawkesbury Agricultural College, nine experiment farms, three demonstration farms, two demonstration orchards, and two viticultural stations. Excluding the demonstration farms at Temora, 1,600 acres, and Condobolin, 1,350 acres, which were established during 1912, the total

area of experiment farms was 23,379 acres, of which 4,656 acres were under cultivation, the areas for various crops being as follows:—

	acres.
Cereals and hay	2,237
Fruit-trees and vines	381
Green fodder	1,317
Sown grasses and forage plants	581
Root and other crops	140

Much of the remaining area allotted to these farms is cleared partially; portion of it is under fallow, and portion ready for ploughing.

The Hawkesbury Agricultural College provides accommodation for resident students, and gives theoretical and practical instruction in a three-years' course, which embraces every department of agriculture. Instruction is given also in dairying, pig-raising, and poultry-breeding and 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 £30 for the first year, £20 for the second, and £10 for the third. Special courses of instruction are also provided, notably at the Farmers' Winter School and Public School Teachers' Summer School. In July, 1913, there were 173 regular students in attendance, and 956 acres out of the total of 3,551 acres attached to the College were under cultivation.

The experiment farms have been established in various districts of the State, and the experiments and education vary with the particular climatic conditions. At Wagga farm the specialties are seed wheats, fruits for drying, breeding of dairy cattle (notably Jerseys) and swine, and the area under cultivation is 878 acres out of 3,228 acres. The course is for two years; a fee of £15 is charged for the first year, the second being free to students who make satisfactory progress. In July, 1913, there were fifty students in attendance.

At Bathurst, particular attention has been devoted to the orchard, and to mixed farming and irrigation. A demonstration area of 180 acres has been selected, the object of which is to show the profit, on commercial lines, accruing from the results of past experiments. There were thirty-four students in July, 1913, the fees charged being similar to those at Wagga.

Practical dairy instruction is provided at two farms in the coastal division. Wollongbar Farm is utilised in dairy-farming suitable for the North Coast district, grasses and fodder plants are grown, the breeding of dairy cattle and pigs is conducted; and at the Duck Creek Farm sugar-cane is cultivated.

At the Grafton Experiment Farm maize and potatoes are grown, and pigs are bred in conjunction with a dairy. Accommodation has been provided with the view of training students in mixed farming suitable for sub-tropical districts also special attention is given to maize in establishing new varieties, and to experiments regarding methods of cultivation and fertilisation.

High-class stock is bred at the Berry Experiment Farm, situated in the centre of the South Coast dairying district. This farm was previously conducted on a leasehold area, but in May, 1911, portion of the old farm and an additional adjoining area were acquired by the Government, and the farm is being remodelled.

The Glen Innes Farm is utilised for mixed farming and fruit-growing suitable for the Northern Tablelands. Cowra is used as a wheat-breeding and experiment station, special courses of training having been arranged for the scientific cadets and junior experimentalists of the Department of Agriculture. Apprentice Farm Schools have been opened at Glen Innes and Cowra.

At Pera Bore Irrigation Orchard, experiments have been made with bore water in agriculture, the culture of citrus fruit, and with methods of neutralising the chemical constituents in artesian water.

Operations at the Raymond Terrace Viticultural Station were discontinued during 1913 in favour of a new site at Narara, in the Gosford district. In connection with this new nursery instruction and advice in regard to vine-growing are given, phylloxera-resistant rootlings and cuttings are grown, and grafted vines are raised for distribution to vine-growers to enable them to replant vineyards destroyed by phylloxera.

At the Howlong Viticultural Station there is a mother-stock vineyard to supply the necessary material for the propagation of vines at the Narara nursery.

At Yanco experimental irrigation work is conducted for the benefit of settlers on the Murrumbidgee Irrigation Area, and a farm school for students was inaugurated in January, 1914. A mother-stock vineyard has been established to provide cuttings of varieties largely in demand. Ostrich-farming and mule-breeding will be important features of the work at this farm in the near future, a number of imported ostriches and three imported donkeys having been already stationed there.

The Department of Agriculture has arranged for an officer to visit and inspect land, and to give advice as to its suitability for irrigation purposes, also in regard to the application of water.

At the Nyngan Demonstration Farm, established in 1909, are being continued investigations into problems of dry-farming which had been conducted previously at Coolabah, and the educational work will be directed towards combining wheat-farming with sheep-raising. The operations at Coolabah were abandoned on account of its distance from any railway.

The Dural Demonstration Orchard is used for conducting experiments in fruit-growing and in combating diseases, also for the education of fruit-growers in the county of Cumberland. Short courses of orchard and garden work are provided.

In March, 1911, an Experiment Farm was opened at Coonamble in connection with modern dry-farming methods, so that the wheat belt may be extended. Wheat and sheep will be combined on this farm in conjunction with a proper system of rotation. An artesian bore is being put down, and eventually experiments in connection with the growth of crops by means of irrigation with bore water will be carried out.

In July, 1913, the number of apprentices at the Apprentice Schools was 51, viz., Cowra, 23; Yanco, 9; Dural, 1; Glen Innes, 8; Wollongbar, 3; and Grafton, 7. The instruction at these schools is entirely practical, the fee is £5 for six months, and a second half-year's maintenance and training may be given in return for apprentices' labour.

The value of plant and machinery on all these farms during 1912-13 was estimated at £16,560, being £3 16s. per acre under crop; exclusive of instructors, 157 persons were employed in addition to the students in attendance. The value of the produce was assessed at £25,569; but as these farms are mainly for experimental and educational purposes, the estimated monetary value of the products does not by any means represent its whole value.

In order to secure the maximum advantage of experimental work and to co-ordinate the methods employed, a committee of experts supervise all scientific farming investigations and field experiments.

Dairy Science Schools for the instruction of factory managers and assistants were held at Port Macquarie in July, 1911; at Grafton in June, 1912; and in 1913 at Singleton and Lismore in July and August, respectively. These schools are held periodically in dairying centres.

In a previous chapter, "Education," information is given relating to agricultural training in schools and the University.

Dreadnought Farm Trust.

A mutually satisfactory agreement was arrived at early in 1911 between the Government of New South Wales and the Trustees of the Dreadnought Farm on the subject of introducing 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. From April, 1911, to 31st December, 1913, 602 boys arrived. The training of these prospective farmers is under the care of the Director of Labour, who places them in remunerative employment at the end of their term.

The Trustees have recently decided upon an extension of their operations and are advancing portion of the fares required for lads. Subject to the approval of their London representative a lad is only required to deposit £3 towards his passage and landing money, and sign an undertaking to repay £8 in instalments extending over a period of eighteen months.

Farmers' Experiment Plots.

A number of experimental plots, ranging from 1 to 20 acres, have been established throughout the State to give practical demonstrations to farmers regarding advanced methods of agriculture, improved varieties of seed, comparative values of manure, and new crops for the respective districts. The State has been divided into seven divisions, and in each an inspector supervises the plots, gives lectures and demonstrations, and advises the farmers generally on agricultural matters. This system has been extended recently 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. More recently it has become a general rule that the farmers carry out the work without cost to the Department other than for seed, manure, and supervision, and the farmer receives the whole of the crop.

These plots have proved valuable media of practical education for the farming community, special attention being directed towards the improvement of cultural methods for wheat and other cereals, potatoes, and grasses; and to the extension of the cultivation of leguminous plants, either in combination with cereals or alone, with the object of improving the feeding value of the green fodder, ensilage, and hay fed to the farmers' stock, and of increasing the fertility of their soils.

In 1912-13 plots were cultivated in ninety-eight districts, a number of trials were made on a small scale, and parcels of seed were distributed amongst farmers for private trial.

Farrer Scholarships.

The Farrer Memorial Fund has been established by public subscription in honour of the late William J. Farrer, whose work in the production of new wheats has afforded great benefit to the industry. The money has been vested in Trustees, and the interest is to be used for the Farrer Research Scholarship, the specific object of which is the improvement of wheat cultivation. The scholarship, valued at about £100 per annum, will be granted to a candidate selected by the Trustees from applicants possessing one of the following qualifications:—

(*a*) A graduate in Science, to pursue studies with original research in Cambridge University Laboratory, or elsewhere outside the State. In such a case, the revenue for two years may be given for one year's research.

(*b*) Graduate or undergraduate, to pursue study of plant-breeding in University laboratories under supervision of Science Faculty.

(*c*) Student who has taken diploma from Hawkesbury Agricultural College, or similar institution, to pursue study of plant-breeding in field or in other approved way.

(*d*) A young farmer, or other person, possessing necessary qualifications and aptitude for investigating this subject in the field under supervision of the Trustees.

The selected scholar will present his results at the close of the year in the form of a paper to be published by the Trustees. At the end of the year the holder of the Scholarship may be re-appointed or a new selection made.

The Government Farrer Scholarship is offered for competition amongst students wishing to enter the Hawkesbury Agricultural College with a special view to study wheat cultivation. The value of the Scholarship is £91; it will be awarded after competitive examination, and will provide for the full education of the recipient during the three years' course, for the purchase of books and apparatus, and the payment of sport, medical, and other fees. The Trustees of the Farrer Memorial Fund are specially authorised to give priority in the matter of the Farrer Research Scholarship to a Government Farrer scholar at the close of his College course, if he shows special aptitude for research work in connection with wheat cultivation.

The *Daily Telegraph* Farrer Scholarship consists of a grant of books, apparatus, &c., to the value of £10, given each year by the *Daily Telegraph* Newspaper Co., Ltd., to the best wheat student at the Bathurst or Wagga Experiment Farm.

Agricultural Bureau.

An Agricultural Bureau has been established under the direction of the Department of Agriculture. Its objects are to collect and disseminate information respecting plants, animals, or products likely to prove of value to cultivators; to discover the best methods of cultivating suitable economic crops, breeding and feeding domestic animals, and preparing products for market; to settle for each district the best times for fallowing, sowing, and harvesting; to prevent the introduction and spread of insect and fungus pests; to encourage social intercourse; and generally to advance the interests of persons engaged in rural industries. Government assistance is granted in the form of subsidies payable to each branch at the rate of 10s. for every £ of membership fees; by lectures and demonstrations by the Departmental experts; and by the supply free of charge of the publications of the Department, including the *Agricultural Gazette* and Farmers' Bulletins.

The Bureau was established in 1911, and there were sixty-four branches, with 2,216 members, at the end of June, 1913.

Agricultural Societies.

A number of Agricultural Societies have been formed throughout the State mainly for the purpose of holding exhibitions of agricultural, horticultural, and pastoral products, of live-stock, machinery and implements, arts and manufactures, and for other purposes relating to rural industries. The exhibitions assist rural development by maintaining a high standard of products and other exhibits, and by familiarising the people with modern methods and appliances. The subscriptions of members are augmented by Government subsidies, paid at a rate not exceeding 10s. in the £ on prizes awarded for *bonâ-fide* agricultural and other approved exhibits and competitions. At 30th June, 1913, there were 163 Agricultural Societies registered for subsidy, and during that year 133 societies received subsidies amounting to £16,963, The membership of the subsidised societies was 30,779, the members' subscriptions amounted to £25,951, and the total value of prize money was £51,147, of which £38,173 was the basis for subsidy.

A system of National Shows was initiated by which a special grant of £500 was payable to a show in each year to be held, as decided by the societies, in one of the eight districts into which the State was divided. The first National Show was held at Berry, in the South Coast district in 1908, the second at Glen Innes, in the Northern Tableland, and third at Lismore, in the North Coast in 1910. The system has since been abolished.

Co-operation of Agriculturists.

Endeavours are being made, through the agency of the Agricultural Bureau to encourage co-operative efforts amongst agriculturists. Notable examples of its success are found in this State in the dairy factories, and in South Australia, where a large proportion of the exportable wheat is handled by a co-operative union. In addition to the advantages of co-operation as a means of successful marketing of produce, the principle can be extended to the purchase of materials, manures, machinery, and seed. The farmers could combine for the joint-ownership of labour-saving machinery and stud-stock, for herd-testing, and for insurance, and, as a body, would be able to obtain concessions from manufacturers, agents, &c., and as regards freight which, as individuals, they could not procure.

The matter has been brought under the notice of the various branches of the Agricultural Bureau for general discussion, and in order that the most suitable method of applying it to local requirements may be decided.

State Advances to Settlers.

To meet the demand for capital, and impelled by the necessity for affording assistance to settlers whose prospects had been affected by the prevalent drought conditions, the Government inaugurated a system in 1899, by which advances are made to settlers on the basis of the French Crédit Foncier, at rates of interest and of repayment which are intended to be available for the benefit of every settler offering adequate security. The original Act of 1899 received several amendments, till finally, in 1906, the powers of the Advances to Settlers Board were transferred to the Commissioners of the Government Savings Bank of New South Wales, and the maximum and minimum advances fixed at £2,000 and £50 respectively.

On 31st December, 1912, 10,892 advances (total value, £2,423,956) had been made to settlers, equivalent to £223 per loan, of which 6,770, representing £1,027,620, were repaid, leaving 4,122 advances current at that date, the average balance of principal being £339 per loan.

The operations of the bank, relating to advances to settlers, for the last five years, have been as follows:—

Year.	Advances Made.			Repayments.		Balances Repayable.		
	Number.	Total Amount.	Average.	Number.	Total Amount	Number.	Total Amount.	Average.
		£	£		£		£	£
1908	822	273,292	332	963	104,725	3,511	592,078	169
1909	778	300,228	386	666	95,554	3,623	796,752	220
1910	658	254,339	387	622	123,005	3,659	928,087	254
1911	838	331,693	395	743	185,420	3,754	1,074,359	286
1912	940	475,070	505	572	153,393	4, 22	1,396,336	339

The Commissioners are empowered to make advances upon mortgages of land in fee-simple and of land held under conditional purchase or lease, settlement purchase or lease, homestead grant or selection. The advances are made for the purposes of repaying existing encumbrances, of purchasing land, or to effect improvements, utilise resources, or build homes.

The conditions under which loans are repayable vary according to the circumstances of the individual case; the maximum loan to any one person is £2,000; the rate of interest ranges between 4½ and 5 per cent.; and the maximum period for repayment is thirty-one years.

It is clear that the system is intended to confer, and does afford, material assistance to men who contemplate settling on the land, as well as to those already engaged in agriculture; but necessarily this system was not initiated to meet every instance in which farmers might require credit in small amounts, and for a comparatively short period.

To effect this object it seems necessary that a comprehensive system should be established in New South Wales, on the lines of a co-operative bank, or borrowers' association, with the sole object of obtaining cheap credit for its members, with adequate protection of their security, on the plan of the co-operative loan organisations which have been introduced satisfactorily in Europe.

Co-operative Credit Societies in Europe.

The best example of co-operative loan organisations exists in the Raiffeisen Banks of Germany, which represent the latest stage in the evolution from the early Crédit Foncier system.

The history of this evolution ranges through Germany, France, Italy, Switzerland, and Austria-Hungary; the first stage is found in the German Landschaften, established in the middle eighteenth century, when, in 1769, Frederick the Great obliged all noblemen holding land in Silesia to unite to form a loan society, to cope with an enormous withdrawal of capital from agriculture. The whole property of the members was collectively liable for each loan made; and, passing the first stage, when the association merely brought intending borrowers in touch with possible lenders, later associations became true land banks, borrowing money by the issue of debentures secured by mortgages and by the joint liability of members, and issuing loans on mortgage to the landed proprietors composing the membership.

In the middle nineteenth century, after inquiry into the German institutions then existing, a law was passed in France, in 1852, by which the Crédit Foncier de France was established. This is on the principle of a joint-stock company, the funds being constituted partly from share

capital, partly by the proceeds of debentures, and partly from moneys received on deposit. The money thus obtained is used for loans on real property, for the reduction of existing encumbrances, and for the general development of agriculture; but advances are also made to public bodies and departments. The loans are usually for long terms, with easy repayments and low interest rates, and shareholders benefit by any profits.

This system did not, however, fulfil all the needs of the community, and in 1861, La Société du Crédit Agricole was formed also on the lines of a joint-stock company, to provide cheap loans for the smaller class of agriculturists; the Government guaranteed a minimum interest of 4 per cent. for five years to shareholders. Debentures were issued, deposits received, and current accounts opened; but the society's business was mainly discounting, and partly lending. The endorsement of an agent of the society or of a joint-stock company or local association working under its auspices was required on all negotiable instruments drawn by agriculturists; and, by the addition of the society's signature, the borrower could deal with the Bank of France. As a loan institution the society made advances on single signatures of the borrower, secured by material pledges. In 1876 it ceased operations, having failed to confine its business to agricultural requirements.

Since 1900, agricultural credit in France has been organised under a special system based on co-operative institutes and district and local savings banks, financially assisted by the State. The funds available for loan to agriculturists are lent by the Bank of France, free of interest, in return for certain privileges, and consist of a fixed sum of £1,600,000, together with a sum which varies annually, according to the amount of business transacted. The State uses the total amount in granting loans to the district credit banks, which, however, do not lend to the actual borrowers, but operate through the local credit banks. In 1912 there were in existence ninety-eight district banks, which received advances amounting to £561,000 during the year, the total amount on loan to these banks from the State on 31st December, 1912, being £3,435,000, as compared with £2,939,000 in 1911. The subscribed capital of the district banks was £933,000, of which a sum of £862,000 was paid up, £556,000 being contributed by the local banks. In all, the sum of £3,664,000 was at the disposal of the district banks in 1912 for loans for short periods, as compared with £3,413,000 in 1911. The local banks give small agricultural credit on short term to their members, using for the purpose not only their own funds, but also the advances granted by the district banks. At the end of 1912, there were in existence 4,204 local banks, with a membership of 215,695, as compared with 3,946 banks and 185,552 members in the previous year. The subscribed capital in 1912 amounted to £820,000, of which £541,000 was paid up. The amount of loans granted was £3,420,000, or £118,000 more than in 1911. The demand created amongst the farmers, owing to poor crops and loss of stock, has been heavy, and in this respect the banks have been of considerable service to the agricultural industry.

In Belgium there are two types of agricultural credit institutions. The *Comptoirs Agricoles* were founded in 1884. During 1910 there were fifteen of these in operation, 786 loans, to the value of £117,000, being granted; 129 loans were for sums under £40, 627 were between £40 and £400, while 30 were for larger sums. At the end of the year, 4,080 loans, to the value of £551,000, were in existence.

The institutions of the second type are the Raiffeisen Credit Banks, founded in 1873. During 1910, 538 Raiffeisen Banks furnished returns, showing a membership of 27,334, of whom 21,892 were farmers; 4,043 loans,

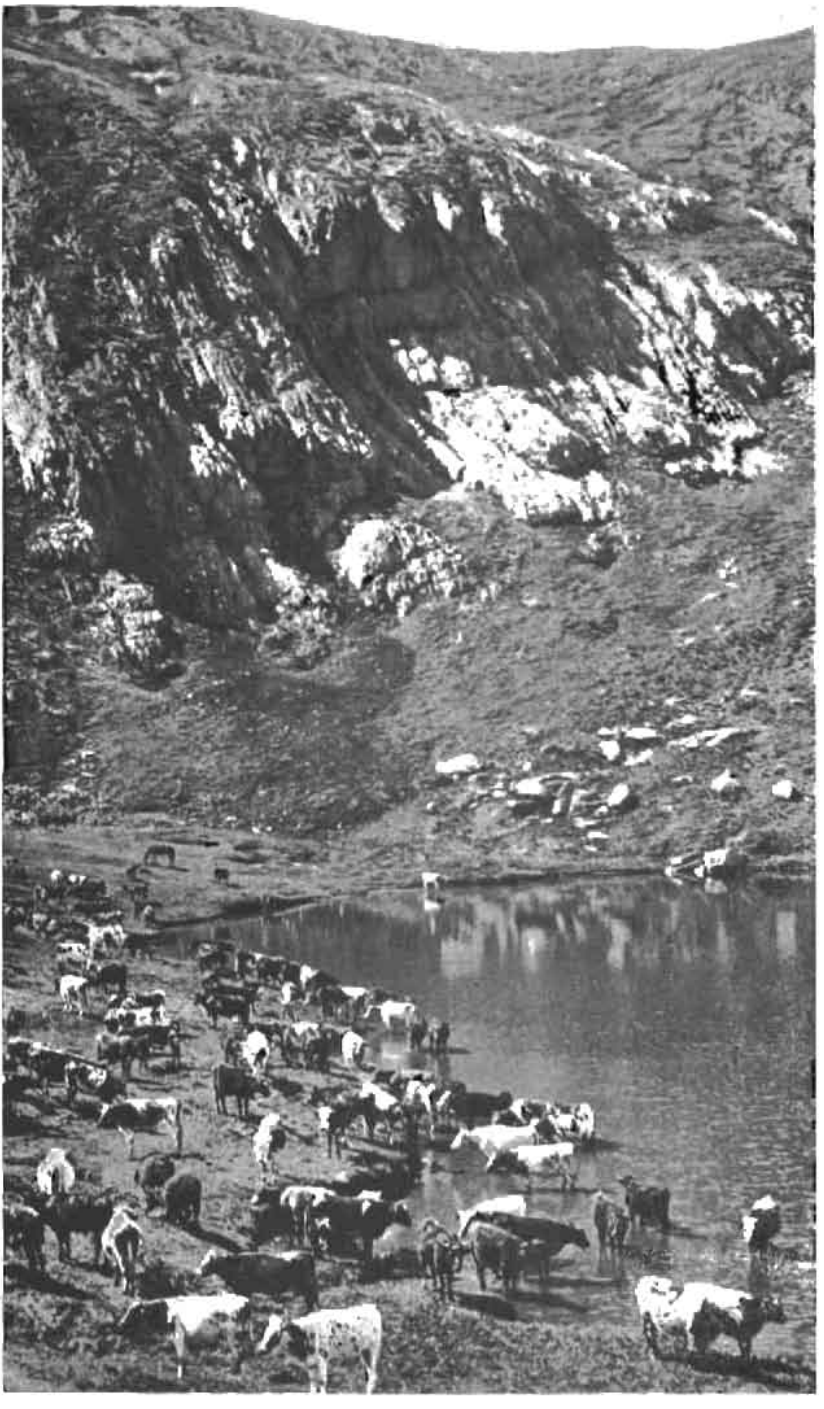
to the value of £162,000, were granted during 1910; while the deposits amounted to £400,000; 1,246 loans were less than £10; 997 were between £10 and £20; 778 were between £20 and £40; and 1,022 were above £40.

During the last twenty-two years agricultural co-operation has made considerable progress in Germany. In 1890 there were only 3,006 societies, with a comparatively small membership; but on 1st June, 1912, about 2,430,000 members were connected with 26,026 societies, of which 20,435 were affiliated with the National Federation. The affiliated societies were divided into 77 co-operative central societies, 13,606 local credit, 2,241 purchase, 2,193 dairy, and 2,318 miscellaneous societies. Although the movement now extends rather by means of additional members than by the formation of new societies, it will be seen to what extent the system has grown. Losses suffered in 1911 through drought and disease were responsible for considerable advances, both in the number of societies and the total membership. The Credit Societies are the most important, and increased in numbers by 784 during the year 1911-12. Particulars respecting the operations of all the societies are not available, but returns for thirty-six of the principal Central Credit Societies show that at the end of 1911 the capital stood at £2,264,000. The amounts deposited and borrowed by the local Credit Societies were £15,153,000 and £14,819,000, respectively. Similar statistics relating to the local Credit Societies are not available except for 1910, but they clearly demonstrate the importance to which agricultural co-operative credit has attained in Germany. 16,735 societies were in existence during 1910. They had a working capital of £132,187,500, of which £117,500,000 represented members' deposits. At the end of the year the loans on current account were £22,766,000, and for fixed periods £58,309,000. The total amounts of loans granted during 1910 were £33,390,000 on current account and £15,226,000 for fixed terms. Many of these societies undertake the purchase of farm requisites for their members, and during 1910 these purchases amounted to £4,186,000.

In Finland co-operative credit societies are conducted on general lines, in accordance with the principles of the Raiffeisen Banks, and their business is almost exclusively the supply of small sums to small farmers. In 1909 there were 384 of these funds, with 15,000 members, to whom loans were granted, amounting to £161,000, or about £10 15s. per member.

The local credit societies are affiliated to a central bank, which controls them and supplies them with capital. This central institute was formed in 1902, and carries on its operations by means of a loan of £160,000, and an annual subsidy of £800 granted by the State. In 1909, 340 co-operative societies joined the central institute, receiving £160,000 in loans.

In the United Kingdom agricultural co-operation has not yet been established to any large extent. A considerable proportion of the landholders are assisted by joint-stock and private banks, which afford great facilities to the farmers as regards credit operations. An endeavour has been made to establish co-operative credit societies on the Raiffeisen model to meet the needs of small farmers, but the effort has not yet been attended with great success. The Government is now, however, taking active steps to encourage the extension of the co-operative credit system, and the movement shows signs of more rapid development. In the United Kingdom, at the end of 1911, there were 224 such societies, with an aggregate membership of 22,101, and a total capital of £168,342. Loans advanced during the year amounted to £79,844. A central bank has been formed in England for the purpose of financing village societies and of assisting their extension.



Club Lake (Summer), Mount Kosciusko, N.S.W.

PASTORAL INDUSTRY.

Live Stock.

The live stock of New South Wales in 1788 consisted of 1 bull, 4 cows, 1 calf, 1 stallion, 3 mares, 3 foals, 29 sheep, 12 pigs, and a few goats. No systematic record of the arrival of live stock was kept in the early days of settlement ; but it appears that in the period between Governor Phillip's landing 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 1912 inclusive :—

Year.	Horses.	Cattle.	Sheep.	Swine.
1861	233,220	2,271,923	5,615,054	146,091
1871	304,100	2,014,888	16,278,697	213,193
1881	398,577	2,597,348	36,591,946	213,916
1891	469,647	2,128,838	61,831,416	253,189
1901	486,716	2,047,454	41,857,099	265,730
1911	689,004	3,194,236	44,947,287	371,093
1912	716,457	3,040,334	39,044,502	293,653

In addition to the live stock shown above, at the end of 1912, there were 52,402 goats (including 5,409 Angora), 1,721 camels, 63 donkeys, 138 mules, and 555 ostriches. Since 1891 the sheep have diminished in number to the extent of nearly 23 millions, but the other classes of stock show increases

—horses 246,000, cattle 912,000, and swine 40,000. In order to indicate the districts in which the changes in the flocks and herds have occurred, the following table has been prepared, showing the number of live stock in each district at the end of various years since 1896. A striking feature of the table is the large increase of cattle, especially of the dairying strain, in the Coastal District:—

District.	1896.	1901.	1906.	1911.	1912.
SHEEP—					
Coastal District	964,759	1,097,471	1,316,580	1,433,037	1,346,811
Table-land	7,036,733	8,359,069	8,842,352	8,961,344	7,932,537
Western Slopes	10,968,344	11,671,524	11,675,425	11,198,621	9,189,233
Western Plains and Riverina	18,541,961	14,578,523	15,998,996	16,048,376	13,665,851
Western Division	10,806,993	5,522,953	6,299,068	7,305,909	6,910,070
Unclassified	.....	127,559	.....	.....	.....
Total	48,318,790	41,857,099	44,132,421	44,947,287	39,044,502
DAIRY COWS IN MILK—					
Coastal District	238,530	284,099	355,238	492,242	494,611
Table-land	82,487	70,224	66,745	70,571	59,810
Western Slopes	46,578	39,732	49,002	48,669	41,249
Western Plains and Riverina	26,372	19,790	21,178	24,137	22,408
Western Division	6,216	3,990	2,657	2,906	3,052
Total	400,183	417,835	494,820	638,525	620,730
OTHER CATTLE.					
Coastal—					
Dry Cows			100,919	136,790	136,711
Heifers	612,797	667,282	25,652	23,755	22,114
All other			709,484	915,602	902,704
Total	612,797	667,282	836,055	1,076,147	1,061,529
Tableland—					
Dry Cows			26,440	31,207	25,291
Heifers	541,493	500,974	7,213	5,178	3,082
All other			468,574	549,874	529,786
Total	541,493	500,974	502,227	586,259	558,159
Western Slopes—					
Dry Cows			25,199	26,112	19,853
Heifers	403,294	305,789	7,051	3,849	2,633
All other			365,980	422,273	362,172
Total	403,294	305,789	398,230	452,234	384,658
Western Plains and Riverina—					
Dry Cows			15,409	20,153	15,053
Heifers	199,817	114,327	4,367	3,437	2,045
All other			204,901	302,103	276,687
Total	199,817	114,327	224,677	325,693	293,785
Western Division—					
Dry Cows			4,921	4,331	4,402
Heifers	68,579	41,247	1,058	1,407	868
All other			87,956	109,640	116,703
Total	68,579	41,247	93,935	115,378	121,973
New South Wales—					
Dry Cows			172,888	218,593	201,310
Heifers	1,825,980	1,629,619	45,341	57,626	30,742
All other			1,836,895	2,299,492	2,188,052
Total	1,825,980	1,629,619	2,055,124	2,555,711	2,420,104
HORSES—					
Coastal District	160,285	160,704	171,485	207,071	216,260
Table-land	115,314	112,394	110,077	126,602	128,004
Western Slopes	108,493	110,845	130,947	179,728	183,639
Western Plains and Riverina	85,622	77,650	97,009	140,140	152,235
Western Division	40,922	25,223	28,244	35,460	36,289
Total	510,636	486,716	537,762	689,004	716,457

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, on the whole, 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 from 1862 to 1912 inclusive, and illustrates the progress of sheep-breeding in New South Wales:—

Year.	Sheep.	Year.	Sheep.	Year.	Sheep.
1861	5,615,054	1881	36,591,946	1901	41,857,099
1866	11,562,155	1886	39,169,304	1906	44,132,421
1871	16,278,697	1891	61,831,416	1911	44,947,287
1876	25,269,755	1896	48,318,790	1912	39,044,502

Divided into periods, the rates of increase are—

1861–71	annual increase	11·2	per cent.
1871–81	,, ,,	8·4	,,
1881–91	,, ,,	5·4	,,
1891–1901	,, decrease	4·0	,,
1901–1911	,, increase	0·7	,,
1911–1912	,, decrease	13·1	,,

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 1912. In the former year there were only 13,187 holdings, but in 1912 the number had increased to 25,549, although the sheep had decreased by nearly 25 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 1912 only 4. The sheep in flocks of over 20,000 comprised 62 per cent. of the total in 1891, but only 26½ per cent. in 1912. 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.	1912.	1891.	1901.	1911.	1912.
1—1,000 .. .	7,606	11,800	17,773	18,431	2,794,751	3,797,114	5,252,546	5,058,391
1,001—2,000	1,954	2,351	3,510	3,227	2,979,168	3,560,849	5,149,618	4,704,283
2,001—5,000	1,696	1,722	2,735	2,386	5,493,942	5,519,008	8,554,299	7,341,880
5,001—10,000	686	729	847	791	4,943,221	5,210,117	5,977,233	5,600,655
10,001—20,000	495	465	507	421	7,056,580	6,666,429	7,143,273	5,954,456
20,001—50,000	491	344	296	253	15,553,774	10,552,373	8,737,927	7,590,840
50,001—100,000 . ..	186	76	53	36	12,617,206	4,835,547	3,434,698	2,363,442
100,001 and over ..	73	12	6	4	10,392,774	1,588,103	697,693	430,555
Total	13,187	17,499	25,727	25,549	61,831,416	41,857,099*	44,947,287	39,044,502

* Includes 127,559 sheep in unclassified flocks.

After allowing for the causes which naturally impede the increase, such as the demands of the meat supply, the requirements of the neighbouring States, and the losses occurring from causes other than drought, it is found that the rate of annual increase has been as high as 20 per cent., so that it is possible for the flocks of New South Wales to double themselves within four years, and actual experience shows that this rate of increase occurred in 1904 and in several of the earlier years. During the period of five years from 1861 to 1866 there was an increase of 100 per cent.; and the flocks of the State were again doubled in the eight years from 1866 to 1874, and in the thirteen years from 1874 to 1887.

Until recent years the demand for sheep for local consumption was so small compared with the supply that it did not appreciably affect the increase of the flocks of the State. This, however, is not now the case;

the annual demand for food consumption within the State is nearly 9 per cent. of the number of sheep depastured—equal to slightly more than three-fourths of the cast. The "cast" implies the number of sheep which, from breeding or wool-growing considerations, it is more profitable to kill than to feed. Expressed as a percentage of the total number of sheep depastured, the "cast" is a variable quantity, which, however, may be taken approximately as 11½ per cent. The number required for export in a frozen or preserved state, and for tallow brings up the total killed per annum to nearly 14½ per cent. of the entire flocks.

The following table gives the number of sheep in each State of Australia at the end of 1912, together with the proportion of the total owned in each:—

State.	Sheep.	Proportion owned in each State.
	No.	per cent.
New South Wales	39,044.502	46·90
Victoria	11,892,224	14·28
Queensland	20,310,036	24·40
South Australia	5,481,489	6·58
Northern Territory	75,808	·09
Western Australia...	4,596,958	5·52
Tasmania	1,852,659	2·23
Commonwealth	83,253,676	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, the United States, and Germany. So far, the principal breed imported has been the merino; but Lincoln, South Downs, Vermont, Shropshire, and other well-known breeds have been introduced. The sheep imported into New South Wales during 1912 for breeding purposes, from the other Australian States and New Zealand, numbered 7,900.

The 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, the 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 1912, the respective numbers of merino and cross-breeds were as shown below; the figures are based on returns collected by the Chief Inspector of Stock, and are exclusive of 1,003,089 sheep, particulars of which are not available:—

Class of Sheep.	Rams.	Ewes.	Wethers.	Lambs.	Total.
Merino	436,640	16,676,887	9,915,494	4,675,545	31,704,566
Other Breeds—					
Coarse Wool ...	135,660	3,000,814	1,821,611	1,378,762	6,336,847
Total	572,300	19,677,701	11,737,105	6,054,307	38,041,413

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. Twenty-seven years ago the proportion of coarse-woolled and cross-breds was only 3½ per cent., and for fully ten years after it stood at about 2½ per cent. In 1893 the proportion rose to 4·3 per cent., and with the development of the meat export trade it has now advanced to 16·7 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 small farmers who combine grazing with agriculture, have emphasised the necessity of conducting experimental breeding on a scientific basis, and of providing instructions for sheep-farmers. To meet this necessity a Sheep and Wool Expert was appointed, in 1909, to the Department of Agriculture to organise the experimental work conducted at State Experiment Farms, and to give 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.
	lb.	lb.	lb.	£	£	£
1876–1880	713,518,500	4,878,500	718,397,000	31,076,350	222,250	31,298,600
1881–1885	939,605,700	4,208,300	943,814,000	40,381,380	181,720	40,563,100
1886–1890	1,290,919,900	3,861,100	1,294,781,000	44,641,580	130,920	44,772,500
1891–1895	1,808,007,600	5,622,400	1,813,630,000	48,893,010	131,590	49,024,600
1896–1900	1,401,170,000	7,070,000	1,408,240,000	42,782,450	201,250	42,983,700
1901–1905	1,297,118,300	5,466,700	1,302,585,000	46,528,630	190,470	46,719,100
1906	324,605,600	835,400	325,441,000	14,072,400	26,600	14,099,000
1907	366,501,900	944,100	367,446,000	17,158,500	26,500	17,185,000
1908	337,128,900	1,000,100	338,129,000	12,800,300	29,700	12,830,000
1909	369,734,800	1,073,200	370,808,000	13,755,000	33,000	13,788,000
1910	413,775,200	1,562,800	415,338,000	15,651,000	57,000	15,708,000
1911	369,144,000	2,402,000	371,546,000	13,178,000	86,000	13,264,000
1912	324,384,000	2,420,000	326,804,000	12,727,000	96,000	12,823,000

The values given in this table represent the export prices free on board, Sydney, and, consequently, differ from those on a later page, which show the values at the place of production. As particulars of the interstate trade were not collected subsequent to 13th September, 1910, the figures for the last two years are approximate.

No distinction was made prior to 1876 between washed and greasy wool, so that any attempt to estimate the production is surrounded with difficulty. From the information available, however, it would appear that the production in 1861 was 19,254,800 lb., and in 1871 the weight in grease was 74,401,300 lb. An estimate of the production for the intervening years is rendered impossible because in several instances the greater portion of the wool clip was held over for a considerable period, awaiting an opportunity for shipment.

The above figures show how greatly the prosperity of the State is affected by fluctuations in the market value of its staple export, for, taking the average annual production during the past five years at 364,000,000 lb., a rise of 1d. per lb. in the market price means an addition of £1,516,000 to the wealth of the people.

As the season for exporting wool does not fall wholly within the calendar year, the exports for any year consist partly of that season's clip and partly of the previous clip. The following table shows the total number of sheep shorn, according to the returns collected by the Chief Inspector of Stock, during each year since 1891 :—

Year.	Sheep and Lambs shorn.	Year.	Sheep and Lambs shorn.	Year.	Sheep and Lambs shorn.
1891	57,702,702	1899	34,569,924	1907	40,338,706
1892	55,602,188	1900	38,400,241	1908	41,912,546
1893	54,090,109	1901	40,417,263	1909	43,356,535
1894	54,234,997	1902	27,639,804	1910	43,179,065
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		
1898	41,220,440	1906	41,704,814		

Wool Sales.

Formerly almost all the wool was shipped on the grower's account and sold in London, but of late years over 86 per cent. has been sold in the Sydney market, as purchasers have realised the advantages of buying on the spot. The attached table exhibits the growing tendency to operate in Sydney :—

Seasons.	Total deep-sea exports (from Sydney and Newcastle).	Sydney Wool Sales.		
		Offered.	Sold at auction and privately.	Proportion of deep-sea exports sold in Sydney.
	bales.	bales.	bales.	per cent.
1887-88—1889-90	1,318,351	764,520	580,000	43·99
1890-91—1892-93	1,823,035	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	779,0 9	86·78
1912-13	773,458	635,978	66),235	86·53

Of the wool sold in Sydney during the last season, approximately 520,881 bales were purchased for the Continent of Europe, 101,424 bales for the English trade and for London on speculative account, 5,719 bales for America, 16,032 bales for Japan, China, and India, the balance—20,426 bales—being taken by local scourers. The average prices per bale realised in Sydney and in London since the year 1902–3 are shown in the following table :—

Year.	Average Prices per Bale realised.	
	In Sydney.	In London.
	£ s. d.	£ s. d.
1902-3	12 8 8	13 2 6
1903-4	12 17 1	13 10 0
1904-5	12 17 1	14 10 0
1905-6	13 19 6	15 15 0
1906-7	14 3 0	17 0 0
1907-8	13 9 0	16 10 0
1908-9	11 15 10	13 5 0
1909-10	13 14 4	15 0 0
1910-11	12 10 11	16 5 0
1911-12	11 19 0	15 0 0
1912-13	13 13 10	16 10 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. As freight and other charges amount to 25s. or 30s. per bale, it is evident that the Sydney market as a general rule is the more favourable to producers.

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.	
	1911-12.	1912-13.	1911-12.	1912-13.	1911-12.	1912-13.	1911-12.	1912-13.
	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	12 to 16	14½ to 18½	9 to 11¾	11¾ to 14	7½ to 8⅝	8⅝ to 11½	5½ to 7¼	7 to 8¼
Pieces	9¼ „ 12	11 „ 13½	7⅜ „ 9	9 „ 10½	6¼ „ 7½	7⅛ „ 8⅜	5 „ 6	6¼ „ 7½
Bellies	7 „ 9	8 „ 11	5½ „ 6⅜	6¾ „ 7⅜	4 „ 5½	5½ „ 6⅜	3 „ 3⅜	4¼ „ 4⅜
Lambs	11 „ 13⅜	12½ „ 14½	8 „ 10¼	10 „ 12¼	6½ „ 7⅜	7½ „ 9⅜	4 „ 6¼	5¼ „ 7¼
Crossbred—								
Fine	10 „ 13¼	12 „ 15	8½ „ 9⅜	11 „ 11⅜	7 „ 8¼	9½ „ 10⅜	5⅜ „ 6⅜	8½ „ 9¼
Coarse	7 „ 9	9 „ 11	5⅝ „ 6⅜	7½ „ 8⅜	5 „ 6¼	6¼ „ 7¼	3 „ 4⅜	4 „ 6
Scoured—								
Fleece	20 „ 23⅜	22 „ 25	18 „ 19⅜	20 „ 21⅜	15⅜ „ 17⅜	18 „ 19⅜	14 „ 15½	16 „ 17⅜
Pieces	17 „ 21½	18⅜ „ 22	15 „ 16⅜	17 „ 18½	13¼ „ 14⅜	15 „ 16⅜	11½ „ 13½	13½ „ 14⅜
Bellies	14 „ 19	16 „ 20	12 „ 13⅜	14½ „ 15⅜	10½ „ 11⅜	12½ „ 14¼	9 „ 10¼	11 „ 12¼
Locks	9¾ „ 13½	11½ „ 15	7⅜ „ 9	10 „ 11¼	6½ „ 7½	8¼ „ 9⅜	5 „ 6	6⅜ „ 8

In order to illustrate the fluctuations in value, the following table has been compiled, which gives a fairly correct idea of the average value realised for greasy wool in the London market at each of the principal sales during the last twelve years :—

Year.	1st Series.	2nd Series.	3rd Series.	4th Series.	5th Series.	6th Series.
	per lb. d.	per lb. d.	per lb. d.	per lb. d.	per lb. d.	per lb. d.
1902	10½	10½	11½	11½	12	12½
1903	12⅔	12	11½	11	11	10½
1904	11	10	10⅔	11	11½	12
1905	12	11¾	12½	12½	12½	12⅔
1906	12	12¼	12⅔	12¼	12	12¼
1907	12¼	12⅓	12½	12¾	12¾	11¾
1908	11¾	10	9¾	10¼	10¾	11¼
1909	11½	11¾	12	12	12½	12¼
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

During the period covered by the table, Sydney-shipped greasy wool realised 12¾d. to 9¾d. The maximum prices were realised during 1907, when the sales twice closed at 12¾d. per lb., and also in 1910. The 1902 sales opened at 10½d., and the prices rose gradually to 12⅔d. at the close. In 1903 there was a gradual fall to 10½d., but at the last sales in 1904 prices again reached 12d. This value was more than maintained during the next three years. During 1908 the value fell to 9¾d., but rose to 11¼d. at the close of the year. In 1909 prices opened at 11⅓d. and gradually rose to 12¾d. in 1910, finishing at the last sales at 12½d. During 1911, the ruling price was 12d.; the price did reach 12⅔d., but receded to 11½d. at the close of the year. This was also the opening quotation for the following season, and although the second series had to be abandoned on account of the coal strike in March, 1912, the prices rose gradually to 12¼d. at the last series in November and December. For 1913 the sales opened at 12½d., and the price declined slightly during the year.

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. Since 1902 the number has increased steadily, and in 1912 reached a total of 3,040,834.

Year.	Cattle.	Year.	Cattle.	Year.	Cattle.
1861	2,271,923	1896	2,226,163	1907	2,751,193
1866	1,771,809	1901	2,047,454	1908	2,955,934
1871	2,014,888	1902	1,741,226	1909	3,027,727
1876	3,131,013	1903	1,880,578	1910	3,140,365
1881	2,597,348	1904	2,149,129	1911	3,194,236
1886	1,367,844	1905	2,337,973	1912	3,040,834
1891	2,128,838	1906	2,549,944		

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 1912 the numbers of each breed, as far as could be ascertained, were :—

Breed of Cattle.	Pure and Stud.	Ordinary.	Total.
Shorthorn	83,972	593,931	677,903
Hereford	32,937	143,079	176,016
Devon	11,525	31,613	43,138
Black-polled	1,922	17,905	19,827
Red-polled	1,015	1,288	2,303
Ayrshire	9,273	61,530	70,803
Alderney	1,319	3,318	4,637
Holstein	751	5,209	5,960
Jersey	14,940	66,226	81,166
Guernsey	961	9,580	10,541
Brittany	18	1	19
Kerry	5	.....	5
Red Lincoln	16	.....	16
Highland	7	200	207
Total	158,661	933,880	1,092,541
Crosses (first crosses)—			
Shorthorn—Hereford ...	.....	307,202	307,202
,, —Devon	.....	129,532	129,532
Hereford— ,, ...	.....	52,916	52,916
Ayrshire—Shorthorn ...	.....	194,829	194,829
,, —Holstein	.....	200	200
Alderney—Shorthorn ...	.....	900	900
Black-polled— ,, ...	.....	75	75
Red-polled— ,, ...	.....	30,544	30,544
Jersey— ,, ...	.....	107,370	107,370
,, —Ayrshire	.....	375	375
,, —Holstein	.....	90	90
Jersey and Kerry	.....	4	4
Unknown	.....	706,927	706,927
Total	.....	1,530,964	1,530,964
Total—All Breeds ...	158,661	2,464,844	2,623,505

There were, in addition, 417,529 cattle not classified, which were for the most part in the towns.

There has been an appreciable increase in the number of milking cattle, many of the farmers in the coastal districts having turned their attention to dairying, with very satisfactory results. The number of milch cows at the close of the year 1912 was 620,730.

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 have imported some high-class stud bulls from England; there are now about thirty of these bulls.

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 1912 was twelve—seven bulls and five cows, and in addition, a number of stud cattle were imported from the other States, principally for dairying purposes.

The exports of New South Wales cattle to countries oversea during 1912 numbered 562. Of these 358, valued at £3,061, were ordinary cattle, and 204, valued at £3,455, were cattle for stud purposes.

The breeding cows in the State in 1912 numbered 791,756. Australian cattle, probably because they live in a more natural state, are remarkably free from milk-fever and other complaints attendant on calving.

Horses.

At an early period the stock of the country was enriched by the importation of some excellent thoroughbred Arabians from India, 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 1912 reached 716,457. There was a great advance in horse breeding in 1910, 1911, and 1912 in consequence of the increased demand owing to additional settlement and the prosperous seasons, and to the defence requirements.

The following table shows the number of horses in New South Wales at the end of various years since 1861:—

Year.	Horses.	Year.	Horses.	Year.	Horses.
1861	233,220	1896	510,636	1907	578,326
1866	274,437	1901	486,716	1908	591,045
1871	304,100	1902	450,125	1909	604,784
1876	366,703	1903	458,014	1910	650,636
1881	398,577	1904	482,663	1911	689,004
1886	361,663	1905	506,884	1912	716,457
1891	469,647	1906	537,762		

For purposes of classification the horses have been divided into draught, light-harness, and saddle horses, and the number of each particular kind, so far as could be ascertained from returns collected by the Stock Department, was as follows:—

Class.	Thoroughbred.	Ordinary.	Total.
Draught	30,149	214,470	244,619
Light-harness ...	16,586	131,043	147,629
Saddle	28,582	175,463	204,045
Total... ...	75,317	520,976	596,293

Returns relating to the remaining 120,164 animals were not received.

New South Wales is specially suitable for the breeding of saddle and light-harness horses, and it is doubtful whether in these particular classes the Australian horses are anywhere surpassed. On many of the large holdings thoroughbred sires are kept, and the progeny combine speed with great powers of endurance. Fed only on the ordinary herbage, these animals constantly perform long journeys across difficult country, and become hardy and sure-footed to a high degree. It is the possession of these qualities which gives them great value as army remounts.

The approximate number of animals fit for market is as follows:—Draught, 35,250; light-harness, 26,155; saddle, 36,530; total, 79,935. Of these it is estimated that about 27,626 are suitable for the Indian and other markets.

Export of Horses.

There is a considerable export trade annually to countries outside Australia, the number of New South Wales horses in 1912 being 1,990, valued at £53,002. 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 1912:—

Countries.	Number.				Value.			
	1900.	1905.	1910	1912.	1900.	1905.	1910.	1912.
					£	£	£	£
Burmah	.....	95	85	...	.....	2,625	2,743	...
Fiji	48	446	190	146	1,220	11,189	4,566	3,642
Hong Kong ...	5	404	...	1	115	15,021	.....	40
India	1,688	1,922	925	1,160	18,521	42,774	20,522	22,131
New Zealand ...	189	118	106	35	3 276	4,188	6,460	5,810
South Africa ...	7,714	8	1	6	124,485	1,780	25	430
Straits Settlements	295	121	42	85	7,440	3,110	6,645	2,793
China	1,489	85	1	25	41,600	2,041	60	625
Japan	.....	1,631	31	41	.....	26,495	1,620	2,650
Java	36	265	98	353	720	3,345	2,747	10,271
Philippine Islands	35	190	397	53	1,060	3,085	9,985	1,479
Other Countries ...	73	121	50	85	4,848	3,311	1,743	3,131
Total ...	11,572	5,406	1,926	1,990	203,285	118,964	57,116	53,002

For many years India has offered the best market for horses. The demand for horses in that country is considerable, and Australia is a natural market from which supplies are derived. The trade with Java has increased, and since 1904 some large consignments have been sent to Japan, but the trade shows great fluctuations.

The large number exported in 1900 was due to the despatch of mounted troops to the South African war; but, apart from this, there has been a considerable decrease in the number exported, mainly on account of the greater local demand.

Veterinary Examination.

With a view to improving the breed of horses, the Minister for Agriculture recently decided in connection with Agricultural Societies desiring to participate in the Government subsidy, that all stallions entered as such for prizes at agricultural shows, shall be subject to veterinary examination with a view to detecting hereditary unsoundness, and deciding their suitability otherwise for stud service. It has been recognised, however, that to effect a general improvement compulsory regulation by the State authorities is absolutely necessary. As a step towards this end, a system of examination and certification of stallions by Government veterinary officers was initiated in 1909; it applies only to horses voluntarily submitted by owners for inspection. Primarily the horses examined were chiefly those submitted at Agricultural and Pastoral Shows, but arrangements were subsequently made to hold parades at numerous centres throughout the State. Examination at Shows, except in the case of the Sydney Royal Show, has now been discontinued.

Lists have been published giving the names of stallions for which certificates for life have been issued to the end of 1913, and include particulars respecting 862 draughts, 477 thoroughbreds, 386 trotters, 157 lights, and 548 ponies.

As the scheme has been in operation for a very short period it is not possible to foreshadow its ultimate effect on the industry; but it has already

brought about some desirable results, as, for instance, depreciation in selling value of uncertificated stallions and corresponding increase to the value of the certificated; greater care in the selection of animals for importation; and the education of owners in a practical manner regarding various forms of unsoundness. It prevents unsound horses from being exhibited, and ensures breeders, if they demand the production of the certificate at time of service, from using unsound sires. By means of the examinations also the veterinary officers have been able to collect accurate information which will be useful as a basis of future measures in connection with horse-breeding.

A number of people vitally interested in this industry are in favour of an Act of Parliament, insisting on the examination of all stallions used for breeding purposes, and forbidding the use of any animals which have not obtained the necessary certificate. At the present time horses rejected for certificate are not prevented from doing stud work, and many stallions have not been presented for examination.

At the Interstate Conference of Chief Veterinary Officers and Chief Inspectors of Stock of the Departments of Agriculture of the various States in 1912–3, respecting the examination and certification of stallions, it was resolved—

(*a*) That early legislation be enacted to provide that uncertificated horses should not be allowed to travel or stand for stud purposes.

(*b*) That, in the interests of the scheme for examination and certification of stallions, it is highly desirable that stud books of the recognised breeders of horses should be established in each State forthwith.

Recognising the importance of improving the breed, and of further developing the industry, the Government has established a Chair of Veterinary Science at the Sydney University.

Live Stock in Principal Countries.

A comparison of the numbers of horses, cattle, sheep and swine in New South Wales and other countries is afforded by the subjoined table, the figures being the latest available :—

Country.	Horses.	Cattle.	Sheep.	Swine.
Australia—				
New South Wales	716,457	3,040,834	39,044,502	293,653
Victoria	539,494	1,508,039	11,892,224	240,072
Queensland	674,573	5,210,891	20,316,036	143,695
South Australia	276,539	383,418	5,481,489	69,832
Northern Territory	18,382	405,552	75,808	1,500
Western Australia...	147,629	806,294	4,596,958	47,351
Tasmania	44,039	222,181	1,852,659	49,152
New Zealand	404,284	2,020,171	23,750,153	348,754
United Kingdom	1,985,355	11,874,594	28,886,561	3,979,754
Argentine	8,894,031	28,786,168	80,401,486	2,900,000
Austria	1,802,848	9,160,009	2,428,101	6,432,080
Belgium	262,709	1,830,747	*	1,348,514
Canada	2,378,204	6,596,860	2,074,594	3,153,680
Chile	420,786	1,760,272	4,163,572	165,673
Denmark	535,018	2,253,982	726,879	1,467,822
France	3,222,140	14,705,900	16,467,700	6,903,750
Germany	4,523,059	20,182,021	5,803,445	21,923,707
Hungary	2,351,481	7,319,121	8,548,204	7,580,446
Italy	906,820	6,198,861	11,162,926	2,507,798
Japan	1,576,146	1,405,026	3,736	298,709
Spain	525,853	2,561,894	15,829,954	2,571,359
Union of South Africa	719,414	5,796,949	30,656,659	1,081,600
United States of America	20,567,000	56,527,000	51,482,000	61,178,000
Uruguay	556,307	8,192,602	26,286,296	180,099

* Not available.

Goats and other Live Stock.

The number of goats in New South Wales at the end of 1912 was 51,652, including 5,009 Angora goats. In 1909 there were 5,042 Angora and 52,835 other 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 1912 being 1,721, and in the previous year 971.

Donkeys and mules are not extensively used in New South Wales, the numbers in 1911 and 1912 being 53 donkeys 128 mules, and 63 donkeys 138 mules, respectively. It is claimed that mules have many points of advantage in comparison with horses for farm work, especially in areas of limited rainfall—for instance, longer period of utility, smaller cost of maintenance, combined with a readiness to labour, and comparative freedom from disease. As regards the profitableness of mule breeding, there is generally a good demand for them in the world's markets. They are largely used for various kinds of work in India, United States, South America, and South Africa, also in the sugar plantations of Fiji. The Indian Government regularly purchases them in large numbers for the army transport service.

Ostrich farming is successfully conducted in New South Wales, though not on an extensive scale. The number of ostriches at the end of 1912 was 555, as compared with 560 at the close of the previous year. As the climate of certain portions of the State is considered very suitable for ostrich farming the industry is believed to have a great future.

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, 1913, was :—Horses, 110,981 ; cattle, 1,435,721 ; sheep, 35,895,971. There were 29,875 inspections made by the Inspectors of Stock, at which 112,954 horses were inspected, 1,169,567 cattle, and 18,973,372 sheep. 24,457 Permits were issued, and 171 renewed permits.

Sheep Brands and Marks.

Under the Pastures Protection Act, 1902, 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 1912-13 the number of sheep brands and ear-marks recorded and transferred were as follow :—

	Recorded.	Transferred.	Total Registered.
Fire Brands...	62	52	114
Tar Brands	1,390	233	1,623
Ear Marks	1,096	229	1,325
Total	2,548	514	3,062

Horse and Cattle Brands.

The number of horse and cattle brands registered up to 30th June, 1913, was 118,647. The number of brands registered during the year was :—Horse brands (alone), 289; cattle brands (alone), 336; horse and cattle brands, 1,662; and camels, 7; making a total of 2,294. The brands are registered under the provisions of the Stock Act, 1901.

Prices of Stock.

The prices of stock show great variation in the course of a year; but the following statement shows a fair average of the market prices of each class of stock throughout 1912; in many instances the figures are based on actual sales :—

Class of Stock.	Fair Average Price.			Class of Stock.	Fair Average Price.		
	£	s.	d.		£	s.	d.
Horses—				Fat Woolly Sheep—			
Draught—Extra Heavy ...	37	0	0	Crossbred Wethers—			
Medium	26	0	0	Extra Prime	1	2	6
Light	17	10	0	Prime ...	0	18	0
Saddle and Harness	18	0	0	Good ..	0	14	0
Carriage	30	0	0	Ewes—Extra Prime	0	19	6
				Prime ...	0	16	6
Fat Cattle—				Good ..	0	13	6
Bullocks—Extra Prime ...	12	0	0	Merino Wethers—			
Prime	9	10	0	Extra Prime	1	1	6
Medium	7	15	0	Prime ...	0	17	6
Light	5	15	0	Good ..	0	15	0
Cows—Extra Prime	8	0	0	Ewes—Extra Prime...	0	18	0
Other	4	10	0	Prime ...	0	14	6
Steers and Heifers—Prime ...	7	10	0	Good... ...	0	12	0
Other ...	4	5	0	Lambs—Extra Prime Woolly	0	16	9
Vealers—Heavy and Prime ...	3	2	9	Prime	0	14	0
Good...	2	4	6	Good	0	11	6
Calves—Medium	1	15	0	Pigs—Porkers—Rough & Heavy	2	15	0
Light	1	7	6	Heavy ...	2	0	0
Prime Young ...	1	4	9	Medium ...	1	13	0
Poddies	0	13	0	Light... ...	1	6	0
Working Bullocks—Best ...	8	10	0	Baconers—Heavy ...	3	5	0
Other ...	6	5	0	Light ..	2	10	0
Dairy Cattle—				Backfatters	3	15	0
Milkers—Best	10	10	0	Slips and Suckers ...	0	10	6
Good	6	15	0	Goats—Angora	3	17	6
Inferior	3	10	0	Other	0	15	0
Springers—Best	7	0	0	Camels	27	10	0
Other	3	15	0	Mules	27	10	0
Dry—Best	4	15	0	Donkeys—Jacks (for breeding)	55	0	0
Other	2	10	0	Jennies	35	0	0

In the case of the horses, the average maximum price was £60 for carriage horses, and the minimum £7 for saddle and harness horses. In fat cattle, £15 15s. was the maximum for extra prime bullocks, and the minimum for extra prime cows £6 10s. Working bullocks ranged from £10 5s. to £4 15s. For dairy cattle, the maximum for best milkers was £14, and the minimum for good milkers, £6. The prices of fat sheep vary, not only with the class and condition of the animal and the number on the market, but also in accordance with the season and growth of the fleece. The range of average prices in 1912 was from a maximum of £1 6s. for extra prime cross-bred wethers to 12s., the minimum for crossbred ewes. The pigs brought prices ranging from £5 for backfatters to £1 4s. for light porkers. The maximum price of Angora goats was £5 5s.; for camels, £35; and 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, etc. On 120,546,052 acres of Crown lands similarly occupied, the value of the improvements was set down at £14,775,000 approximately.

From the nature of the industry, it is difficult to arrive at a correct estimate of the return from pastoral pursuits as at the base of production; but taking the Sydney prices as a standard, and making due allowance for incidental charges, such as agistment, railway carriage or freight, and commission, the value in 1912 would appear as £19,440,000. The returns received from the different kinds of stock are shown in the following table, for various years since 1891 :—

Year.	Annual Value of Pastoral Production.					
	Sheep for Food.	Wool.	Cattle.	Horses.	Total.	Per Head of Population.
	£	£	£	£	£	£ s. d.
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	2,236,000	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	13,732,000	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	1,753,500	2,062,500	19,440,000	11 3 8

In order to exhibit clearly the extent of the variation in the prices of pastoral products, the following table has been prepared, showing the price-level in each year since 1905 as compared with 1901. The figures are calculated on the average prices of exports to the United Kingdom free on

board at Sydney. The prices of 1901, represented by the number 1,000, are taken as a basis :—

Article.	1905.	1906.	1907.	1908.	1909.	1910.	1911.	1912.
Wool—greasy	1,300	1,433	1,553	1,272	1,200	1,266	1,200	1,200
,, scoured ...	1,396	1,509	1,585	1,258	1,245	1,188	1,132	1,151
Tallow	937	1,031	1,303	1,176	1,135	1,250	1,188	1,215
Leather	1,078	1,183	1,150	1,017	972	1,100	1,133	1,161
Frozen Beef	1,000	875	1,010	1,008	1,250	1,250	1,375	1,375
,, Mutton ...	1,031	1,125	1,055	1,021	1,063	1,250	1,250	1,500
Skins—Hides	1,250	1,375	1,316	1,053	950	1,100	1,113	1,204
,, Sheep, with wool	1,541	2,000	1,863	1,175	1,279	1,311	1,164	1,299
All articles ...	1,192	1,316	1,354	1,122	1,137	1,214	1,194	1,327

Pastoral Implements and Machinery.

A list of the implements and machinery in use on pastoral holdings appears in the previous issue of this Year Book. The aggregate value of the implements and machinery in the year 1912 was £1,514,636.

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 agricultural machinery, as stated in the chapter relating to Agriculture, in which a comparative table of the value of agricultural, pastoral, and dairying 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 59, and in the country districts, 1,212 slaughter-yards, employing respectively 641, and 3,653 men; in all, 1,271 establishments and 4,294 men.

The following table shows the number of stock slaughtered during 1912 :—

Stock	Metropolis.	Country.	Total.
Sheep	1,895,952	3,491,626	5,387,578
Lambs	77,822	346,782	424,604
Bullocks	125,297	203,836	329,133
Cows	64,122	142,106	206,228
Calves	62,105	15,574	77,679
Swine	173,543	178,635	352,178

These figures represent the stock killed for all purposes. Of the sheep and lambs, 3,991,784, including 1,296,867 killed on stations and farms, represent the local consumption; 616,435 sheep were required by meat-preserving establishments; 1,174,804 for freezing for export; and 29,150

were boiled down for tallow. All the cattle killed, except 50,941 treated in the meat-preserving works and 9,368 exported frozen, 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.
1903	1,702	3,991	3,180,408	96,712	157,173	103,471	14,555	178,157
1904	1,593	3,961	2,927,078	131,458	211,839	72,778	14,472	232,955
1905	1,568	4,570	3,969,577	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	4,058	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	202,303
1910	1,282	4,328	7,032,102	448,932	275,497	156,110	52,340	290,328
1911	1,287	4,313	6,146,739	400,186	306,773	182,178	59,969	316,331
1912	1,271	4,294	5,387,578	424,604	329,133	206,228	77,079	352,178

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, 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 five assistants, and there are twenty-two inspectors stationed at other slaughtering premises. Five inspectors are engaged wholly and four partly at canning works, cold stores, ships, and slaughter-houses in connection with the export trade. 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 carcases 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 1912 and 1913 are shown in the following statement :—

Animals.	1912.			1913.		
	Slaughtered.	Condemned.		Slaughtered.	Condemned.	
		Number.	Per cent.		Number.	Per cent.
Bulls	1,393	202	14·50	1,801	230	12·77
Bullocks	104,785	557	·53	125,496	593	·47
Cows	60,840	2,504	4·11	78,838	3,572	4·53
Calves	60,043	2,799	4·66	60,834	3,412	5·61
Sheep	1,773,458	3,280	·18	2,188,789	716	·03
Pigs	112,396	2,580	2·29	90,817	1,702	1·87

In order to cope with the expanding requirements of the meat trade, new abattoirs are in course of construction at Homebush Bay, where facilities will be provided for both railway and steamer traffic.

The average prices of the best beef during 1912 ranged from 21s. 9d. per 100 lb. in January to 36s. 6d. in September.

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-carcase sheep, pastoralists have lately turned their attention in this direction, with a view to securing a larger 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	105,762
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	147,404	217,920	653,801	15,556,834	310,192

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, as shown above, 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 sixty-seven steamers engaged at the end of the year 1913 in the frozen meat trade between Australia and the United Kingdom. The carrying capacity of these steamers, which are fitted with refrigerating machinery, is 3,410,100 carcases. In addition, seventeen steamers, of a capacity of 1,490,600 carcases, were engaged occasionally.

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 from New South Wales.	
	Quantity.	Value.	Quantity.	Value.
	cwt.	£	cwt.	£
903	4,016,622	7,826,062	37,502	73,406
1904	3,494,782	6,861,531	67,200	130,839
1905	3,811,069	7,336,490	244,033	470,482
1906	4,082,756	7,645,935	341,963	609,275
1907	4,578,523	8,687,407	391,500	723,148
1908	4,385,771	8,140,029	315,998	564,326
1909	4,761,838	7,839,195	448,011	715,761
1910	5,405,923	9,802,858	776,084	1,261,173
1911	5,330,070	9,576,446	612,620	1,000,556
1912	5,021,529	9,698,783	342,422	591,513

The value of frozen mutton from New South Wales imported into the United Kingdom during 1912 shows a large reduction on the figures of the previous two years, and is only 47 per cent. of the shipments of the year 1910.

Below is given a statement of the average wholesale prices obtained during the past ten years for English 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 English.	New Zealand.	Australian.	River Plate.	Year.	Best English.	New Zealand.	Australian.	River Plate.
	d.	d.	d.	d.		d.	d.	d.	d.
1903	7¼	4	3½	3¾	1908	7⅞	4¼	3¼	3½
1904	7¼	4½	4	3⅞	1909	6⅞	3½	3	3⅜
1905	7¼	4½	3½	3¾	1910	7½	4⅜	3½	3⅞
1906	7½	4	3⅜	3½	1911	7⅞	4⅜	3½	3½
1907	7½	4⅜	3¼	3½	1912	8	4⅜	3¾	3⅞

In addition to frozen beef and mutton, there was an export during 1912 of rabbits and hares to the value of £252,053, and other meats £104,967.

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 production of tallow has declined considerably since 1897, consequent on the decrease in the number of live stock depastured, and on the drop in the market value of the article. In earlier years the production was much

greater than for any of the years shown hereunder, reaching in each of the years 1894 and 1895 nearly 54,000 tons :—

Year.	Estimated Quantity of Tallow.		
	Produced.	Locally consumed.	Exported.
	tons.	tons.	tons.
1903	11,036	5,710	5,326
1904	17,654	5,897	11,757
1905	24,758	5,686	19,072
1906	24,391	5,837	18,554
1907	24,527	5,788	18,739
1908	21,031	5,881	15,150
1909	32,006	5,810	26,196
1910	37,110	5,923	31,187
1911	36,467	6,187	30,280
1912	28,425	6,580	21,845

The oversea exports of skins and hides, the produce of New South Wales, are of considerable value, and show a large increase during the last decade, as will be seen from the following statement. The other products of the pastoral industry are of minor importance, as leather, valued at £346,000 in 1912, is classified as a product of the manufacturing industry :—

Products.	Value of Oversea Exports.			
	1901.	1906.	1911.	1912.
Skins and Hides—	£	£	£	£
Cattle	86,017	84,893	292,193	622,949
Horse	170	428	790	6,460
Rabbit and hare.. ...	9,379	293,260	295,476	318,930
Sheep	151,144	314,722	260,007	413,292
Other	184,522	140,050	296,672	545,600
	431,232	833,353	1,145,138	1,907,231
Hoofs, horns, and bones ...	13,765	14,673	15,390	22,445
Bone dust	14,848	13,817	33,280	33,945
Hair	9,833	13,524	16,503	18,632
Lard and animal fats ...	312	2,557	4,841	4,163
Tallow	362,631	461,540	871,018	668,036
Glue-pieces and sinews ...	6,020	8,103	8,781	10,726
Furs	767	1,540	117	37
Total	839,408	1,349,107	2,095,068	2,665,215

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 in New South Wales 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. The Barbs and Kelpies are supposed to have originated in Scotland from a cross of fox and smooth-haired collie. 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, as is the case in Great Britain, where trained animals may be exempted under certain conditions.

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, during the year ended 30th June, 1913, by dogs and foxes were as follow :—

Destructive Agent.	Sheep.	
	Number.	Value.
		£
Native Dogs	60,263	29,847
Tame Dogs	21,890	11,351
Foxes	77,918	30,432
Total	160,071	71,630

Rabbits, which are the greatest pests, first found their way into this State from Victoria, where some were liberated about fifty years ago in the Geelong district. Their presence first attracted serious attention in 1881, when complaints were heard in the south-west portion of this country of the damage done. They multiplied so rapidly that, in 1882, they were to be met on most of the holdings having frontages to the Murray River. Attempts to cope with them under the Pastures and Stock Protection Act were ineffectual, and the Rabbit Nuisance Act was passed. This Act provided for the compulsory destruction of rabbits by the occupiers of the land, who were to receive a subsidy from a fund raised by an annual tax upon stockowners, but the fund soon proved inadequate, and from 1st May, 1883, to 30th June, 1890, when the Act was repealed, it was supplemented by £503,786 from the Consolidated Revenue. The tax upon stockowners yielded £831,457, and landowners and occupiers contributed £207,864, so that the total cost during the whole period exceeded £1,543,000.

The Rabbit Act of 1890 repealed the 1883 Act and those provisions of the Pastures and Stock Protection Act relating to rabbits. It also provided, as occasion required, for the proclamation of Land Districts as "infested," and for the construction of rabbit-proof fences. From 1st July, 1890, to 30th April, 1902, the State expenditure under this Act was £41,620, nearly all of which has been devoted to the erection of rabbit-proof netting. From May, 1902, to December, 1903, the expenditure was £10,548.

Under the Pastures Protection Act of 1902 the State was divided into districts, the protection of the pastures being supervised by a board elected

in each district by the stockowners. The Pastures Protection Boards are empowered to levy a rate upon the stock, and to erect rabbit-proof fences on any land, take measures to ensure the destruction of all noxious animals and pay rewards for such destruction. The State expenditure on rabbit extermination since the establishment of the Boards has consisted mainly of payments to the Railway Commissioners for the maintenance of rabbit-proof fences, amounting to £9,739 to the end of June, 1913.

In order to prevent the spread of the pest, and also with a view of assisting in its destruction, fences have been erected by the Government of the State at numerous places. The longest of these traverses the western side of the railway line from Bourke, *via* Blayney and Murrumburrah, to Corowa, in the extreme south of the State, a distance of 612 miles, the Railway Commissioners undertaking the work of supervision. On the border between New South Wales and South Australia there is a fence which extends from the Murray River northwards, a distance of about 350 miles. On the Queensland border a rabbit-proof fence has been erected between Barringun and the river Darling, at Bourke, a distance of 84 miles; while another has been erected at the joint expense of the Governments of Queensland and New South Wales, from Mungindi to the Namoi River, a distance of about 115 miles. The total length of rabbit-proof fences erected by the State up to 30th June, 1913, was, approximately, 1,332 miles, at a cost of £69,888; by private persons, 92,310 miles, at a cost of £5,317,190; and by Pastures Boards, 550 miles, at a cost of £23,985.

The chief means adopted for the destruction of the pest are poisoning and trapping, but it has long been recognised that these methods are inadequate to cope with the evil. In 1906 Dr. Danysz, an eminent French scientist, claimed to have discovered a disease which was fatal to rabbits and easily propagated amongst them, while proving harmless to other animals or to birds. A liberal offer was made by the pastoralists of the State for the introduction of the disease, and the use of Broughton Island, near Newcastle, was granted by the New South Wales Government for the purpose of experiments with animals and birds, under the supervision of a medical officer of the Health Department. The experiments were continued during 1907, and in November of that year the Supervising Medical Officer 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. During the year ended 30th June, 1913, the total amount paid as bonus by the Boards was £14,169 :—

Animals.	Animals Destroyed.	Bonus Paid.
		£
Native Dogs	9,015	4,414
Foxes	19,678	2,850
Wallabies	199,623	861
Kangaroo Rats	69,561	667
Pademelons	52,431	332
Wombats	1,957	177
Hares	135,224	1,010
Eaglehawks	3,044	279
Crows	134,583	3,579
Bandicoots	12	.....
Total	625,128	14,169

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 each year since 1903 :—

Year.	Value of Domestic Exports beyond Australia.		
	Frozen Rabbits and Hares.	Rabbit and Hare Skins.	Frozen Rabbits, Hares, and Skins.
	£	£	£
1903	37,274	35,923	73,197
1904	54,286	96,810	151,096
1905	143,768	153,779	297,547
1906	246,803	293,260	540,063
1907	301,115	209,754	510,869
1908	247,525	138,403	385,928
1909	329,020	159,904	488,924
1910	406,762	327,874	734,636
1911	330,741	295,476	626,217
1912	252,053	318,930	570,983

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 five sections, which are governed by different conditions. The fences have been continuously patrolled and kept in good order, and the care of Departmental dips and yards maintained.

In order to obtain comprehensive information as to methods of dealing with the cattle tick in the United States of America a Commission was appointed in June, 1912, to visit that country.

Water Conservation and Public Watering Places.

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 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:—

Bores.	Flowing.	Pumping.	Total.	Total Depth.
				feet.
For Public Watering-places, Artesian Wells, &c.	119	28	147	262,704
For Country Towns Water Supply	3	.....	3	4,354
For Improvement Leases	40	3	43	65,670
Total, Government Bores	162	31	193	332,728
Private Bores...	227	45	272	342,368

The average depth is 1,725 feet in the case of Government bores, and of private bores, 1,270 feet.

The deepest bore is at Boronga, in the Moree district, where boring has been carried to a depth of 4,338 feet; this well yields a supply of 1,062,133 gallons per day. The largest measured flow obtained from Government bores is from Boomi, in the Moree district; the depth of this well is 4,008 feet, and the flow 1,079,766 gallons per day. The State flowing bores yield about 63 million gallons of water per day, and in addition there are pumping bores which supply 459,600 gallons per day; but in many cases the flow is estimated only, and in others no data are available.

The Artesian Wells Act of 1897 provides that any occupier of land, or any group of occupiers, may petition the Minister to construct an artesian well, and the necessary distributing channels. The petitioners are required to transfer to the Crown an area, not exceeding 40 acres, embracing the site for the bore, and to pay such charges as may be assessed by the Land Board, which shall not exceed the yearly value to each occupier of the direct benefit accruing to his land from the supply of water, but such charges must not exceed 6 per cent. per annum on the cost of the works. Provision is also made for the Minister to take the initiatory steps when a group of settlers are not in agreement; it is enacted that a two-thirds majority, occupying two-thirds of the area affected, shall rule, and that the minority must come into the scheme and pay proportionately with the others under the provisions of this Act. Twelve bores watering an area of 381,230 acres have been sunk.

Much has been done in the way of artesian boring by private enterprise. As far as can be ascertained, 295 private bores have been undertaken in New South Wales, of which twenty-three were failures, and four are in progress. Information concerning the daily flow is not available, as in many cases this has not been gauged, whilst in the others the measurements cannot be regarded as reliable.

The Water and Drainage Act of 1902 authorises the construction by the Government of works for affording supplies of water, for irrigation, stock,

or domestic purposes, and for draining swamp lands. The works are administered by Trusts constituted under the Act. The trustees make an assessment to cover maintenance, 4 per cent. interest and 2 per cent. sinking fund and to liquidate the capital cost of the work at the end of twenty-eight years. Under this Act trusts for the supply of water have been constituted in connection with (*a*) fifty-five artesian wells, (*b*) four schemes for the improvement of natural offtakes of effluent channels for the purpose of diverting supplies from the main rivers, (*c*) in four instances for the construction of dams across stream channels, and (*d*) two pumping schemes from natural watercourses. The total area included within these trusts amounts to 4,474,035 acres. In addition, twenty-eight trusts have been formed for the purpose of draining swampy lands, and rendering them fit for pastoral and agricultural purposes, and the area dealt with amounts to 119,265 acres.

Watering places are established on all the main stock routes of the State, and consist of tanks, dams, wells, and artesian bores. At the close of 1912 there were 668 public watering-places, consisting of 486 tanks and dams or reservoirs, 107 wells, and 75 artesian bores. Except at those dams and reservoirs which are of large extent and capacity, stock are not allowed direct access to the tanks, but are watered at troughs which are filled by means of service reservoirs, into which the supply is raised by various methods—steam, horse, or wind power. From the wells the water is mostly drawn by whims and self-acting buckets.

DAIRYING INDUSTRY.

Dairy Farming.

The dairying industry is now a very important factor in the wealth and prosperity of New South Wales. Although the first dairy farm for the manufacture of butter was established on the Nepean River, dairying as a profitable pursuit was in later years conducted mainly on the South Coast, in the Shoalhaven and Illawarra districts. For many years its progress was slow, and it was not until the introduction of the creamery and factory system that any great development occurred. With the manufacture of butter by machinery, and the perfection of the cold-storage system, the real business of dairying may be said to have begun.

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 was firmly established in the North Coast, especially on the Clarence and Richmond Rivers, and the advantages of the northern coastal rivers have induced a large migration from the South Coast district.

The following figures show the dairy production in each division of the State during 1912 :—

Division.	Dairy Cows in Milk at end of year.	Total yield of Milk.	Butter made.	Cheese made.
Coastal—	No.	gallons.	lb.	lb.
North Coast	252,048	98,892,962	39,019,903	280,660
Hunter and Manning ...	131,813	46,914,609	18,317,698	222,270
County of Cumberland	21,711	10,857,374	730,083	14,132
South Coast	89,039	33,230,880	9,845,357	4,254,926
Total	494,611	189,895,825	67,913,041	4,771,988
Tableland—				
Northern...	27,583	7,271,219	2,100,921	168,494
Central	18,860	4,980,411	1,322,788	108,791
Southern	13,367	3,121,497	917,471	12,720
Total	59,810	15,373,127	4,341,180	290,005
Western Slopes—				
North	16,434	4,915,880	1,035,093	153,452
Central	7,158	2,256,224	459,118	.....
South	17,657	5,426,651	1,899,436	239,210
Total	41,249	12,598,755	3,393,647	392,662
Western Plains—				
North	2,167	587,392	26,450	.....
Central	5,224	1,359,301	128,663	.....
Total	7,391	1,946,693	155,113	.....
Riverina	14,617	4,693,851	761,805	30
Western Division	3,052	937,958	44,742	.....
Total, New South Wales	620,730	225,446,209	76,609,528	5,454,685

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 generally carried on in conjunction with wheat-farming and sheep-raising, and sufficient fodder must be grown to carry the cattle through the winter months.

The system of share-farming has been applied to dairying chiefly in the northern coastal divisions. As a general rule the farm and stock are the property of one party, and the other conducts the farm work. In 1912 the area of dairy farms under this system was 83,611 acres, of which 16,204 acres were in the North Coast and 36,345 acres in the Hunter and Manning Division.

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. In the year 1912 the quantity made was 18,519 tons. The area of land devoted to sown grasses has been largely extended during recent years, and in March, 1913, it amounted to 1,152,449 acres. The produce of this land is principally used 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 1912 were as follows:—

Division.	Dairy Cows in Milk.	Area of land under Sown Grasses.	Ensilage made.
Coastal Division—	No.	acres.	tons.
North Coast	252,048	811,078	284
Hunter and Manning	131,813	110,092	430
County of Cumberland	21,711	4,164	1,860
South Coast	89,039	181,084	5,648
Total	494,611	1,106,418	8,222
Tableland Division—			
Northern	27,583	15,295	160
Central	18,860	5,443	434
Southern	13,367	2,710	14
Total	59,810	23,448	608
Western Slopes—			
North	16,434	5,923	918
Central	7,158	938	1,287
South	17,657	5,543	2,322
Total	41,249	12,404	4,527
Western Plains—			
North	2,167	80	.....
Central	5,224	3,570	1,443
Total	7,391	3,650	1,443
Riverina	14,617	6,274	3,719
Western Division	3,052	255	.....
Total, New South Wales ...	620,730	1,152,449	18,519

Yield of Milk.

The number of dairy cows shows a considerable increase since 1902, although several of the seasons were unfavourable; and, still more important, as is apparent from the following figures, there has been also an increase in their average yield of milk :—

Year.	Dairy Cows in Milk at end of year.	Production of Milk.	Average Yield of Milk per Cow.
	No.	gallons.	gallons.
1902	351,287	105,742,900	301
1903	362,429	129,966,100	359
1904	424,936	158,650,800	373
1905	442,950	162,918,600	368
1906	494,820	185,941,230	376
1907	506,395	183,303,474	362
1908	527,843	188,518,562	357
1909	566,378	201,183,337	355
1910	632,786	235,577,702	372
1911	638,525	237,623,000	372
1912	620,730	225,446,209	363

It would be more accurate to base the average yield on the mean number of cows in milk during the year. Owing, however, to the great difficulty in ascertaining that number, which depends not only on the actual number of cows, but on the length of time during which they were in milk, the average has been deduced as above, and probably is as accurate as can be obtained.

Almost as important as the average yield of milk is the percentage of butter-fat, and it is satisfactory to note that this has been well maintained throughout the period reviewed in the following table, which shows the quantity of butter made per 100 gallons of milk treated on farms and in factories :—

Year.	Quantity of Butter per 100 gallons of Milk treated.		
	On Farms.	In Factories.	On Farms and in Factories.
	lb.	lb.	lb.
1902	34·5	39·6	39·0
1903	34·5	39·7	39·1
1904	35·4	41·7	41·1
1905	34·0	41·5	40·7
1906	32·0	38·0	37·8
1907	32·4	39·8	39·2
1908	33·6	40·2	39·6
1909	33·2	38·7	38·2
1910	32·5	39·8	39·2
1911	33·0	42·9	42·2
1912	33·1	42·4	41·8

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, 225,446,209 gallons, produced in 1912 was treated :—

	Gallons.
Used on farms for making butter	12,601,510
,, ,, ,, cheese	2,025,292
Separated on farms, cream being sent to factories	169,552,020
Sent to butter factories or separating stations for butter	1,175,404
,, ,, ,, ,, ,, sweet cream ...	211,472
,, cheese factories	3,655,593
,, condensers...	1,056,140
Pasteurised at factories for metropolitan market	5,107,980
Balance sold or otherwise treated	30,060,798
Total	225,446,209

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 the last few 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 1902, the first year for which the information is available:—

Year.	Milk Separated for making Butter.			
	On Farms.		In Public Separating Stations.	Total.
	By hand.	By steam, &c.		
	gallons.	gallons.	gallons.	gallons.
1902	54,124,023	6,319,687	16,395,720	76,839,430
1903	76,419,864	5,771,980	16,857,395	99,049,239
1904	108,029,663	6,184,480	16,276,016	130,490,159
1905	103,438,591	7,577,972	19,347,767	130,364,330
1906	140,859,572	5,899,445	9,290,331	156,049,348
1907	142,843,911	3,775,899	6,488,604	153,108,414
1908	145,623,868	5,352,269	3,896,794	154,872,931
1909	156,189,009	5,962,492	2,302,239	164,453,740
1910	181,281,265	11,589,744	2,715,550	195,586,559
1911	176,983,192	17,835,035	2,162,984	196,981,211
1912	165,341,882	16,811,648	1,175,404	183,328,934

Production of Butter.

In order to show the enormous increase in the 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 years since 1902. 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.
1902	9,914,454	3,417,502	66,924,976	26,533,475	76,839,430	29,950,977
1903	11,859,529	4,094,150	87,189,710	34,632,957	99,049,239	38,727,107
1904	12,791,709	4,530,771	117,698,450	49,060,472	130,490,159	53,591,243
1905	13,640,534	4,576,076	116,723,796	48,464,174	130,364,330	53,040,250
1906	14,288,379	4,636,642	141,760,969	54,304,495	156,049,348	58,941,137
1907	12,750,602	4,128,256	140,357,812	55,913,193	153,108,414	60,041,449
1908	12,876,805	4,329,241	141,996,126	57,051,635	154,872,931	61,380,876
1909	14,562,520	4,840,049	149,891,220	58,025,559	164,453,740	62,865,608
1910	15,751,415	5,126,790	179,835,144	71,498,040	195,586,559	76,624,830
1911	14,034,132	4,631,585	182,947,079	78,572,983	196,981,211	83,204,568
1912	12,424,315	4,116,762	170,904,619	72,492,766	183,328,934	76,609,528

The proportion of factory-made butter in the total production has increased from 72 per cent. in 1895 to over 94 per cent. in 1912; 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."

Cheese-making.

The advance in cheese-making has not been commensurate with the expansion of the butter trade; in 1909 the quantity of cheese made was only 19 per cent. more than in 1896, but the production of butter had increased by 143 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. It is certain that the manufacture of cheese will never command the same attention as butter, owing to its great disadvantages as an article of export. Cheese matures quickly, and, unlike butter, cannot be frozen; and it decreases in value after a certain period. Moreover, it has only half the money value of butter, while the cost of freight is practically the same; so that it is not surprising that even where cheese can be produced in New South Wales under excellent conditions, its manufacture is not being greatly extended.

From a previous table showing the manufacture of cheese in districts it will be seen that cheese-making is practically confined to the South Coast; in fact, the quantity made in other parts of the State is becoming smaller each year. The South Coast production in 1912 was equivalent to 78 per cent. of the total in all divisions.

The following table shows, for each year since 1902, the production of cheese in factories and on farms:—

Year.	Production of Cheese.		
	In Factories.	On Farms.	Total.
	lb.	lb.	lb.
1902	2,691,439	1,456,599	4,148,038
1903	3,340,510	1,407,666	4,748,176
1904	2,677,830	1,545,791	4,223,621
1905	2,997,982	1,627,998	4,625,980
1906	3,459,641	1,929,704	5,389,345
1907	3,261,894	1,324,963	4,586,857
1908	3,260,389	1,502,971	4,763,360
1909	3,248,515	1,526,753	4,775,268
1910	3,892,506	1,298,583	5,191,089
1911	4,617,387	843,265	5,460,652
1912	4,428,304	1,026,381	5,454,685

As in the case of butter, the proportion of cheese made in factories is increasing.

Although the manufacture of cheese for export has many disadvantages, it is evident that these must apply to a similar extent in other countries, and it is, therefore, notable that there is a large import into this State.

Co-operative and Proprietary Factories.

Most of the factories dealing with dairy produce are established on the co-operative principle, which has steadily gained favour, until in 1912 over 84 per cent. of the factory butter was made in these establishments. The following figures showing a comparison of 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	69	35,572,428	6	624,775
1908	77	40,510,586	7	677,662
1909	86	43,914,116	8	853,420
1910	99	57,732,363	8	866,021
1911	101	64,454,197	8	992,829
1912	99	61,212,525	9	1,444,459
	Proprietary Factories.			
1907	91	20,176,712	21	2,101,155
1908	73	16,445,335	25	2,093,485
1909	64	13,931,907	22	1,895,686
1910	50	13,657,736	23	2,214,864
1911	50	13,967,315	20	2,493,090
1912	47	11,209,245	20	2,018,577

Other Milk Products.

In addition to butter and cheese, there are other milk products which might receive more attention than at present. The manufacture of condensed milk is an instance, as the local production is not sufficient, and large importations are necessary to supply the demand for this article. At present there are two factories in the State, situated at Bomaderry and Belford. A somewhat similar product, known as concentrated milk, is also being manufactured at these factories. This article will keep for months in cool chambers, and is used principally on ocean-going steamers. Being without sugar, it has all the richness and flavour of fresh milk, and consequently is more useful than condensed milk, which is not palatable to many people. The total quantity of milk used in the manufacture of the two products in 1912 was 1,056,140 gallons, and the output of the articles totalled 3,636,519 lb., valued at £49,394.

Swine.

The breeding of swine, which is usually carried on in conjunction with dairy-farming, has been very 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	1895	223,597	1906	243,370
1865	146,901	1900	256,577	1907	216,145
1870	243,066	1901	265,730	1908	215,822
1875	199,950	1902	193,097	1909	237,849
1880	308,205	1903	221,592	1910	321,632
1885	208,697	1904	330,666	1911	371,093
1890	283,061	1905	310,702	1912	293,653

The breeding of swine is an important factor in successful dairy-farming, but the number of stock has not kept pace with the increase in the quantity of milk available for pigs' food. A farmer who possesses his own cream separator can utilise the separated milk for the purpose of feeding pigs, and those who sell milk to a creamery can sometimes obtain separated milk without cost; in any case it can be purchased at about a farthing per gallon, a price which renders it a most economical food for pigs, provided that such crops as maize, rye, peas, mangolds, pumpkins, &c., are grown to supplement the milk diet. Under these circumstances, and as it is no uncommon thing for good bacon pigs to bring over £3 each in the open market, the breeding of swine must be a profitable pursuit. 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 1912, and the quantity of bacon and ham made:—

Division.	Swine.	Bacon and Ham cured.
	No.	lb.
Coastal—		
North Coast	104,927	7,037,620
Hunter and Manning	63,204	661,637
County of Cumberland	19,294	5,856,479
South Coast	31,328	685,291
Total	218,753	14,241,027
Tableland—		
Northern	10,133	447,925
Central	13,055	388,944
Southern	5,886	243,230
Total	29,074	1,080,099
Western Slopes—		
North	9,712	124,738
Central	5,403	181,608
South	11,058	439,254
Total	26,173	745,600
Western Plains—		
North	1,300	4,965
Central	3,652	88,355
Total	4,952	93,320
Riverina	9,571	349,892
Western Division	5,130	16,438
Total, New South Wales	293,653	16,526,376

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.

Bacon and Hams.

There is no reason why the production of bacon and hams should not be largely increased, as, except in rare instances, it has not hitherto been sufficient to meet local requirements. The production has varied with the seasons, but the general tendency is towards an increase, as may be seen from the following table:—

Year.	Production of Bacon and Hams.		
	Factory.	Farm.	Total Production.
	lb.	lb.	lb.
1901	7,392,060	3,688,831	11,080,891
1902	6,143,030	2,852,826	8,995,856
1903	5,664,492	2,200,279	7,864,771
1904	7,343,220	3,337,312	10,680,532
1905	6,931,217	4,721,223	11,652,440
1906	7,337,910	4,505,685	11,843,595
1907	7,240,685	3,117,841	10,358,526
1908	7,296,532	2,191,767	9,488,299
1909	7,856,466	2,074,911	9,931,377
1910	10,183,441	2,436,626	12,620,067
1911	13,393,536	2,709,291	16,102,827
1912	13,766,482	2,759,894	16,526,376

At present there are few factories devoted entirely to the curing of bacon and hams, and more bacon factories fitted with refrigerating machinery are required, so that curing may be continued during the summer months. In these central establishments, moreover, greater care could be exercised both in securing uniformity in the quality of the article and in cutting. For export the animals should be grown larger, as English bacon pigs weigh 300 or 400 lb. each. The pigs bred in this State are usually sold at from 60 lb. to 90 lb. weight, the majority being sent to the Sydney market alive. The average prices for pigs during 1912 are shown, with those of other live stock, in the chapter dealing with Pastoral Industry. Owing to the neglect to grow root crops for the purpose of feed during the winter, when milk is scarce, the demand for store pigs at the commencement of the summer is usually very great, and there is a corresponding glut of fat pigs at low prices as winter approaches.

LARD.

Statistics showing the total production of lard are not available; during the year 1912 the quantity made in bacon factories amounted to 598,753 lb., valued at £15,889, 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 1912 the oversea exports of lard, lard oil, and refined animal fat produced in New South Wales amounted to 163,409 lb., valued at £4,163, and the direct imports from oversea countries to 492,599 lb., value at £14,711.

DAIRY INSTRUCTION.

Educational and experimental work relating to dairying is conducted by the Department of Agriculture at several of the State institutions, notably at the Hawkesbury Agricultural College, at Wagga and Grafton Experiment Farms, and at the Wollongbar Dairy Farm in the North Coast, and at the Berry Stud Farm in the South Coast district.

The Berry farm is devoted to the breeding and raising of pure bred stock, and at Wollongbar and Grafton experimental work is done in connection with the cross-breeding of cattle; at Wagga Jersey cattle are bred. At each of these institutions and at the Hawkesbury College provision is made for students, and it is intended to establish a dairy school in connection with the Berry farm, where special courses of veterinary instruction will be given.

In order to enable factory managers and butter-makers to improve their scientific knowledge dairy science schools are held for short terms at different dairying centres.

A staff of instructors travel throughout the principal dairying districts during each year to give instruction and advice in cream-grading, butter and cheese-making, and all other matters connected with the industry.

Lectures and demonstrations in the theory and practice of milk and cream testing are given to senior pupils in State schools in the dairying districts.

HERD-TESTING ASSOCIATIONS.

Efforts are being made by the Department of Agriculture to encourage the organisation of herd-testing associations as a most effective means of improving the dairy herds and increasing the milk yield. In many localities the associations will be conducted in connection with the dairy

factories, where samples supplied by the farmers could be tested with a minimum of expense. Acting upon the results of the tests, the farmers would be enabled to cull unprofitable animals from their herds, and with stricter attention to breeding they should reap considerable benefit by reason of increased quantity and the higher quality of their products.

Exports of Dairy Products.

The following table shows the oversea exports of butter, cheese, and bacon during the last seven years. The export of bacon during 1910, 1911, and 1912 was much heavier than formerly, owing to the opening up in England of a market for heavy sides of green bacon, a class which is not suitable for local requirements :—

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	17,381,117	752,487	53,117	1,732	62,380	2,670
1910	27,047,481	1,223,518	82,294	2,413	500,296	14,551
1911	32,629,324	1,500,709	85,395	2,508	487,845	12,836
1912	20,456,300	1,076,851	84,866	3,219	377,352	11,498

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 has grown rapidly, and 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 seven 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

Butter from this State has attracted attention in London only in recent years; the great import and established reputation of the Swedish or Danish article had practically controlled the market. But the position is changing, so that 23 per cent. of all butter imported into the United Kingdom during the four months December, 1912, to April, 1913, was of Australian origin, and on many occasions Australian creamery butter has commanded a higher value than Danish.

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.	1909-1910.		1910-1911.		1911-1912.		1912-1913.	
	Top.	Bottom.	Top.	Bottom.	Top.	Bottom.	Top.	Bottom.
	1909.		1910.		1911.		1912.	
	s.	s.	s.	s.	s.	s.	s.	s.
August	*	*	*	*	119	113	114	112
September	120	104	116	112	122½	119½	118	114
October...	120	106	112	110	133½	131	119½	119½
November	114	113	107	104	127	124	114½	113½
December	110	108	103	101	129	127	117½	117½
	1910.		1911.		1912.		1913.	
January	122	110	106	104	131	128	112	112
February	117	113	102½	98½	129	127	111½	111½
March	122	118	101½	98	125	123	111½	111½
April	116	114	104	100	113½	111½	109	109
May	106	102	98	95½	107½	106	109	109
June	103	100	101	99	110½	110	107½	107½
July	102	100	*	*	107½	102	108	108

*No quotations.

The experience of the export trade shows that butter should be made, salted and coloured to suit the taste of the particular market for which it is intended. So long as the present standard is maintained, no doubt the product of this State will continue in its present demand, and there is no reason why further improvement should not be made by greater attention to detail.

In earlier years the difficulty in securing ocean freights during the export season constituted a severe drawback, but the trade has assumed such important dimensions that it is now the subject of keen competition among shipping companies, with consequent reduction in charges.

The freight on butter forwarded by mail steamers from Sydney to London during the seasons 1900-1 to 1904-5, was 3s. 6d. per box of 56 lb., while other steamers accepted shipments at rates varying from $\frac{5}{16}$d. to $\frac{3}{8}$d. per lb. For the season 1905-6 mail steamers contracted to accept 1s. 10d. per box, while other steamers charged $\frac{3}{8}$d. per lb., or 1s. 9d. per box. Since 1st January, 1908, the rates have been 2s. 6d. per box by mail steamers, except those of the Orient Company, by which the charge has been 2s. 4d. since the date of the mail contract with the Federal Government. The charge by all other steamers, including the cargo boats of the Peninsular and Oriental Company, is 2s. per box.

Dairying Industry.—Value of Production.

The value of the production from the dairying industry during 1912 was £5,219,000, to which may be added £539,000 obtained from the sale of swine, making a total of £5,758,000:—

	£
Butter	3,895,000
Cheese	168,000
Milk (not used for butter or cheese)	750,000
Milch cows	406,000
Swine	539,000
Total	£5,758,000

The value of dairy production in 1912 was £451,000 above the value in the previous year.

Machinery.

A list of dairying implements and machinery in use during 1911 was given in the Official Year Book of 1912. The value of farm implements and machinery used in the dairying industry during 1912 was £575,637.

A comparison of machinery used in rural industries is shown in chapter dealing with Agriculture.

Poultry-farming.

Poultry-farming has been conducted in past years in conjunction with the dairying industry, but the interests involved have become so important commercially, that a distinct industry relating to poultry alone has now been developed. Great attention is given to secure the most modern methods in the conduct of the farms, both as to the excellence of breeds for egg-producing and for table, and as to the treatment of the birds in view of expected profitable results. Information is not available regarding the full production, but a general estimate based on the accessible records shows the value for 1912 to be approximately £1,401,000.

A complete return regarding poultry and egg production in New South Wales is not available, but 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.
1908-9	2,736,986	234,870	25,631	193,613	4,514	11,305,299
1909-10	2,692,385	268,741	25,878	224,187	5,000	12,096,859
1910-11	3,092,375	325,550	28,980	244,456	5,015	13,204,904
1911-12	3,199,163	321,596	26,127	232,529	4,663	13,637,129
1912-13	3,351,639	261,075	23,948	216,274	5,988	13,768,865

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 by owners from all parts of New South Wales, the other Australian States, and New Zealand, and some have been sent from America.

By this means much valuable information has been gained by practical experiment and research; tests are arranged and records kept of results obtained from the various breeds of poultry and by different methods of treatment.

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 plantation and forestry purposes.

The total forest area, although not large, contains a great variety of useful timbers, which in hardwoods number about twenty different kinds of good commercial value, including such renowned constructive woods as ironbark, tallow-wood, and turpentine, whilst in soft or brush woods there are about twenty-five varieties, including such valuable timbers as cedar, beech, pine, and teak. It is estimated that, approximately, two-thirds of the timber supply consists of mixed hardwoods and one-third of soft and brush woods.

The earliest evidence of attention to State forestry is found in the publication of Timber License Rules in the year 1839; in 1871 the first timber reserves were notified; and in 1877 regulations were made as to the cutting and use of timber.

During the ensuing years little was done to protect the forest resources; timber was cut as requirements prompted, no heed being given to the necessity for systematic replacement to meet the wants of the future; and as there was no specially constituted body with powers of supervision or conservation, large tracts of country were denuded and much valuable timber destroyed.

Realising the necessity for remedial measures, the Government in 1907 appointed a Royal Commission to report upon the effectiveness of the forest laws, and to indicate what steps should be taken in the direction of afforestation and reafforestation.

The Royal Commission estimated that at the current rate of consumption local supplies of hard and soft wood timbers could last about forty-seven and twenty-eight years respectively; and recommended the passing of Forestry legislation, the strengthening of supervisory machinery, and the permanent dedication of all lands reserved for forestry purposes, for the preservation, growth, and regrowth of timber. Among other recommendations were the prohibition of export of certain timbers which are of special value locally for constructive purposes, the establishment of a Department of Forestry, the appointment of a Director of Forests, and the initiation of a vigorous policy of afforestation and reafforestation.

Following this report, the Forestry Act, 1909, was passed, establishing a Forestry Department, with a Director of Forestry and others officers.

The Government may purchase, resume, or appropriate land for the purpose of a State forest, and may dedicate Crown lands as State forests or timber reserves. Timber-getters' and other licenses are granted by the Minister's authority, and exclusive rights to take timber products from specified areas of State forest or timber reserves may also be granted.

Every person conducting a sawmill for the treatment of timber must obtain a license, keep books and records, and make prescribed returns. Royalty must be paid on all timber felled and on all products taken from any State forest, timber reserve, Crown lands, or lands held under any tenure from the Crown which require the payment of royalty; but such

royalty is not payable on timber exempted by terms of the license or by the regulations, or on timber required for use on any holding not comprised within a timber or forest reserve; allowance may be made also for any timber which is not marketable. Trees on any State forest, timber reserve, or Crown lands, with the exception of lands held under conditional lease granted before the passing of the Act, must not be ringbarked except under permit.

The Minister imposes conditions for afforestation and reafforestation in all exclusive rights or licenses.

The Act makes provision for regulations on the following matters:—Licenses, &c., and the fees and royalties payable; the periods and the conditions under which licenses, &c., may be granted; the protection and preservation of timber; the inspection, cutting, marking, and removal of timber; the kinds, sizes, and quantities which may be cut or removed; the conditions under which fires may be lighted in State forests; and the organisation of a system of education in scientific forestry.

The Act provides also for the classification of forest lands and for proclamation of State forests; and survey work is in progress for this purpose.

As an aid to forest management, arrangements are being made for the enrolment of forest cadets, and for the establishment of a training school with a curriculum of educational and scientific subjects.

A large amount of regenerative work has been done already in connection with the Murray River and the inland forests; experimental works have been started in various parts of the coast and highlands to test the reafforestative capacity of different classes of hardwood forest, and to ascertain the best methods of treatment; and stations have been selected for the promotion of afforestation by the establishment of State nurseries, with the object of utilising some of the waste lands of the State, of which about 300,000 acres are suitable for the purpose.

On 30th June, 1913, the total area of State lands reserved for the preservation of timber was 7,607,587 acres, as compared with 7,654,600 the previous year.

State Forest Nurseries and Plantations.

A State Forest Nursery is maintained at Gosford for the propagation of economic plants. The planted area is about 42 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, 1913, was as follows:—

Plantations—	
Attached to State Forest Nursery	1,665
Hogan's Brush	700
Tuncurry	25,300
Armidale	29,110
Departmental Grants	8,055
Agricultural Farms and Public Institutions	3,380
Exchanges	1,440
Total...	69,650

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 now being planted. Preliminary arrangements have been made to establish a wattle plantation for convalescent consumptives at Boonoo Boonoo, near Tenterfield. Experimental areas for reafforestative treatment have been selected near Grafton, Bellingen, and Coopernook; and reafforestation work was done during the year 1912-13 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.

The annual requirement for renewals and maintenance of existing railway lines is 470,000 sleepers; for duplications and deviations, &c., at the rate of 100 miles per annum, some 250,000 are required, making a total of 720,000 or nearly 14,000 per week.

Forest Industries.

During the year ended 30th June, 1913, there were 635 sawmills licensed. The employees numbered 5,590, and the value of plant and machinery was estimated at £597,097. The output of timber amounted to 162,604,000 superficial feet, valued at the mills at £1,111,976.

It is impossible to state accurately the annual value of production; but it has been calculated to represent, at the base of production, about £1,083,000.

Forestry Licenses and Permits.

The following return shows the licenses and permits current during the years 1912 and 1913:—

Description.	Amount of Fee.			Total Fees collected during year	
	Per Month.	Per Quarter.	Per Year.	1912.	1913.
	s. d.	s. d.	s. d.	£	£
Timber License (subject to Royalty).	2 6	7 6	.....		
Fuel License	5 0	10 0	40 0		
Products License ...	2 6	7 6	.....	6,810	6,841
Grazing Permit ...	1 0	.....	.....		
	(Subject to payment of agistment fees, as assessed by Forestry Officers.)				
Saw-mill License ...	.....	.....	20 0	669	609
	(When issued after 30th June in any year, 10s. for unexpired portion of the year).				
Special License ...	.....	7 6	30 0		
Occupation Permit ...	1 0	.....	.....	429	486
	(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 ...			643	661
			Total ... ... £	8,551	8,597

Timber Licenses.

The revenue collected by the State from Timber Licenses and from Royalty on timber during each of the last ten years is given in the subjoined table:—

Year.	Timber Licenses, &c.	Royalty on Timber.	Total.	Year.	Timber Licenses, &c.	Royalty on Timber.	Total.
	£	£	£		£	£	£
1904	6,388	27,995	34,383	1909	10,486	46,755	57,241
1905	7,540	30,414	37,954	1910	10,877	70,960	81,837
1906	9,199	38,981	48,180	1911	11,153	79,165	90,318
1907	9,955	45,775	55,730	1912	10,998	85,967	96,965
1908	10,546	46,583	57,129	1913	11,370	84,775	96,145

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 timber of New South Wales as to its great strength and durability.

Interstate Forestry Conferences.

Interstate Conferences of Forest Officers of Australia were held in 1911 and 1912, with the object of securing uniformity in procedure and administration. The subjects discussed include the following:—

Forest policy and legislation, training of Forest Officers, afforestation of waste lands, establishment of an Australian Forestry League, maintenance and extension of coniferous forests, fire protection, preservation of forest vegetation on mountain, water sheds, identification and uniform nomenclature of indigenous timbers, economisation of waste material, mixed planting of eucalypts, &c.

Tree-Planting by Local Authorities.

Under the Local Government Act, 1906, the functions of a Shire Council include the making of provision—

For the prevention or mitigation of bush-fires, including the organisation of bush-fire brigades.

For the construction and maintenance of streets, including tree-planting.

The primary functions of municipalities include the care and management of parks and recreation grounds, public reserves and commons, the care of which is not under any statute vested in other bodies or persons. A Council of a municipality or shire may plant trees in any public road or street; and may set apart and fence portions of public roads or streets as tree reserves.

Portion of the output of Gosford Sylvicultural Nursery is distributed to local authorities, but no records are available as to the extent of their tree-planting operations.

FISHERIES.

ALTHOUGH the waters along the coast of New South Wales teem with numerous varieties of fish, the fishing industry has not been developed commercially; the vast mineral resources and pastoral and agricultural potentialities of the State have presented more profitable avenues for the investment of capital, so that the development of the fisheries has been left mainly to a few individuals with limited capital and primitive appliances.

CONTROL OF THE FISHERIES.

Under the Fisheries Act, 1902, control of the fisheries of the State, previously administered by a Commission, was placed in the hands of a Board to supervise the industry, to carry out investigations likely to be of service, and to ensure observance of the regulations in regard to the dimensions of nets, closure of inland and tidal waters, net-fishing, and other such matters. Under an amending Act, in 1910, the Fisheries Board was dissolved, and its powers vested in a Minister of the Crown, the Chief Secretary being charged with the administration of the Act.

FISHING LICENSES.

A license must be obtained for his fishing boats, by every fisherman in tidal waters, the annual fee being 5s., which is reduced to half that amount if the license is issued after 30th June and before 1st December.

The number of licenses granted to fishermen during the year 1913 was 2,712, and of fishing-boat licenses 1,376; the fees received from these 4,088 licenses amounted to £932.

OYSTER LEASES.

For the purposes of oyster-culture, tidal Crown lands below an approximate highwater mark may be leased at yearly rentals, determined by the Minister, for every hundred yards of frontage; the areas are classified as average, special, or inferior lands.

The leases of average lands are for fifteen years, but may be renewed for a like period; no area upon which an aggregate rental of less than £5 per annum is payable, may be leased to any person not already an oyster lessee.

Leases of special lands are granted for areas of special value after the land has been offered by auction or tender, and are subject to the same conditions as leases of average lands, but need not be reduced along the approximate highwater mark.

Leases of inferior lands are granted for a term not exceeding ten years with the right of renewal for a further term of five years.

During the year 1913, applications for leases numbered 277, aggregating 82,769 yards; while at the end of the year the existing leases numbered 1,896, the length of foreshores held was 491,693 yards, and there were deep-water leases to the extent of 31½ acres. The deposits paid with the applications for leases amounted to £608, while the rentals received during the year for leased areas were £5,240. Licenses issued to oyster vendors numbered 315, the fees received being £296.

PRODUCTION.

The most important kinds of fish marketed are schnapper, bream, blackfish, whiting, mullet, jewfish, flathead, garfish, and Murray cod—a freshwater fish; salmon, tailer, trevally, and others are gradually gaining favour in the local markets.

Particulars regarding the marketing of fish and oysters are given in the chapter of this Year Book relating to Food and Prices.

Fish.—The amount of fish delivered to recognised distributing markets during the year 1913 totalled 161,576 baskets, or, approximately, 12,118,219 lb. In addition, a quantity equal to about 969,374 lb. is recorded as having been sold in various fishing centres in coastal areas, but these figures are incomplete. A basket of fish is calculated at 75 lb. weight, although an average of actual baskets would probably give about 84 lb. net, but included with the above totals are many boxes of fish which reduce the net average.

As usual the bulk of the supplies came from the estuaries and lakes on the northern half of the coast-line. A small proportion (schnapper, chiefly) came from the ocean, this being principally the produce of the long-line ("Jacob") fishery. The six most important sources of the fresh fish supply were:—

Clarence River	2,908,500 lb.	Tuggerah Lakes... ...	856,200 lb.
Port Stephens	1,262,400 ,,	Lake Macquarie ...	818,850 ,,
Cape Hawke (Wallis L.)	1,029,900 ,,	Lake Illawarra	808,125 ,,

Notwithstanding the immense shipping development and consequent increase of traffic, and the large reclamation of foreshores of Port Jackson of recent years, it is of special interest to note that the marketed production from this source was as much as 304,650 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 1913 was 108,965; the number captured was very much greater, but many were lost by death before marketing. The principal source of supply was the northern crayfish grounds, from Newcastle to Port Macquarie. In addition, the records of local sales show that 7,824 were disposed of; these figures, however, are incomplete, as they do not cover the whole coast.

Prawns.—A quantity of 5,977 baskets, or, approximately, 239,080 quarts, of marine prawns (*Penæus*) was marketed during 1913. Local returns (incomplete as before mentioned), show an additional production of 43,747 quarts.

Crabs.—A large number of edible crabs were marketed. These comprised several species of swimming-crabs, notably the Blue (*Lupa*) and the Mangrove (*Scylla*).

Oysters.—For the year 1913, the oyster production of the State amounted to 19,899 sacks, equivalent to about 27,959,600 of the "Rock" Oyster (*Ostrea cucullata*). This output was principally the result of artificial cultivation. During the years 1900-04 the production was low, as the result of undue depletion of the natural beds; subsequently methods of artificial cultivation were more generally practised and the output increased steadily, reaching the maximum 21,053 sacks, in 1911. The output of that year, however, cannot be regarded as normal because the demand was very great, and it is probable that many growers were induced to market stock at a smaller size than usual.

Whaling.—The year 1912 saw a great revival of whaling on the waters lying on the seaboard of New South Wales. The operations, being carried out under the modern conditions, were totally unlike the old-time whaling, and species of whales were captured which were seldom taken in former times.

During September, the Whaling Factory s.s. "Loch Tay," a large steamer of 8,000 tons, with two accompanying whale gunboats (joined later by a third), started operations from Jervis Bay. Work was conducted for about two and a half months, and no less than 158 whales were captured, comprising the following species, with their respective numbers:—Blue (*Sulphur-bottom*), 60; Humpback, 52; Finback, 24; Pollack Whale (*Seihval*), 21; Sperm, 1. Approximately 3,500 barrels (583⅓ tuns) of oil, valued at £11,670 were taken, and a large quantity of the inferior grades of whalebone was obtained, also some spermaceti. During 1913 operations were begun in May, and the season which included nearly two months of very bad weather closed in November with 329 whales, yielding 16,000 casks of oil; the kinds and numbers of whales taken in 1913 were, Humpback, 204; Blue, 68; Finback, 39; Seihval, 17; Sperm, 1, One Blue whale yielded no less than 150 casks of oil (value,£520), and another 70 casks. Both of these whales were about 90 feet in length. The blue whales averaged 25 casks of oil each, but this average was reduced on account of the poor condition of some of the whales, which appeared to be diseased and practically devoid of blubber. The Humpbacks proved the most valuable, averaging 40 casks with a maximum of 60 casks. Finbacks averaged 18 casks and Seihval about 9, the maximum being 30 and 20 casks respectively. The production would have been much greater, but, owing to insufficiency of labour, many carcases were not treated for oil and some thousands of bags of a valuable fertiliser, which might have been prepared from the offal, were entirely lost. In all future operations, full provision should be made for the economic treatment of every portion of the whale's carcase.

The Humpbacks and Finbacks were seen mostly from 8 to 30 miles off Jervis Bay lighthouse; Blue, from 2 to 6 miles; and Seihval, from 8 to 20 miles.

Thirty-one Sperm whales were taken in the southern part of the Tasman Sea, and from one of these whales a piece of ambergris worth £10,000 was taken.

During the short period that the "Loch Tay" and her attendants were at work in 1912, a smaller Factory Ship, the "Polynesia," accompanied by two steam whalers arrived, but only remained for a short time. Some whales were taken, but the number is at present unknown.

The small shore station at Eden, Twofold Bay, famous as the locality where the whalers are assisted in their captures by the "Killers" or Killer-Whales (*Orca*), accounted for 5 whales (Humpbacks), producing 11 tuns of oil during the 1913 season. Except for the removal of the blubber the carcases were not treated. With modern appliances at this locality a big industry would be possible, but at present the whole outfit consists of a 5-oared whale-boat and an oil launch, with hand-lances, harpoons, and bomb-guns.

There is ample scope on the coast of the State for two shore stations, working under modern conditions, with two steam whaling gunboats each. The season begins about June and ends about November—though whales may be taken before and after that period.

Dolphin Fishing.—Some attention has been given to the Dolphin (porpoise) fishery, and there has been a material advance in development

lately. The dolphins are harpooned from a swiftly moving motor launch; at present the teeth only are saved, each dolphin yielding on an average, about 160; the teeth are used as currency in certain Pacific Islands, and are worth about 10s. per hundred to the captors. The returns of the Fisheries Department, show that a total of not less than 360,000 teeth were obtained during 1912. Probably the demand for these teeth will decline, but, in the meantime, the pursuit of the dolphin is helping the development of ocean fisheries.

General.—There is a small consumption of marine mussels, cockles, and whelks, various squids and octopi and the "Mutton Fish" or "Ear-shell" (*Haliotis*), but they are not of great importance in the food supply. In the western areas of the State there is a fair consumption of the Freshwater Crayfish (*Astacopsis*), which attain a large size; a few are sent to Sydney markets.

Value of Production.

Excluding (1) crayfishes and prawns sold locally in coastal districts and not recorded, (2) the product of the crab fishery, (3) freshwater crayfishes ("Lobsters") and shrimps sold in country districts, (4) molluscs other than oysters, and (5) a small amount of fish used for fertiliser and oil, the value of the production from fisheries of New South Wales for the year 1913 was approximately £271,543, made up as follows:—

	£
Fresh Fish...193,892 baskets	155,114
Crayfish ... 9,732 dozen	4,379
Prawns ... 7,070 baskets	7,070
Oysters ... 19,899 sacks	44,773
Whaling ... 16,000 barrels (2,667 tuns) of oil	56,007
Low-grade Whalebone (Blue, Humpback, Finner)	1,500
Dolphin Fishing—Teeth approx. 300,000	1,500
Fish fertiliser	1,200
Total Value	£271,543

The value of fish, fresh and preserved, imported into the State of New South Wales during 1913 was £273,667.

Fish Preserving.

The fishes especially suitable for treatment by canning, smoking, or salting include pilchard, sandy sprat, anchovy, tailer, samson fish, cowanyung, kingfish, trevally, mackerel, bonito, little tunny, southern tunny, and Spanish mackerel. Canneries have been established at various times in New South Wales, but the irregularity of supplies under present conditions has militated against their success.

Under the Bounties Act (Commonwealth), provision has been made to foster the fishing industry by subsidising the fish-preserving industry. To qualify for bounty, the fish preserved must have been caught by white labour only, in waters and under conditions prescribed. The bounty is fixed at ½d. per lb., and is payable for ten years from 1st July, 1907, with a maximum aggregate of £10,000 in any one year.

Fisheries Investigation.

In 1898 the s.s. "Thetis" was equipped by the Government to conduct an extensive investigation of the waters along the coast of New South Wales. The outcome of the expedition was a considerable addition to the knowledge of Australian deep-sea fauna, but from a commercial point of view no practical results were obtained.

Subsequent to the appointment of the Fisheries Board comprehensive investigations were undertaken regarding rates of growth, life conditions, and habits of various fishes, prevailing currents, and their correlation to spawning migration, location of spawning grounds, &c., and acclimatisation of species not indigenous to Australian waters.

In 1907 the Commonwealth Government decided to conduct investigations regarding Australian deep-sea fisheries, and the Federal ship "Endeavour" was built for the purpose. Operations were commenced in March, 1909, trawling being the principal method used. As the result of cruises along the New South Wales coast it has been demonstrated that trawling is commercially possible over large areas of the sea bottom particularly to the south of Sydney.

Fish Culture and Acclimatisation.

Experiments in the acclimatisation of non-indigenous fishes, such as carp, perch, and trout, have met with success in New South Wales, particularly in regard to Californian rainbow trout, which has been introduced in many mountain streams. Trout fishing now constitutes an important attraction for tourists and sportsmen in the districts watered by the Murrumbidgee and Snowy Rivers and their tributaries. A trout hatchery is maintained at Prospect, and considerable numbers of young fry are distributed annually.

Potentialities of New South Wales Fisheries.

It is easily possible, without exhausting the grounds, to obtain a greatly increased output of fresh fish from the coastal lakes and estuaries, which now constitute the principal sources of supply. Increased and greater facilities for transport, and improved methods of handling the fish on arrival at the markets, to avoid loss of time in reaching the consumer, would provide regular daily employment for many fishermen, who, under present conditions, work intermittently. The output of Murray cod from the waters of the Murray River system would greatly increase, if more convenient transport arrangements were made. It is not in these places, however, that the most extensive development may be expected, but in the ocean waters, and chiefly among the immense shoals of deep-sea fish such as great Tunnies, Spanish Mackerel, Bonito, Mackerel, Kingfish, Tailer, Salmon, and many other truly pelagic fishes, which travel in large shoals. There are also immense quantities of Pilchards, Sprats, and other "Herring-kind," as well as Sea Garfish and others.

For the capture of these fishes special surface-nets, like the American purse-seine, the drift-net, surface trawls, &c., are most suitable.

In addition to the surface fisheries, bottom fishing, by means of the long-line ("Jacob" or Bultow) the trammel-net and the trawl-net, is capable of large development. A very considerable section of the 8,960,000 acres of bottom lying within the 100-fathom line is known to be suited to the

operation of the trawl-net. The experiments of the "Endeavour," the "Thetis," and of other vessels, have clearly shown that suitable conditions exist, and justify the opinion that well-planned trawling operations would be successful.

Crayfishing is also capable of great development, but better means of handling during transport must be introduced to prevent the present waste.

The development of the oyster industry depends simply on a diffusion of that knowledge of successful oyster culture which has begun to manifest itself recently among a number of oyster growers. With intense cultivation, it is not too much to say that one locality—Port Stephens—could produce in one year the whole of the present output of New South Wales.

There is opportunity for the development of a large Mussel fishery as this mollusc may be easily and successfully farmed in a somewhat similar way to oysters, and, in many cases, in waters or in zones of the littoral in which the oyster will not flourish.

The Whaling Industry also may be expected to improve as a result of the work already conducted at the latter end of 1912; 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), and tiles, as well as empty oyster and other shells.

The available zone of oyster growth is governed largely by the density of the water and varies in the different waters, and in various sections of the same water. Oysters cannot live permanently in water that is either very fresh or very salt, but must have a certain admixture of both. In localities in which the entire body of water is suitable for oyster growth, there is no limit nor zone in the oyster beds; and they may commence near the limits of high-tide, and extend continuously across the bottom of the bed of the estuary to the opposite shore. In the lower, and salter, parts of estuaries and other coastal inlets, the oysters are found to occur in a very narrow and limited zone—usually between tide-marks only. Instances of this may be seen in the Lower Hawkesbury (Broken Bay), Middle Harbour (Port Jackson), Port Hacking, and on the training walls at the entrances of some of our rivers.

The food of the oyster consists principally of the microscopic plants known as *Diatoms,* which occur in profusion in estuarine waters and wherever there is a soakage from the shore.

The local distribution of growing oysters, in a natural state, depends primarily on two things—Density of the water, and suitability of the bottom; but their local distribution under proper systems of cultivation depends principally on the former only, as it is often possible by artificial means to render bottom suitable, and oysters may be made to grow profusely in many localities in which they would not grow naturally. For instance—and this is only one of many varied cases that might arise—a bottom may consist of soft squelchy mud in which, if placed there, the oyster would gradually sink out of sight. In such a case it may be necessary only to spread a good layer of old oyster or other molluscan shells over the mud bottom. Many intending lessees are misled by first appearances, and are inclined to take up only areas which already show a good deposit of oysters, whereas there may be abundant signs of the suitability of other areas which have few or no oysters upon them.

There are many oyster areas which show great natural recuperative powers even after serious depletion, but usually a good deal of artificial cultivation is necessary to obtain the new stock in a reasonable time after the first natural stock has been thinned out.

Oysters attain their greatest perfection and size in the vicinity of muddy bottoms or bottoms of mud and sand, but not on pure sand. Their food supply is most aboundant in the vicinity of the mud.

Oysters show an enormous fecundity; each one of 2 inches or more in length produces many millions of ova each year, the power of production increasing with size. They also become sexually mature at a very early age, and have been found containing ripe eggs when only three months old. The wonderful fecundity often leads to the belief that a rapid recuperation should always naturally follow the thinning out of oyster beds, and that a few mature oysters should be able to do the work. But, on the contrary, enormous fecundity is an unfailing sign of correspondingly enormous destruction. Millions of oyster spat are deposited, which last only a few days, and countless millions of eggs are destroyed at once. At the outset, and when spawning actually takes place, the destructive influences are infertile eggs, unsuitable water, unsuitable catchment and microscopic enemies; while a large number of the eggs and motile embryos are consumed by the oysters themselves. The common oyster is diœcious, or bisexual.

Even after the spat has gone through its short free swimming existence, and has settled down, it is surrounded by enemies—both active and passive. Among the numerous active enemies are various fishes, boring molluscs, worms, starfishes, and a boring sponge. Among the passive forms may be included vegetable and animal growths in the shape of seaweed, barnacles, mussels, &c., which grow round and gradually envelope the oyster. Other detrimental conditions are the times of unsuitable water, when there are either prolonged freshets or periods of drought in which the water becomes too salt.

Growth of Oysters.—There is no fixed period for the growth of the oysters. Some attain a marketable size in fifteen months, while others might take three, four, or five years to attain the same size; or, indeed, might be so dwarfed as never to attain the size. Oysters that are submitted to a pro-

longed existence in water of too strong a density always become stunted. The average time taken to produce a marketable oyster ranges from two to three years approximately.

Persons Employed in Oyster Culture.

At the end of December, 1912 (the latest figures available), there were 427 men and youths employed in connection with the actual business of oyster cultivation, on the leases. These include 24 youths below the age of 18, and excludes casual employees and lessees not permanently engaged on their leases.

Boats in Use.

The number of boats employed in oyster work at the end of 1912 was 492. In the general term "boats" are included punts of various shapes and sizes, ordinary pulling or sailing boats, and motor launches. The actual number of launches was 69.

Gear used in Oyster Culture.

At the end of 1912, the total value of the gear used in the business of oyster culture in New South Wales waters was £18,169.

EMPLOYMENT AND INDUSTRIAL ARBITRATION

EMPLOYMENT.

Age Distribution.

THE age limits within which the working force of the population of New South Wales is found are fixed fairly definitely. 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 lies naturally for the majority of the population within the age group 60-65, and is, for all practical purposes, definitely fixed by the fact that old-age pensions are claimable from the Commonwealth Government on attainment by females of age 60, and by males of age 65. The population as at the census of April, 1911, classified in working and non-working or dependent ages—*i.e.*, infancy and old age—and exclusive of the population of the Federal Territory situated within the boundaries of New South Wales, was as follows:—

Age Groups.	Population.			Percentage of Total.		
	Males.	Females.	Total.	Males.	Females.	Total.
Working ages—						
14-20	116,397	113,347	229,744	7·1	6·9	14·0
21-29	146,174	138,305	284,479	8·9	8·4	17·3
30-39	119,349	110,604	229,953	7·2	6·7	13·9
40-49	97,578	81,038	178,616	5·9	4·9	10·8
50-59	66,889	50,869	117,758	4·1	3·1	7·2
60-64	20,023	.....	20,023	1·2	...	1·2
Total	566,410	494,163	1,060,573	34·4	30·0	64·4
Non-working ages—						
Under age 14 ...	250,430	244,584	495,014	15·2	14·9	30·1
60-64	.....	16,352	16,352	...	1·0	1·0
65 and over ...	36,368	30,134	66,502	2·2	1·8	4·0
Total	286,798	291,070	577,868	17·4	17·7	35·1
Unspecified ...	4,490	3,803	8,293	·3	·2	·5
Total, all ages ...	857,698	789,036	1,646,734	52·1	47·9	100·0

At per thousand persons in the population, 644 constituted the potential labour force, 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 actually classed as breadwinners numbered only 431 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.
Occupational Groups	575,300	134,612	709,912	34·93	8·18	43·11
Independent ...	5,507	3,401	8,908	·33	·21	·54
Dependent	265,731	650,480	916,211	16·14	39·50	55·64
Unspecified ...	11,160	543	11,703	·68	·03	·71
Total	857,698	789,036	1,646,734	52·08	47·92	100·00

The persons for whom precise occupations were unspecified, constituting less than three-quarters of 1 per cent. 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—active breadwinners in occupational groups, and dependents, the latter class, of course, including married women and other persons engaged in services for which no money-wage is paid—*e.g.*, domestic duties.

Roughly, there were for each person who was independent 100 who were dependent, and 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 population, excluding unspecified persons, was distributed in the occupational groups as follows:—

Class.	Occupational Population.			Percentage of Total Population.		
	Males.	Females.	Total.	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
Total ...	575,300	134,612	709,912	34·93	8·18	43 11

Class and Status.

For males, excluding the classes, dependent and independent, the occupational records derived were as follows:—

Class.	In Employment.				Unemployed.	Total.	Others.		Total.
	Proprietors.		Assistants.						
	Employing Labour.	Non-Employers.	Remunerated.	Unremunerated.			Not Applicable	Not Stated.	
Professional	3,041	3,324	25,870	45	388	32,668	3,940	155	36,763
Domestic	3,304	1,168	12,732	190	696	18,090	728	82	18,898
Commercial	12,015	10,180	57,767	610	1,891	82,463	5,273	472	88,208
Transport and Communication	2,216	3,558	51,192	277	1,393	58,641	1,366	360	60,367
Industrial	14,750	6,138	135,104	436	7,617	164,045	7,198	678	171,921
Primary Producers ..	33,080	25,170	110,358	16,247	3,544	188,399	3,552	7,192	199,143
Unspecified	176	138	593	2,582	676	4,165	4,745	2,250	11,160
Total	68,582	49,676	393,616	20,387	16,210	548,471	26,800	11,189	586,460

In this classification of population, inmates of hospitals, charitable or penal establishments, etc., have been classed according to their usual avocations, when such was indicated.

For females, the classification on the same basis was:—

Class.	In Employment.				Unemployed.	Total.	Others.		Total.
	Proprietors.		Assistants.						
	Employing labour.	Non-employers.	Remunerated.	Unremunerated.			Not Applicable.	Not stated.	
Professional	321	4,679	11,215	63	262	16,540	2,682	155	19,377
Domestic	1,600	1,789	47,658	812	1,466	53,325	999	159	54,483
Commercial	879	1,694	12,102	890	312	15,877	2,119	116	18,112
Transport and Communication	40	5	1,536	7	5	1,593	4	..	1,597
Industrial	1,612	4,067	28,967	195	582	35,423	316	354	36,093
Primary Producers ..	1,177	586	249	2,779	..	4,791	15	144	4,950
Unspecified	43	7	88	123	73	334	14	195	543
Total	5,672	12,827	101,815	4,869	2,700	127,883	6,149	1,123	135,155

For the whole working population, male and female, the records summarised are as follows:—

Class.	In Employment.				Unemployed.	Total.	Others.		Total.
	Proprietors.		Assistants.						
	Employing labour.	Non-employers.	Remunerated.	Unremunerated.			Not applicable.	Not stated.	
Professional	3,362	8,003	37,085	108	650	49,208	6,622	310	56,140
Domestic	4,904	2,957	60,390	1,602	2,162	71,415	1,725	241	73,381
Commercial	12,894	11,874	69,869	1,500	2,203	98,340	7,392	588	106,320
Transport and Communication	2,256	3,563	52,728	284	1,403	60,234	1,370	360	61,964
Industrial	16,362	10,205	164,071	631	8,199	199,468	7,514	1,032	208,014
Primary Producers ..	34,257	25,756	110,607	19,026	3,544	193,190	3,567	7,336	204,093
Unspecified	219	145	681	2,705	749	4,499	4,759	2,445	11,703
Total	74,254	62,503	495,431	25,256	18,910	676,354	32,949	12,312	721,615

Occupational Status.

The classification, as regards occupational status, emphasises the preponderance of assistants, as compared with proprietors. The categories following include persons unspecified in previous tables as to occupational class:—

Status.	Persons.			Percentage of Total Population			Percentage of Active Bread-winners.		
	Males.	Females	Total.	Males.	Females	Total.	Males.	Females	Total.
Proprietors—									
Employers	68,582	5,672	74,254	4·16	·34	4·50	10·14	·84	10·98
Non-employers	49,676	12,827	62,503	3·02	·78	3 80	7·34	1·90	9·24
Assistants—									
Remunerated	393,616	101,815	495,431	23·90	6·18	30·08	58·20	15·05	73·25
Unremunerated .. .	20,387	4,869	25,256	1·24	·30	1·54	3·01	·72	3·73
Unemployed	16,210	2,700	18,910	·99	·16	1·15	2·40	·40	2·80
Total Active Breadwinners..	548,471	127,883	676,354	33·31	7·76	41·07	81·09	18·91	100·00

Proprietors represent 8·3 per cent. of the total population, or 20·22 per cent. of active breadwinners. Assistants represent 31·62 per cent. of total population, or 76·98 per cent. of active breadwinners.

Proprietors were grouped in occupational classes as follows:—

Class.	Employers.			Non-employers.			Total.		
	Males.	Females	Total.	Males.	Females	Total.	Males.	Females	Total.
Professional	3,041	321	3,362	3,324	4,679	8,003	6,365	5,000	11,365
Domestic	3,304	1,600	4,904	1,168	1,789	2,957	4,472	3,389	7,861
Commercial	12,015	879	12,894	10,180	1,694	11,874	22,195	2,573	24,768
Transport and Communication	2,216	40	2,256	3,558	5	3,563	5,774	45	5,819
Industrial	14,750	1,612	16,362	6,138	4,067	10,205	20,888	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 Communication	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

Age and Occupation.

For the Commonwealth of Australia the census records show the population classified according to age and occupation, but detail figures are not published to enable this relation to be displayed for the State of New South Wales.

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:—

Census.	Non-working Ages.							Working Ages.			Unspecified.		
	Under 14 Years.			Males, 65 years and over; Females, 60 years and over.			Total. Non-working all ages	Males. 14–64.	Females 14–59.	Total.	Males.	Females	Total.
	Males.	Females	Total.	Males.	Females	Total.							
1901	17·0	16·6	33·6	2·0	2·3	4·3	37·9	33·2	28·6	61·8	·2	·1	·3
1911	15·2	14·9	30·1	2·2	2·8	5·0	35·1	34·4	30·0	64·4	·3	·2	·5

The figures for 1911 are exclusive of the population in the Federal Territory. The increase of nearly 3 per cent. in the working-age group reflects the results of the encouragement of immigration throughout the latter half of the decennium.

Dependency.

In the history of a young community in process of development a ten-year period represents, relatively to more stable communities, an epoch marked by considerable changes, and it is natural to expect the recorded figures to reflect these variations between the periods. Taking two groups of bread-winners, including persons of independent means and indefinite occupations and dependents, but excluding the comparatively small class of those whose occupations were not recorded, the proportion in each class per cent. of the total population at the respective census dates between 1861 and 1911 was remarkably constant:—

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.

The following tables enable a general comparison of class variation as recorded at each census since 1871:—

Census.	Specific Occupations.		Indefinite, chiefly Independents.		Dependents.		Unspecified.		Total.		Total.
	Males.	Females	Males.	Females	Males.	Females	Males.	Females	Males.	Females	
1871	169,404	35,208	1,916	1,165	99,820	190,854	4,411	1,208	275,551	228,430	503,981
1881	259,060	52,713	3,631	2,250	145,410	282,510	3,048	2,846	411,149	340,319	751,468
1891	377,779	83,885	4,606	5,617	223,711	425,960	1,907	499	608,003	515,951	1,123,954
1901	447,806	107,469	3,597	5,927	256,634	531,164	1,968	281	710,005	644,841	1,354,846
1911	575,360	134,612	5,507	3,401	265,731	650,480	11,160	543	857,698	789,036	1,646,734

Reduced to percentages of the total population the variations are more readily perceptible:—

Census.	Specific Occupations.			Indefinite and Independent.			Dependent.			Unspecified.		
	Males.	Females	Total.	Males.	Females	Total.	Males.	Females	Total.	Males.	Females.	Total.
1871	33·60	6·99	40·59	·38	·23	·61	19·81	37·87	57·68	·88	·24	1·12
1881	34·47	7·02	41·49	·48	·30	·78	19·35	37·59	56·94	·41	·38	·79
1891	33·61	7·46	41·07	·41	·50	·91	19·90	37·90	57·80	·17	·05	·22
1901	33·05	7·93	40·98	·27	·44	·71	18·94	39·20	58·14	·15	·02	·17
1911	34·93	8·18	43·11	·33	·21	·54	16·14	39·50	55·64	·68	·03	·71

The noticeable feature in these records is the persistent increase in the proportion of females in specific occupations, from 6·99 per cent. in 1871 to 8·18 per cent. in 1911; the increase in the proportion of males in specific occupations between 1901 and 1911 reflects the degree to which the encouragement of immigration has added to the male labour force.

Specified Occupations.

In regard to specific occupations, the grouping at each census was as follows:—

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	26,255	14,529	36,703	19,377
Domestic	8,721	16,507	12,689	25,000	17,764	38,249	20,128	52,690	18,898	54,423
Commercial	23,119	2,473	41,441	4,194	50,937	4,782	67,097	10,567	88,408	18,112
Transport and Communication	....	....	....	....	34,208	500	42,322	1,645	60,367	1,597
Industrial	49,316	6,126	97,293	10,326	118,998	17,819	122,092	23,996	171,921	36,093
Primary Producers ..	81,431	8,027	98,091	8,965	134,846	12,178	168,212	4,642	199,143	4,950
Agriculture ..	45,733	6,361	60,365	6,520	66,478	7,022	75,834	1,735	77,599	1,636
Pastoral .	17,169	1,666	17,333	2,385	27,212	334	31,312	595	69,724	3,266
Dairying ..	....	....	....	....	4,996	4,758	15,850	2,295		
Mining	18,529	....	18,393	....	20,936	1	33,378	4	39,551	23
Forestry }	....	....	....	....	5,224	3	6,788	23	6,358	6
Other .. }									5,911	19
Total	169,404	35,208	259,060	52,713	377,779	83,885	447,806	107,469	575,360	134,612

The figures and classification for 1871 and 1881 are, as stated previously, hardly on a 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 Communication ...	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 sub-classes of primary producers show the aggregate proportion, made up as follows:—

Primary Producers.	1891.		1901.		1911.	
	M.	F.	M.	F.	M.	F.
Agriculture	14·40	1·52	13·67	·31	10·93	·23
Pastoral	5·89	·07	5·64	·11	9·82	·46
Dairying	1·08	1·03	2·85	·41		
Mining	6·70	·00	6·91	·00	5·58	·00
Forestry	1·14	·00	1·22	·01	·90	·00
Other					·83	·01
Total	29·21	2·62	30·29	·84	28·06	·70

Annual Records of Primary and Manufacturing Industries.

For the intervals between the census periods, records as to the numbers of persons in occupations are restricted to the primary industries, and to the manufacturing section of the industrial group, concerning which groups annual returns are collected in this Bureau of Statistics. The following are the figures showing persons permanently employed in the principal industries of the State since 1903. In regard to women and girls engaged in agriculture and dairying, it must be remembered that the majority are only partly so employed, in conjunction with, or in addition to, their usual domestic duties. In the manufacturing industry, employees in establish-

ments where no machinery is used are not recorded, unless at least four persons are engaged:—

Year.	Agricultural.		Dairying.		Pastoral.	Mining.		Manufacturing.	
						Metal.	Coal and Shale.		
	Males.	Females.	Males.	Females.	Males.	Males.	Males.	Males.	Females.
1903	65,213	5,948	13,208	12,331	26,051	23,442	14,117	52,453	13,180
1904	63,111	5,742	17,041	13,750	27,886	23,691	14,146	53,457	14,579
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

There has been during the whole period a steady increase in the labour permanently employed in all the principal industries, with the exception of agriculture and metal mining. The 1912 figures for dairying show a perceptible reduction in comparison with the two previous years which were, however, years of abnormal activity.

The retrogression in agricultural labour is probably more apparent than real, production having increased considerably; 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.

A noticeable feature of the table is the rapidly-increasing extent to which women and girls are employed in factories, the numbers having more than doubled between 1903 and 1912; while the increase in the number of men and boys employed also was maintained steadily, though it is very evident that the two rates of progression are not comparable. This condition is discussed in detail in Part Manufacturing Industry, of this volume. The decline in the number of metal-miners since 1906 is a true reflex of the effect of low prices current for metals. 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, and though not maintained in 1912, the figures for the latter year were in excess of any other year under review.

Grouping the figures shown above in Primary and Secondary Industries, the following results are obtained:—

Year.	Primary.					Secondary	Primary and Secondary.	
	Males.			Females.	Total.	Manufacturing.		
	Rural.	Mining.	Total.	Rural.		Total.	Males.	Females.
1903	106,472	37,559	144,031	18,279	162,310	65,633	196,484	31,459
1904	108,638	37,837	146,475	19,492	165,967	68,036	199,932	34,071
1905	111,625	38,932	150,557	19,817	170,374	72,175	206,668	35,881
1906	117,522	42,546	160,068	21,341	181,409	77,822	220,047	39,184
1907	120,106	43,758	163,864	20,809	184,673	86,467	229,817	41,323
1908	119,836	38,965	158,801	22,317	181,118	89,098	226,417	43,799
1909	123,769	36,405	160,174	22,573	182,747	91,702	229,358	45,091
1910	126,548	37,413	163,961	24,632	188,593	99,711	239,345	48,959
1911	129,174	37,017	166,191	25,204	191,395	108,624	248,270	51,745
1912	127,414	37,858	165,272	24,218	189,490	115,561	253,450	51,601

Contrasting Primary and Secondary Industries as above, it is noticeable that the Primary Industries experienced no adverse periods in 1908 and 1909, and in 1912, when the numbers employed showed decreases as compared with the figures for the year immediately preceding. In no case, however, did the decrease reflect in the secondary group.

Reviewing the proportional increases under each head as between 1901 and 1911, and 1912, 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, following are the figures marking the relative positions in 1911 and 1912:—

	1911.			1912.		
	M.	F.	Total.	M.	F.	Total.
Primary—Rural	124	132	125	123	127	123
Mining	101	...	101	103	...	103
Total ...	118	132	120	118	127	119
Secondary—Manufacturing ...	151	227	164	162	235	174
Total	127	168	133	130	168	135

Seasonal Changes and the Labour Market.

The State Labour Branch of the Department of Labour and Industry collects monthly reports from some 200 agents in various parts of the State regarding the condition of the labour market generally, and the results of seasonal changes, &c. These reports for each month of the year 1913 are summarised briefly as follows:—

January.—Very dry month all over the State; rural prospects deteriorated; bush fires prevalent; 9 per cent. of agents reported considerable unemployment; seasonal slackness in city and suburban business. Prospects of strike at Newcastle and Maitland coal-fields.

February.—Dry weather continued, and 15 per cent. of agents' districts reported many unemployed. In city and suburbs labour conditions fair; trade union figures for Sydney show, of those reporting, 3·4 per cent. of members unemployed.

March.—Very wet month; many unemployed reported from 9 per cent. of agents; all building trades had fair employment; trades of bricklayers and carpenters reported bad; electrical trades busy; boot and painters trades slack; first-class labourers in demand. Ferry hands on strike for 48-hour week; duty resumed after six days; claims conceded. Scarcity of firewood at Cobar; likelihood of closing smelting works there. South Coast miners on strike.

April.—General conditions in country good; Darling Harbour railway porters on strike from 2nd to 7th April; Silverton Tramway employees on strike; boilermakers at Cockatoo Island on strike.

May.—High percentage of satisfactory country reports; employment in building, iron trades, &c., in city and suburbs only fair.

June.—Primary industries reported as satisfactory; more unemployment in city and suburbs than for May, owing to adverse weather.

July.—Hopeful prospects reported in many districts. Darling River navigable, and shipping on river commenced. Shearing in progress; no unemployed in 48 per cent. of districts; large unemployment list in city and suburbs.

August.—Dry weather, suitable for shearing; Darling waters have fallen; employment outlook good.

September.—Dry weather leading to anxiety. In 50 per cent. of cases agents reported no unemployment. In city and suburbs employment reported fair to good; building trades brisk.

October.—Country in flourishing condition—beneficial rains; no unemployed reported by 49 per cent. of agents; in only 3 per cent. of districts were there many unemployed; city and suburbs reported employment good; scarcity of bridge carpenters; building trades busy.

November—Absence of rain caused anxiety; no unemployed in 49 per cent. of districts; many unemployed in less than 5 per cent.; city and suburban employment brisk; boot trade alone reported employment bad.

December.—Drought felt in many centres; employment generally good; building, iron, and maritime trade prospects bright.

Generally, the year 1913 was industrially an exceptionally brisk one.

Adequacy of Labour.

The adequacy of the labour force 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 adequacy of the labour force to continue the expansion of the natural resources of the States consistently with the progress of the past twenty years.

Shortage of Labour Commission.

During 1911, this phase of the population question was studied under the heading of "Shortage of Labour," and in order to investigate the diverse views set forth in regard to labour conditions within the State, a Royal Commission was appointed on 9th June, 1911, with power to inquire into the following matters:—

(1) The alleged shortage of labour in the State of New South Wales.

(2) The hours and general conditions of employment of female and juvenile labour in factories and shops, and the effect on such employees.

(3) The cause of the decline in the apprenticeship of boys to skilled trades, and the practicability of using technical and trade classes as aids to, or substitutes for, apprenticeship.

In October, 1911, a report was presented to Parliament, showing the conclusions reached from the evidence presented under the first head of investigation. The evidence supported the truth of the allegation as regards skilled labour, the shortage under that head being estimated as follows:—Artisans—Metropolitan area, 1,712; artisans—country, 210; requirements of Public Bodies, including Railways, 775; women workers, 550; making a total of 3,247 workers.

The general conclusion of the Commission was that a great and permanent need existed for the introduction from abroad of trained and competent workers for most of the skilled trades, and for the manufacturing industries, this condition being ascribed to natural causes; the immediate cause of the congestion, however, lay in the relatively rapid accumulation of wealth due to good seasons, as compared with the slower but steady growth

of population. Figures evidencing this increase in material prosperity have been given in other parts of this Year Book.

The most sensitive gauge of the diffusion of the great wealth of the country was found in the amount of Savings Bank deposits as the usual treasury of people of moderate means. Figures quoted in Part "Private Finance" show that the average amount per depositor increased by £6 9s. 2d. or 17 per cent. in the period 1900-1910, as reviewed by the Commission, and the point was taken that these accumulations call for expenditure and investment in varying degrees of extent and urgency, and so require an increase of the labour force of the community. Hitherto, as is shown subsequently, State assisted immigration had been restricted to the introduction of farmers, agricultural labourers, and domestic workers, and their families; and the Commission demonstrated the necessity for increasing the influx of assisted and of unassisted immigrants, due regard being paid to the fact that within limits set by the productive and consuming power of the community, every efficient new worker creates, as well as performs, work; but to outrun those limits would lay the present labour force open to loss in specific wages paid, in hours and conditions of work, and in continuity of employment. In conducting the inquiry the Commission assumed that all existing conditions would be maintained, or that no alterations would be permitted in the direction of relaxation of restrictions and prohibitions, *e.g.*, on child labour. The trades investigated were dealt with *seriatim*, the principal coming under the classification of Building Trades, Iron Trades, and Textile Trades, in the last of which women workers predominated.

The branches of the building trades investigated included rockchoppers, quarrymen, masons, bricklayers, carpenters and joiners, plumbers, plasterers, and painters. With regard to rockchoppers and sewer-miners, quarrymen and masons, and bricklayers, the Commission found no opposition to the employers' assertion of serious shortage; of painters the available force appeared adequate for all requirements. In the iron trades, private work and Government workshops were interdependent to a great extent, but particularly in respect of boilermakers must a distinction be made between the two classes of work. Projected works at the State Government Dockyard were hampered by the difficulty of securing material from local private works in accordance with contracts, and also by the difficulty of getting the necessary labour to cope with the work in hand and in prospect. A considerable proportion of the private trade consisted of repair work, which is peculiarly fluctuating in its nature; but for land work, such as girder and locomotive boiler and steel-rail making, no surplus of labour was proven; as regards fitters there was no proved shortage; of moulders and shipwrights (for wooden ships) a shortage was disclosed.

In the electrical trades a remarkable extension of work, both of private and public bodies, in recent years, had been fairly met by unassisted immigration, particularly from England, where the trade was highly specialised, but somewhat slack. Necessarily, in the circumstances, incoming tradesmen had not the general knowledge required in the local trade, but they adapted themselves quickly to their new conditions.

In the brick and cement making, boxmaking, and timber trades there was no evident deficiency of labour, but for pottery works a few qualified hands were required to enable the local trade to be developed. Similarly, for the coach-building trade, notably body-building for the motor trade, labour was required.

Extent of Local Shortage.

The different industries and the extent of the shortage disclosed in each were summarised as follows:—

Artisans—Metropolitan Area.	
Rockchoppers	400
Masons	100
Quarrymen	40
Bricklayers	300
Carpenters and Joiners	200
Plumbers	50
Plasterers	150
Boilermakers	100
Ironmoulders	60
Shipwrights	40
Wood Machinists	30
Joiners (timber yards)	50
Bodymakers and Trimmers	100
Jewellers	60
Glassblowers	12
Stovemoulders	20
Total	1,712

Artisans—Country.	
Bricklayers	75
Carpenters	50
Plumbers	15
Plasterers	40
Bodymakers	15
Trimmers	15
Total	210

Requirements of Public Bodies.	
Sydney Harbour Trust—	
Carpenters	100
Government Dock—	
Boilermakers and Riveters	400
Ironmoulders	16
Total	516

Railway Construction and Maintenance.	
Bricklayers	23
Carpenters and Joiners	61
Bridge Carpenters	31
Rough Carpenters	10
Painters	60
Brush Hands	30
Plumbers	14
Wood Machinists	2
Bridgeplaters	4
Riveters	12
Riveters' Assistants	12
Total	259

Women Workers.	
Boot Machinists	100
Bootfitters	50
Mantle and Costume Machinists	100
Clothing Machinists	150
Shirt Machinists	40
Straw Hat Machinists	40
Paper Boxmakers	30
Tent Machinists	20
Weavers	20
Total	550

Total.		
Artisans (metropolitan area)		1,712
Artisans (country)		210
Requirements of Public Bodies	516	775
Railway Construction	259	
Women Workers		550
		3,247

Reinforcements by Immigration.

The Commission appointed to investigate the question of a labour shortage within the State of New South Wales, demonstrated that the volume of unsubsidised immigration, induced by systematic advertisement of the State and its resources, was inadequate to meet the demand for labour; and assisted immigration was confined within fairly definite limits; the special training and preparation of young people for entrance to the skilled trades hitherto has not been undertaken extensively, nor have the developments effected in recent years in the educational system yet had time to affect materially the influx of workers to such trades. The remedy suggested for the deficiency in the labour force was a more extensive system of immigration, in the direction of registering the applications of employers, arranging for guarantees where such could possibly be secured, and for priority of choice to those employers who tendered such guarantees. In this extension the Immigration Bureau would be developed into a labour exchange, and be enabled to adjust the flow of assisted immigration according to the volume of the voluntary inflow.

The latest figures regarding the population show that for New South Wales, during 1912 the excess of arrivals from, as compared with departures,

to, countries outside the Commonwealth, was 34,085. For the same period the number of assisted immigrants was 14,956 (8,361 males and 6,595 females), the average since 1st January, 1906, being 5,828 per annum.

IMMIGRATION.

Commonwealth Control.

Power to legislate with regard to immigration and emigration is conferred upon the Commonwealth Parliament, under section 51, subsection 27, of the Constitution Act, 1900, 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 alien races, or 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 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 that if any of the crew be missing when the vessel clears the port, such person may be declared a prohibited immigrant, and the master, &c., held responsible. The prescribed dictation test may be imposed at any time up to two years after the admission of an immigrant. Provision is made for the conditional entry of prohibited immigrants for a limited period.

In Part, "Population and Vital Statistics," of this Year Book, particulars are given of the accretions to the population of the State due to immigration. Unfortunately, in regard to persons refused admission who passed the dictation test, or were admitted without submitting to the test, and regarding the nationalities of persons admitted, and of alien races who left the State, particulars are not available for New South Wales separately from the aggregate figures for the Commonwealth.

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

Particulars are not available to show the occupations or nationalities of contract immigrants engaged for New South Wales. During the year 1913 no contracts were disapproved, nor were any contract immigrants refused admission.

The Pacific Island Labourers Act prohibits the importation, and regulates the deportation of Pacific Islanders engaged for labour on sugar plantations.

Emigration.

The Emigration Act, 1910, operates in the direction of restricting the emigration of children and aboriginal natives from Australia, regulating contracts in relation thereto, and supervising the transportation or removal of prohibited emigrants.

Encouragement of Immigration.

The Commonwealth.

Encouragement of immigration, as undertaken by the Commonwealth, has been confined to advertisement of the attractions of Australia generally, with a view to promoting the flow of voluntary immigration to the different States. To carry on this work, the funds made available for each of the years 1910-11 and 1911-12 out of the revenue of the Commonwealth amounted to £25,000, and for the year ended 30th June, 1913, £50,000 was available.

The amounts actually expended by the Commonwealth during the past four years are shown in the following statement:—

Expenditure.	1908-9.	1909-10.	1910-11.	1911-12.
In United Kingdom—	£	£	£	£
For Newspaper advertising	2,110	2,037	5,325	4,839
For other purposes ...	305	3,518	4,675	8,444
In Australia	6,229	2,555	5,640	6,713
Total	8,644	8,110	15,640	19,996

The amounts expended in Australia are chiefly the costs of advertising, and of sustentation of special and of official publications, in which are described conditions of life and of industry as existent 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.

For the financial year 1910-11, the amount voted by the State Parliament for the promotion of immigration and the advertisement of the State's resources was £25,000, which amount was supplemented by a further vote of £10,000 for that year. For the year 1911-12 the amount was increased to £60,000, and for 1912-13 this vote was further supplemented by an amount of £11,000, making £71,000 in all. For the financial year 1913-14 the sum of £40,975 has been voted for the promotion of immigration and advertising the State, whilst an additional sum of £5,176 has been voted to meet that proportion of the joint expenditure of the amalgamated Immigration Department of New South Wales and Victoria which is chargeable to New South Wales. These votes are supplementary to the usual vote, approximating £20,000, for maintenance and administration of the office of the Agent-General in London, and of the Immigration and Tourist Bureau in Sydney.

The following statement shows the expenditure on, and the resulting increase of population from, the encouragement of immigration by the State in each year since 1906:—

Financial Year.	Expenditure, exclusive of Administration.	Immigrants assisted.						Unassisted Immigrants placed in employment.
		Nominated.		Selected		Total.		
		Males.	Females.	Males.	Females.	Males.	Females.	
	£							
*1906	1,226	23		143		166		.....
1907	8,079	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	3,260
1913	69,656	5,002	6,148	1,745	754	6,747	6,902	3,787
Total ...	233,368	29,735		17,158		46,893		13,572

* Six months—January to June.

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 1906-1913:—

Financial Year.	Immigrants from—						Total.		
	United Kingdom.		Other British Possessions.		Foreign Countries.				
	Nominated.	Selected.	Nominated.	Selected.	Nominated.	Selected	Nominated.	Selected.	Total.
*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
Total	29,210	16,563	151	509	374	86	29,735	17,158	46,893

* Six months—January to June.

Assisted passages are granted to immigrants who are classified as selected or as nominated. The former include only farmers, agricultural labourers, and domestic servants. The selection of assisted immigrants is made mainly from the population of the United Kingdom; but a proportion may be drawn from Canada, South Africa, and other parts of the British Empire, also other European countries, and from the United States of America, provided they are eligible under the regulations of the Commonwealth Immigration Acts. Selected immigrants must be under 45 years of age, of good character, and in general must afford satisfactory evidence that they are likely to prove suitable settlers. Assistance is given also in respect of their wives and families. Selected immigrants are brought to the State for minimum net fares of £6 for domestic servants and £8 for agriculturists.

Arrangements exist with various steamship companies for reductions in the ordinary rates for passages from the United Kingdom, Germany, Belgium, Italy, and other European countries. Besides these reductions a Government contribution, ranging from £4 to £8, is made towards the fares, these concessions being allowed to persons approved in London by the Superintendent of Immigration and who settle in the State.

The following statement shows the distribution of selected immigrants in their respective occupational classes in each financial year:—

Financial Year.	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
Total ...	146	10,187	10,333	3,025	1,084	2,716

* Six months—January to June.

In 1912 the immigration of selected agriculturists did not proceed as vigorously as usual; as to domestic servants the numbers, though increasing, are still judged inadequate to meet the demand, and, as a further encouragement to this class of immigrant, the Government decided to advance part of the fare to competent girls, the advance to be repaid in instalments after arrival. Arrangements have also been made whereby a person resident in New South Wales may prepay the cost of the passage for a domestic to be selected, who will repay the advance in instalments extending over a period of six months. 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 are, of course, exempted from the restriction. In 1913 the system was extended to include brothers and sisters, with their families, if of approved occupations. Nominators are required to lodge the reduced steamer fare, and an undertaking that employment awaits the nominees, or that adequate provision will be made for their maintenance. Any immigrant who settles upon the land as owner, lessee, or labourer, within a reasonable time of his arrival, may be granted a remission of one-third of the railway fare for himself and family when travelling to the district in which he settles, and of one-third of the railway freight charged on household furniture, stock, and agricultural implements which were in his possession on arrival. These concessions may be granted also to nominated immigrants proceeding to the homes of their nominators, or travelling to take up farm work or domestic service.

Selection of Subsidised Immigrants.

Till 1912 intending immigrants from the United Kingdom were selected or approved after nomination per medium of the Agent-General's office in London, but in 1913 the Government established an Immigration Department in London, and the Superintendent thereof now makes all arrangements for assisted passages.

Co-operation of the States.

In the early part of 1913 the Attorney-General of New South Wales, being in London, was enabled to arrange for conjoint action with Victoria in

regard to the regulation and supervision of immigration. For this purpose the Immigration Office in London of the State of Victoria was amalgamated with the New South Wales Office, as from 1st July, 1913. This action resulted practically from discussion at the Premiers' Conference of 1912 on immigration, particularly in relation to disparity of passage rates in force under the immigration policies of the different States. The resolutions of the Conference on this subject were:—

1. That the following immigation passage rates and bonuses to immigration agents recommended by the immigration officers of the States be agreed to by this Conference.

That all States charge the following minimum rates to immigrants:—

Farmers, farm-hands, skilled artisans, and all nominated, assisted, or indented male immigrants, £6.

Adult females, £3.

Children of immigrants—under 12 years of age, £1 10s.

It is to be understood that, while no States shall charge lower amounts than those mentioned, no objection will be made to higher rates being imposed.

That age limits for all State-aided immigrants be fixed as follows:—

Males, married women, and widows, 45 years.

Single women, 35 years.

The only free immigrants to be those whom the shipping companies carry free.

An adult immigrant is an adult within the meaning of the steamship companies' passenger rates regulations.

2. That the maximum bonus payable to immigration agents be as follows:—

(*a*) Per adult, £1.
Per child under 12 years, 10s.

(*b*) In the case of an assisted immigrant recruited by an agent nominating his wife and family within twelve months of his arrival in the State, a similar bonus on account of the wife and family be paid to the agent.

(*c*) In the cases of immigrants with capital of £200 and over, which capital is deposited with the Agent-General for transmission to the State, an additional bonus of 1 per cent. on the capital so deposited be paid to the agent.

That the immigration passage rates and bonuses to immigation agents recommended be brought into operation after the 31st day of March, 1912.

That the Commonwealth Government be asked to provide 25,000 assisted passages per annum for immigrants, arranging with the shipping companies and paying the cost of transportation on a uniform basic rate, the States to select the immigrants and place them, as at present, and any State being at liberty to supplement the number of assisted passages allotted to it at the same rate.

Reception of Immigrants.

Vessels carrying immigrants are met on arrival by officers of the Immigration Bureau, and in certain cases, where large numbers of immigrants are travelling from England, an officer joins the vessel at Melbourne. Suitable accommodation is available for all immigrants pending their entry into situations, and advice is given freely. In the majority of cases assisted

immigrants go to employment at once. Details have been given previously regarding the numbers of immigrants placed in employment in each year through the agency of the Immigration Bureau.

The question of providing a Government Depôt for the accommodation of immigrants was under the consideration of the Government during 1912. The provision of such a building was approved, but before a suitable site was secured accommodation was made available through the efforts of organisations, such as the Church of England Men's Society, and the Central Methodist Mission. The Government then arranged with the Church of England authorities to provide accommodation for 400 people at their Welcome Home.

Trade Unions.

The Trade Union Act of 1881 defines a "Trade Union" as "any combination, whether temporary or permanent, for regulating the relations between workmen and employers, or between workmen and workmen, or between employers and employers, or for imposing restrictive conditions on the conduct of any trade or business, whether such combination would or would not, if this Act had not been passed, have been deemed to have been an unlawful combination by reason of some one or more of its purposes being in restraint of trade."

The Act provided simple machinery for the incorporation, free of cost, of Unions, and the practical advantages of registration quickly became evident to those interested in industrial organization.

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 35 in 1890 and 35 in 1901, and the registrations in 1912, viz., 26, are slightly above the average of the previous five years.

Incorporation and Dissolution.

In the thirty-one years, 1882-1912, 454 Unions have been incorporated under the Trade Union Act. The numbers, for quinquennial periods, of new Unions registered, of such registrations since cancelled or still effective, as at December, 1912, 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	66	30
1907-11	125	37	88
1912	26	1	25
Total	454	245	209

The great majority of Unions are clearly of comparatively recent formation, since 143 out of 209 existent are less than eleven years old. The total number existent at the end of 1912, viz., 209, represents approximately 45 per cent. of the Unions formed throughout the period. Of the Unions formed in the last eleven years, 43 per cent. have already disappeared. The average life of all extinct Unions was seven years.

Cancellations for the most part have been directly consequent upon non-compliance with the requirements of the law in regard to the rendition of 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 heaviest closures have been of Unions formed in 1890, 1891, 1902, and 1903, the numbers being 32, 20, 31, and 20 respectively—*i.e.*, of 59 Unions registered in 1890 and 1891, only 7 now remain; of 106 Unions registered in 1901, 1902, and 1903, primarily in order to secure the benefits of the Industrial Arbitration Act of 1901, only 40 now

remain. At these two periods, viz., 1890-1891 and 1901-2-3, the heavy registrations were induced by pressure of development and forces external to the Unions. The steady progression of recent years points to a safer future:—

Year.	New Unions Registered.	Number of these Unions defunct at 31 Dec., 1912.	Average Membership of Unions Reporting.
1907	13	9	693
1908	25	4	744
1909	27	15	860
1910	29	6	805
1911	31	3	843
1912	26	1	1,006

Aggregate Funds and Membership.

The following statement shows the position of all Trade Unions for each of the last four years, as regards finances and membership:—

	1909.	1910.	1911.	1912.
Unions existent, end of year	166	174	191	209
Total income	£148,202	£129,754	£163,448	£199,157
Total expenditure	£147,152	£123,794	£146,959	£173,474
Total assets	£94,900	£98,758	£114,687	£151,543
Membership	127,402	130,346	153,504	201,144
Income per member	23s. 3d.	19s. 11d.	21s. 3d.	19s. 9d.
Expenditure per member ...	23s. 1d.	19s. 0d.	19s. 2d.	17s. 3d.
Amassed funds per member	14s. 11d.	15s. 2d.	14s. 11d.	15s. 1d.

These Unions are classifiable in three groups according to their constitution, viz., of employers, of employees, and a miscellaneous group of Labour Federations, and Eight-hour Demonstration Committees, without any membership of individuals. The following table displays the relative positions of the three classes as at December, 1912:—

Trade Unions.	Number.		Membership.			Funds.	
	Existent.	Reporting.	Aggregate. Males.	Aggregate. Females.	Per Union Reporting.	Aggregate.	Per Union Reporting.
						£	£
Employers	13	13	3,845	173	309	3,136	241
Employees	190	186	190,671	6,455	1,060	138,638	745
Other—							
Labour Federations	3	3	...	...	...	8,451	2,817
Eight-Hour Committees ...	3	3	...	...	...	1,318	439
Total	209	205	194,516	6,628	981	151,543	739

The following statement gives a general view of the numerical strength of all Trade Unions in the last three years:—

Membership.	1910.	1911.	1912.
Less than ... 100	47	54	49
100 and less than 500	65	65	77
500 ,, 1,000	22	24	23
1,000 ,, 1,500	12	15	15
1,500 ,, 2,000	6	6	11
2,000 ,, 3,000	2	9	8
3,000 ,, 4,000	2	2	4
4,000 ,, 5,000	2	1	3
5,000 ,, 8,000	2	4	5
8,000 ,, 10,000	1	...	...
10,000 ,, 20,000	...	1	2
20,000 ,, 25,000	...	1	1
Exceeding 25,000	1	...	...
Not stated	12	9	11
Total	174	191	209

Employers' Unions.

For the thirteen employers' unions which reported, the finances for the year 1912 were:—

Receipts.	£	Expenditure.	£	Assets.	£
Contributions ...	6,225	Legal Charges ...	279	Cash—In Bank ...	914
Interest	18	Management & Other	6,041	Cash not bearing interest.	1,219
Other Receipts ...	1,213			Other Assets ...	1,003
Total	7,456	Total	6,320	Total	3,136

Arranged in groups, according to industry, these unions reporting, and their funds and membership, were as follows:—

Group.	Trade Unions reporting.	Assets.	Membership.	
			Males.	Females.
		£		
Builders and Contractors	3	1,286	260	...
Farriers	1	64	342	...
Bakers, Butchers, and Victuallers ..	3	978	1,396	173
Carriers and Carters...	2	736	1,404	...
Launderers	1	49	41	...
Tug-owners	1	6	14	...
Basket-workers	1	.....	12	...
Hairdressers and Tobacconists	1	17	376	...

EMPLOYEES' UNIONS.

Development.

Naturally, 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 has the constitution of unions been subject to alteration in the direction of replacement of isolation by solidarity. 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. In the last ten years there has been apparent an effective movement towards consolidation of allied interests, so that but 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 the Central Councils in Sydney, Newcastle, or Broken Hill. The movement towards consolidation received an added impetus during 1912 from the rearrangement of Wages and 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. Necessarily this alteration is bound to accentuate the bias towards concentration.

Finance and Membership.

The financial operations of employees' unions in groups, according to the class of industry, are as follows for the year 1912:—

Industrial Classification.	Unions reporting.	Receipts.				Expenditure.							
						Benefits.							
		Contributions.	Interest.	Other.	Total	Funeral.	Accident.	Unemployment.	Other.	Total.	Legal Charges.	Management and Other.	Total.
		£	£	£	£	£	£	£	£	£	£	£	£
Building	20	13,474	190	1,716	15,380	397	368	17	772	1,554	287	8,671	10,512
Pastoral, Agricultural, Farming	4	14,631	121	216	14,968	65	..	..	28	93	281	16,067	16,441
Mining, Quarrying, and Smelting.	23	49,930	201	2,495	52,626	2,175	6,133	7,412	192	15,912	1,770	31,163	48,845
Engineering and Metal Working.	16	19,264	254	2,382	21,900	453	275	941	2,389	4,058	1,979	13,862	19,899
Clothing, Boots, Hats	7	3,182	29	335	3,546	..	3	..	..	3	316	2,292	2,611
Printing, Bookbinding, &c.	7	4,727	78	446	5,251	164	..	36	627	827	192	3,172	4,191
Food and Drink ..	22	9,015	79	1,224	10,318	72	71	..	137	280	1,301	8,260	9,841
Manufacturing, n.e.i...	24	10,872	203	717	11,792	191	130	38	235	594	808	7,198	8,600
Railways & Tramways	8	17,043	191	2,705	19,979	91	..	..	371	462	1,513	12,793	14,768
Other Land Transport	8	2,563	21	376	2,960	..	77	..	5	82	241	2,196	2,519
Shipping and Wharf Labour.	14	16,092	108	156	16,356	150	..	..	..	150	2,769	11,743	14,662
Clerical, Artistic, Teaching.	5	775	..	99	874	..	..	..	.	..	38	656	694
Domestic, Hotel ..	5	2,142	26	1,060	3,228	35	..	..	13	48	102	2,638	2,788
Miscellaneous	23	7,906	74	312	8,292	76	427	..	28	531	550	6,122	7,203
Total	186	171,656	1,575	14,239	187,470	3,869	7,484	8,444	4,797	24,594	12,147	126,833	163,574

The accumulated funds and the membership at December, 1912, are shown in the following table, which also discloses the relativity of expenditures for benefits and for legal charges to total expenditures:—

Industrial Classification.	Funds.	Membership.			Funds per member.	Percentage of Total Expenditure absorbed in—		Percentage of Group membership to Total.
		Males.	Females.	Total.		Benefits	Legal Charges.	
	£				s. d.			
Building	17,238	16,935	...	16,935	20 4	14·78	2·73	8·59
Pastoral, Agricultural, Farming	13,891	21,496	...	21,496	12 11	·57	1·70	10·91
Mining, Quarrying, and Smelting ...	30,813	25,761	...	25,761	23 11	32·58	3·62	13·06
Engineering and Metal Working ...	13,099	13,255	...	13,255	19 0	20·39	9·95	6·73
Clothing, Boots, Hats ...	4,062	3,591	1,846	5,437	14 11	·11	12·10	2·76
Printing, Bookbinding, &c...	9,172	2,958	261	3,219	57 0	19·73	4·58	1·64
Food and Drink	7,480	10,613	394	11,007	13 7	2·85	13·22	5·58
Manufacturing, n.e.i. ...	12,958	12,099	1,406	13,505	19 2	6·91	9·40	6·85
Railways and Tramways ...	13,061	36,239	...	36,239	7 2	3·13	10·25	18·38
Other Land Transport ...	1,682	5,544	...	5,544	6 1	3·26	9·57	2·81
Shipping and Wharf Labour	6,222	17,960	...	17,960	6 11	1·02	18·89	9·11
Clerical, Artistic, Teaching	1,145	1,858	214	2,072	11 1	...	5·48	1·05
Domestic, Hotel	1,960	3,281	1,097	4,378	8 11	1·72	3·66	2·22
Miscellaneous	5,855	19,081	1,237	20,318	5 9	7·37	7·64	10·31
Total...	138,638	190,671	6,455	197,126	14 1	15·04	7·43	100·00

The strongest unions financially are those connected with the printing and bookbinding trades. Next in order of importance, measured by accumulated assets per capita of membership, are the mining and building groups. In all three of the transport groups the accumulated assets are very low. Taking the four more or less definitely defined branches of manufacturing industry as a whole, the funds accumulated represent 20s. 4d. per head of membership, the expenditure for benefits and legal charges represent respectively 6·8 per cent. and 10·4 per cent. of total expenditure; and the combined membership is 16·8 per cent. of the total union membership. This group includes 3,907 female members, being 60·5 per cent. of the total female membership.

The relation of the expenditures for benefits, and for legal charges, to the total expenditure, discloses some interesting variations, *e.g.*, the expenditure on benefits rises to almost one-third the total expenditure in the mining and smelting group, and falls as low as ·57 per cent. in the rural industries group, while on the average it represents 15·04 per cent of the total. Legal charges, including expenditure in connection with wages boards, &c., rise to 18·89 per cent. of total expenditure in the shipping and sea transport group, and fall to 1·70 per cent. in the rural group, the average being 7·43 per cent. for all groups.

As regards expenditures for benefits, the largest outlay is for unemployment benefit, and practically the whole amount was expended by the Unions in two groups, viz., mining, quarrying, &c., and engineering and metal working. The relativity of Trade Union records to the broad question of unemployment is discussed later.

Concerning costs of management, no general conclusions can be derived, as expenditure under this head is not dissociated in the tabulations from incidental or miscellaneous expenditures.

Trade Unions of employees embrace all types of occupations, and the majority of wage-earners, the impetus towards organisation being derived immediately from the necessity of establishing the status of the Union as an industrial body.

The most noticeable features of their recent development are the extension of organisation to embrace more particularly the trades in which women workers are numerous, and the consolidation of branches of industries.

Consolidation.

The numerical strength of employees' unions in 1912 is displayed in the following statement:—

Membership.	Unions.	Membership.	Unions.
Exceeding 20,000	1	Exceeding 1,000	13
,, 10,000	2	,, 500	23
,, 5,000	5	,, 100	71
,, 4,000	3	Less than 100	44
,, 3,000	4	Not stated ...	5
,, 2,000	8		
,, 1,500	11	Total ...	190

During recent years considerable progress has been made in the direction of closer unionism of subsidiary or allied industries; various conferences were held with the object of promoting uniformity of trade conditions and of wages throughout Australia.

Organisation of Women Workers.

At the end of 1912 women unionists numbered 6,455, and represented 3·27 per cent. of the total membership. In industrial groups the women unionists were distributed as follows:—

Group.	Membership.			Percentage of Total.	
	Males.	Females.	Total.	Males.	Females.
Clothing	3,591	1,846	5,437	1·82	·94
Printing	2,958	261	3,219	1·50	·13
Food and Drink	10,613	394	11,007	5·38	·19
Manufacturing	12,099	1,406	13,505	6·14	·71
Professional	1,858	214	2,072	·94	·11
Domestic and Hotel	3,281	1,097	4,378	1·66	·56
Shops and stores	5,929	419	6,348	3·01	·21
Watchmen, Caretakers, Cleaners	719	549	1,268	·37	·28
Hospitals, &c.	293	269	562	·15	·14
Other Groups	149,330	...	149,330	75·76	...
Total	190,671	6,455	197,126	96·73	3·27

Labour Federations, &c.

The smallest group includes the Labour Federations and Eight-Hour Demonstration Committees, the financial operations of which for the year 1912 are summarised as follows:—

Group.	Receipts.				Management and Other Expenditure.	Assets.		
	Capitation Fees.	Interest.	Other Receipts.	Total.		Cash.	Other.	Total.
	£	£	£	£	£	£	£	£
Labour Federations	1,357	1	184	1,542	1,297	366	8,085	8,451
Eight-hour Committees... ...	15	13	2,661	2,689	2,283	1,274	44	1,318

Local unions are affiliated with the Labour Federations, which have their headquarters at Sydney, Newcastle, and Broken Hill—the three largest industrial centres of New South Wales.

Commonwealth Industrial Arbitration Operations.

The legislation of the Commonwealth Parliament relating to arbitration is embodied in the Commonwealth Conciliation and Arbitration Acts, 1904, 1909, 1910, and 1911, 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. Organisations, whether of employers or of employees, must, to qualify for registration, represent, as the minimum, 100 employees. Stringent provisions of the Act applying to registered organisations absolutely prohibit the use of funds for political purposes, and participation in strikes or lockouts.

State Intervention in Industry.

The year 1851 marks the starting point in the history of industrial development in New South Wales. Till that time Australia seemed destined to rank as a purely pastoral country, distance from the world's markets and sparseness of population militating against progress in agriculture or other forms of production. The period immediately preceding the discovery of payable gold deposits was marked by over-speculation in land, culminating in acute financial distress in 1842; and subsequently there occurred an appreciable fall in wages. During 1849, the labour market in Sydney, where the conditions prevailing throughout the country were duly reflected, was relieved of a proportion of its surplus labour by the commencement of emigration to California consequent upon gold discoveries there. In 1851, the discovery of gold in payable quantities in New South Wales occurred opportunely to relieve the still prevailing depression; and from 1851 to 1858 the attention of the population was directed chiefly to gold-seeking. The discoveries and developments of this period have been far-reaching in their economic effects upon standards of living, prices of commodities and of labour, expansion of industry, extension of means of communication, distribution of population, and particularly upon the direction of immigration. Between 1859 and 1862 a degree of stability in industry was evolved, though the period was essentially one of transition, characterised by decreasing

gold-winnings, with a corresponding diminution in the earnings of working miners. Naturally, many gold-seekers were diverted to other pursuits. The Land Act of 1861 helped materially in the renewal of activity in agrarian pursuits; and the history of the last half-century is written in the fairly steady and consistent development of a varied industrial life, though marked by vicissitudes of season and by variations in policy and procedure consequent upon the necessarily experimental nature of much legislation.

A landmark in this half-century is the critical period which closed with financial distress in 1893. Considerable expenditure of public moneys and a vigorous policy of immigration combined to attract population to New South Wales, and with the curtailment or cessation of expenditure on public works, the story of fifty years before repeated itself in a labour market again congested. The year 1885 witnessed the attainment of the highest point in a scale of wages which had improved steadily for some fifteen years; and in 1886, coincidently with the restriction in public and private business, came a fall in prices of commodities and a more or less general reduction in wage standards.

In the six years, 1886-1892, strikes and trade disputes were common occurrences, not merely in New South Wales, but throughout Australia, and thenceforward strikes figure more or less prominently in the industrial history of the State.

The more important of the early dislocations are remarkable for their spread and duration. In 1886-7 collieries in the southern district were idle for nearly twelve months as the result of disputes and strikes. In 1888 coal-miners in the northern mining district were on strike for several months. In 1888-9 the completion of various public works released some 12,000 men, mainly unskilled labourers, from the ranks of industry. In 1890 the maritime and the pastoral industries were in upheaval; and in 1892 silver mines at Broken Hill were idle for nearly three months in consequence of strikes. The year 1895 represents the turning point. The wage rate, which may be taken as the industrial barometer, and which for ten years previously had been low and variable, evidenced a degree of stability, and since that date no extraordinary fluctuations have been apparent, but the wage standard has been improved consistently.

The complications affecting the industrial community between 1886 and 1896 are reflected in the Statute Laws of New South Wales, particularly as relating to the regulation of industry. Various Bills were prepared, and one introduced in the Legislature, proposing intervention between employers and employees. In 1890 the Census and Industrial Returns Act empowered the Government Statistician to report upon the conditions prevailing in the factories within the State; but in spite of an accumulation of evidence as to the urgent necessity for regulative supervision, legislative action was deferred till 1896, when the Factories and Shops Act was passed, following the lead of the Victorian Act of 1885. In December, 1899, as a corollary to the regulation of the manufacturing industry, regulation of shops, in regard to hours during which goods might be sold, was initiated by the Early Closing Act, 1899.

Coincidently with these efforts to regulate the conditions prevailing in manufacturing and retail establishments, attention was given to the problem of regulating the relations between employers and employees generally, so as to obviate dislocations of industry. In 1882 a Bill was introduced into Parliament for the establishment of a council composed of members of Employers' Unions and of the Trades and Labour Council, to provide for conciliation on the lines adopted in France, but the Bill was shelved.

In 1887 a scheme, based upon English precedent, was drawn up by a joint committee of the Employers' Union and of the Trades and Labour Council, but was rejected. In the same year a Trades Conciliation Bill was introduced in the Legislature, the machinery projected following the lines of the voluntary conciliation which had for some years proved satisfactory in the building trade. This measure also failed to become law; but Parliamentary attention was focussed on the subject of mediation in industrial disputes, and during the last twenty years the Parliament of New South Wales has given much attention to legislation having for its object the improvement of the industrial conditions of the people generally, and involving particularly the settlement of trade disputes and regulation of the hours of employment and rates of wages.

The legislation enacted in this State has been of an experimental nature, subject to modification in the light of experience gained, and of the exigencies of time and the ever-changing conditions of an advancing civilisation, involving new conditions of labour and new methods of production and distribution.

Mediatory Legislation.

1. *Conciliation and Arbitration.*

The effective history of mediatory legislation dates from 1890, when a Royal Commission of Inquiry was appointed, following on the maritime strike in that year, to investigate the causes of industrial disputes and to indicate means for their prevention. A result of this Commission was the Trades Disputes Conciliation and Arbitration Act, 1892. As the preamble of the Act declares, the establishment of Councils of Conciliation and of Arbitration for the settlement of disputes between employers and employees should conduce to the cultivation and maintenance of better relations, and of more active sympathy, between employers and their employees, and be of great benefit in the public interest by providing simple methods for the prevention of strikes and disputes, through which industrial operations are liable to serious and lasting injury, against the welfare and peaceful government of the country.

The Act was intended to be operative for four years from 31st March, 1892; its initiation was facilitated by the progress made by trade unionism, both in the way of organisation of trades and by securing direct representation in Parliament.

Councils of Conciliation and of Arbitration were established, to which applications were referable from employers and employees regarding disputes or claims. Pending the division of the State into industrial districts, a general Council of Conciliation was projected, to be composed of twelve to eighteen representatives elected by employers and employees. The district councils were to be elected for two-year terms, and to be composed of two representatives of employees registered under the Trade Union Act, and two of registered employers' associations. Apart from the ordinary Councils of Conciliation, special conciliators might be appointed by the parties to a dispute. Then, supplementary to the Councils of Conciliation, there was a Council of Arbitration elected for a similar term of two years, but composed of three members, being representatives selected by employers and by employees, with a third chosen by mutual agreement of the first two. To this council matters might be referred after failure of the Council of Conciliation, or directly, and the Council of Conciliation might sit as assessors to the Council of Arbitration, if the parties so agreed. The latter

council sat as an open court, and was guided by the principles of equity and good conscience. Representation by attorney was not permissible, but the council had full power to summon witnesses, and to enter upon premises for inspection. Awards, which had to be issued within one month of conclusion of sittings, were enforceable by legal process only by prior agreement of the parties, but the claims were made to deal with matters of wages, workmanship, conditions of work, quality of food supplied to employees, and sanitation of workshops.

As this Act did not compel either party to a dispute to submit its case to the Council of Arbitration and Conciliation, nor to abide by any award made in a case submitted, it proved ineffective. From the date of appointment of the two councils to the end of 1894 only one case for conciliation and one for arbitration were taken. Negotiations in other cases were unsuccessful. The Parliamentary vote for administration lapsed on 31st December, 1894; and though the Act remained in force till 31st March, 1896, its machinery having broken down, it was inoperative. During this period, however, the first regulative legislation in regard to factories and shops was passed, viz., the Factories and Shops Act, 1896.

The Conciliation and Arbitration Act, 1899, aimed at the prevention, as well as the settlement, of trade disputes; it authorised the Minister, in cases where a disagreement was pending, or probable, between an employer and employees, to direct inquiry into the causes and circumstances of the difference, and to take steps to enable the parties to meet together under the presidency of a chairman mutually selected, with a view to an amicable settlement. In the event of failure, the Minister could direct a public inquiry into the causes of the difference, and on the application of either employers or employees, or of both, could appoint a board of conciliation. On the application of both parties an arbitrator could be appointed, but parties to a dispute were not compelled to submit their cases, and to remedy the imperfections disclosed further legislation was enacted.

These initiatory enactments were aimed at the elimination of the strike as an instrument in the settlement of industrial disputes, or at least at minimising the disastrous consequences to which the community becomes liable. Contemporary with these mediatory measures legislation was originated in Victoria to deal with sweated industries, and to determine fair wage rates generally. Subsequent legislation in this State associated these two ideals by embodying in a specific enactment the combined objective, the prevention of strikes and lock-outs, and the assessment of fair wages and working conditions.

II.—*Arbitration.*

The Industrial Arbitration Act, 1901, provided for the registration and incorporation of industrial unions and the making and enforcing of industrial agreements; constituted a Court of Arbitration for the hearing and determination of industrial disputes and matters referred to it; defined the jurisdiction, powers, and procedure of such Court, and provided for the enforcement of its awards and orders. This Act remained in force until the 30th June, 1908; but in the year 1905 it was so extended by the Industrial Arbitration (Temporary Court) Act that if the Registrar, or in cases of appeal the Court, were satisfied that compliance had been made with the Act, there could be registered, as an industrial union, any person or association of persons, or any incorporated company or any association of incorporated companies, employing on an average, taken per month, not less than fifty employees; and any trade union or association of trade unions.

An industrial union could make with another industrial union or with an employer, an agreement in writing relating to any industrial matter; the Court had jurisdiction to hear and determine, according to equity and good conscience, industrial disputes and industrial matters referred to it, and to make orders or awards in pursuance of such hearing and determination. An industrial dispute was defined to be a dispute in relation to industrial matters arising between an employer, or industrial union of employers, and an industrial union of employees or a trade union, and included a dispute arising out of an industrial agreement.

This Act, in providing for the prevention of strikes and lock-outs, made it a misdemeanour for any person who, before a reasonable time had elapsed for a reference to the Court of the matter in dispute, or while any proceedings were pending in the Court in relation to an industrial dispute, did any act or thing in the nature of a lock-out or strike; or suspended or discontinued employment or work in any industry; or instigated to or aided in any of the abovementioned acts.

Industrial Unions.

The following statement shows the membership of the unions, both of employers and employees, registered during the currency of the Act of 1901:—

Year.	Membership of Unions.	
	Employers.	Employees.
1902	2,302	58,203
1903	2,916	63,510
1904	3,204	71,031
1905	3,343	78,665
1906	3,172	85,199
1907	3,229	96,381

The Industrial Arbitration Act, 1901, was a tentative measure which was intended to remain in operation for seven years. Principally on account of the slowness of the Court in dealing with disputes, and the consequent congestion of cases, it was superseded, on its effluxion, by the Industrial Disputes Act, 1908.

III.—*Industrial Disputes and Wages Boards.*

In the Industrial Arbitration Act, 1901, the principal innovation lay in the extension of the definition of industrial disputes, so as to include consideration of conditions prevailing in industries in which no dispute existed technically. Under the Act of 1908, which represents the third stage in the development of an industrial code, a social ideal was definitely evolved that every normal individual is entitled to a reasonable standard of comfort consistent with the welfare of the community.

All awards, orders, and directions of the Court of Arbitration, and all industrial agreements current and in force at the commencement of the Act, remained binding on the parties, and on the employers and employees concerned, for the period fixed by the Court, or by the award, or agreement, or where no period was fixed, for one year from 1st July, 1908. Any industrial agreement might be rescinded or varied in writing by the parties, any such variation, if filed with Registrar, to be binding as part of the agreement.

Provision was made for the registration of trade, as industrial unions, and the expiration of the Industrial Arbitration Act, 1901, did not affect the incorporation of industrial unions registered under that Act, while any trade union registered under the Act might make a written agreement with an employer relating to any industrial matter.

The Industrial Court consisted of a judge, sitting with assessors, when necessary.

A board could be constituted for an industry on application to the Industrial Court by—

(*a*) an employer or employers of not less than twenty employees in the same industry;
(*b*) a trade union registered under the Act having a membership of not less than twenty employees in the same industry;
(*c*) an industrial union whose members are such employers or employees; or
(*d*) where there is no trade or industrial union of employees in an industry having membership and registered as aforesaid, or where such union fails to make application, then not less than twenty employees in such industry.

Each board consisted of a chairman and not less than two (nor more than four) other members as determined by the Industrial Court, one half of whom were employers and the other half employees at some time engaged in any industry or group of industries for which the board was constituted. Where the employers or employees consisted chiefly of women and girls, the Court could waive this qualification of quondam employment.

A board with respect to the industry or group of industries for which it was constituted might—

(*a*) decide all disputes;
(*b*) fix the lowest prices for piece-work, and the lowest rates of wages payable to employees;
(*c*) fix the number of hours and the times to be worked in order to entitle employees to the wages so fixed;
(*d*) fix the lowest rates including allowances as compensation for overtime and holidays and other special work;
(*e*) fix the number or proportionate number of apprentices and improvers, and the lowest prices and rates payable to them, according to age and experience;
(*f*) appoint a tribunal, other than the board itself, for the granting of permits allowing aged, infirm, or slow workers, who are unable to earn the lowest rates of wages fixed for other employees, to work at the lowest rates fixed for aged, infirm, or slow workers. If no such tribunal is provided by the board, the Registrar has jurisdiction to grant such permits;
(*g*) determine any industrial matter;
(*h*) rescind or vary any of its awards.

At any time within one month after publication of an award by a board, any trade or industrial union or any person bound by the award could apply to the Industrial Court for leave to appeal to such Court. The Court alone had power to rescind or vary any award or order made by it, or any award of a Board which had been amended by the Court, or any award of a Board which had been dissolved or was no longer in existence; but where

public interests were endangered, the Crown might intervene in proceedings, and make any necessary representations; or, further, the Crown might at any time after the making of an award, apply for leave, and appeal to the Industrial Court. Under the Amending Act of 1910 proceedings for the enforcement of awards and penalties were made referable to a Magistrate's Court, and in accordance with this proviso the Industrial Registrar's Court was constituted as a Court of Petty Sessions.

IV. *Conciliation and Arbitration.*

The laws in force in the first period of attempted legislative intervention in industrial difficulties, viz., the Trades Disputes Conciliation and Arbitration Act, 1892, and the Conciliation and Arbitration Act, 1899, were based on the principle of voluntary conciliation as the most effective instrument in the adjustment of grievances. The latter Act was short-lived, being replaced by the Arbitration Act of 1901, which remained in force for seven years until 1908. From this Act the principle of pure conciliation was omitted, its ineffectiveness having been shown, primarily in the lack of a legal tribunal to enforce the findings of the Court. The basis of the rejection of conciliation lay in the precedent established in New Zealand, where also its ineffectiveness was regarded as proven, and the principle was being abandoned in favour of arbitration. Into the Act passed by the State Parliament in 1901 was introduced a principle quite new to the earlier arbitration enactments, viz., the extension of the arbitration principle beyond the area of an existing dispute, to the regulation of wages and working conditions generally.

On account of the large number of cases promptly cited before the Industrial Court, and the possibility of securing an injunction against the Court, there ensued a state of congestion ultimately culminating in considerable industrial unrest, when experience had proved the Act to be cumbered by technicalities.

In the Industrial Disputes Act of 1908 an effort was made to combine the relatively simple procedure of conciliation courts with the compulsory powers of the Arbitration Court as to enforcement of findings and awards, while still maintaining the machinery for regulating wages and working conditions in industry generally. But after some three years' experience, adverse criticism was directed against this the fourth attempt at settlement of the industrial problem, the most serious objection being found in the multiplicity of boards and the danger of overlapping of awards, due to an entire absence of co-ordinating principles.

Though no enactment made between 1892 and 1913 has been wholly effective, it is significant that the periods of industrial unrest have occurred precisely when there has been no machinery available for adjustment of difficulties or when the machinery available has demonstrated its ineffectiveness. Experience shows that many of these disturbances originated in small disputes, which were capable of peaceful settlement, if machinery for immediate inquiry had been available. 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.

Costs of Intervention.

The cost of State intervention between employers and employees is considerable. The several systems established by legislation, in respect of all features of administration have resulted in aggregate expenditures, as follows:—

Year ended June—	Expenditure.	Year ended June—	Expenditure.	Year ended June—	Expenditure.
	£		£		£
1902*	1,625	1906	5,476	1910	13,367
1903	4,134	1907	5,056	1911	13,507
1904	5,919	1908	5,750	1912	16,251
1905	5,240	1909	7,927	1913	21,210

* Six months.

Cost of Industrial Boards.

The expenditure for Industrial Boards, apart from administration, for years ended 30th June, has been as follows:—1909, £3,498; 1910, £9,665; 1911, £8,795; 1912, £11,264; 1913, £13,635.

Fees, in addition to fares, payable to members of Boards and Committees, as determined by Regulation of 23rd October, 1912, are as follows:—

Chairman—£1 per hour for the aggregate of hours occupied by sittings of the Board.
Members—6s. 8d. per hour for the aggregate of hours occupied by sittings of the Board.

When his place of residence is so situated that he cannot reasonably return home at night from the place of meeting—

Chairman, at the daily rate of 17s. 6d.; minimum payment, 10s.
Member at the daily rate of 12s. 6d.; minimum payment, 7s. 6d.

Subsisting Legislation.

The subsisting legislation of the State for the constitution of industrial tribunals is comprised in two enactments, the Industrial Arbitration Act, 1912, and the Clerical Workers Act, 1910; in intimate relationship with these Acts, as constituting arbitral tribunals, is the Gas Act, 1912, providing for regulation of a specific industry.

Industrial Arbitration.

The principal points of the Industrial Arbitration Act, 1912, relate to the operations of Industrial Boards, &c.; but for the clear understanding of the details which follow, it is necessary to review the most important innovations. Provision is made for the registration of industrial unions of employers and employees, and also for the cancellation of registration by request, or by determination of the Court. Unions of employees may make industrial agreements with employers, or with any other industrial union, such agreements to be filed, and binding for 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, rearrangement, or regrouping of" scheduled industries as may be desirable, and where question arises as to the demarcation of callings, may constitute a special board to determine such question The maximum tenure of office by Board members is three years. Concerning the jurisdiction and procedure of Boards and of the Court, details are given hereafter. Where public interests are, or would be, likely to be affected, the Crown may intervene in proceedings before a Board or the Court, or appeal from an award of a Board, and make such representation as may appear necessary to safeguard the public interests.

In the enforcement of awards and orders, "any property of a union, whether in the hands of trustees or not, shall be available to answer any such order."

Appeal from the Registrar or an Industrial Magistrate lies to the Court, any decision of the Court to be final.

Penalties imposed are recoverable in courts of summary jurisdiction, and are payable to the public revenue.

Clerical Workers.

Complementary to the Industrial Disputes Act, 1908, and its amendments, the Clerical Workers Act, 1910, was passed to enable the constitution of a tribunal to fix a minimum wage for persons engaged in clerical work, as difficulty was experienced in applying the machinery of the Industrial Disputes Act as to Wages Board to work of this nature, which, moreover, was not an industry or calling scheduled under the Act. The Clerical Workers Act provides that, on application to the Industrial Court by any employer of not less than ten clerks, or by not less than ten clerks in the same or similar employment, the Court may—

(1) Fix the minimum wages and rates for overtime payable to clerks, such minimum to be a real minimum, based on the wage which, in the Court's opinion, should be paid to

(*a*) The lowest grade of efficient clerical labour, if it does not classify such labour; or

(*b*) The lowest grade of efficient labour in each class, if it classifies such labour.

The classification is determinable by age, experience, qualification, nature of employment, or in any other way practical, expedient, and just.

(2) Provide specially for aged, infirm, or slow workers.

The provisions of the Industrial Disputes Act, 1908, were applicable for the making and enforcing of awards, which would be binding for three years.

No tribunal has been constituted under this Act, which remains supplementary to the Industrial Arbitration Act, 1912; nor have any proceedings whatever been taken under its provisions.

Gas Industry.

The Gas Act, 1912, is designed to prescribe standards of illuminating power, purity, and pressure for gas, and to regulate the price of gas and the operations of suppliers. In regulating the price of the commodity, the regulative authority must allow for variations in cost of production, due to alterations in labour conditions, including wages, made by award of a constituted tribunal.

JURISDICTION AND PROCEDURE OF REGULATIVE TRIBUNALS.

Development of Jurisdiction.

The Industrial Arbitration Act, 1901, aimed at the determination of disputes referred to it rather than at the constitution of a regulative tribunal. The jurisdiction of the Court of Arbitration extended to all industries except domestic service, and its awards applied without limitation of area throughout the State.

The Industrial Disputes Act, 1908, aimed at the constitution of Wages Boards to determine the conditions which should govern employment in specified industries. Boards could be constituted for industries, or occupations or local sections of industries or for any division or combination of employees in industries as might be judged expedient by the Court. In practice, boards were constituted for industries, but employees were associated according to trades, to materials worked in, or to goods made, with the result that there were boards for trades, for business, and for industries or associations of trade—all with exemptions for certain classes of employees or employers.

Under the Industrial Arbitration Act, 1912, the powers of the Court and of its subsidiary tribunals are not limited to the relationships of employment. the range of industries and callings is defined by schedule, and boards may be constituted for any industry or calling or for division or combination in such industry or calling. In practice, old boards have been re-established so far as is consistent with the conditions of the Act. Thus a material distinction between the Wages Board system as operative under the Industrial Disputes Acts, 1908-1910, and the Industrial Boards, provided under the Industrial Arbitration Act, 1912, lies in the grouping of allied industries under one chairman, and in the arrangement of such boards more upon the basis of craft or calling than of industry, the ultimate aim being the maintenance of some twenty-eight subsidiary Arbitration Courts, each having power to deal with a group of allied industries, but subject to the general control of the Court of Industrial Arbitration, which in its supreme direction will co-ordinate the work of the minor courts.

Industries and Callings.

Schedule I.

The following extended form of the Schedules I and II to the Act displays the method of grouping of industries and callings, as at the end of 1912. 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 1, 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, paperhangers, decorators, signwriters, plumbers, gasfitters, builders' labourers, and all other employees engaged in the erection, alteration, or demolition of buildings, monumental masons and assistants, marble and slate workers, **tuckpointers, tile-layers, stone-machinists and all other employees engaged in the preparation of stone for use in the erection of buildings.**

Designation of Group.	Industries and Callings.
Clothing trades ...	Tailors, tailoresses, machinists, cutters and trimmers, pressers, **brushers, folders, and examiners,** felt and straw hat makers, textile workers, and all other persons engaged in the manufacture of clothing, felt and straw hats, and textile goods.
Coal-mining (North)	Coal-miners, wheelers, surface hands, and other persons employed in or about coal-mines north of Sydney.
Coal-mining (South)	Coal-miners, wheelers, surface hands, and other persons employed in or about coal-mines in the Metropolitan and the South Coast Districts.
Coal and shale mining (West).	Coal-miners and shale-miners, wheelers, surface hands, and other persons employed in and about coal and shale mines west of Sydney.
Domestic	Hotel, club, restaurant, caterer, tea-shop, boarding-house, and oyster-shop employees, hairdressers, barbers, wig-makers, laundry employees, hospital nurses, and attendants, ambulance employees; employees of insane asylums and public charitable institutions, **billiard-markers, medical school laboratory and microbiology department attendants.**
Engine-drivers ...	Shore engine-drivers, firemen, greasers, trimmers, cleaners, and pumpers.
Gas-makers	All persons employed in the making, distribution, supply and lighting of gas, or the reading of gas meters.
Food supply and distribution (No. 1).	Bakers and assistants, bread-carters, pastrycooks, employees in biscuit and cake factories, confectioners; butchers employed in shops, factories, slaughter-houses, and meat-preserving works, including carters; fruit preparers and canners and jam factory employees; **candied-peel makers, employees in meat-preserving works, poulterers, and assistants;** and yardmen, grooms, carters and labourers employed in connection with any such callings.
Food supply and distribution (No. 2).	Milk and ice carters, milk weighers and receivers, aerated water, cordial, and beverage makers, brewery employees, malt-house and distillery employees, bottlers, washers, wine and spirit store employees, ice manufacturers, cold-storage employees, freezing and cooling chamber employees; **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;** grooms, labourers, and carters employed in connection with any such callings.
Furniture trades ...	Cabinetmakers, wood-turners, french-polishers, upholsterers, chair-makers, blindmakers, 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; **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;** and yardmen, carters, grooms, and labourers employed in connection with any such 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 employees.	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; **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.**

Designation of Group.	Industries and Callings.
Iron and ship building trades.	Engineers, smiths, boilermakers, iron-ship builders, angle-iron smiths, fitters, turners, pattern-makers, ironmoulders, 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, **wire-workers, wire-fence, nail and tubular gate makers, iron-pipe makers, moulders, grinders, dressers, and polishers of any metal, and brassfinishers, canister makers, metal-ceiling employees and sheet-metal fixers; employees engaged in the manufacture of metallic bedsteads, metallic cots, metallic 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;** and all labourers and assistants employed in connection with any such callings.
Leather trades ...	Boot, shoe, and slipper makers, coachmakers, coachpainters, coach-trimmers, and wheelwrights, saddle, harness, portmanteau, and bag makers, leather makers, tanners and curriers, fellmongers, wool-classers, wool and basil workers, **leather dressers, and boot, shoe, and slipper repairers;** and all labourers and assistants employed in connection with any such callings.
Labourers	Persons engaged in the construction of railways, tramways, roads, bridges, and water conservation and irrigation works, cement makers, concrete workers, rock-choppers, plate-layers, hammer and drill men, timberers, pipe-layers, manhole builders, tool-sharpeners, navvies with or without horses and drays, gangers, employees of shires or municipal councils, and of the City Council, timber-getters and carters; **persons engaged in the demolition of buildings, sewer miners, lime burners and makers, surveyors' labourers;** and all labourers and assistants employed in connection with any such callings.
Manufacturing (No. 1).	Brick, tile, pipe, pottery, terra-cotta, and chinaware makers and carters, tobacco, cigar, and cigarette makers and employees, bag and sack makers, boiling-down employees, bone-millers and manure makers, makers of kerosene, naphtha, and benzine, or any other shale products, **all persons engaged in or in connection with the manufacture and repair of rubber goods, sail, tent, and tarpaulin and canvas makers;** and all labourers and assistants employed in connection with any such callings.
Manufacturing (No. 2).	Cardboard box makers, grain, starch, and mill employees, condiment makers, tea, starch, pickles, and condiment packers, soap and candle makers, jewellery manufacturers and jewellers, electroplaters, **goldsmiths, silversmiths, gilders, chasers, engravers, lapidaries, persons engaged in the manufacture or repair of watches, clocks, electroplate ware, spectacles, optician employees (mechanical), metal badge workers, wholesale drug factories' employees, coffee and other mill employees, persons employed in or in connection with the manufacture and refining of sugar, and in all the products of sugar-cane;** and all labourers and assistants employed in connection with any such callings.
Metalliferous Mining (Broken Hill).	Miners and all persons engaged in and about the mines and quarries and ore smelting, refining, treatment, and reduction works of Broken Hill.

Designation of Group.	Industries and Callings.
Metalliferous Mining (General).	Metalliferous miners, limestone miners, quarrymen, and all persons engaged in and about metalliferous and limestone mines, quarries, mining dredges, or sluicing processes, ore smelting and refining treatment and reduction works, **employees engaged in or in connection with mining for minerals other than coal or shale, and all persons engaged in and about diamond and gem-bearing mines.**
Pastoral and rural workers.	Wool-classers in charge of wool-rooms in shearing-sheds, or in charge of both wool-rooms and shearing-boards in shearing-sheds, shearers, shearing-shed employees, shearers' cooks, wool-pressers, rouseabouts.
Printing trades ...	Compositors, linotype, monoline, and other type-setting or type-casting machine operators, and attendants, letter-press machinists, book-binders, paper-rulers, lithographic workers, metal varnishers, stone polishers, guillotine machine cutters, process engravers, paper makers, and all persons employed in paper mills, stereotypers, electrotypers, readers, feeders, flyers, publishing employees, book-sewers, folders, numberers, wire-stitchers, perforators, embossers, tin-box makers, copper-plate printers, metallic printers, box cutters and cardboard box makers, and all other persons employed in or in connection with the callings herein mentioned or the printing industry.
Professional and shop workers.	Professional musicians, journalists, and paragraph writers, and newspaper and magazine illustrators, shop assistants, cashiers, in shops and office assistants in shops, warehouse employees, **employees in any branch of the process of photography, employees in dental workrooms and theatrical employees.**
Shipping	Shipmasters, officers, marine engineers, **marine motor drivers and coxswains,** sailors, lamp-trimmers, donkeymen, greasers, firemen, **trimmers,** deckhands, stewards, cooks, persons employed on ferry boats, dredges, tug boats, and ferry boats, **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 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 are excluded form the jurisdiction of boards. To obviate the difficulty thus created provision was made specifically for the inclusion of certain Government employees.

Industries which are in the nature of home industries are scheduled separately:—

Schedule II.

Dressmakers, shirt, blouse, and costume makers, milliners and makers of underclothing (including outdoor workers).

This schedule also is capable of extension. The members of boards constituted under this heading are to be appointed by the Minister, the employers' and employees' representatives and the jurisdiction of the board being recommended by the Court. Where employers or employees in the industries or callings consist chiefly of females, 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 the boards in making awards include—

(*a*) fixing the lowest prices for work done by employees, and the lowest rates of wages payable to employees, other than aged, infirm, or slow workers;
(*b*) fixing the number of hours and the times to be worked in order to entitle employees to the wages so fixed;
(*c*) fixing the lowest rates for overtime and holidays and other special work, including allowances as compensation for overtime, holidays, or other special work;
(*d*) fixing the number or proportionate number of apprentices and improvers and the lowest prices and rates payable to them;
(*e*) determining any industrial matter;
(*f*) rescinding or varying any award made in respect of any of the industries or callings for which it has been constituted;
(*g*) declaring that preference of employment shall be given to members of any industrial union of employees over other persons offering their labour at the same time, other things being equal: Provided that where any declaration giving such preference of employment has been made in favour of an industrial union of employees such declaration shall be cancelled by the Court of Arbitration if at any time such union, or any substantial number of its members, takes part in a strike or instigates or aids any

other persons in a strike; and if any lesser number takes part in a strike, or instigates or aids any other persons in a strike, such court may suspend such declaration for such period as to it may seem just.

Where an institution, carried on wholly or partly for charitable purposes, provides for the food, clothing, lodging, or maintenance of any of its employees or any of its inmates who are deemed to be employees, the board in its award as to the wages of such employees or inmates, shall make due allowance therefor. The board may exempt such institution from all or any terms of the award, where the food, clothing, lodging, and maintenance provided by the institution, together with the money (if any) paid by the institution to such employees or inmates as wages, are at least equal in value to the value of the labour of such employees or inmates.

Awards are binding for a maximum period of three years on all persons engaged in the industries or callings and within the locality covered. Appeal lies to the Court, but the pendency of an appeal does not suspend the operation of the award.

Proceedings before a board may be commenced by—

(*a*) reference to the board by the Court or the Minister; or

(*b*) application to the board by employers or employees in the industries or callings for which the board has been constituted.

To induce agreement in case of an application or reference the board will inquire expeditiously and carefully into the matter and anything affecting the methods thereof; it is empowered to enter, for inspection, premises used in the industry, to conduct its proceedings in public or in private, and in respect of witnesses to compel attendance and evidence as under section 136 of the Parliamentary Electorates and Elections Act, 1902. Advocates or agents appearing before the board must be, or have been, actually and *bona fide* engaged in one of the industries or callings in respect of which proceedings are taken.

In the first constitution of Industrial Boards under the Industrial Arbitration Act, 1912, the Court, recognising that industries in Broken Hill could be regulated best by local tribunals, excluded the county of Yancowinna from the jurisdiction of State-wide boards excepting those for textile workers, wire-mattress makers, broom-makers, brush-makers, glass-workers, fire brigade employees, gas-meter makers, motor and cycle makers and repairers, electrical fitters and repairers, wire-netting makers, tinsmiths, rock-choppers, cigar-makers, oil-workers, soap and candle makers, cardboard box makers, paper-makers, and musicians.

Subsequently local boards were constituted for three industries—painters, tailors, and bakers of Yancowinna.

Difficulty of administration ensued on the requirement of one chairman for a group of industries throughout the State, and ultimately the Court, using its power of transposition, dissolved the board covering tailors, etc., varied other boards, and constituted a Metalliferous Mining (Broken Hill) Group No. 1 board for members in county Yancowinna of the industries and callings mentioned in schedules 1 and 2 of the Act, not already included in any existing board, and excepting miners and all persons engaged in and about mines and quarries, and ore smelting, refining treatment, and reduction works at Broken Hill.

A conciliation committee for county Yancowinna was designed with a magisterial tribunal for the enforcement of awards and claims.

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, anticipating by voluntary processes the expedients subsequently embodied in the Industrial Arbitration Act, 1912.

For the year ended 30th June, 1913, some 3,684 complaints were received; 1,931 prosecutions were initiated, of which 104 were withdrawn, and 104 were dismissed. The penalties in fines and costs amounted to £2,731. The prosecutions under the Factories and Shops Acts numbered 99, penalties being imposed in 97 cases and orders to comply in 2. Under the Early Closing Act convictions were obtained in 182 cases, 12 being dismissed; while under the Minimum Wage Act penalties were inflicted in 4 cases and 2 withdrawals noted.

Concurrently with this procedure for the enforcement of awards, &c., the Investigation Officer was engaged in mediatory services wherever disputes or dislocations were known to be pending. He was appointed an Industrial Commissioner on 1st July, 1912, and subsequently in practice his intervention was sought in many cases, statutory authority having been given to this process of intervention with the commencement of the Industrial Arbitration Act, 1912. From 9th October, 1911, to 31st December, 1913, intervention in 142 cases had resulted in dislocations being prevented in 83 cases, while dislocations were curtained and brought to a conclusion in 56 cases, leaving only 3 cases in which mediatory efforts failed.

Factory Inspection.

The provisions of the Factories and Shops Acts are applicable only in localities specifically proclaimed as factory districts, and records of the proclamations have kept pace with the extensions of the manufacturing industries. The Metropolitan district was originally defined by proclamation on 1st February, 1897, as an area of 535 square miles, extending westward to Parramatta, northward to Broken Bay, and southward to George's River. Additions in 1904, and again in 1911, increased the area to 3,446 square miles. Newcastle district was declared in 1899, and extended in 1904. Broken Hill municipality was constituted a factory district in 1903. The Western factory district, as originally proclaimed in 1904, covered 657 square miles in the southern part of Hartley electorate. Extensions in 1911 included the towns of Bathurst, Blayney, and Orange. Goulburn district, proclaimed in 1907, was extended in 1911. Albury district was proclaimed in 1909.

Altogether, the six factory districts embrace 34,434 square miles, and include practically the whole area in which manufacturing is carried on:—

Factory District.	Area—sq. miles.
Metropolitan	5,414
Newcastle	4,579
Broken Hill	26
Western...	12,158
Goulburn	6,288
Albury	5,969
Total	34,434

Inspectors under the Factories Act, the Early Closing Act, and the Industrial Arbitration Act are under the control of the Department of Labour and Industry. The total number of inspectors is 30, of whom 4 are women, and each inspector 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.

Conciliation.

The procedure in investigation and mediation previously noted formed the basis of the machinery for conciliation featured in the Industrial Arbitration Act, 1912, for the efficient discharge of the two functions associated in the enactments it replaced, viz.:—

(I) Prevention and settlement of industrial disputes.

(II) Determination of minimum wage standards, so as to guarantee to all workers in the community a reasonable standard of comfort, and the elimination of sweating and oppression.

The machinery for conciliation provided is as follows:—

(*a*) The Conciliation 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 Industrial 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 follows:—

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 operations of this Committee from July, 1912, to July, 1913, included the following:—

Payment for small coal.—Claim pending.
Shortland Colliery.—General working conditions.
Hetton Colliery.—Payment for narrow bords and headings and adjustment of dirt scale.
Hebburn Colliery.—Height of coal to be worked (new section).
Bellbird Colliery.—Lifting of bottom coal. Award.
Hebburn Colliery.—"Coupt" skips. Award.
Shortland Colliery.—Sharpening tools and working in wet places. Claims upheld.
Hetton Colliery.—Claim for extra shilling in wet places. Pending.
Neath Colliery.—Working conditions; top coal.
Bellbird Colliery.—Working of tops and future bottoms. Award.

Rhondda Colliery.—Yardage rates, &c. Pending.
Stockton-Borehole Colliery.—Wheeling rates.
South Greta Colliery.—General working conditions. Pending.
Abermain Colliery.—Cut-throughs or winning work. Pending.
Burwood Colliery.—General conditions. Pending.
Elermore Vale Colliery.—Working of "little tops." Pending.
Hetton Colliery.—Retrospective payment for narrow bords.
Pelaw Main Colliery.—New cavilling rules.
South Greta Colliery.—General agreement.
Abermain Colliery.—Lower seam. Pending.
Dudley Colliery.—Pillar workings.

The Committee consisted of five representatives each of the Hunter River 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 question of wages and classification of tophands and underground employees (non-miners) was prominent before this Committee.

The Southern Colliery District Conciliation Committtee consists of two representatives each of employers and employees, with a Chairman.

The business before this Committee has arisen chiefly out of alleged deficient places.

In September, 1912, a threatened strike of wheelers at the Metropolitan Colliery was settled by the Committee. During 1913 its operations included:—

Mount Kembla Colliery.—Night shifts only.
Mount Pleasant Colliery.—Treatment of screenman and lamp-boy.
Helensburgh Colliery.—Breach of cavilling rules.
Coal Cliff Colliery.—Promotion of wheeler.
Coal Cliff Colliery.—Yardage.
Metropolitan Coal Company.—Deficiency pay.
South Clifton Colliery.—Deficiency claim.

The Conciliation Committee for the Western Colliery Association consists of a Chairman and two representatives of the employers and two of the employees. Among the matters investigated were:—

Invincible Colliery (Bullen Bullen).—Working agreement.
Invincible Colliery (Bullen Bullen).—Deficient places.

Boards and Awards.

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.

During the four years ended June, 1912, the transactions of the Industrial Court in regard to Boards and awards were as follow:—

Year.	Constitution of Boards.		Boards dissolved.	Awards—	
	Applications received.	Recommended.		Made.	Varied.
1909	105	100	3	45	...
1910	44	38	13	102	35
1911	34	34	7	54	60
1912	...*	...*	1†	153	6

* The figures for this year cannot be used for comparative purposes, as under the system of the 1912 Act (operating from April, 1912) the Court, on its own motion, and without application to it, recommends the constitution of Boards.
† Until 17th April.

The operations of the year ended June, 1913, are subject to the Industrial Arbitration Act, 1912, which was operative from 18th April, 1912. The transactions for the year ended 30th June, 1913, were as follow:—

Boards constituted	211	Awards varied	29
Boards dissolved...	13	Injunctions granted	2
Awards rescinded	2		

On 30th June, 1913, the number of Boards in existence, including those under the 1908 Act, was 196, in addition to one Special Board. The number of awards of Boards for the year was 113, while 33 awards were varied. The awards of the Court numbered 6, and variations and amendments 35.

Enforcement of Awards.

Proceedings before the Industrial Court 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	...

Breaches of Awards.

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.

Summonses for penalties for breaches of awards since 1904, were dealt with as follows:—

Year.	Summonses for Breaches of Awards.		
	Convictions.	Dismissed, Withdrawn, or Struck-out.	Total.
1904	30	153	183
1905	11	91	102
1906	17	6	23
1907	14	24	38
1908	56	182	238
1909	234	325	559
1910	447	468	915
1911†	124	60	184
1912*	798	300	1,098
1913*	1,911	455	2,366

* Year ended 30th June. † To 30th June.

Awards in Industries.

Details as to awards and variations of awards in force in New South Wales are given in Part Manufactories and Works of the "Statistical Register of New South Wales."

The majority of awards have a currency of three years. A minority made under the Industrial Disputes Act, 1908 were for two years; awards of a shorter currency are infrequent.

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 would be 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	1906	13	1910	21
1903		1907	11	1911	27
1904	18	1908	12	1912	44
1905	6	1909	28	1913	36

The noticeable increase in the number of industrial agreements made between 1905 and 1913 as compared with previous years, reflects the measure of encouragement afforded to voluntary collective bargaining.

In December, 1913, sixty-five agreements were in force, to which thirty-eight unions had been contracting parties. Following is the number of agreements current arranged according to the industries concerned, as at December, 1913.

Industries.	Agreements.	Industries.	Agreements.
Biscuit and Cake-making ...	3	Oil Refining and Works ...	1
Broadcasters	1	Printing	14
Carters and Carriers	1	Shipping—	
Clothing—Pressing	1	Ferries and Tugboats ...	1
Cold Storage	2	Marine Engineers	1
Colliery—Mechanics	1	Firemen and Deck Hands	1
Dentistry	1	Masters and Engineers ...	2
Engine-driving and Firing ...	5	Seamen	1
Engine-driving and Firing—Locomotive	1	Shipbuilding	1
		Ships' Officers	1
Farrying	1	Shire Employees	1
Gas Making	6	Smelting	1
Hairdressing	1	Storing and Packing ...	1
Hospital and Asylum Employees	2	Trolley-draymen	1
Iron Working	1	Wire, Nail, and Barb Wire Making	2
Journalism	1		
Mining—Coal	6		
Coal and Shale	1	Total	65
Municipal Employees	1		

Preference to Unionists.

The question of preference to unionists is of vital importance in relation to industrial organization.

In the majority of awards made by boards, a clause has been inserted granting, unconditionally, preference to unionists, all other things being equal. In occasional cases preference has been made subject to a restriction, viz., in the case of Trolley-draymen (Newcastle) providing that the existing employment of non-unionists should not be prejudiced, and in the Caterers (Metropolitan) Award, in which the preference was not extended to women.

Awards granting preference are far more numerous than those in which restricted preferences are given.

Apparently there has been no general rule governing the decisions of boards in this matter, for where there are several awards relating to various branches in an industry, it will generally be found, as in the iron trades, that in one or two branches the preference is unconditional, while in other branches there is no preference whatever in favour of unionists.

In a few cases the preference clause is in the nature of a prohibition of discrimination against unionists.

Wages.

From 1880 to 1887 was, perhaps, the brightest period in the State from the industrial standpoint; except in the five years, 1853-57, wages previously were never so high, moreover 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.

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 in the fifteen years between 1895 and 1910 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.	1912.
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. d. s. 20 0 to 25
Bush carpenters ...	,,	15 0 ,, 30	21 3	25 0	25 0 ,, 30	25 0 ,, 30
Cooks—Station ...	,,	20 0 ,, 40	21 3	20 0	22 6 ,, 30	25 0 ,, 30
Farm labourers ...	,,	10 0 ,, 15	16 3	20 0	20 0 ,, 25	20 0 ,, 25
Milkers	,,	10 0 ,, 18	15 0	16 3	20 0 ,, 25	20 0 ,, 25
Shearers, no rations	per 100	17 6 ,, 20	18 9	20 0	24 0	24 0
Married Couples ...	per annum	£50 to 80	£70 to 75	£70 to 80	£90 to 120	£100 to 120
Stockmen	,,	50 ,, 70	58 ,, 100	52	52 ,, 65	52 ,, 65
Vignerons	,,	60 ,, 70	37 10s	39	52 ,, 55	52 ,, 55

In the above table, average wages for 1900 and 1905, as deducted from the data available, have to be compared with the range of nominal wages in other years, and it is therefore possible to review the figures only on very broad lines. The main feature of the comparison is that the general level of wages has been raised in almost every case, any exceptions being

traceable to the exigencies of a particular season. Thus, for farm labourers, the wage rose from the range of 10s.-15s. per week in 1895, to the range of 20s.-25s. per week in 1910 and 1912. 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 over the 18 years. 1895-1912, 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.	1912.
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 0¾ to 4 2	2 0¾ to 4 2
	s. d.				
Wheelers... per day	7 0	7 0 ,, 8 6	6 6 ,, 9 0	7 0 ,, 9 6	8 0 ,, 9 6
	s. d. s. d.				
Screenmen ,,	6 6 ,, 8 3	6 6 ,, 7 6	6 6 ,, 7 6	7 0 ,, 9 6	8 0 ,, 9 0
					per hour.
Engine-drivers ,,	7 6 ,, 10 0	11 0 ,, 12 6	11 0 ,, 12 6	8 9 ,, 13 0	1 1⅛ ,, 1 4½
					s. d.
Labourers ... ,,	5 6 ,, 8 6	6 6 ,, 7 6	6 6 ,, 7 6	7 0 ,, 8 0	8 0
Metal-mining—	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
	s. d. s. d.	s. d. s. d.	s. d. s. d.	s. d. s. d.	s. d. s. d.
Engine-drivers ,,	9 0 to 10 0	9 0 to 10 0	9 0 to 10 0	11 0 to 12 0	11 0 to 14 0
	s. d.	s. d.	s. d.	s. d.	s. d.
Labourers ... ,,	7 6	7 6	7 6	9 6	9 6

In the manufacturing industry, comparison becomes more difficult, with the increasing variety and complexity of the work, and the rapid development of the past thirteen years, accompanied by the extension of Wages Board awards to so many branches. The following may be taken as typical of different branches of this class of work, the figures, as in the previous tables, applying to adult workers:—

Trade or Calling.	Average Rates.			Minimum Award Rates.	
	1895.	1900.	1905.	1910.	1913.
	£ s. d. £ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Bakers... ... per week	1 5 0 to 2 15 0	2 11 9	2 13 3	2 12 6	3 5 0
Confectioners... ,,	1 10 0 ,, 2 10 0	2 6 3	2 15 6	2 16 0	3 0 0
Millers ... ,,	3 0 0 ,, 3 10 0	2 7 6	2 12 6	2 10 0	3 0 0
Boot-clickers ... ,,	1 10 0 ,, 3 0 0	1 14 3	2 3 6	2 8 0	2 14 0
Tailors (slop) ... ,,	2 0 0 ,, 2 10 0	2 3 3	2 19 0	2 15 0	2 15 0
Tailoresses (slop) ,,	0 10 0 ,, 1 15 0	0 18 3	1 2 4	1 8 0	1 12 6
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 2 6

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.	1913.
Males, per day, without board and lodging.					
Building:—	s. d.	s. d.	s. d.	s. d.	s. d.
Carpenters	8 0	9 6	9 4	11 0	11 0
Bricklayers	8 6	11 0	11 0	12 0	12 0
Masons	7 8	11 0	11 0	12 0	11 0
Plasterers	7 0	9 6	10 0	11 0	11 0
Painters	7 0	9 0	9 4	10 0	10 8
Boilermakers	8 0	10 3	10 3	10 4	11 0
Labourers and navvies	6 0	6 10	7 0	8 0	9 0
Females, per week, with board and lodging.					
Domestic:—	s. d.	s. d.	s. d.	s. s.	s. s. d.
Housemaids	10 0	11 3	12 0	14 to 16	14 to 17 6
Laundresses	14 0	18 9	18 0	20 ,, 25	20 ,, 25 0
Nursemaids	7 6	7 0	10 0	10 ,, 12	12 ,, 14 0
General servants	11 6	11 0	15 0	10 ,, 20	17 ,, 20 0
Cooks	14 0	20 0	17 0	17 ,, 25	25 ,, 30 0

It is noticeable that the rate of wage progression in the different industries has been very uneven; and a detailed study of the whole question would probably yield valuable results. But in reviewing the figures quoted in all the tables above, particular stress must be given to the fact that they are taken only as representative of adult workers in skilled or unskilled trades, and no special deductions can be made from them in the absence of figures to show the extent and effect of factors such as juvenile or slow workers. Further, in discussing the extent of the admitted increase in wages generally, consideration must be given to the relation of wages to the question of food and prices, as evidencing the spending power of money, and to the degree to which the increase of wages corresponds to the generally increased cost of living. The relative force of the two increases and the distinction of cause and effect are not ascertainable without reliable data.

Regulation.

Fixation of wages by specific legislation is confined practically to the Minimum Wage Act, 1908, noted hereunder. The Truck Act, 1900, regulates contracts made with respect to, and the payment of wages, so as to prohibit such payments being made in goods or otherwise than in money. The service of legal process also is subject to the conditions of this Act. Other legislation touching the matter of wages has relation to methods and conditions of work, rather than to rates of payment, excepting, of course, recent legislation already described in regard to industrial arbitration and industrial disputes, where the assessment of equitable wages is specified as an important function of the tribunals under the Acts.

Minimum Wage.

The Minimum Wage Act, 1908, which is 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.

Contraventions or breaches of the Act, or of the regulations, are reported to the Minister for Labour and Industry by inspectors, and proceedings may be instituted with the authority of the Minister. During the year 1910 twenty-six informations were laid in this connection; eleven cases resulted in convictions, seven were withdrawn on payment of costs; seven were withdrawn in view of other convictions against the particular employers, and one case only was dismissed. In 1911 only two informations were laid, both in Newcastle, and both resulting in convictions, while in 1912 only one information was laid, resulting in a Sydney employer being fined.

The provisions as to the Minimum Wage are in operation over the whole State.

They are observed carefully throughout the districts subject to inspectorial supervision as to Factories and Shops, though in many large country towns outside these areas, and not ordinarily included in the inspector's itinerary, infringements may occur, particularly in dressmaking and millinery establishments, the breaches being attributed mainly to ignorance. Overtime is classified under two heads, viz., by the week of forty-eight hours, and also, on any working day, after 6 p.m., when tea money is payable. Many clothing factories complete the week's work in five days, and all work done on Saturday is actually overtime. A case being submitted it was held, on appeal to the High Court, that tea money is payable only in the instance when work is done on any day after 6 p.m.

The minimum wage system has tended to destroy systems of night-work for women, carried on really in violation of the international agreement entered into by Great Britain.

Current Standards as to Wages.

Since 1908 the number of trades in which wages are regulated by awards has extended so rapidly that but few occupations remain without the jurisdiction of industrial tribunals. The principle running through the awards of boards, &c., is the stipulation of an adequate living wage, and the minimum adult wage ranges between 8s. and 9s. per day for any class of

labour. The question of the cost of living enters into the determination of a living wage, and judgments and awards tend more and more to embody all the factors determining effective wages, rather than to compromise between the standards of employer and employee. Early in 1914, as a result of an inquiry into the cost of living, the living wage for adult males was assessed by his Honor Judge Heydon at 48s., per week.

Details as to average wages paid in industries are shown in part "Manufactories and Works" of the Statistical Register.

Aged, Infirm, and Slow Workers.

Applications for variations from award rates were made, under the Industrial Disputes Act, 1908, and its amendments, to the Registrar of the Industrial Court, and to any tribunal which might be constituted for the purpose by an Industrial Board.

Under the Industrial Arbitration Act, 1912, the Registrar alone has power to determine when and how such variations shall be permitted.

For the year ended 31st December, 1913, 485 applications were lodged for permits to pay less than award rates; 355 were granted and 130 refused. The number of permits cancelled was 6, and 65 applications for permits were not proceeded with.

Hours of Work.

In 1855, after a strike, the principle of an eight-hour working day for operative masons was established. In the fifteen years following, the spread of the movement was not great, but in 1871 the Eight-hour Day celebration (since held annually) was inaugurated by the four classes then working the eight-hour day, viz., stonemasons, brickmakers, carpenters, and general labourers; since that inauguration, a forty-eight hour week has become the standard of custom for the majority of trades, and in recent years has been fixed by the awards of Boards as the legal standard. In practice the eight-hour principle is expressed in five working days of eight and three-quarter hours each and four and a quarter hours on Saturday.

Early Closing of Shops.

Under a voluntary system of early closing of shops in the city of Sydney and in adjacent suburbs, the working hours of many employees were reasonable. Infringement of agreements in regard to this voluntary system caused considerable dissatisfaction, and in December, 1899, the Early-closing Act was passed, to operate from 1st January, 1900. It was applicable to the Metropolitan and Newcastle districts as delimited in the schedules to the Act, and to all municipalities, while its operation might be extended to unincorporated areas. The Act provided that in metropolitan and Newcastle districts each shopkeeper should be given the option of closing his shop at 1 o'clock on either Wednesday or Saturday of each week, and where this option was not taken Wednesday was deemed to be the day chosen. During 1900, 566 shopkeepers, chiefly importers and warehousemen, notified Saturday as their early-closing day. All others selected Wednesday. In many country municipalities the early-closing day has been altered, after a poll, from Wednesday as originally fixed by proclamation to Saturday, and Friday substituted for Saturday as the late-closing night. Subsequent amendments of the Early Closing Act were necessitated by the conflicting interests between scheduled and non-scheduled shops.

Universal Half Holiday.

In 1905 a movement in favour of a universal half holiday was initiated; in 1909 a Royal Commission of Inquiry was appointed to investigate the desirableness of amending the Early Closing Acts so as to provide for a universal half holiday in the Metropolitan and Newcastle districts. In September, 1909, the Commission reported adversely. In August, 1910, the Saturday Half Holiday Act was passed; it was applicable to metropolitan and Newcastle districts, and to all other country shopping districts in county Northumberland. The operation of the Act has since been extended by proclamation to many other country shopping districts.

Shops are permitted to remain open till 10 p.m. on Friday, 6 p.m. on other week nights, and 1 p.m. on Saturday.

In relation to the working hours in factories, reference has been made to the growing practice of completing the full week's work within five days, so leaving the Saturday a full holiday.

General Conditions.

In prescribing limits to the hours of work of women and boys, legislation both in England and in Australia has been concerned with the following subjects:—

(*a*) The aggregate hours to be worked per week.
(*b*) Overtime in excess of this aggregate.
(*c*) Number of hours' work per day.
(*d*) Night-work.
(*e*) Number of hours of continuous work.
(*f*) Meal times.

In factories in New South Wales, as in other States of the Commonwealth, the maximum working week for women and juveniles is forty-eight hours, under the Factories and Shops Act, 1912, with a maximum period of five hours' continuous labour and an overtime limitation of three hours per day.

The second sectional report of the Royal Commission of Inquiry into the Shortage of Labour, (1911) had for its subject-matter the hours and general conditions of employment of female and juvenile labour in factories and shops, and the effect on such employees. Details as to the class and amount of labour employed in factories are given in Part "Manufacturing Industry" of this Year Book. As to the effect of supervision relative to material surroundings, the Commission was of opinion that the net result of the regulative clauses of the Factories and Shops Act, after fifteen years' operation, is that from the point of view of health the factory buildings in the metropolis (to which locality inquiry was confined) vary between wide extremes of fitness, the older factory buildings being far below a fair standard, while buildings originally erected for stores or warehouses have been adapted to factory work, at the expense of essentials of ventilation and lighting, and provisions for safety from fire, and for comfort of the employees.

Emphasis was placed upon the necessity for prohibition of factory work in buildings of galvanized iron, or insistence upon lining of roof of buildings in occupation.

Adequacy of safety provisions in case of fire is determinable by Inspectors, and the Commission recommended that standardised requirements in this direction should be embodied in the statute law.

Air space requirement under the Factories and Shops Act is 400 cubic feet per person employed. To prevent overcrowding, aggregate air space is insufficient, and the Commission suggested a definite interval of air space as the minimum between individual workers, and the prevention of vitiation of air by gas-heaters, &c.

As to dust, the statutory requirement is that any factory or shop, or any portion thereof, shall be ventilated in such a manner as to render harmless, as far as practicable, all the gases, vapours, dust, or impurities, generated in the course of the manufacturing process or handicraft carried on therein, that may be injurious to health. . . ." Where grinding, glazing, or polishing on a wheel or any other process is carried on, whereby dust is generated, which is inhaled by the employees to an injurious extent, such inhalation could be to a great extent prevented by the use of a fan, or by other mechanical means of ventilation. The necessity for definite stipulation is obvious.

Standardisation by Award.

The majority of Wages Boards awards have legalised the 48-hour normal working week, but the awards in which that standard is not specified are numerous. On the other hand, 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.

A strict eight-hour day is observed only by two trades of the full number of 105 which in October, 1912, were working a 48-hour week; the strict eight-hour day, with a half day of four hours on Saturday, involves a 44-hour week.

In 1912 out of 153 awards listed, 105 covered limitations of the working week to 48 hours or less. The industries for which less than 44 hours per week are stipulated are notably unhealthy trades, *e.g.*, rock-chopping and sewer-mining, 36 hours per week, or 6½ hours per day; printing trade machine operators on night work are limited to 42 hours per week.

In six trades the limit ranged between 44 and 48 hours per week; stonemasons and quarrymen have a 44-hour week, or a strict eight-hour day; process engravers a 44½ hour week; jewellers (watch and clock makers and repairers) and clerical workers under the Government Railway and Tramway award, 46¾ hours; storemen and packers in two sections of the industry a 47½-hour week.

In two industries the hours of female workers have been specially limited, viz., in meat packing, preserving and canning, to 44 hours; and sail, tent, and tarpaulin making to 47 hours.

In several awards relating to the Government Railways and Tramways, 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. The persons affected by this provision are chiefly shunters, guards, labourers, firemen, signalmen, conductors, drivers, pointsmen, starters, examiners, shed foremen, checkers, and washers.

It is to be noted that most of the occupations for which the short week is fixed are regarded as more than usually unhealthful or strenuous.

Of the trades working more than forty-eight hours per week, the most prominent are those connected with transport services and food supplies.

In most cases in which a working week in excess of 48 hours is prescribed, it is to be noted that the workers are regarded generally as unskilled, the chief groups being carters and shop assistants. Yet there are occasional and notable instances of long working weeks in occupations which might appear entitled to a short week; *e.g.*, cement workers, in continuous processes, employees at the steel and blast furnaces in the iron trades at Lithgow, and pharmaceutical shop assistants, in all which cases a 56-hour week is prescribed. The maximum working week allowed under any award is 91 hours, alternating with a 78-hour week, for horse-cab drivers; taxi-cab drivers, under the same award, with alternating weeks of 84 and 72 hours, occupy the second highest place on the list.

Apprenticeship.

Under the Apprentices Act of 1901, any person resident and trading in New South Wales may take apprentices under certain conditions regulating the apprenticeship, *e.g.*, as to age limitation and probation before completion of indentures. The Act limits the working time of apprentices to forty-eight hours per week, with saving clauses as to rural industries and domestic service. The minimum age of apprentices is 14 years, and limitations upon the proportion of apprentices to adults are fixed in the majority of cases in awards of wages boards. Usually 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 extent of instruction imparted, premiums usually paid, and rate of wages, &c.

The third sectional report of the Royal Commission of Inquiry in New South Wales as to the Shortage of Labour, &c., in 1911-12, covered investigations as to the cause of the decline in the apprenticeship of boys to skilled trades, and the practicability of using Technical and Trade classes as aids to or substitutes for apprenticeship.

The decline of the apprenticeship system is a characteristic feature of industrial development in practically every community, and is common to all trades and industries, both to factory trades in which machinery is developed to a high point of specialisation and to the handicrafts which also are being subdivided into specialties.

An important contributory factor in the decline of apprenticeship in New South Wales is, according to the findings of the Commission, the facility with which highly remunerative wages may be obtained in unskilled trades, *e.g.*, rabbit-trapping. While Technical education is unlikely to give satisfaction as a substitute for apprenticeship its value as an adjunct is realised, and the Commission recommended that the school-leaving age be raised from 14, as required under the Public Instruction Act, 1880, to 16 years of age, so as to obviate the hiatus between the cessation of general education and the commencement of the specialised trade or technical training, which usually is not commenced till age 16.

The classification of industries to determine which are skilled trades, and the delimitation of the essential requirements of each are conditions precedent to the restoration of the apprenticeship system.

Generally, wages or industrial boards have exercised control over apprenticeship in individual trades, but the Commission recommends the constitution of an Apprenticeship Commission with power—

(*a*) to classify for apprenticeship trades and branches of trades, determinable as skilled.

(*b*) to determine, with regard to apprenticeship, the period, rates of pay, length of attendance at Technical classes, and amount of pay for certificated attendance.

(*c*) to supervise the carrying out by masters and apprentices of the apprenticeship agreement and transfers from one master to another.

A new apprenticeship law was suggested to determine—

(*a*) compulsory apprenticeship for future juvenile labour in skilled trades.

(*b*) technical education, if procurable, to be obligatory on all apprentices.

(*c*) additional pay to apprentices for certified technical study.

Outworkers.

Under section 14 of the Factories and Shops Act, 1896, occupiers of factories are required to keep, and to supply to the factory inspectors, full records regarding outworkers employed. Permission to engage outdoor workers is required by the awards.

Shearers' Accommodation.

The Shearers' Accommodation Act, 1901, was intended to become operative on 1st January, 1902, but in view of the fact that the State was then experiencing a drought, the provisions of the Act were suspended temporarily. The Act is administered in conjunction with the inspectorial work under the Factories and Shops Act, &c. During 1913, 1,490 stations were visited, 1,961 huts inspected, of which 1,817 were regarded as satisfactory. The new huts built numbered 62. One summons issued for infringement of conditions resulted in a conviction.

Derangements to Industry.

Interruptions to industry from such causes as fires and floods, the blocking of bar harbours, &c., necessarily supervene, periodically, but no reliable records are available to show the extent of the resultant suspension or slackening of industrial operations or the amount of loss or depreciation of perishable products. In regard to the manufacturing industry, it is shown that the average time worked in all classes of manufacturing is slightly more than eleven and a half months per year, and an analysis of the details given shows the extent of the variations from that average.

Seasonal Slackness.

In the summer-time industries, particularly manufacturing, in the city and suburbs suffer to a certain extent from seasonal slackness. For instance, in January, and even in February, slackness and half-time working are to be anticipated in trades such as order tailoring, mantle, and costume making. But such slackness is the necessary corollary to high-pressure work and overtime, which usually prevail in the weeks before the Christmas season. In the clothing trades, manufacturers for retail shops have to face the difficulty of rush orders, it being the practice of such shops to allow their stocks to run out entirely before placing fresh

orders. Further, the practice of indenting surplus English stocks to catch the corresponding Australian season's trade causes some uncertainty regarding estimates of local requirements. In the tailoring trade, and especially in the highest class work, the on-and-off 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 force 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, aims at obviating strikes and lock-outs. The inefficiency of penal proceedings for all cases is postulated, and the characterisation of a strike or lock-out as criminal gives way to its characterisation as an extravagant expedient, liable to penalisation extending to a charge on any moneys then or thereafter due to the person ordered to pay such penalty. The Court also may grant a writ of injunction to restrain any person from continuing to instigate or to aid in a lock-out or strike, the maximum penalty attaching being imprisonment for six months.

In the following table is given a summary of the dislocations in which complete information was supplied since 1907; all cases involving a loss of 10,000 or more working days have been classified as principal:—

Year.	Principal Dislocations.			All 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	268,693	152	31,366	88,662
Total ...	44	63,441	2,690,424	728	151,169	680,965

* July–December.

NOTE:—The number of cases in which incomplete information was given was 198, distributed over the years 1907 to 1913 as follows:—17, 43, 23, 55, 35, 16, 9.

Duration of Dislocations.

In 808 cases of 970 dislocations recorded some particulars as to duration have been given. Appended is a table distinguishing between mining and non-mining, and showing the strikes lasting one day or less, and over one day:—

Year.	Industries and Duration.					
	Mining.		Non-Mining.		Total.	
	One Day or less.	Over one Day.	One Day or less.	Over one Day.	One Day or less.	Over one Day.
1907*	14	16	8	5	22	21
1908	62	66	30	30	92	96
1909	23	62	21	24	44	86
1910	17	23	35	14	52	37
1911	12	30	17	19	29	49
1912	48	28	16	26	64	54
1913	54	37	25	46	79	83
Total ...	230	262	152	164	382	426

* July–December.

The number of workers affected by one-day strikes was 72,352, and the loss of working days 65,452. Thus these brief dislocations accounted for approximately 49 per cent. of the total number under review, 33 per cent. of the workers involved, and 2 per cent. of the working days lost.

More complete information is given in the following table regarding the duration of the dislocations previously discussed:—

Duration in Days.	Dislocations.	*Workers involved.	*Working days lost.
Under 1 day	79	13,007	6,144
One day	303	59,345	59,308
Over 1 and not exceeding 7 ...	261	65,701	215,028
,, 7 ,, ,, 14 ...	45	12,179	174,533
,, 14 ,, ,, 21 ...	24	22,678	151,000
,, 21 ,, ,, 28 ...	20	3,894	78,358
29 to 56	36	13,482	408,822
57 ,, 112	25	8,734	464,381
113 ,, 168	8	15,576	1,473,767
169 ,, 224	4	604	95,308
246	1	180	33,200
273	2	800	178,000
282	1	100	22,500
485	1	30	11,040
Not stated	160	†	†
Total	970	216,310	3,371,389

* Exclusive of information not obtainable in 160 cases. † Information not supplied.

Causes of Dislocations.

An analysis of the proximate causes, as set down by the participants, reveals that the majority of dislocations in the past four years have been the result of disagreement as to wages and working conditions. In all there were 970 dislocations, and the following statement shows the causes, the workers affected, and the time lost:—

Cause.	All Industries.		
	Dislocations.	* Workers involved.	* Working days lost.
Wages	329	70,408	919,300
Hours	63	10,540	62,559
Employment of persons or classes of persons.	159	35,725	408,976
Trade unionism	42	3,964	68,124
Working conditions	250	61,757	1,493,523
Sympathy	38	17,345	373,793
Miscellaneous	35	9,145	25,352
Not stated	54	7,426	19,762
Total	970	216,310	3,371,389

* Exclusive of information not obtainable in 160 cases.

Settlement of Dislocations.

The methods of settlement have been classified in four groups termed "strife," "arbitration," "replacement," and "other." The settlements by replacement and methods not definitely ascertained are combined in the following table:—

Year.	Dislocations of all Industries 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	93	53	23	169
Total ...	557	159	254	970

* July-December.

Results of Settlements.

Of the 970 recorded dislocations, 495, or 51 per cent., resulted in resumption of work with modified conditions, more or less in accordance with the workers' claims. In 225, or 23 per cent., no modifications were granted, while the results of the remaining 26 per cent. were not recorded. The following statement affords a comparison for the years 1907 to 1913:—

Year.	Dislocations in all Industries resulting in—						Results not stated.
	Modification.			No Modification.			
	Dislocations.	Workers involved.	Working days lost.	Dislocations.	Workers involved.	Working days lost.	
1907*	21	15,327	190,741	13	2,138	5,279	24
1908	110	27,703	194,778	52	8,566	23,317	61
1909	84	29,685	1,651,926	27	2,507	7,998	40
1910	50	9,696	96,250	40	2,793	5,043	46
1911	59	14,408	183,382	14	4,160	170,282	33
1912	67	16,092	69,012	34	9,297	18,359	26
1913	104	31,108	308,288	45	7,869	45,944	20
Total ...	495	144,019	2,694,377	225	37,390	276,222	250

* July-December.

Industrial Accidents.

Deaths due to accident or negligence are discussed in section "Vital Statistics" of this Year Book. The accident record for the State for years 1910 to 1912 may be summarised as follows:—

Year.	Fatal Accidents Recorded.			Accident Rate per 10,000 of Population.
	Males.	Females.	Total.	
1910	721	197	918	5·66
1911	795	222	1,017	6·12
1912	809	218	1,027	5·91

The chief causes under which these accidents are classified, and the proportion per 10,000 accidents attributed to these causes, are as follows:—

Causes.	Distribution per 10,000 Accidents.		
	1910.	1911.	1912.
Burns and scalds	1,570	1,640	1,120
Drowning	1,520	1,550	1,353
Vehicles and horses ...	1,440	1,460	1,636
Falls	820	890	1,709
Railways and tramways ...	740	780	1,163
Mines and quarries ...	520	470	662
Weather agencies ...	510	380	448
Other causes	2,380	2,830	2,104

Records are not available to show what proportion of fatalities under each head may be classed immediately as 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. Following are the recorded accidents for the past four years:—

District.	1909.		1910.		1911.		1912.	
	Fatal.	Non-fatal.	Fatal.	Non-fatal.	Fatal.	Non-fatal.	Fatal.	Non-fatal.
Metropolitan	2	386	1	405	2	451	3	477
Newcastle	2	35	1	26	1	50	...	35
Total... ...	4	421	2	431	3	501	3	512

The non-fatal accidents may be classified further as resulting in permanent or partial disablement, or merely temporary incapacitation:—

	1909.	1910.	1911.	1912.
Permanent disablement	6	2	5	2
Partial ,, ...	60	86	91	105
Temporary incapacitation ...	355	343	405	405
Total	421	431	501	512

These figures represent only a partial statement of the case against the manufacturing industry as the scene of fatalities and mishaps; a truer presentation of the case would be seen if the accident rate could be derived by referring the total accidents to the number of persons exposed to risk.

The following table shows in comparative form for each of the two districts the mishaps which occurred during the last five years:—

District.	Year.	Fatal Accidents.	Non-fatal Accidents.			
			Disablement.		Temporary Incapacitation.	Total.
			Permanent.	Partial.		
Metropolitan	1908	4	5	82	261	348
	1909	2	5	53	328	386
	1910	1	1	83	321	405
	1911	2	5	80	366	451
	1912	3	2	96	379	477
Newcastle	1908	1	...	13	31	44
	1909	2	1	7	27	35
	1910	1	1	3	22	26
	1911	1	...	11	39	50
	1912	...	9	2	24	35

Accident Rates.

Relating the accidents as reported to the mean of the number of employees in factories recorded for each year, the rates per 10,000 employees are as shown in the following statement:—

District.	Year.	Mean Number of Employees.	Fatal Accidents.	Non-fatal Accidents.		
				Disablement.		Temporary Incapacitation.
				Permanent.	Partial.	
Metropolitan	1908	60,307	·663	·829	13·597	43·297
	1909	64,332	·311	·777	8·238	50·985
	1910	68,678	·146	·146	12·085	46·740
	1911	74,295	·269	·673	10·768	49·263
	1912	79,586	·377	·251	12·062	47·621
Newcastle	1908	5,406	1·850	.....	24·047	57·344
	1909	5,056	3·955	1·978	13·844	53·397
	1910	4,918	2·034	2·034	6·101	44·738
	1911	5,265	1·890	.....	20·893	74·074
	1912	5,394	.....	16·685	3·708	44·493

On the figures shown above, temporary incapacitation is the result of approximately 80 per cent. of the accidents; and it is unfortunate that records are not available to show the time lost through these mishaps. The remaining 20 per cent. of accidents result in death, or disablement which, whether permanent or partial, means the practical removal of the disabled person from the ranks of the labour force.

If comparison be made of the extent of the serious accidents (fatalities and disablements) in these principal factory districts, it will be seen that the Newcastle rate is usually the higher:—

Year.	Serious Accident Rate per 10,000 Employees.	
	Metropolitan.	Newcastle.
1908	15·089	25·897
1909	9·326	19·777
1910	12·377	10·169
1911	11·710	22·792
1912	12·690	20·393

Broken Hill constitutes an important factory district, but details regarding accidents are not readily available.

Lifts and Scaffolding.

The construction of high buildings, particularly of steel and concrete, involves considerable risk of accident. Four fatalities were reported in connection with building operations during 1912-13. One accident was due to the collapse of a scaffolding, the projected construction of which had not been notified. Four accidents, one fatal, occurred in connection with cranes and hoists in operation; in three cases the causes were other than defect or failure, and in the fourth overloading was responsible.

Particulars are not available to enable the correlation of the recorded accidents with the area of exposure as represented by the numbers of persons liable to risk.

Inspection of Lifts and Scaffolding.

The inspection of lifts and scaffolding, like industrial inspection, is undertaken with a view to safeguarding the interests and well-being of employees and other persons. This function of supervision is carried out by the Department of Public Works.

Consequent on the ascertained structural weakness in a large proportion of hand-cranes and power cranes, both imported and locally made, the Public Works Department, in February, 1914, demanded a factor of safety of not less than four in the structural members, and six in all gearing on cranes, with an overload test of 25 per cent. where considered necessary.

For the purpose of the test, the jib is extended to the maximum radius (*i.e.*, jib-head level with mast-head), and the jib against either backstay.

The section of the glandirons is determined by resolving the compressive stress in a backstay into its vertical component, taking the horizontal portion of the glandiron as a beam fixed at one end and loaded at the other, the length of the beam being measured between perpendiculars through the top pivot and the intersection of the neutral axis of the backstay portion of the glandiron with that of the horizontal portion.

In connection with steel jibs, in addition to the jib being taken as a strut, the additional stresses set up in the jib as a beam will also be taken into consideration, as in long jibs these stresses have an enormous weakening effect.

Close attention is directed to gearing, owing to overstressing through unsatisfactory engagement of one tooth with another, also to top and bottom pivots as points of weakness.

Lifts.

The numbers of lifts erected during the last six years are as follows:—

Financial Year.	Electric.	Hydraulic.	Belt Driven.	Total.
1908	52	33	9	94
1909	75	35	8	118
1910	70	15	4	89
1911	114	28	14	156
1912	167	21	12	200
1913	181	27	18	226

The lifts in commission in the Metropolitan area in June, 1913, were classified as follows:—

Classification.	Electric.	Hydraulic.	Belt Driven.	Total.
Passenger	359	171	1	531
Goods	278	509	90	877
Service	78	24	8	110
Whips, &c.	39	110	48	197
Total	754	814	147	1,715

No fatalities were recorded during the year 1913, but 15 minor casualties were reported.

Scaffolding and Cranes.

Superintendence of scaffolding and lifts in course of erection is a further function of the Department of Public Works. Notices of intention to erect have to be submitted. During 1912-13, 1,347 such notices were received, 996 being for scaffoldings, and 351 for hand cranes.

The number of power cranes and hoists used in connection with building operations during the year was 181. Excluding 8 electric lifts, the lifting power of the cranes was as follows:—

Crane or Hoist.	Capacity in tons.				
	1 and under.	1-3.	4-5.	6-10.	Total.
Power Crane—					
Electric	...	36	3	2	41
Steam	...	6	1	3	10
Hoist—					
Electric	95	...	...	...	95
Steam	17	...	....	....	17
Oil Engine	5	...	...	....	5
Hydraulic	5	...	...	...	5
Total	122	42	4	5	173

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 1912 is shown as 4·5.

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 this connection it may be of interest to summarise the report made in 1910 by the International Association for Labour Legislation regarding the nature of industrial poisons, the method of their entry into the human body, the extent of danger, and measures for combating such poisons.

Nature of Industrial Poisons.—Industrial poisons include those substances which in their production, their use, or, to a less extent, occurring as by or intermediate products, endanger by chemical processes the working capacity of the labourer, the deleterious effect arising from chemical reaction with the compounds or elements of the body.

Methods of Entry.—(1) Through the mouth and digestive system. (2) By the respiratory system. (3) By the skin.

Extent of Danger.—Complete statistics are lacking for every country both as regards the handicap to industry and the impairment of the worker's efficiency and the extent to which sickness insurance funds are affected by the frequency of industrial poisoning. This failure of facts and figures is attributed in a large degree to lack of toxicological knowledge as much as to lack of leisure to investigate the specific nature of employment of patients presenting themselves to physicians or in hospitals. And it is beyond question that the necessary information can be secured only by means of a legal obligation placed upon medical authorities.

Methods of Combating Industrial Poisons.—Preventive measures largely rest with factory owners and managers because of their responsibility for provision of proper technical arrangements for removal of gases, vapours, dust, &c., and for effective protection in the form of washing facilities, respirators, helmets, and gloves.

List of Industrial Poisons.—A comprehensive list of industrial poisons was quoted in Bulletin No. 86 of the Department of Commerce and Labour of the United States of America. A revised list, as prepared by the International Association for Labour Legislation, is published in Bulletin No. 100 of the same Department.

Realisation of the importance and necessity of accurate knowledge, as opposed to mere opinion, concerning the existence of dangers from industrial poisoning in various industries, led to the enactment during 1911 in various parts of the United States of America of laws requiring reports by physicians of all cases of occupational disease discovered in the course of medical practice.

In the majority of unhealthy trades there are frequent compensating advantages in the way of short hours and high wages; but in New South Wales these matters are regulated rather by the ratio of supply and demand in the labour market than by statute or award based upon a full appreciation of the element of risk.

UNEMPLOYMENT.

Unemployment in any community may be traced to one of three causes, one personal, and two impersonal and beyond control of the individual:—

(*a*) Disability to perform work.
(*b*) Inability to find employment.
(*c*) Compulsory cessation of work, arising from trade disputes, seasonal slackness, &c.

In the first category are found those who from incapacity incidental to extreme youth, old age, or mental or physical unfitness, are dependent on others for subsistence. Necessarily relief not obtainable for such types from assurance, either private or national, must be sought from eleemosynary institutions.

The third cause involves considerations of strikes and lock-outs, concerning which many theories and plans have been broached and ventilated since labour questions have become the subject of scientific inquiry. The modern method of treatment of this cause is to be found in legislative enactments constituting authoritative tribunals for free inquiry and awards in settlement.

The above two causes present problems which admit of solution, although remedies have not yet been found which are acknowledged universally to be successful. Only with respect to the second cause, dearth of work, or inability to find it, is it to be admitted that real difficulty exists as to solution of the problem. The more the question is studied, the more plainly does it appear that a multitude of factors are at work in our civilisation, of which the existence is admitted, but the remedial measures are not so readily perceptible. While the much desired means of prevention of this cause of unemployment are being sought, it is eminently desirable to relieve the individual sufferers from its effects, but the difficulty of measuring accurately the volume of unemployment is considerable.

Census Records.

The following table summarises the numbers and proportion for each industrial group of employed and unemployed persons in New South Wales at the census in April, 1911:—

Class of Occupation.	Persons Employable.			
	Unemployed.		Employed.	
	Males.	Females.	Males.	Females.
Professional	388	262	32,280	16,278
Domestic	696	1,466	17,394	51,859
Commercial	1,891	312	80,572	15,565
Transport and Communication ...	1,398	5	57,243	1,588
Industrial	7,617	582	156,428	34,841
Primary Producers	3,544	...	184,855	4,791
Total Breadwinners	15,534	2,627	528,772	124,922
Unspecified	676	73	3,489	261
Total	16,210	2,700	532,261	125,183

The percentage of unemployed to total population was 1·89 for males and ·34 for females.

Comparison with previous census records is impossible, for lack of data.

Trade Unions and Unemployment.

Preliminary statistics relating to unemployment, as affecting Trade Unions, were collected for 1910. The general trend of these records indicated that the degree of unemployment amongst union members was not extensive, but this was the first year of collection of the figures, and only 78 out of a total of 174 unions reported. Following are the records gathered from the reports relating to unemployment in the various groups of industries at the end of 1912:—

Group.	Unions Reporting.	Members.	Period.			Members Unemployed—Cause.			
			Under 2 Weeks.	Over 2 Weeks.	Total.	Lack of Work.	Accident.	Sickness.	Other.
Building	6	5,601	46	136	182	179	...	1	2
Clothing	1	201	30	10	40	40	...	...	...
Engineering and Metal	15	10,634	254	293	547	421	2	9	115
Food and Drink ...	9	6,350	572	339	911	875	...	3	33
Land Transport ...	3	4,753	65	4	69	69	...	...	...
Mining	9	13,505	65	1,294	1,359	522	86	94	657
Printing, &c.	3	848	15	11	26	26	...	...	...
Shipping, &c.	3	3,183	25	48	73	73	...	...	...
Manufacturing, n.e.i...	12	6,514	560	99	659	659	...	...	...
Other industries ...	6	2,224	111	69	180	180	...	...	...
Total	67	53,813	1,743	2,303	4,046	3,044	88	107	807

From fifty-seven other unions, reports were obtained to the effect that no members were out of employment at the end of the year.

Regarding each industrial group of the unions affected by unemployment, the following summary has been prepared for 1912 from returns collected from one hundred and twenty-four unions of employees:—

Group.	Unions Reporting—				Unions which did not supply Information.	
	No Unemployment.		Unemployment			
	Unions.	Members.	Unions.	Members.	Unions.	Members.
Building	6	3,830	6	5,601	7	7,484
Clothing	1	340	1	201	5	4,896
Engineering and Metal Working	1	2,621	15	10,634	...	...
Food and Drink	10	3,257	9	6,350	7	5,678
Land Transport (exclusive of Railways and Tramways)	4	535	3	4,753	1	256
Mining and Smelting	10	2,416	9	13,505	4	9,840
Pastoral	2	1,078	...	...	2	20,418
Printing, Bookbinding, &c.	3	346	3	848	1	2,025
Railways and Tramways	1	13,848	...	...	1	117
Shipping and Sea Transport	4	6,495	3	3,183	5	7,906
Manufacturing, n.e.i.	8	2,565	12	6,514	4	4,426
Miscellaneous	7	5,441	6	2,224	11	12,160
Total	57	42,772	67	53,813	48	75,206

Group.	Members Unemployed.			Causes of Unemployment.				
	Under Two Weeks.	Over Two Weeks.	Total.	Lack of Work.	Accident.	Sickness.	Industrial Disputes.	Other Causes.
Building	46	136	182	179	...	1	...	2
Clothing	30	10	40	40	...	...	...	...
Engineering and Metal Working ...	254	293	547	421	2	9	65	50
Food and Drink	*572	†339	911	875	...	3	...	33
Land Transport (exclusive of Railways and Tramways)	65	4	69	69	...	...	...	...
Mining and Smelting...	65	1,294	1,359	522	86	94	...	657
Pastoral	...	...	...	...	...	...	...	...
Printing, Bookbinding, &c.	15	11	26	26	...	...	...	...
Railways and Tramways	...	...	...	...	...	...	...	...
Shipping and Sea Transport ..	25	48	73	73	...	...	...	...
Manufacturing, n.e.i.	‡560	§99	659	659	...	...	...	...
Miscellaneous	111	69	180	180	...	...	...	...
Total	1,743	2,303	4,046	3,044	88	107	65	742

* Including 17 Females. † Including 5 Females. ‡ Including 6 Females. § Including 3 Females.

Relief of Unemployment.

The question of relief of unemployment first received practical political attention in 1885, when, following upon a period of severe pastoral, commercial, and industrial depression, a Casual Labour Board and State Soup Kitchen were 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.

State Labour Bureau.

Stated succinctly, the functions of the State Labour Bureau include:—

(*a*) Maintenance of a free registry office for men in Sydney, with forty-three branch offices in as many of the principal centres of population. At any of these, men 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 men are assisted to reach employment available. All these operations are conducted at the cost of the State, no fees of any kind being charged to employers or employees.

(*b*) Issue of railway and steamer fares on credit, repayments being required after the lapse of one month or longer, according to circumstances; and payment being accepted, where considered necessary, by easy instalments. Usually the payment of such fares is guaranteed either by the employer or some responsible person; but at the discretion of the Director, such fares are at times issued on the personal acknowledgment of the recipient, and his promise to repay the same. Occasionally wives and other relatives are removed from one part of the State to another, also furniture, farm animals, &c.

(*c*) Provision of rabbit traps, tents, blankets, and some few other things, on satisfactory guarantee of repayment, which is accepted in whole or in part, as in the case of rail and steamer tickets.

(*d*) Management of an agricultural training farm at Pitt Town, 5 miles from Windsor, for city and oversea youths. One hundred lads can be accommodated during a course of instruction lasting three months. They take part in turn in all the operations of the farm which, besides the usual areas under crop, has a dairy, pigs, poultry, an irrigated vegetable garden, and a good orchard, mainly of citrus fruits. Broom millet is also grown and manufactured into brooms on the farm. All horse-shoeing, other blacksmithing, saddle and harness making, and tin-smithing required are done on the place, and most of the vehicles used are built on the farm, so that the students have an unrivalled opportunity of gaining an elementary knowledge of all sorts of farm work and cognate occupations likely to assist them therein.

(*e*) Management of a pig, poultry, vegetable, and flower farm at Randwick, 5½ miles from the city, to which destitute men unable to maintain themselves may resort; and where, in exchange for labour, they are given lodging, food, and a small money allowance. 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.

(*f*) Marketing of produce from these farms. The revenue from this service in 1913 was £6,673.

(*h*) Provision of food to destitute families which have an adult male at the head. Three days' work in each week at the Randwick Depôt is offered to such family head, who is housed and fed, and on the conclusion of his work, given an order for 7s. 6d. worth of goods. These orders are addressed to approved storekeepers only, and are inconvertible. Articles to be supplied are listed, and from this list choice may be made by the recipient. Articles not listed are not paid for. 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 cases of real and immediate destitution and want of food.

(*i*) Collection and dissemination of information by means of the Press and otherwise concerning labour conditions in all centres of population in the State. Forty-three Clerks of Petty Sessions are agents for the Bureau, and report at the commencement of each month on business done, condition of district, state of labour market, wages ruling, new avenues for labour, &c. They also frame special reports, when required, on any subject cognate to industrial matters. In addition the police of 200 principal stations all over the State, make a similar monthly report, and specially report whenever any opening for labour of any kind comes under their notice.

A registry for women was maintained from 1902 till January, 1906, but in the year 1913 the Women's Employment Agency was opened.

The following table shows a summary of Registrations since the system was commenced in the year 1901:—

Year ended 30th June.	Re-registrations.	New Registrations.	Net Registrations for the year.	Year ended 30th June.	Re-registrations.	New Registrations.	Net registrations for the year.
1901	6,343	3,099	9,442	1908	187	2,839	3,026
1902	1,391	2,243	3,634	1909	609	2,800	3,409
1903	740	2,114	2,854	1910	327	3,393	3,720
1904	2,513	1,482	3,995	1911	792	2,599	3,391
1905	885	998	1,883	1912	333	2,363	2,696
1906	361	1,257	1,618	1913	208	2,811	3,019
1907	249	2,316	2,565				

The following is a statement of the persons registered and sent to work during each year since 17th February, 1892. Country branches were opened on 1st March, 1896:—

Year ended 30th June.	Head Office.		Branches.	
	Registered.	‡Sent to work.	Registered.	Sent to work.
*1893	18,600	8,154	.....	.....
*1894	12,145	10,349	.....	.....
*1895	13,575	16,380	.....	.....
*1896	14,062	20,576	.....	.....
1896—18 Feb.-30 June ...	3,283	5,327	1,104	143
1897	6,427	13,718	1,253	534
1898	4,167	7,817	715	288
1899	3,843	7,228	686	224
1900	5,487	6,495	516	319
1901	10,639	9,654	1,613	149
1902	3,634	5,151	1,252	238
1903	2,854	6,493	218	65
1904—Dawes' Point... ...	3,995	15,731	22	11
† Trades Hall	758	1,156	.....	.....
1905—Dawes' Point... ...	1,883	4,317	31	46
† Trades Hall	306	1,556	.....	.....
1906—Dawes' Point... ...	1,602	3,934	37	35
† Trades Hall	16			
1907	2,565	3,639	24	24
1908	4,027	3,237	37	24
1909	3,409	3,299	20	21
1910	3,720	3,883	26	24
1911	3,391	3,277	6	6
1912	2,696	3,341	5	4
1913	3,019	3,163	2	2
Total	130,103	‡167,880	7,567	2,157

*Year ended February.

†The total registrations at the Trades Hall Registry from its inauguration on 15th December, 1901, to 31st July, 1905, when it was abolished, were 4,070. ‡The number shown as sent to work exceeds the number shown as registered, owing to the fact that persons, although registered only once, may and do receive several engagements as a result of such registration.

At the end of February, 1911, a registration bureau for unemployed was opened in Newcastle, to enable the Government to assist in relieving distress which was said then to prevail chiefly among colliery workers. Of the total registrations, 743 represented single men to whom employment was offered on the North Coast Railway work. The second month's operations being on a very small scale, the bureau was closed after the end of April.

The distribution of those assisted and sent to work during the year 1912-13 will be seen from the following table:—

Classification.	Assisted and sent to work.		
	City and Suburbs.	Country.	Total.
Government work	23	10	33
Private work	450	1,865	2,315
Do (Country branches)...	.....	2	2
*Labour Depôt	734	.....	734
Agricultural Training Farm ...	.....	81	81
Total	1,207	1,958	3,165

* Includes 200 "Specials," or married men earning food for their families.

The subjoined statement gives particulars of registrations in each classification for 1912-13:—

Classification.	Registered for the year 1912-13.	Eligible for work on 30 June, 1913.
Professional and clerical	20	3
Mechanics, tradesmen, and skilled labourers of definite occupations ...	2,307	279
Labourers	692	77
Total...	3,019	359

The statements given show that, though the Labour Bureau is prepared to deal with men of all classes, its main business concerns the distribution of manual labour, skilled or unskilled.

Women's Employment Agency.

A State Women's Employment Agency was opened at Sydney in the year 1913. The record of the first month's operations shows that 574 women were registered and 32 sent to employment.

Sydney Clerks' and Warehousemen's Benefit Association.

A friendly society, the Sydney Clerks and Warehousemen's Benefit Association, endeavours to regulate clerical labour.

The following figures show the extent of out-of-employment benefits granted to members of the Association in recent years:—

Year.	Mean Membership.	Aggregate Benefits.	Year.	Mean Membership.	Aggregate Benefits.
	No.	£		No.	£
1905	362	261	1910	775	231
1906	456	245	1911	791	252
1907	491	212	1912	876	377
1908	579	330	1913	954	250
1909	706	211			

Particulars as to the number of beneficiaries in each year are not available.

The extent of out-of-employment benefits provided by trade unions has been shown previously in this chapter.

Workmen's Insurance.

State Legislation.

Legislation in relation to employers' liability in New South Wales is based upon English statute law, which embodies the modern English conception of the function of government, in a series of legal enactments in addition to the common law, *i.e.*:—

Employers' Liability and Workmen's Compensation Acts, 1880-1907.
Old-age Pensions Act, 1908.
National Insurance Act, 1911.

Local legislation has not advanced to the principle of social insurance developed in the English law. It is restricted, so far as the State is concerned, to 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.

The operation of the Workmen's Compensation Act, 1910, during 1913, disclose that in all 488 returns were received, showing 77,088 males and 3,774 females exposed to risk.

The number of fatalities, where compensation was paid, was 62, and £14,797 was paid into Court or to legal representatives in respect thereof.

The number of disablements was 6,061 for which £30,275 was expended, and in 156 non-fatal cases £9,079 was disbursed. The following summary shows the duration of disablements completed during the year:—

Particulars as to Duration of Compensation.	Number of Cases.
Less than 2 weeks	3,120
2 weeks and less than 3	994
3 ,, ,, 4	564
4 ,, ,, 13	1,154
13 ,, ,, 26	182
26 weeks and over	47
Total	6,061

The cases which had not terminated at the end of the year 1913, and their durations were as follows, over 1 year and less than 2, 6 cases; over 2 years and less than 5, 1 case.

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 employers' 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 1913 numbered 202.

The gross revenue for the year 1913 was £71,900, which showed an increase of £4,895 over the previous year. The total amount deducted from wages was £30,478, representing an average year's contribution from 31,272 persons. The contributions by mine owners amounted to £15,163, which includes one-third of the contributions made by checkweighmen and pickmen.

The Government subsidy for the year 1913 was £15,169, and interest received on investments amounted to £11,059.

The funds invested at 31st December, 1913, amounted to £319,000, of which £19,000 was added during the year, the whole sum being represented by New South Wales Funded Stock. The expenditure for the year was £52,041, or £6,203 in excess of the year 1912.

The following table summarises the beneficiaries during the year 1913:—

Condition of Beneficiaries.	Claims existing, 31st Dec., 1912.	Claims allowed, 1913.	Benefits Determined.				Claims existing on 31st Dec., 1913.
			By Death.	By marriage.	By Age.	Otherwise.	
I. Fatal Accidents—							
Widows	308	41	4	6	...	2	337
Fathers	11	1	...	...	...	...	12
Mothers	38	5	2	...	...	...	41
Sisters and Guardians ...	17	5	...	...	...	3	19
Children	536	76	...	...	56	4	552
II. Disablement—							
Persons permanently disabled	232	40	12	...	...	2	258
Children	192	51	2	...	16	4	221

The year 1913 was free from anything that might be described as a mining disaster, though at Broken Hill three men were killed as the result of one accident. The accidents, fatal and non-fatal, since 1901 are shown below:—

Period.	Average Number of Employees.	Fatal Accidents.		Non-fatal Accidents.	
		Number.	Per 1000 Employees.	Number.	Per 1000 Employees.
1901-5*	21,377	57	2·67	3,484	162·98
1906-10*	26,626	56	2·10	5,538	207·99
1911	28,034	64	2·28	6,024	214·88
1912	29,390	77	2·62	6,211	211·33
1913	31,272	78	2·49	6,184	197·75

* Average.

The Commonwealth.

In addition to the general enactments of the State, specific enactments of the Commonwealth provide for compensation to men in a particular class of work which is subject to special risks, and to officers in the Service of the Commonwealth Government.

Seamen's Compensation.

The Seamen's Compensation Act, 1911, provides for compensation to seamen for injuries suffered in the course of their employment. It is applicable to seamen (*a*) on ships in the service of the Commonwealth, other than naval or military service; (*b*) on ships trading with Australia or engaging in any occupation in Australian waters, and being in territorial waters of any territory which is part of the Commonwealth; and (*c*) on ships engaged in trade and commerce with other countries or among the States. In case of ships not registered in Australia, the two last clauses apply only in relation to seamen shipped under articles of agreement entered into in Australia, and while the ships are subject to the law of the Commonwealth. Liability runs only after one week's incapacitation; in case of death the amount of compensation, when deceased leaves dependents, is the equivalent of three years' wages in the particular employment, or £200, to a maximum amount of £500.

The compensation is reducible with the measure of dependence, but the minimum for a seaman leaving no dependents is the cost of medical attendance and burial to the value of £30.

In case of total or partial incapacity, the maximum compensation is 50 per cent. of average earnings during the twelve months previous to the injury.

Periodic returns as to compensation are required from the owner or master of every ship on which seamen are employed to whom the Act is applicable, the returns to specify—

(*a*) The number of injuries in respect of which compensation has been paid.
(*b*) Amount of such compensation.
(*c*) Other particulars as required.

Industrial Legislation.

For many years subsequent to the establishment of Responsible Government in New South Wales in 1855, the majority of the population were engaged chiefly in pastoral or mining industries, in sparsely-settled districts. Local conditions neither promoted nor necessitated the concentration of attention upon industrial activity, with consequent legislation in that direction. Between 1871 and 1881, however, manufacturing came into prominence as an integral part of the industrial life of the State; the increasing population displayed a tendency to aggregation in defined localities, and for some ten years, till 1892, legislative interest expressed itself in a desultory way in specific enactments intended for the betterment of conditions obtaining in industry. In this period world-wide interest was displayed in the question as to the necessity and the wisdom of protective legislation for the betterment of environment for the great body of workers.

The Legislature of New South Wales was alert to the general trend of thought and opinion. The Parliamentary session of 1892 constitutes a landmark in the industrial history of New South Wales, for three vastly differing enactments were passed, which signalised a new era of activity in legislation, viz.:—

Protection of Children Act.
Diseased Animals and Meat Act.
Trade Disputes and Conciliation Act.

These enactments formed the nucleus of a body of statute law which has been expanded by subsequent legislation, and is being amended constantly in the effort to give concrete form to advancing standards and ideals.

The enactments which initiated the era of consistent consideration for the welfare of the general body of the people are notable in that they apply to three diverse aspects of life—(*a*) the dependent stage of infancy; and (*b*) the adult period as to (1) health, (2) working conditions. In codifying the industrial laws in New South Wales, as enacted in the last twenty years, the sequence of introduction which displays the direction of attention of legislators indicates also the trend of popular thought.

Historically, the earliest subjects to receive attention were such as related to industrial conditions and safeguards in trade. The sequence of treatment of individual trades placed shipping in the first rank, followed in order by retail trading, mining, agricultural, and pastoral industries. Health interests and matters relating to food and drink and bodily welfare were antecedent to the subject-matter of general welfare and protection; while in regard to the helpless and extreme stages of life, youth received consideration as being proximate to the working years, before the extremes of infancy and old age, which were concerned more remotely with the industrial problems.

In 1901 the Commonwealth of Australia was inaugurated, and its Parliament was empowered, under the Commonwealth of Australia Constitution Act, 1900, to make laws under stated conditions for the peace, order, and good government of the Commonwealth, particularly in matters of trade and commerce, taxation, bounties on production, borrowing money on public credit, postal, telegraphic and telephonic services, defence, lighthouses, astronomical and meteorological observations, quarantine, fisheries, statistics, currency, banking, insurance, bills of exchange, bankruptcy, copyright, and patents, naturalisation, marriage, divorce, pensions, migration, external affairs, and railway control in relation to defence and railway construction subject to the consent of the State concerned.

With the translation of these subject-matters to the Federal arena, an acceleration is noticeable in the attention given by the Parliament of the State to economic measures for the advancement of industrial efficiency and well-being, which acceleration is in part attributable to the expanding popularity of protective regulation by statute law, and in part to the additional opportunity afforded for attending to subjects of social reform. Thus, New South Wales now possesses a body of statute law which forms an industrial code sufficiently comprehensive to compare favourably with similar codes governing other advanced communities.

An analytical list of the principal industrial laws of New South Wales has been given in previous years, and need not be recapitulated. The provisions of a number of these Acts, which have for their object the amelioration of the conditions of the industries, have been discussed in various chapters of this Year Book.

The Grand Arch, Jenolan Caves N.S.W.

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 necessaries 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 (viz., pastoral, agricultural, dairying, mining, forestry, fisheries, and manufacturing) 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. There is certainly a vast opportunity for further and systematic development of its resources, as may be gathered from a study of the trade figures relating to primary products.

For purposes of review, a summary is given of the production from local industries, and the extent to which food products are imported from oversea countries, may be seen by reference to the section of this Year Book relating to Commerce.

VALUES OF LOCAL INDUSTRIES.

During 1912 the total value of production from the principal industries reached the very satisfactory sum of £74,100,000, which is far in advance of the total of any former year. For many years the pastoral industry has been the chief source of the wealth of the State, the production of 1912 being £19,440,000. The production from the manufacturing industry has increased very rapidly during the last seven years, and in 1912 exceeded the pastoral, being valued at £22,464,000.

The statement below shows the estimated value of production of the various industries, at the place of production, at intervals since 1891:—

Value of Production. (*In thousands,* 000 *omitted.*)

Year.	Pastoral.	Agricultural.	Dairying. *	Poultry, Bees, Rabbits. *	Forestry and Fisheries.	Mining.	Manufacturing.	Total, all Industries.
	£	£	£	£	£	£	£	£
1891	14,725	3,615	2,735	.....	758	6,434	7,799	36,066
1896	11,774	5,374	2,546	.....	715	4,465	7,302	32,176
1901	12,552	7,060	3,046	.....	733	5,681	9,742	38,814
1906	19,743	7,518	3,425	1,693	1,536	7,913	11,906	53,734
1907	22,281	6,588	3,567	1,708	1,382	10,295	13,481	59,302
1908	18,846	8,319	4,064	1,732	1,165	8,384	13,633	56,143
1909	19,040	10,908	3,983	1,990	1,096	7,403	14,536	58,956
1910	21,028	9,493	4,796	2,119	1,108	8,455	16,794	63,793
1911	19,434	9,749	5,215	2,055	1,195	9,410	19,143	66,201
1912	19,440	11,817	5,758	2,089	1,303	11,229	22,464	74,100

* 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.	Manufacturing.	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

* Poultry and bee farming included with dairying in 1901 and previous years.

The following table shows the total value of production in various years, from 1871 onwards, and the resultant return per head of population :—

Year.	Value of Production.		Year.	Value of Production.	
	Aggregate. (,000 omitted).	Per head of Population.		Aggregate. (,000 omitted).	Per head of Population.
	£	£ s. d.		£	£ s. d.
1871	15,379	30 5 3	1908	56,143	36 6 5
1881	25,180	32 18 3	1909	58,956	37 7 7
1891	36,066	31 11 7	1910	63,793	39 9 5
1901	38,814	28 7 11	1911	66,201	39 15 4
1906	53,734	36 3 11	1912	74,100	42 12 5
1907	59,302	39 1 4			

These figures show that since 1871 the aggregate value of production has increased by nearly 59 million pounds, and the value, per head of population, by £12 7s. 2d. From the primary industries alone the return in 1912 was £51,636,000, equal to £29 14s. per head. The figures afford ample justification for the investment of the capital which has secured such results.

Variations in prices, due mainly to causes beyond local control, and the general conditions of the season, are the most powerful factors in regulating the volume and value of production; but making due allowance for these factors, the steady advance noticeable throughout the period covered by the figures given above is a magnificent testimony to the wealth of the State, and the bountiful returns which it yields.

The steady progress of the value of production from the various industries during the last sixteen years may be seen in the following statement, which shows the average annual value during quinquennial periods since 1897.

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.			
	1897-1901.	1902-1906.	1907-1911.	1912.	1897-1901.	1902-1906.	1907-1911.	1912.
	£	£	£	£	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Pastoral	13,166	14,747	20,126	19,440	9 17 9	10 5 10	12 14 1	11 3 8
Agricultural	5,930	6,395	9,012	11,817	4 9 1	4 9 3	5 13 9	6 15 11
Dairying	2,923	3,940	4,325	5,758	2 3 11	2 15 0	2 14 7	3 6 3
Poultry, bees, rabbits			1,921	2,089			1 4 3	1 4 0
Forestry, Fisheries	743	1,020	1,189	1,303	0 11 2	0 14 3	0 15 0	0 15 0
Mining	5,475	6,423	8,789	11,229	4 2 3	4 9 8	5 10 11	6 9 2
Total Primary	28,237	32,525	45,362	51,636	21 4 2	22 14 0	28 12 7	29 14 0
Manufacturing	9,022	10,467	15,517	22,464	6 15 6	7 5 3	9 15 11	12 18 5
Total, all Industries ..	37,259	42,992	60,879	74,100	27 19 8	29 19 3	38 8 6	42 12 5

Taking the annual average for the quinquennium 1897–1901 as 100 in each case, the average for all industries for the second period was 115, and for the third quinquennium 1907–1911, 163, and for the year 1912, 199. The dairying industry shows the largest relative increase, then the manufacturing industry :—

Industry.	1902–1906.	1907–1911.	1912.
Pastoral	112	153	148
Agricultural	108	152	199
Dairying, Poultry, &c. ...	135	214	268
Forestry, Fisheries ...	137	160	175
Mining	117	161	205
Total, Primary ...	115	161	183
Manufacturing	115	172	249
Total, al Industries...	115	163	199

Imports and Exports.

During the year 1909, the latest for which the total imports and exports of this State were recorded by the Customs Department, domestic produce to the value of £33,446,016 was exported, viz., to other Australian States, £11,674,436; to countries oversea, £21,771,580. The value of local production unexported was £25,509,984, being less than half the total value of

local production. These unexported local products were supplemented by imported goods to the value of £38,034,962. In the chapter relating to Commerce, details are given as to the import and export trade of the State; a review of the figures shows that the value of food and drink, &c., imported during 1909 was £6,896,310; textiles and dress stuffs were valued at £6,686,816, these two groups thus representing 18·13 per cent., and 17·58 per cent. respectively of total imports.

Domestic produce exported during 1909 included commodities, other than gold to the value of £32,658,639, and of these commodities, food and drinks, &c., were worth £4,559,003; textiles and staple animal and vegetable substances, £17,556,465.

Wool holds first place among the articles of export; and far lower down in the scale come skins and hides; wheat, butter, meats, copper, lead and coal also are exported in large quantities.

Food Consumption.

With the cessation, on 13th September, 1910, of the old system of keeping records of all interstate trade, it has become impossible to determine the value of imports to, and exports from, the State, or to assess the extent and value of commodities consumed, or, in some cases, produced locally. Consequently, tables which have been published hitherto, cannot be continued.

The annual consumption per capita of the principal articles of diet, based on an average of three years, ending in December, 1909, is estimated as follows:—

		lb.	lb.
Meat	Beef	141·8	249·4
	Mutton	96·5	
	Pork, &c.	11·1	
Fish	Fresh	7·0	11 6
	Preserved	4 6	
Potatoes			181·0
Flour			225·4
Rice			8·2
Oatmeal			7·6
Sugar			103·8

		lb.
Salt		38·5
Butter		26·1
Cheese		3·5
		gal.
Milk	Fresh	17·4
		lb.
	Preserved	4·4
Tea		7·3
		oz.
Coffee		11·0

Comparison with an average dietary in older and colder countries, as in Germany or in England, serves to prove the truth of the assertion so often made, that the standard of living in New South Wales, and in fact throughout Australia, is high relatively to that of any other community.

An investigation was conducted in 1907-8 into the cost of living of families of moderate income in Germany; data for 150 workmen's families, with an average of 4·76 members, disclosed the following average annual consumption of specified articles of food.

	Per Family.	Per Individual.
Meat—lb.	288·36	60·63
Butter—lb.	77·60	16·31
Other fats—lb.	62 83	13·23
Cheese—lb.	40·34	8·38
Potatoes—lb.	965·39	202·82
Coffee—lb.	32·41	6·83
Milk—qt.	532·89	111·90

Meat.

The remarkable feature of the per capita quotations for New South Wales is the large amount of meat consumed. In other countries where meat and butter are not easily obtainable, these articles are replaced in the dietary, by cheese which is cheap and nutritious, and by suet and other fats. Particulars shown subsequently in this chapter in relation to the food supply of Sydney indicate that the consumption of meat in New South Wales is now far below the average of earlier years.

Further information regarding the production of meat is given in the chapter relating to Pastoral Industry.

Fish.

Contrasted with the local consumption of fresh meat, which averaged almost 11 oz. per capita per day, or with the consumption of fish in other countries, the quantity of fish consumed in New South Wales is very small.

The local supply marketed, which constitutes the bulk of fresh fish consumed, amounted in 1913 to 12,118,200 lb., exclusive of 9,080 dozen crayfish, 239,080 quarts of marine prawns, and 19,900 sacks of oysters. It is estimated that approximately 4,000,000 lb. are disposed of each year without passing through the recognised markets; supplies pass, unrecorded, from various rivers to country towns in the State, from the northern rivers into Queensland, and from the south into Victoria.

Potatoes.

The consumption of potatoes is subject to considerable fluctuation. In 1904 it amounted apparently to 125,000 tons, but fell to 87,000 tons in the succeeding year when prices became higher. In 1908 it reverted to the figures of 1904, but in 1909 it dropped to 96,000 tons. Local production varies greatly, but is seldom equal to the demand, and the State is usually compelled to import supplies, mainly from the neighbouring States.

Sugar.

The consumption of sugar is considerable, reaching the average of 103·8 lb. per head of population. The northern rivers district is adapted to the growing of sugar-cane, and during the four years ended on 31st March, 1899, the average area cut was over 15,000 acres. With the growth of dairy-farming the industry has declined, and now within the State only 6,000 acres of cane are cut annually.

In New South Wales only one company is engaged in sugar milling and refining; its mills in New South Wales number three. All the sugar is produced from cane; beet is not grown for sugar in the State. All sugar imported is subject to the duty of £6 per ton; the excise hitherto payable on sugar of Australian origin has been discounted by a bounty system for sugar manufactured from cane grown by white labour under standard industrial conditions. The Sugar Excise Repeal Act, 1912, and the Sugar Bounty Abolition Act, 1912, repealed the excise and bounty system. In New South Wales cane is grown on the northern rivers, but locally grown and crushed cane forms a comparatively small proportion of the raw sugar treated in the local refinery.

Tea and Coffee.

Tea enters largely into consumption amongst all classes, the average annual consumption being about 7 lbs. per head. Coffee, on the other hand, averages only 11 oz. per head; there are indications however that the consumption of coffee is increasing.

From the following comparison of the average consumption of tea and coffee in various countries it is apparent, as regards tea, that Australia, New Zealand, and the United Kingdom are the largest consumers; the Netherlands and United States of America show the highest averages for coffee; the figures for British countries relate to the year 1912, and for foreign countries to 1910 :—

Country.	Annual Consumption per head of Population.	
	Tea.	Coffee.
	lb.	lb.
Australia	7·55	0·64
New Zealand	7·33	0 29
United Kingdom	6·47	0·61
Canada	5·40	2·17
Netherlands	2·07	15·12
Union of South Africa	1·23	4·12
United States of America ...	0·89	9·33
German Empire	0·11	5·80
France	0 07	6·26

Consumption of Intoxicants.

As with other commodities, so with alcoholic beverages, it is not possible to compute the volume and value of local consumption. To supply a basis for approximations, however, details are given as to the ascertained consumption up to and inclusive of 1909, when the volume of spirits consumed in New South Wales was 1,295,400 gallons (proof), of which 123,800 gallons were Australian produce, and 1,171,600 gallons were imported. The consumption per head, 0·82 gallons, was equal to the average for the previous five years, as will be seen from the following table:—

Year.	Consumption of Spirits.		Year.	Consumption of Spirits.	
	Aggregate.	Per Inhabitant.		Aggregate.	Per Inhabitant.
	gallons.	gallons.		gallons.	gallons.
1891	1,268,400	1·11	1903	1,127,200	0·80
1895	921,500	0·73	1904	1,126,400	0·79
1898	986,300	0·74	1905	1,131,500	0·78
1899	1,005,800	0·75	1906	1,163,600	0·78
1900	1,104,000	0·82	1907	1,419,900	0·94
1901	1,245,700	0·91	1908	1,188,200	0·77
1902	1,260,400	0·91	1909	1,295,400	0·82

The average consumption of beer per head of population declined considerably from 1891, when the rate was 11·43 gallons per capita, and in 1905 was lower than in any previous year for which information is available, namely, 9·07 gallons per head. The rate subsequently rose in each year to a maximum of about 10 gallons annually for each inhabitant. The consumption of imported beer decreased, though not to the extent indicated in the follow-

ing table, as in the two earlier years the figures included imports from other Australian States :—

Year.	Consumption of Beer.			
	Aggregate.			Per Inhabitant.
	Locally brewed.	Imported.	Total.	
	gallons.	gallons.	gallons.	gallons.
1900	13,274,700	1,619,000	14,893,700	11·00
1901	13,118,300	1,757,900	14,876,200	10·88
1902	13,441,300	1,121,300	14,562,600	10·49
1903	12,571,700	1,011,500	13,583,200	9·65
1904	12,079,400	940,900	13,020,300	9·11
1905	12,327,900	867,800	13,195,700	9·07
1906	12,716,800	812,400	13,529,200	9·11
1907	14,278,800	945,700	15,224,500	10·03
1908	14,856,800	906,800	15,763,600	10·20
1909	15,240,000	973,500	16,213,500	10·28

The wine entering into consumption in New South Wales is chiefly the produce of Australian vineyards; but the quantity produced in the State is much less than might be expected in a country so eminently adapted for viticulture. The quantity of Australian and foreign wines consumed during recent years is shown below :—

Year.	Consumption of Wine.			
	Aggregate.			Per Inhabitant.
	Australian.	Foreign.	Total.	
	gallons.	gallons.	gallons.	gallons.
1899	831,800	75,500	907,300	·67
1900	816,900	87,000	903,900	·67
1901	700,000	94,000	794,000	·58
1902	851,600	167,900	1,019,500	·73
1903	845,300	107,600	952,900	·68
1904	941,100	40,500	981,600	·69
1905	1,075,500	29,100	1,104,600	·76
1906	1,094,600	39,400	1,134,000	·76
1907	927,000	43,000	970,000	·64
1908	850,800	41,800	892,600	·58
1909	877,700	43,600	921,300	·58

Compared with other countries the average consumption per head of population of alcoholic beverages in Australia is moderate, as will be seen from the following table. The figures are based on the latest available data, and for British countries represent the consumption during the year 1912 and for foreign countries during 1909 :—

Country.	Consumption per head of Population.		
	Spirits.	Wine.	Beer.
	galls.	galls.	galls.
Germany	1·58	·97	22·0
France	1·32	32·80	7·9
Canada	1·15	·14	7·3
United States of America ...	1·14	·58	16·5
Belgium	1·03	1·01	46·0
Australia	*·95*	*·93*	*13·2*
New Zealand	·83	·15	9·7
United Kingdom	·67	·25	26·8
Italy	·56	26·00	·4
Union of South Africa	·29	1·25	1·2

Of the representative countries quoted, Belgium, France, and the United Kingdom are respectively the greatest consumers under the three heads of spirits, wine, and beer; and it is worthy of note that Australia compares so favourably in all three classes.

Tobacco.

The consumption of tobacco during the seven years, 1903–09 is recorded below :—

Year.	Consumption of Tobacco.					
	Aggregate.			Per head of Population.		
	Tobacco.	Cigars.	Cigarettes.	Tobacco.	Cigars.	Cigarettes.
	lb.	lb.	lb.	lb.	lb.	lb.
1903	3,365,500	180,400	440,100	2·39	·13	·31
1904	3,199,200	184,000	512,000	2·24	·13	·36
1905	3,426,200	189,100	525,400	2·36	·13	·36
1906	3,603,000	202,900	558,800	2·43	·14	·38
1907	3,607,700	271,400	622,000	2·33	·18	·41
1908	3,747,800	244,800	690,700	2·42	·16	·45
1909	3,724,100	223,300	719,800	2·36	·14	·46

The quantity of tobacco consumed in 1909 was 4,667,200 lb., the figures including tobacco, cigars, and cigarettes. This is equivalent to 2·96 lb. per inhabitant, and is slightly below the average of 1908, which was 3·03 lb. per head. The consumption is gradually increasing; ten years ago the average per head was just over $2\frac{1}{2}$ lb., and from 1900 to 1904 not quite $2\frac{3}{4}$ lb. per head. The figures for 1909 are as follows :—

Description.	Consumption of Tobacco.			
	Aggregate.			Per head of Population.
	Imported.	Australian.	Total.	
	lb.	lb.	lb.	lb.
Tobacco	492,600	3,231,500	3,724,100	2·36
Cigars	114,100	109,200	223,300	·14
Cigarettes ...	42,100	677,700	719,800	·46
Total ...	648,800	4,018,400	4,667,200	2·96

In regard to the description of tobacco used there had been a large increase in the quantity of cigarettes. In 1890 about 88 per cent. of the total consumption was of ordinary tobacco, in 1909 the proportion had fallen to 80 per cent.; of cigars, the consumption was about 8·5 per cent., as compared with 5 per cent.; and of cigarettes 3·5 per cent. in 1890, compared with 15 per cent. in 1909.

Food Supply and Prices in Sydney.

A Royal Commission was appointed in July, 1911, to conduct an inquiry into the food supply and prices in Sydney, with special reference to fish, meat, bread, milk, fruit, and vegetables. Evidence was collected in the neighbouring States as well as in many parts of New South Wales, and sectional reports dealing with the various commodities were issued to supplement the general report.

Generally the methods of production of foodstuffs are not calculated to secure the maximum output nor the highest quality that might reasonably be expected even under existing economic conditions. Considerable waste and deterioration occur as the result of inefficient methods of transport and handling, the system of distribution is crude and expensive, and the multiplication of distributing agencies adds considerably to the cost to the consumer.

The unsatisfactory conditions may be attributed to two general defects :—

(1.) The nature of the economic system under which the bulk of foodstuffs is produced and distributed, viz., by a large number of persons with small capital operating on a small scale in competition with one another. The most effective method of improvement lies in the adoption of the principle and practice of co-operation. The Commission recommends also the extension of agricultural education, the maintenance of a vigorous policy of immigration to secure adequate labour for the producer, and the increased intervention of public authorities in the business of distribution.

(2.) The absence of an organised and unified supervision of the whole process of production, transport, and distribution of food. At present the supervision is conducted by several independent authorities, such as the Board of Health, the Department of Agriculture, the Railway Commissioners, and the local government authorities. This lack of co-ordination can be remedied by the establishment of a permanent bureau or commission, with comprehensive powers and general duties somewhat analogous to those exercised by the statistical department of the British Board of Trade.

Regarding the prices of foodstuffs the investigation was limited to local causes affecting prices in the local market, and did not embrace such causes affecting the world's prices generally, as the increase in the world's gold supply, and the increasing demand for food-products in new markets.

The outstanding cause of the rise in prices of foodstuffs, which has taken place during recent years is the relative deficiency in production. Apart from the extension of the export trade of the State, the sources of supply are taxed by a disproportionate increase of the food consuming classes, as compared with the producing classes. This fact is illustrated by a table in the chapter relating to Employment, showing the classification of the population according to occupation. During the intercensal period, 1901-1911, the food-producing classes, that is, persons engaged in agricultural and pastoral industries, increased at the rate of 19·9 per cent., as compared with commercial and industrial classes 36·8 and 41·8 per cent., total working population 23·4 per cent., and total population of the State 21·7 per cent.

The complexity of the distributing system is an important factor of the cost of food. It is estimated that the costs of distribution amount to one-half, and in some cases more, of the price paid by the consumer. Under the present system it is impossible to make an appreciable reduction in these charges, but improvement may be effected by providing facilities for the direct transmission of foodstuffs in small parcels from the producer to the consumer ; by extending the facilities for retail buying in the markets, and by increased intervention of public authorities in the work of distribution. The increasing stringency of Government regulations tends to raise the cost of production and distribution, but these regulations have the effect of improving the quality, and this fact must be taken into consideration in comparisons of prices.

Another factor of the rising prices is the change in the habits of consumers. The prosperity of recent years has in many ways increased the cost of supplying the demands of the ordinary householder—by increasing the demand for more expensive classes of meat, bread, fish, &c., which involves the waste of the cheaper, but not less nutritive classes. The practice of dining in restaurants and hotels, reduces the quantity consumed at home, with the result that the total cost of suburban distribution, which owing to increases in wages, fodder, &c., has risen greatly during the last ten years, is expended to supply a smaller average quantity to each householder. Moreover, the proportion of food supplied at contract rates to the restaurants and hotels has increased, and the tendency is for the supplier who obtains but a small return on his large orders to keep up the price on the small orders of individual housekeepers. It is stated also, that the demands of all classes of consumers upon distributors have become more exacting.

The increase in wages owing to the operations of Trade Unions, Wages Boards, &c., has contributed towards the rise in prices, by giving the working classes a higher purchasing power, and so increasing the demand for articles of general consumption, but otherwise wages increases in the particular trades investigated, except perhaps in the milk trade, have not directly caused any large increase in prices. For instance, the increased wages cost in the meat trade would be covered by a rise of $\frac{1}{12}$d. per lb. in the wholesale, and from $\frac{1}{10}$d. to $\frac{1}{5}$d. per lb. in the retail prices. In the milk trade the increased wages cost since 1900 amounts to 1·3d. per gallon; and in the bread trade since 1902, to about $\frac{1}{3}$d. per loaf.

There was little evidence of any detrimental combinations among producers or distributors in the trades investigated, but as they may be affected seriously by combinations in any trade which supplies them with services or materials, and as the conditions which make detrimental combinations possible are always present in food supplying trades, the Commission recommends the extension of the law regarding monopolies and combinations, to cover those directly or indirectly concerned with the supply of foodstuffs.

Fish Supply.

Food Value of Fish.

From expert evidence before the Commission the following conclusions were deduced as to the physiological value of fish:—

1. Fish is a valuable article of food; it is nutritious; easily digestible, almost wholly absorbed; and furnishes variety of diet, which is essential.
2. Compared with meat it has less value as a builder of tissue and muscle. As a supplier of energy, "fatty" fish has a value about equal to meat; the finer classes of fish have less nutritive value.
3. Canned fish contains all the nutritive properties of fresh fish, but is generally less digestible.
4. Fish commonly regarded as "inferior" or "cheap," such as mullet, blackfish, tailer, salmon, herring, is of equal, if not superior nutritive value to the more expensive classes of fish, such as whiting, schnapper, &c. Most of the latter, however, are digested more easily.

Conditions of Fishing Industry.

In the chapter relating to Fisheries it has been shown that, although the seaboard waters, rivers, estuaries, and coastal lakes of New South Wales contain immense quantities of edible fish, the industry has not been developed, and consequently the position of the fish supply is generally unsatisfactory.

Supplies are irregular and inadequate; there is no effective system of distribution; and as a result, prices are high. The Commission recommends (a) the development of the deepsea fisheries, which now furnish only one-tenth of the Sydney supply, and (b) the improvement of the conditions under which the inshore fisheries (*i.e.*, fisheries in river estuaries, and coastal lakes and inlets) are conducted.

If within a reasonable time no satisfactory efforts have been made by private enterprise to exploit the vast resources of the ocean fisheries, it is recommended that the Government undertake the work and equip a small fleet with the most modern appliances for trawling, surface-netting, and long-line fishing.

Handling, Marketing, and Distribution of Fish.

Communication between the inshore fishing-grounds and the Sydney market depends mainly on ocean transport, as only those between Newcastle on the north and Jervis Bay on the south are connected by rail. After capture, the fish is taken to the point of shipment in the fishermen's boats; it is then washed, packed in cases, and consigned to agents in Sydney. For sea carriage the capacity of the cases varies from 252 to 840 lb. of fish, exclusive of ice; fish carried by rail is packed in cases of a capacity of 65 lb. to 80 lb. The cases are usually the property of the agents, who charge a small rental for their use.

The quantity of fish available for consumption is considerably reduced and the quality impaired by careless handling and packing by the fishermen; by inefficient treatment on shipboard; by the want of proper accommodation for fish at points of shipment pending departure of steamer or train; by the common use of very large cases which renders the lower layers of fish unfit for food, and necessitates the transfer of fish to baskets on arrival at Sydney wharves.

The desirability of cleaning fish before shipment and as soon as possible after capture is urged emphatically; and, as this is not practicable under existing conditions, it is proposed that as a tentative measure it should be made compulsory to clean all fish before it is placed in cool storage.

The quantity of fish supplied is restricted by the want of regular and frequent communication from grounds not connected with Sydney by rail, while the cost of freight by steamer from some of the more prolific grounds tends to further restrict the supply of the commoner varieties.

The freight charges to Sydney from the various fishing grounds are as follows:—

Point of Shipment.	Distance from Sydney.	Freight.
Ocean—	miles.	per basket.
Between Richmond and Manning Rivers	321–134	1s.
Cape Hawke	120	1s. 6d.—2s.
Port Stephens	83	*2s.—2s. 6d.
Between Nowra and Wagonga	69–159	9d.
Bermagui	170	1s.
Tathra	186	1s.
Merimbula and Eden	208	1s. 3d.
Railway—		
Nowra	93	1s. 6d.

* Myall Lakes to Port Stephens, 6d.–1s. extra.

Cartage from wharf or station to the markets is undertaken by the agents to whom the fish is consigned, at a charge of 6d. a basket.

Fish Markets.

There are three fish markets in Sydney, the bulk of the supply being handled in two—the Municipal Fish Markets and the Commonwealth Fish Exchange. The former is controlled by the Sydney Municipal Council, which acts as selling agent; private agents are, however, allowed to conduct business in the Council's building. The Commonwealth Fish Exchange is owned and controlled by a private company, most of the agents operating on its premises being shareholders.

Fish is sold in the markets by agents both by auction and by private treaty; the Municipal Council sells by auction only. Inspection in the Municipal Market is carried out by an officer of the Council, and in the Commonwealth Fish Exchange by a Government Inspector acting under the Pure Food Act.

The marketing charges, in addition to rail or steamer freight, are as follows:—

	per basket.
Wharfage dues	1d.
Cartage, wharf to market	6d.
Market dues—	
Municipal Market	4d.
Commonwealth Market...	3d.

Case rent—1s. per trip—is charged also by some agents, and on any fish placed in cool storage additional dues must be paid. The private agents charge a selling commission of 10 per cent., out of which they pay the market dues. The Municipal Council charges 5 per cent. commission, and debits the fisherman with the market dues.

Distribution.

The need for an effective system of general distribution of fish to private consumers is urgent. The buyers at the markets comprise mainly wholesale and retail dealers, and hotel, restaurant, and boarding-house keepers; few private consumers attend the sales.

In the nearer suburbs a few dealers maintain regular rounds for the purpose of house-to-house distribution. In the more distant suburbs distribution is carried on only by hawkers and basketmen, and their visits are intermittent and uncertain; the prices are excessive, and the condition of the fish often unsatisfactory.

In evidence before the Commission, the Naturalist in charge of Fisheries Investigation directed attention to a method, recently introduced in Europe, of packing fish in a specially prepared vegetable parchment. This method is of value in connection with suburban and country distribution.

The Commission recommends that private markets be abolished, and that the Sydney Municipal Council act as sole agent for the sale of fish, with the exclusive right of conducting fish markets in the metropolitan area, and the power to engage in the retail sale and distribution of fish. The Commission recommends also that the Council discuss the propriety of purchasing direct from the fishermen on the grounds: that the packing and inspection be regulated by the Department of Fisheries; that the Council establish receiving depôts at suitable places along the coast, and provide motor boats to collect fish from neighbouring grounds and transport it to depôts, where it could be forthwith inspected, cleaned, packed in cases of convenient size, and stored in cool chambers pending despatch to Sydney; that the Council take appropriate measures to secure that cases be carried by rail and steamer, under proper conditions; that, plant for the treatment of in-

edible fish, fish offal, and for the manufacture of fish-oil be established at the proposed depôts; and that all fish be sold by weight, or by basket of 84 lb. net.

Prices of Fish.

Reliable statistics regarding the movement of prices are not obtainable readily, but there is sufficient evidence to show that, during the last ten years, the wholesale prices of all classes of fish have increased considerably. The rise has been most marked during recent years, and has been much greater in the case of the better classes of fish, the increase since 1903 being at least 50 per cent. In the case of the commoner varieties the increase is estimated at about 30 per cent.

The main cause of the high prices is the steadily increasing demand, with which the supply has not kept pace. The increase in the demand is not due solely to growth of population, as it is shown that during the period 1900–11 the quantity of fish marketed in Sydney increased by over 100 per cent., while the increase in the mean population was 32 per cent. The increase in the demand is attributable to general prosperity and to changes in the domestic and housing conditions of the people which have led to increased consumption in hotels and boarding-houses where fish is more regularly an item of food than in the average private household.

Crayfish.

The crayfishing industry admits of extensive development, and there is an increasing demand for this article of diet, the number marketed in 1913 being 108,965, 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, and consigned as deck cargo to oyster merchants who have stores in various parts of the city. 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. Oysters, however, have little direct bearing on the food supply, as their nutritive value is very small.

The trade conditions of oyster culture differ from those of other branches of the fishery industry; oyster cultivation is apparently more remunerative, and oyster leases form an important source of revenue to the Department of Fisheries. Presuming, therefore, that the Department will offer every encouragement to persons engaged in this branch, the Commission did not extend their recommendations in regard to the handling and distribution of fish to the oyster trade.

Canned Fish.

There is a permanent demand for canned fish, especially in country districts, where fresh fish is not obtainable readily; at the present time this demand is supplied wholly by importation. In local waters there are large numbers of fish eminently suitable for preserving, and a bounty of ½d. per lb. has been provided by the Commonwealth Government for fish preserved in Australia, in addition to the protection afforded by cost of transportation, &c., and a duty of 1d. per lb. imposed on the imported article.

Canneries have not proved successful in New South Wales, owing partly to lack of experience of persons engaged, and partly to irregularity of supplies. The Commission recommends that the Sydney Municipal Council consider the advisability of establishing a plant for canning, smoking, preserving, &c., in connection with their markets.

Meat Supply.

Production and Sources of Supply.

In the chapter relating to Pastoral Industry particulars are shown regarding the production of live stock and the number of stock slaughtered for the meat supply.

The subdivision of large estates and the encroachment of agricultural settlement on vast areas used previously for stock-raising has an important relation to the meat supply, tending to encourage the breeding of sheep for mutton instead of for wool, and the substitution of crossbred sheep for the smaller merino. These conditions have an opposite tendency in the case of cattle; cattle for beef-producing thrive best on large, sparsely-populated areas, and, if land is suitable for sheep, it is not profitable to use it for cattle-raising. As a result, cattle-breeding is becoming restricted to the coastal belt, and in this division the cattle are of the dairying strain and not so suitable for beef as the classes which are being displaced.

Another influence operating to restrict supplies of the best classes of cattle is the opening up of new outlets for Queensland fat cattle which used to be sent directly to the Sydney market from the south-western portions of that State. The cattle now imported from Queensland are "stores" and require to be fattened for six or nine months; this increases the cost of placing them on the local market.

A fact of considerable economic importance in connection with the supply of meat for local consumption and the price of meat is that a much higher number of animals is required now to produce a given quantity of meat than was the case ten years ago. This is attributable partly to a decrease in the average size and weight of cattle slaughtered and partly to the preference for choice cuts fostered by the prosperity of recent years.

Cattle Sale Yards, Flemington.

Information regarding the Sydney Municipal Small-stock yards is given subsequently.

The cattle sale-yards at Flemington, covering an area of 66 acres, and capable of accommodating on one day from 75,000 to 80,000 head of sheep and lambs, and 2,500 head of cattle, are controlled by the Meat Industry and Abattoirs Board.

Sales are held on Monday and Thursday of each week, and are conducted by auctioneers; pens are allotted for consignments of stock arriving. Sales are held in rotation, and are limited in time according to the number of consignments. The dues charged are at the rate of ¾d. per head for sheep, and 5d. for cattle.

The following table shows the number of stock yarded annually at the Cattle Sale-yards :—

Year.	Sheep.	Cattle.	Year.	Sheep.	Cattle.
1886-1890	1,458,563	90,604	1909	3,810,445	132,050
1891-1895	2,677,586	118,352	1910	4,064,650	155,833
1896-1900	2,424,176	110,020	1911	3,407,835	193,953
1901-1905	1,790,192	93,865	1912*	3,648,188	211,705
1906	2,196,535	96,494	1913*	2,721,356	265,126
1907	2,741,283	106,893	1914*	2,805,207	276,440
1908	3,104,025	117,496			

* Year ended 30th June.

The record day's yarding for yards was (4th June, 1914) 4,289 cattle (1911), 68,000 sheep; the record week's yarding was (June, 1914) 7,630 cattle and (1913) 101,000 sheep. Sheep average 120 to 250 owners, the record number being 270.

Meat as a Food.

Meat is one of the strongest protein foods and is more valuable to the young than to those advanced in years. There is little difference in the nutritive properties of the different parts of a carcase, but the choice cuts are more digestible.

Chilling or freezing interferes but little with the nutritive quality of meat, but appears to increase its liability to decompose, when thawed, in hot weather.

Consumption of Meat.

The consumption of meat is influenced largely by prices. In the period of scarcity and high prices between 1900 and 1903 the average consumption decreased and the habit of abstention from meat engendered by these conditions persisted after the return of good seasons, and in 1911 the average was far below that of the period 1895-97, but owing to widespread prosperity it is rising steadily.

The local consumption of preserved meats, with the exception of tinned tongues, is very small, and the bulk of the products of large and efficient meat-preserving works is exported.

Transport, Handling, and Slaughter of Stock.

The stock for the metropolitan meat supply are for the most part sold at Flemington saleyards by agents who charge a selling commission of $2\frac{1}{2}$ per cent. After sale the stock are driven to the abattoirs at Glebe Island or Riverstone, or to suburban slaughterhouses, which number about 47. The bulk of the slaughtering is done at the public abattoirs at Glebe Island, about 7 miles from the saleyards. There is no regulation to prescribe the length of time that must elapse before slaughter, but most butchers, in their own interests, provide rest paddocks.

At Glebe Island the killing houses were previously leased annually to the highest bidder; in view, however, of projected early completion of the new abattoirs at Homebush, and to avoid dislocation of business by offering

leases for a probable short period, the leases have been renewed. Inspection at Glebe Isand is under the direct control of the Board of Health, but the law regarding the inspection of private abattoirs is unsatisfactory; the duty is vested primarily in the local authorities, but in many cases its execution is left to the Board of Health.

New abattoirs, in course of construction at Homebush Bay, are being equipped with modern appliances, and are surrounded by ample space for resting paddocks, the total abattoir area being about 1,000 acres. On the opening of this establishment many defects of the present system will disappear; it is recommended that all slaughtering for the metropolitan supply be concentrated in this establishment to facilitate inspection and supervision.

The centralisation of the stock-selling and killing in Sydney necessitates the carriage of live stock over long distances by rail. Under the present transit arrangements the stock are unnecessarily harassed, and the Commission emphasises the necessity for greater care and expedition in transport; the improvement most urgently needed, viz., speedier transit, appears to depend upon the extension of railway facilities by the duplication of trunk lines. The Commission considered a proposal to have the killing done in the country, but decided that the scheme is impracticable at present by reason of the enormous expenditure the change would entail, the necessity of chilling the meat for transmission to the metropolis, the greater expense of treating by-products, and the difficulty of regulating supplies from various centres. Moreover, the advantages are doubtful, as the railway journeys, though lessened, could not be wholly avoided.

Distribution of Meat.

There is no public meat market in Sydney, but buildings for this purpose are nearing completion at Pyrmont. Meat for metropolitan consumption is distributed by the wholesale butchers directly to the retail shops, except in the case of a few retail butchers who purchase their supplies on the hoof at Flemington.

There are about 18 or 20 carcase butchers, the majority being engaged exclusively in the beef trade. The chief mutton butchers number six—operations in this branch of the wholesale trade being restricted to persons possessing expert knowledge and substantial capital.

In Sydney and suburbs there are about 500 retail butchers. Generally, there is keen competition between them, and no arrangement exists for the regulation of prices.

The Commission recommends that, in order to simplify the process of distribution, a central authority be empowered to accept consignments of stock direct from the grower for slaughter, the carcase to be sold by auction on the grower's behalf, and that all meat for local consumption be graded and stamped at the Abattoirs.

Control of the Meat Trade.

The Commission recommends that, subject to the general supervision and co-operation of the Board of Health, the whole control and regulation of the sale of stock at the metropolitan yards, of the subsequent handling and slaughter, and of the wholesale and retail distributing trades, be vested in a single authority. At present the saleyards and public abattoirs are controlled by the Meat Industry and Abattoirs Board; the inspection and regulation of butchers' shops, the granting of butchers' licenses, and the licensing and inspection of slaughterhouses are functions of the local authorities; and the Board of Health exercises powers of administrative supervision.

Prices and Profits.

The governing factor in the price of meat is the price paid for live stock at Flemington. The following statement shows the movement of the prices of fat stock since 1900 :—

Stock.	1900.	1902.	1904.	1906.	1908.	1910.	1911.	1912.
Sheep.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Cross-breds—								
Extra prime wethers ...	...	...	21 3	20 9	18 3	17 9	19 6	23 0
Prime wethers	14 3	20 6	19 0	18 0	15 9	14 9	16 0	18 0
Good ,, ...	12 3	13 0	17 3	16 6	13 0	11 9	12 9	15 9
Medium ,, ...	10 6	10 3	15 3	15 0	10 6	8 6	9 9	11 6
Extra prime ewes	...	...	21 0	19 0	17 3	15 9	16 6	19 6
Prime ewes	13 0	20 0	17 0	17 0	15 0	14 6	13 6	16 0
Good ,, ...	11 9	12 0	16 0	15 9	12 6	10 0	11 3	13 6
Medium ewes	10 6	9 6	14 3	14 3	10 0	7 3	8 3	10 3
Merinos—								
Extra prime wethers ...	...	...	21 0	21 0	18 6	18 6	18 9	21 6
Prime wethers	14 0	19 0	18 6	17 9	15 9	15 3	15 6	17 9
Good ,, ...	12 3	13 3	17 0	16 0	12 9	11 9	13 0	15 3
Medium ,, ...	10 0	10 0	15 0	14 3	10 0	8 6	9 6	11 9
Extra prime ewes	...	...	16 9	17 0	15 3	14 3	15 9	18 3
Prime ewes	11 9	13 9	14 6	14 6	13 0	12 0	13 0	15 9
Good ,, ...	10 3	10 0	13 0	13 3	10 3	9 9	10 6	13 3
Medium ewes	9 0	7 9	11 9	11 6	7 9	6 6	7 9	9 3
Lambs—								
Extra prime woolly ...	...	...	17 3	16 6	15 3	14 3	14 6	16 9
Prime woolly	12 0	12 9	15 3	14 9	13 3	11 3	11 9	13 6
Good ,, ...	10 0	9 3	14 3	13 6	10 9	8 3	9 9	11 6
Medium ,, ...	7 3	6 9	11 9	11 0	8 0	5 6	7 3	8 6
Cattle.								
Bullocks—	£ s.	£ s.	£ s.	£ s.	£ s.	£ s.	£ s.	£ s.
Extra prime	11 8	16 11	12 3	13 0	13 2	10 11	11 3	13 5
Best	11 0	12 15	10 10	10 12	10 14	8 15	9 2	10 14
Good trade beef	8 3	10 11	9 15	9 8	8 14	7 12	7 17	9 0
Medium	5 9	8 18	8 12	8 8	7 1	5 0	6 4	7 0
Cows—								
Extra prime...	7 16	12 5	10 10	9 11	9 18	7 7	5 19	8 12
Best	6 9	10 3	7 17	8 1	8 4	5 15	6 9	7 5
Good trade beef	6 7	8 12	7 0	7 6	6 13	4 9	5 3	5 15
Medium	3 12	6 15	6 7	6 10	5 9	3 3	3 10	3 10
Meat.			s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Best beef, per 100 lb.	...	...	24 0	26 6	29 9	22 3	23 6	27 0

Apart from fluctuations, due to weather conditions, such as drought, which affected the prices of the period 1902-4, the prices of fat stock have varied little since 1900. The general level in 1911 was about the same as in 1900; in 1912 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 prices of best quality cattle appear likely to increase in future, owing to restriction of supplies, but there is no such tendency in the case of sheep.

The Commission investigated the working of two companies which operate at the saleyards as subsidised buyers; one—a preserving company engaged exclusively in the export of canned meats, &c.—receives from the pastoralists a subsidy of ½ per cent. on the proceeds of nearly all the stock sold in the yards. The payment is voluntary, but the company does not in general bid for the stock of owners who do not pay it. It is claimed that by this subsidy the pastoralists are protected from combinations of buyers, and are assured of a market even in case of over-supply. The Commission resolved, however, that the receipt of this subsidy is detrimental to the local meat trade, as it tends to raise the price or to depreciate the quality of the meat supplied to the local consumer, to hamper the export trade, and to prevent fair competition for stock at Flemington.

The other company participates in the Federal Government's bounty on wool tops, but while its operations as a buyer tend to raise the price of stock at Flemington, its operations as a carcase butcher have prevented the rise being passed on to the local consumer.

The movement of wholesale prices since 1911 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
	d. d.	d. d		d. d.	d. d.
1901	⅞ to 2¼	2 to 3¼	1908	1⅝ to 3½	1½ to 3⅝
1902	1⅞ ,, 5½	2 ,, 7	1909	1¼ ,, 2⅜	1¼ ,, 3¼
1903	2½ ,, 3¼	2¼ ,, 5	1910	1¼ ,, 2¼	1¼ ,, 3¼
1904	2⅛ ,, 3½	1⅝ ,, 3⅛	1911	1⅝ ,, 2⅜	1½ ,, 3
1905	1⅝ ,, 3	1½ ,, 3⅛	1912	2 ,, 4¾	1½ ,, 5
1906	1⅞ ,, 2½	1⅜ ,, 3½	1913	2 ,, 3¼	1¾ ,, 3¾
1907	1⅞ ,, 3	1⅝ ,, 3¾			

The wholesale prices in 1911 were not generally higher than for 1901, but they rose during 1912 when the prices of stock increased. The costs of conducting the wholesale trade have increased, but only to an extent that would be covered by a rise of 1½d. per lb. in the price.

Profits in the wholesale mutton trade appear to be small, and the business speculative; in the beef trade the conditions appear to be normal.

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 ½d. to 1d. per lb. is made:—

Year.	Sirloin Roast.	Rump Steak.	Leg of Mutton.	Forequarter of Mutton.	Short-loin Chops.
	d. d.	d. d.	d. d.	d. d.	d. d.
1901	4 to 5	6 to 7	2½ to 3	1½ to 2	3½ to 4
1902	4 ,, 5	6 ,, 7	2½ ,, 3	1½ ,, 2	3½ ,, 4
1903	4 ,, 5	6 ,, 7	2½ ,, 3	1½ ,, 2	3½ ,, 4
1904	4 ,, 5	6 ,, 7	2½ ,, 3	1½ ,, 2	3½ ,, 4
1905	4 ,, 5	6 ,, 7	2½ ,, 3	1½ ,, 2	3½ ,, 4
1906	4 ,, 5	6 ,, 7	2½ ,, 3	1½ ,, 2	3½ ,, 4
1907	4½ ,, 5	6 ,, 7	3	1⅝ ,, 2	4
1908	4½ ,, 5	5½ ,, 7	3	1¾ ,, 2	4
1909	4 ,, 5	6 ,, 7	2½ to 3	1½ ,, 2	3 to 4
1910	4 ,, 5	6 ,, 7	2½ ,, 3	1½ ,, 2	3 ,, 4
1911	4½ ,, 5	6½ ,, 7	2½ ,, 3	1⅝ ,, 2½	3½ ,, 4
1912	4½ ,, 5⅜	6⅜ ,, 7½	3 ,, 3¾	2¼ ,, 3⅛	4 ,, 4⅞
1913	4½ ,, 5½	7 ,, 8¾	3½ ,, 4	3 ,, 3⅝	4½ ,, 5

Meat Export Trade.

The maintenance and extension of the export trade, apart from its economic value to the State generally in providing a remunerative outlet for surplus stock, benefits the local meat market by encouraging the breeding of a class of sheep more suitable for mutton than the Merino, and tends to lessen the expense of slaughtering and handling in enabling the buyer for local consumption to handle larger numbers.

The export trade has little effect on the local trade in beef; in mutton it exercises a direct influence on local prices by preventing them from falling below the level of London parity. Prices of Australian mutton abroad are quality for quality higher than local prices.

The Commission directed the attention of the Government to the advisability of co-operation with the Governments of the Commonwealth and of the other Australian States in order to prevent foreign trusts from gaining control of the Australian sources of supply. More recently, in June, 1914, a Commission was appointed by the Commonwealth Government to inquire as to the operations of any person, combination, or trust tending to create any restraint of trade or monopoly in connection with the export of meat from Austra lia.

Bread.

The Sydney bread supply is produced by about 200 master bakers, and is for the most part sold by them directly to the consumers. The conditions under which the bread is produced are satisfactory and the quality is good. It is desirable, however, that the use of machinery to carry out all the processes of bread-making be encouraged.

The method of distribution is unnecessarily expensive by reason of overlapping in areas served by the carters, but the probable saving by the introduction of any suggested method of regulation is very small.

The price of bread is fixed periodically by the Master Bakers' Association. About 160 of the Sydney master bakers are members of the Association, but the price is observed generally by non-members also. The price is 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 is not always the actual price paid by the baker.

The price of flour is fixed by an association of millers, and is, on the average, higher than the price obtainable for export, and higher also than it would be under competitive conditions. The excess, however, is due to special conditions in the trade and not to any deliberate attempt to exploit the public, and is not great enough to cause any substantial addition to the price of bread.

Prices of Bread.

The price of bread as fixed by the Master Bakers' Association at various times since 1900 is shown below in conjunction with the declared price of flour at the time when the price of bread was fixed :—

Year.	Price of 2 lb. Loaf.	Cost of Flour per ton.
	d.	£ s. d.
1900	2½	6 15 0
1902—April	2¾	8 15 0
September	3	9 10 0
November	3¼	10 10 0
1903—February	3½	12 0 0
December	3¼	10 10 0
1904—February	3¼	9 10 0
September	3	9 0 0
1907—June	3¼	8 15 0
October...	3½	10 0 0
1909—March	3½	10 0 0
1910—June	3¼	8 15 0
1912—May	3½	9 15 0
1913—October...	3½	8 15 0

The cost of manufacture and distribution, as distinguished from the cost of material, is an important factor of the cost of bread ; it has increased since 1903, when it represented 33·8 per cent. of the total cost, as compared with 46·5 per cent. in 1912. The largest element in this increase is the wages of bakers and carters, which rose from ·7d. per loaf in 1902 to 1·07d. per loaf in 1912.

Fruit.

The fruit supply of Sydney is derived mainly from orchards within the State, from Victoria and Tasmania, and from the United States of America, Sicily, and Italy. Relatively small quantities are obtained from Queensland and South Australia, and the bulk of the banana supply comes from Fiji.

From November or December to February or March the supply is for the most part locally grown ; from March to October the market for all fruits, except citrus, is supplied chiefly from Victoria and Tasmania ; in October shipments arrive from America. From May to December local supplies of citrus fruits are available, though importations of oranges and lemons are made from the United States of America from October to December, and from Italy from December to March.

It has been shown in the chapter relating to agriculture that, notwithstanding the favourable climatic conditions and the potentialities of the soil, fruit cultivation has not made satisfactory progress in New South Wales. The quality of much of the fruit produced is relatively inferior owing to neglect of scientific methods and the scarcity of skilled labour. The law relating to inspection and control of orchards is in urgent need of revision. The orchards are inspected by officers of the Department of Agriculture, but the powers of the inspectors are inadequate to cope successfully with fruit pests and diseases. Careless carriage and handling, bad picking and packing, and

the want of cool storage in orchard districts, cause much loss of fruit. The system of distribution is very defective, and results in low returns to the grower and relatively high prices to the consumer.

There are two public fruit markets in Sydney, one controlled by the Sydney Municipal Council, and the other privately owned. The duplication involves unnecesary expense in supervision, while the concentration of the markets in the city causes great inconvenience to retail distributors in the suburbs. A detrimental practice of forestalling, that is, buying in the markets and reselling there, is not uncommon ; and there are no facilities for retail buying in the markets—in fact, it is prohibited in the Municipal market. The charges and profits of individual distributors are not, on the whole, excessive ; therefore, the remedy lies in the elimination of the unnecessary factors of the process of distribution.

Most of the defects which now hamper the fruit industry and injure the interests of the producers and consumers are due to the absence of co-operation in the processes of production, packing, pulping, storing, transport, and distribution ; the Commission recommends that every encouragement be given to its development, and that a system of compulsory grading, such as exists in Canada, be introduced. No statistics are available to show the movement of fruit prices, but it may be stated that the prices of average and good quality fruit are considerably higher now than 10 years ago. The rise is due mainly to the facts that the supply has not kept pace with the increased demand resulting from general prosperity ; that an increase in the duty on preserved fruits has resulted in greater competition for local supplies between the manufacturers of jam and preserved fruit and the buyers for the retail trade ; and that the requirements of the oversea export trade of Victoria and Tasmania constitute an increasing drain on these sources of supply.

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, but no statistics of interstate trade are now recorded.

The production of potatoes is progressing in this State, though large importations from Victoria and Tasmania are still necessary. The local production of onions is almost negligible, the bulk of supplies come from Victoria.

With regard to other vegetables, such as beans, peas, cabbages, cauliflowers, carrots, parsnips, &c., there is a growing discrepancy between the demand and the supply, especially in the case of "bunch" vegetables—that is, carrots, parsnips, lettuces, rhubarb, spinach, and all others usually sold in bunches.

The perishable nature of bunch vegetables precludes transport over long distances, and the supply for the Sydney market is grown in the vicinity of the city, being cultivated mostly by Chinese. Owing to the expansion of suburban building areas and the diminution in the number of Chinese gardeners, the production is decreasing, and unless some measures are introduced to facilitate the cultivation of these vegetables relatively near Sydney, the supply must continue to diminish and the prices to increase. Formerly large quantities of cabbages and cauliflowers were imported from Victoria, but supplies from this source have been curtailed owing to heavy increases in rail and sea freights and the restriction of deck space for cargo on modern steamships. The break of gauge at Albury interferes seriously with transport by rail from this source.

The comments made in connection with the distribution of fruit apply generally to the vegetable trade, but forestalling is practised more commonly in the marketing of vegetables. Selling by measure leads to many abuses, and it is recommended that, wherever possible, vegetables should be sold by weight.

The method by which potatoes and onions are distributed differs from that which is adopted in the case of other vegetables. 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.

No official records of the prices of vegetables are obtainable, but from evidence before the Commission, the following averages have been compiled :—

Vegetables.	1901.	1909.	1913.
Cabbages ... per doz.	1s. 6d. to 2s. 6d.	3s. to 4s.	6s. to 7s.
Cauliflowers ,,	2s. 6d. to 3s. 6d.	4s. to 5s.	7s. to 10s.
Peas ... per bush.	2s. 6d.	.....	6s. 3d.
Beans ... ,,	2s. 9d.	4s.	6s.
Carrots ... per doz.	7d.	.....	1s. 3d.
Parsnips ... ,,	1s.	.....	2s. 6d.

The average wholesale prices of Tasmanian and Victorian potatoes and of onions are shown below in half-yearly periods since 1901 :—

Year.	Potatoes.				Onions.	
	Tasmanian.		Victorian.			
	Jan.-June.	July-Dec.	Jan.-June.	July-Dec.	Jan.-June.	July-Dec.
	Per ton.	Per ton.	Per ton.	Per ton.	Per ton.	Per ton.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
1901	5 0 0	6 0 0	None offering	None offering	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

The chief causes of the increase in the prices of vegetables, as already indicated, is the deficiency of supply ; importation is becoming more expensive, and the demand on external sources of supply heavier.

Milk.

The milk supply of Sydney is derived partly from dairies in the metropolitan area, and partly from dairies in country districts, viz., the South Coast district between Wollongong and Nowra; the districts traversed by the Main Southern railway between Liverpool and Moss Vale; the Penrith, Windsor, and Richmond districts; and the districts around Branxton, Singleton, and Gosford, on the Northern railway line.

It is estimated that the consumption of milk in Sydney and suburbs amounts to about 44,500 gallons per day; about 14,500 gallons are obtained from the metropolitan dairies and 30,000 gallons from the country. The proportion of the city supply derived from metropolitan dairies is decreasing steadily, and in 1912 represented only 31 per cent. as compared with 45 per cent. in 1903. The chief reasons for the decline are the increased land values in the suburban areas and the high price of fodder—cows kept in the city and suburbs must be hand fed throughout the year. The average yield per cow is increasing in the metropolitan district, as the high cost of maintenance necessitates the culling of unprofitable animals from the herds.

On the other hand, there is strong evidence of diminishing productiveness in many parts of the South Coast district, where the bulk of the country milk is obtained. The decline is attributed to the rabbit pest, over-stocking, continuous grazing without restoring the fertility by manuring, &c., and the extraordinary succession of unfavourable seasons during recent years. This has an important relation to the city milk supply, as, unless an improvement is effected, milk will have to be brought to the city from more distant parts of the State.

The law governing the conditions of milk production and distribution is contained mainly in the Dairies Supervision Act of 1901 and the Pure Food Act 1908. The duty of registering dairies, and supervising, and inspecting dairy premises, and cattle, is vested in local authorities, but in actual practice the administration is conducted by the Board of Health. The Dairies Supervision Act needs amendment to extend the powers of inspection, and should be administered by a single authority.

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 recommends the establishment of a system of milk-grading on the lines adopted in many cities of the United States of America.

The milk from the metropolitan dairies is distributed direct to the consumer, and the country milk is handled by three large distributing companies. The milk which is sent to two of these companies is delivered at the country railway stations in 10-gallon cans, and carried in louvred vans to Sydney, where it is subjected to a pasteurising process. A preferable method is adopted in the case of the milk sent to the third company; it is treated at a country factory and sent in 600-gallon tanks to Sydney, where it is cooled again before distribution.

Pasteurisation, if carried out effectively, is a useful safeguard against the spread of disease by milk, and the Commission recommends that a definite standard of pasteurisation be formulated; that regular inspection of all pasteurising plant be maintained; that no pasteurised milk be distributed except within a fixed time after treatment; and that the sale of pasteurised milk under the representation that it is fresh milk be prohibited. Attention is directed to experiments made at the University of Liverpool, with the view of sterilising milk by the application of electricity. The results of this treatment were the destruction of all colon bacilli and those of a similar nature, and an enormous reduction in the total number of bacteria of all kinds; and the experiments indicate that tubercle bacilli may be destroyed also by this method. These results were achieved without interference with the nutritive properties of the milk.

The present system of distribution—especially in the case of raw milk—is expensive and ill-adapted for facilitating proper supervision of the milk. The cost is, approximately, 1d. to 6d. per gallon, or $\frac{3}{10}$ of the total price paid by the consumer. The following scheme is outlined by the Commission

for the distribution of raw milk produced in the metropolitan dairies :— The establishment of co-operative depôts under continuous supervision of the controlling authority; all milk to be delivered at depôts by producers, and paid for according to grade; the milk to be cooled immediately after delivery, and distributed to consumers within a limited time after production. Such a system would make possible effective supervision, and considerably reduce the cost of distribution.

The distribution of country milk in the city is already conducted on somewhat similar lines, but the system is only partially co-operative, and a large proportion of the milk is sold wholesale to milk vendors and not directly to the consumers.

The range of wholesale and retail prices of milk during each year since 1901 is shown below. The wholesale price represents the price paid by the distributing companies to the farmer; 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.	per qt.	per qt.		per gal.	per qt.	per qt.
	d. d.	d.	d.		d. d.	d.	d.
1901	6 to 7	4	4-5	1907	6½ to 9	4-5	4-5
1902	6 ,, 10	4-5	5-6	1908	6 ,, 12	5	5
1903	6 ,, 10	5	5	1909	7 ,, 10	5	5
1904	5 ,, 6	3-4	4-5	1910	6 ,, 9	4-5	5
1905	5½ ,, 7	4	4	1911	6 ,, 9	4-5	5
1906	6 ,, 7	4	4	1912	6 ,, 9	5	6

The chief factors of the cost of production and distribution of metropolitan dairy milk are fodder and wages. During the period 1909-12 the cost of fodder amounted to half the price paid by the consumer, and since 1911 wages have absorbed about one-fifth. The rises in retail prices have been due mainly to increased prices of fodder.

The price paid to the farmer for country milk has varied from 5d. to 1s. per gallon; in view of the increased costs of production since 1901, it is generally agreed that in an average year the minimum price payable is 8d. per gallon. The milk received by the distributing companies is retailed to the householder at an advance of from 10d. to 11d. per gallon on the price paid to the farmer, but considerable quantities are sold to milk vendors at wholesale rates about 3d. per gallon higher than the price paid to the farmer.

The profits made in the milk trade are not excessive. No reduction can be expected in the price of milk from metropolitan dairies while the price of fodder is high; a reduction in the prices charged for country milk may be effected by the elimination of milk vendors and the better organisation of distribution to householders.

Protection and Standardisation of Foods.

Prior to the passing in New South Wales of the Pure Food Act, 1908, limited powers of supervision regarding the preparation and sale of foods had been exercised by the Board of Health and by the various local governing bodies under Acts relating to public health, local government, dairies supervision, cattle slaughtering, &c. Since the enactment of a specific measure a definite system of regulation has become possible. The administration of the pure food law is entrusted primarily to the Board of Health,

with an Advisory Committee, consisting of the President of the Board, and medical men, chemists, merchants, and others, on whose recommendations the Board makes regulations regarding the standardisation, composition, methods and conditions of manufacture, storage, sale, &c., in order to secure the wholesomeness, cleanliness, and purity of the food supply. Officers appointed under the Act may enter for the purpose of inspection any place used for the sale, storage, delivery, manufacture, or preparation of any article intended for use as a food or drug. The first code of regulations prescribing the standards for foods and drugs was gazetted on 15th July, 1909. The Commonwealth Department of Trade and Customs has control as to the composition and labelling of foods and drugs imported into Australia.

Pure food legislation having been enacted in several of the Australian States, great inconvenience arose from the want of uniformity, and it was deemed advisable to frame a code of standards and definitions which would be applicable to all Australia both as regards imports and all articles manufactured and vended. With this objective, an Interstate Departmental Conference was held in Sydney during 1910, of principal medical officers, Government analysts, and representatives of commercial interests on Advisory Committees. The co-operation of the Commonwealth Department of Trade and Customs was an important feature of the Conference; all the States except Western Australia were represented.

The Conference issued a report which included a code for the guidance of State authorities in framing their regulations. It is worthy of note that the code then in force in New South Wales was chosen to guide the discussions of the Conference, and the report, except in a few minor details, closely resembles the New South Wales code.

The Conference resolved that it would be in the interest of the public health if the provisions of the Pure Food Act, passed in New South Wales in 1908 for the protection of the public from misleading or otherwise undesirable advertisements relating to food, drugs, and appliances, were adopted and enforced throughout Australia, and urged uniform administration of the food laws by the Central Department of Public Health of each State.

As an outcome of the Conference the President of the New South Wales Board of Health was appointed, during 1911, as a Royal Commission in each State of the Commonwealth, to collect evidence of traders, and manufacturers affected by the food and drug laws, with a view to uniform legislation for the purpose of making regulations in the several States. The Commission found that the recent legislation concerning foods and drugs, and the regulations made thereunder, were acceptable to traders and manufacturers, and that very great progress had been made towards uniformity of State regulations as the result of the Conference of 1910.

To settle all points of difference a further Conference, similarly composed, met to determine standards and regulations affecting importation and interstate trade, and also to bring into uniformity the administrative laws which regulate the keeping and sale of food within each State.

Marketing.

Practically all commodities are distributed by private agents and consignees, and from all parts of the State various products are brought to Sydney which is at present the only oversea port of the State, excepting, of course, Newcastle, from which port the principal trade is in coal. In connection with the trade in wool, wheat, and live-stock (and these three commodities with butter are the most important items of the State's oversea trade), there is sufficient reason for the concentration in Sydney. The whole

wool clip, excepting the relatively small proportion which goes to Melbourne from the Riverina stations, is forwarded to Sydney, which, as a wool-selling centre, is advancing steadily to the premier position amongst the world's markets. As regards wheat for export, the softer northern wheat must be combined with a harder grain, and Sydney forms the most convenient depôt. The live stock business is largely dependent on centres of population and distribution, and the traffic can be decentralised only so far as the frozen meat trade is distributed to the various ports provided with accessories for killing, freezing, and shipping.

The conditions which have thus necessitated the centralisation of the State's trade in Sydney have resulted in an apparently overgrown city with frequent congestion of traffic, and these conditions, coupled with the occasional interruptions to sea-borne traffic, as in butter and eggs from the North Coast, naturally affect prices.

The markets for various commodities are concentrated in proximity to the points at which the goods are discharged, such as the railway goods yards, and the wharves where coastal and oversea cargoes are discharged.

Municipal Markets.

The Sydney Corporation (consolidating) Act of 1902 empowers the City Council to establish public markets within its boundaries for the sale of fruit, vegetables, fish, produce, or general merchandise; the Council may grant licenses for hawking and selling in the city, poultry, fish, vegetables, garden produce, and other articles as provided under the by-laws.. The Council had a practical monopoly, within the city and within 14 miles of the city boundary, of cattle sale-yards, and power to exercise a similar monopoly in regard to sheep, calves, pigs, horses, &c., until 1st July, 1912, when this control, so far as it affects sheep and fat stock, was assumed by the Government.

Under the Amendment Act of 1905, the Council has power to make by-laws for the regulation and control of all stands and stalls used, in any public way in the city, for the sale of refreshments or fruit.

Under the Local Government Act of 1906, municipalities (excluding Sydney) exercise among their primary functions control as to the regulation and licensing of the hawking of goods; both shires and municipalities have power to lease buildings, wharfs, markets, &c. Among the specific powers of shires is included dairy supervision; among the additional powers which may be acquired by shires and municipalities are those relating to the construction, establishment and maintenance of cattle sale-yards and abattoirs and public markets; inspection and regulation of the wholesale and retail sale and of the storage and exhibition for sale of fish, and of rabbits, poultry and game; and the regulation and supervision of the sale, storage, and exhibition for sale, conveyance, and mode of delivery by carcase or otherwise, of meat for human consumption, and of the disposal and removal of other meat, and of any offal, or other refuse

Sydney Municipal Markets.

The Municipal Council of Sydney has undertaken the provision of an extensive scheme of markets. Land amounting to about 12½ acres was resumed in 1908 in the Engine-street area, then a closely-populated district, and also a growing manufacturing centre. Handsome structures have been erected for the marketing, in separate buildings, of vegetables, farm produce, fruit, fish, and poultry.

The total cost of this scheme, including the opening of additional roadways, and the widening of those existing, is estimated at nearly half a million

pounds sterling, and 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 metropolitan sale-yards for cattle and sheep are situated at Flemington, 8 miles from the city; these yards were controlled by the City Council until 1st July, 1912, but have been transferred to the Meat Industry and Abattoirs Board to be managed in conjunction with the new abattoirs at Homebush Bay. The Council has control of the small-stock yards within the city.

The vegetable market has 288 stalls which are occupied by the *bonâ fide* grower, who brings his own produce to market, and conducts the sale by private treaty; the charges are on the due system at 1s. 6d. per cart load, the minimum amount payable for each stall is 3s. per week. The quantity of vegetables sold per annum, in favourable seasons, is estimated to range from sixteen to twenty thousand tons.

The produce market is occupied almost entirely by agents who receive products from the country and over-sea; these agents are allotted stands on the scale of 1s. 6d. per load, with an additional reserving fee of 1s. per week for the particular stand. Surrounding this market are stores which are leased to the agents, who distribute to suburban and distant centres.

The fish market is managed on an entirely different plan, and is, in reality, apart from the electric lighting undertaking, the only municipal trading venture of the Council. Fish are consigned direct to the Council from the various districts, and are sold by the Council's officers at auction. Salt water, pumped from the harbour, is supplied to the markets, for cleansing the fish, and there is a cooling chamber available for the use of shopkeepers and others in the trade.

The Council was impelled to intervene in this business by the action of the fish agents in deciding to form a co-operative society, to build their own markets, and so to ignore the Council because it was proposed to insist that all fish coming into the market should be sold by public auction, and that the auctioneers should submit a carbon copy of each day's sales to the Council for record purposes. From numerous complaints of fishermen, there seemed no doubt that the agents were not giving them the full return of their sales, and were forwarding returns based, not upon the actual prices obtained for the fish, but on a rate which, by mutual agreement on the part of the several agents, became almost a fixed quantity. On the other hand, many fishermen were in debt to the agents for boats and nets, even to the extent of their food supplies, and the agents recovered payment of these debts in instalments, by deductions from time to time from the account sales. To insure fair business, public auctions and duplicate records of sales are deemed essential.

On 1st February, 1909, all the agents left the market without notice, and the Council then 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 Council's action undoubtedly has been beneficial both to the fishermen and the consumer, though not in the direction of lessening the price. The class and condition of the fish put before the public have improved, and agents operating in other markets have increased their returns to the fishermen.

The fruit market was designed with every convenience for the speedy and careful handling of this delicate food product. Fruit may be landed into the market directly from the orchards by means of a special railway siding, 292 feet in length, thus saving at least two handlings; and provision is made for sales by auction, if the consignors so desire, instead of private treaty. Commodious cool storage is provided, with a total chilled air space of 250,000 cubic feet, divided into chambers for the freezing and cooling of fruit, fish, poultry, farm produce, mutton, and rabbits. Within the market area an elevated series of offices is provided, and a disinfecting chamber for fruit.

The poultry market provides space and pen accommodation for from fifteen to twenty thousand head of poultry, as well as 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 Small-stock Yards.

Small-stock yards are at the foot of Market-street, Sydney, adjacent to the various wharves, most of this class of stock coming from the coastal districts by sea. Sales are held on three days each week.

The number of small stock yarded since 1910 was as follows :—

	Pigs.	Calves.
1910	66,153	31,967
1911	112,843	37,379
1912	110,898	48,336
1913	82,233	45,109
1914 (to 30th June) . .	31,051	15,295

Municipal Cold Storage Works.

These works, situated in the Market area immediately adjoining the Fruit Markets, are connected with the main Railway system of the State by a special siding. They consist of three floors :—

The Ground Floor, containing 4 rooms, and served by an attemporating passage leading direct from railway siding and roadway sidings. The sizes of these rooms vary from 7,220 to 13,400 cubic feet, giving a total storage space of 43,850 cubic feet. This floor will be used almost exclusively for the storage of fruit, and will provide a necessary adjunct to the Fruit Market under the same roof.

The 1st Floor consists of 6 distinct chilling rooms, varying from 4,000 cubic feet to 22,000 cubic feet, giving a storage capacity of 65,530 cubic feet. This floor will be used principally for the storage of dairy and farm produce; and probably one of the rooms will be set apart for fish, the cooling chamber at the Fish Market, which is in the same area, having proved too small. The system of receiving and delivering produce to this floor will be by means of conveyors from a receiving room adjoining the Railway siding and fronting Hay-street.

The 2nd Floor, which will be used for freezing, consists of 13 rooms, each of about 6,000 cubic feet, and each opening into a large storage room measuring 23,250 cubic feet, with a passage running completely round the Chamber, providing, without passages, a cubical storage capacity of 98,750 cubic feet. It is expected that this floor will be used mainly in connection with the mutton and rabbit trade; and space has been provided on the floor of the Market alongside the railway siding for grading and packing, from which, by means of an independent conveyor, the several freezing

rooms will be served. After freezing, the meat will pass into the store room, whence delivery is possible direct to Railway side or into Hay-street.

The total cubical storage capacity of the Chambers, excluding passages and grading rooms, is 208,130 cubic feet.

The charges for storage have not yet been discussed by the Council, but will probably be the same as the charges generally adopted by the various freezing works in this city, the Council having no desire to cut rates.

An ice making plant is not contemplated at present, but provision is made to supply power for this addition, also for a further addition of cooling space as may become necessary.

Prices of Commodities.

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, and 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.

Wholesale Prices.

Average wholesale prices at Sydney sales of the principal kinds of farm and dairy produce are given in the following statement for the seven years, 1907 to 1913. 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.	1907.			1908.			1909.			1910.			1911.			1912.			1913		
	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.
Wheat ...bush.	0	3	10	0	4	3¼	0	4	9¼	0	3	10	0	3	6	0	4	1	0	3	7
Flour .. ton	8	15	0	9	11	0	11	2	0	9	14	6	8	9	10	9	8	11	8	12	9
Bran ...bush.	0	0	11¼	0	1	3	0	0	11¾	0	0	10½	0	0	11¾	0	1	2¼	0	0	11
Pollard ... ,,	0	0	11½	0	1	3¾	0	1	1	0	0	10¼	0	0	11¾	0	1	3¼	0	0	11¼
Barley ... ,,	0	3	5	0	4	9	0	3	1	0	3	0¾	0	2	9	0	4	4	0	3	0¼
Oats ... ,,	0	2	10	0	3	3	0	2	5¼	0	2	5¼	0	2	8	0	3	6½	0	3	0
Maize ... ,,	0	3	2½	0	4	7	0	4	2¼	0	2	11¼	0	3	0	0	4	8	0	4	1¼
Potatoes... ton	3	5	0	5	15	0	5	17	0	6	12	2	6	1	3	8	12	9	4	16	6
Onions ... ,,	4	8	3	6	5	0	6	16	6	4	16	3	4	7	9	12	4	3	7	18	9
Hay—																					
Oaten or Wheaten ton	4	6	6	6	5	9	4	2	0	3	17	6	4	15	3	6	6	6	4	15	3
Lucerne.. ,,	4	19	0	5	4	0	3	19	0	3	1	7	3	5	0	4	18	9	4	19	0
Chaff ... ,,	4	8	0	6	1	3	4	10	6	4	4	0	4	4	3	5	14	0	4	7	9
Butter ... lb.	0	0	9¾	0	1	0¼	0	0	10	0	0	11½	0	0	10¾	0	1	0	0	0	11
Cheese(loaf) ,,	0	0	6¾	0	0	8	0	0	7	0	0	6¼	0	0	7¼	0	0	8½	0	0	7
Bacon ... ,,	0	0	8¼	0	0	8¾	0	0	8½	0	0	7½	0	0	7	0	0	8½	0	0	9¾
Eggs ... doz.	0	0	11	0	1	1	0	1	1	0	1	0½	0	1	0½	0	1	2¼	0	1	2
Milk ... gal.	0	1	1	0	0	11	0	0	10½	0	0	10	0	0	9¼	0	0	11¼	0	0	11¾
Poultry—																					
Fowls ... pair	0	3	9	0	3	9	0	4	3	0	4	10	0	4	8	0	5	0	0	4	10
Ducks ... ,,	0	3	0	0	3	0	0	4	3	0	3	1½	0	3	3	0	3	3	0	4	4
Geese ... ,,	0	5	9	0	6	3	0	5	3	0	6	2	0	5	8	0	6	3	0	7	0
Turkeys.. ,,	0	11	9	0	11	3	0	14	0	0	12	8	0	11	3	0	15	9	0	11	0
Bee produce—																					
Honey ... lb.	0	0	3	0	0	2⅔	0	0	3	0	0	3½	0	0	2½	0	0	3	0	0	3½
Wax ... ,,	0	1	3½	0	1	2½	0	1	2	0	1	2	0	1	1½	0	1	2½	0	1	2¾

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 1913 are quoted for the more important articles of New South Wales agricultural production :—

Month.	Wheat (Milling).	Flour.	Bran.	Pollard.	Oats.	Maize.	Hay (Oaten).
1913.	per bushel. s. d.	per ton. £ s. d.	per bushel. d.	per bushel. d.	per bushel. s. d.	per bushel. s. d.	per ton. £ s. d.
January ..	3 6½	8 12 6	11¾	12½	3 6	4 4½	5 13 3
February ...	3 6½	8 11 6	12¼	12¾	3 0	4 3½	4 17 9
March	3 7	8 13 9	13	13½	3 0¼	4 3	5 3 0
April	3 8¼	8 13 9	12¼	12½	2 11¾	4 0½	5 6 9
May	3 8	8 13 9	11	11	2 10	3 11½	5 13 3
June	3 7	8 13 9	11	12	2 9¼	3 9½	5 1 9
July	3 6⅞	8 13 9	10¼	10½	2 9⅞	3 8¾	4 3 3
August ...	3 7¼	8 13 9	10	10¼	3 2¼	3 8½	3 18 3
September ...	3 7	8 13 9	10½	10½	2 11	4 3	4 6 9
October ...	3 6¾	8 13 9	10¾	10¾	2 11¾	4 5½	4 5 0
November ..	3 5¾	8 9 6	9½	9½	2 11½	4 3½	3 17 0
December ...	3 5¾	8 9 6	9½	10	2 10¾	4 2½	4 15 9

Month.	Potatoes (Local).	Butter (Best Brands).	Cheese (Loaf).	Bacon (sides).	Lard (Bulk).	Eggs.	
						"Norths" and "Souths."	New Laid.
1913.	per ton. £ s. d.	per lb. d.	per lb. d.	per lb. d.	per lb. d.	per doz. s. d.	per doz. s. d.
January ...	5 5 0	9⅞	7¼	9½	8	1 0¼	1 3¾
February ...	5 5 0	9½	6½	10½	8	1 3	1 6¾
March	6 13 0	10¼	6⅞	10	7⅝	1 4½	1 9½
April	6 8 0	10⅛	7½	8¾	6⅞	1 7	2 2
May	5 8 0	10⅛	7⅝	7½	6⅝	1 8½	2 4½
June	5 2 0	12¼	7⅝	8½	6¾	1 7	2 0
July	4 11 9	12	7⅞	9	6¾	1 3½	1 5
August ...	3 13 3	12	6⅞	9	7	0 10¾	1 0
September ...	3 0 9	11½	6⅞	10	7	0 10¼	0 11⅛
October ...	2 15 0	11¼	6¾	10⅞	7	0 8⅛	0 10⅛
November ...	3 0 0	10¾	5⅝	11¼	7	0 9¾	0 11¾
December ...	6 3 3	11	5¾	11¼	7	0 10½	1 1

For locally-grown wheat the quotations during 1913 ranged from 3s. 8¼d in April to 3s. 5¾d. in November and December. Of barley and oats, the bulk are imported, and the prices of these cereals during the year call for little notice. Maize, on the contrary, is largely of local growth, and its price varied from 3s. 8½d. in August to 4s. 5½d. in October.

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.

Root crops show very great range; thus locally-grown potatoes varied between £2 15s. in October and £6 13s. per ton in March.

Prices of the items set forth in the tables just given are determined by the local demand, wheat, of course, excepted, its price being fixed by that ruling in the markets of the world.

The prices of pastoral and other primary produce, which form so large a proportion of the exports of the State, are not sensibly affected by local consumption, but are established by the prices ruling in London. In the following table are given for six years the Sydney f.o.b. prices of the principal pastoral products:—

Pastoral Produce	1908.			1909.			1910.			1911.			1912.			1913.		
	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.
Beef ... ... lb.	0	0	2	0	0	2½	0	0	2½	0	0	2¾	0	0	2¾	0	0	3¼
Mutton ... ... ,,	0	0	2	0	0	2⅛	0	0	2½	0	0	2½	0	0	3	0	0	3
Wool—Greasy ... ,,	0	0	9½	0	0	9	0	0	9½	0	0	9	0	0	9	0	0	9¾
Scoured ... ,,	0	1	4⅔	0	1	3½	0	1	3¾	0	1	3	0	1	3¼	0	1	5
Sheepskins—with Wool ... ... bale	17	18	4	19	11	8	20	0	0	17	15	0	19	16	0	22	17	0
Hides .. ..each	1	1	1	0	19	3	1	2	0	1	2	3	1	4	0	1	9	4
Leather ... ... bale	30	10	0	29	3	4	33	0	0	34	0	0	34	16	8	39	19	9
Hair ... ... lb.	0	1	4	0	1	5½	0	1	4½	0	1	3½	0	1	8	0	1	6½
Bones ... ...cwt.	0	7	6	0	7	8¾	0	9	3	0	12	1	0	13	9	0	11	5
Horns 100	1	13	4	2	4	7	2	2	11	2	2	10	2	11	6	2	7	0
Hoofs ... ...cwt.	0	6	6	0	6	10	0	6	3	0	8	3	0	10	0	0	9	0
Tallow ... ... ,,	1	8	3	1	7	3	1	10	0	1	8	6	1	9	3	1	10	3
Glue-pieces ... ... ,,	0	7	1	0	6	3	0	7	7	0	9	8	0	10	8	0	11	5

Leather is included as a pastoral product, although it might be regarded as a manufactured article; in 1913 the prices rose considerably above those of the previous five years. The prices of wool, the staple product of the State, declined considerably during 1908; the prices in 1913 were the highest since 1907, but did not reach the level of that year. The prices of the other articles also showed a great decrease during 1908; sheepskins were 37 per cent. lower than in 1907; greasy wool and scoured wool were over 25 per cent. higher than in 1901, but nearly 20 per cent. lower than in 1907. In 1909 the decreased prices of the previous year still prevailed, 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.

The following statement shows the fluctuations during 1913 in the prices obtained in London for the more important articles of New South Wales produce :—

Month.	Wheat.	Flour.	Butter (Best Quality).		Wool.		Tallow.
			Average Top.	Average Bottom.	Greasy.	Scoured.	
	per qr.	per ton.	per cwt.	per cwt.	per lb.	per lb.	per cwt.
1913.	s. d.	£ s.	s.	s.	d.	s. d.	s. d.
January ...	39 6	9 19	112	112	11	1 5	34 0
February ...	40 3	10 0	111½	111½	11½	1 5	34 0
March	41 9	10 0	111½	111½	11	1 5	34 0
April	41 0	10 3	109	109	10¾	1 6	34 0
May	40 3	9 16	109	109	10½	1 8	34 0
June	39 6	9 15	107½	107½	10¾	1 6	34 6
July	39 3	9 13	108	.....	10½	1 7	34 6
August ...	39 3	9 13	106½	.....	10	1 7	34 0
September ...	39 0	9 13	109½	.....	10½	1 7	34 9
October ...	38 6	9 13	119	.....	10¼	1 6	34 6
November ...	37 6	9 11	121	.....	10½	1 5	34 0
December ...	38 6	9 13	120½	.....	11	1 5	34 6

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.	1908.	1909.	1910.	1911.	1912.	1913.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Silver ...oz.	0 2 $0\frac{5}{16}$	0 1 $11\frac{1}{2}$	0 2 1	0 2 $0\frac{3}{8}$	0 2 4	0 2 $3\frac{5}{8}$
Copper ...ton	57 18 0	57 10 0	56 3 4	54 18 4	72 10 0	68 13 4
Tin ... ,,	131 5 0	133 2 0	153 3 4	188 1 8	209 1 8	202 5 0
Lead ... ,,	13 2 0	12 11 0	12 13 4	13 3 4	17 3 4	18 15 0
Coal ... ,,	0 10 7	0 10 8	0 10 8	0 10 8	0 10 8	0 10 9

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. The export price of coal has during the last six years been maintained at a relatively high level as compared with 1906 and 1907.

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

The fluctuations in the prices of the same series during 1913, as compared with 1901, are shown in the following figures :—

Period.	Index Numbers.		
	General Index—All Articles.	Pastoral Products—Wool, Tallow, Hides, Leather, &c.	Metals—Silver, Lead, Copper, Tin.
1913.			
January ...	1,374	1,399	1,486
February ..	1,345	1,377	1,430
March ...	1,360	1,435	1,382
April ...	1,369	1,415	1,460
May ...	1,394	1,436	1,511
June ...	1,401	1,441	1,492
July ...	1,372	1,401	1,430
August ...	1,367	1,388	1,459
September ...	1,385	1,418	1,507
October ...	1,376	1,407	1,483
November ...	1,352	1,399	1,427
December ...	1,330	1,402	1,346

Prices in United Kingdom.

To show the universal prevalence of rising prices, the following index numbers are quoted, as disclosed in investigation made by the British Board of Trade, of wholesale prices current in the United Kingdom in the years 1901–1912. As Great Britain is the principal market for New South Wales exports, it is evident that the upward tendency of prices in the world's market must reflect in local prices in many commodities, but especially in those in which the export trade is being developed; the figures are on the basis of 100 as representing the price in 1900 :—

Year.	Grain.	Meat, Fish, and Dairy Produce.	Sugar, Tea, Coffee, Cocoa and Tobacco.	Wine and Foreign Spirits.	Total Food and Drink.	Foreign Wheat.
1901	102·6	99·3	94·7	96·7	100·1	97·4
1902	102·3	104·4	84·4	91·8	101·4	98·4
1903	102·2	102·1	86·4	99·5	100·6	99·9
1904	106·9	98·3	92·5	100·8	101·2	103·1
1905	104·2	97·7	104·8	107·9	101·2	106·3
1906	102·3	102·2	88·7	103·2	101·0	103·4
1907	109·3	104·8	94·2	100·0	105·5	113·1
1908	113·8	103·3	99·0	97·8	107·0	123·5
1909	114·7	105·8	100·0	99·0	108·7	136·0
1910	105·9	111·7	111·7	100·2	109·2	123·4
1911	114·3	109·2	114·1	104·1	111·6	116·8
1912	124·0	116·8	120·4	111·9	119·9	124·7

The average level of wholesale prices of food and drink (including tobacco) has increased steadily since 1906, and in 1912 showed an incease of 7·4 per cent. as compared with the previous year, and of 18·7 per cent. as compared with 1906.

London Retail Prices.

In the following statement is shown the range of London retail prices over the same series of years for six principal food products, 1900 prices representing 100 in each case :—

Year.	Bread.	Beef (British).	Mutton (British).	Butter.	Eggs.	Potatoes.
1901	94·3	99·7	99·6	101·8	95·9	94·9
1902	101·4	105·3	100·2	99·7	97·2	81·6
1903	108·4	102·5	99·5	96·8	94·5	101·1
1904	108·3	99·5	98·8	95·7	96·7	102·1
1905	109·0	97·9	100·1	99·1	98·1	80·3
1906	102·5	97·6	99·9	102·5	100·7	83·0
1907	106·7	99·4	99·5	100·7	102·9	89·2
1908	115·1	103·2	99·1	106·3	100·7	93·4
1909	124·3	102·1	94·7	102·8	107·1	78·4
1910	119·5	107·1	96·3	106·2	105·7	76·9
1911	113·8	103·7	94·1	108·7	110·4	95·1
1912	119·5	108·9	100·4	113·8	114·1	95·9

Prices in Canada.

The average wholesale prices of various commodities in Canada for the years 1912 and 1913 were as follow:—

Commodity.	Average Wholesale Prices.						Commodity.	Average Wholesale Prices.					
	1912.			1913.				1912.			1913.		
Wheat—	£	s.	d.	£	s.	d.	Cheese, Western,	£	s.	d.	£	s.	d.
No. 1, Northern .. bus.	0	4	0	0	3	7½	coloured ... lb.	0	0	6¾	0	0	6¼
No. 2, Ontario ... „	0	4	0¼	0	3	9	Bacon, English boneless... ... „	0	0	8¼	0	0	9½
Barley—							Ham ... ... „	0	0	8	0	0	9½
Western ... ... „	0	2	4½	0	1	10¼	Eggs—						
Ontario ... ... „	0	3	3	0	2	3¼	Fresh ... ... doz.	0	1	4	0	1	5¼
Oats, white (Ontario) ... „	0	1	10¾	0	1	6¼	Milk ... ... gal.	0	0	9¼	0	0	9¾
Corn, yellow ... „	0	3	1½	0	2	8¾							
Hay ... ... ton	3	6	11	2	17	9	Beef, dressed—						
Butter—							Hind-quarter... cwt.	2	13	0	2	12	7
Creamery, finest... lb.	0	1	2½	0	1	1½	Forequarter ... „	1	15	2	1	16	8
Dairy, prints ... „	0	1	1	0	0	11½	Mutton, dressed ... „	1	18	0	2	2	7

A statistical record of wholesale prices prepared by the Canadian Department of Labour shows that in comparison with the average prices during the decade 1890–99, the prices were 27·4 per cent. higher in 1911, and that during 1912 they rose 34·4 per cent. above that basis.

The causes to which the increase during 1912 is attributed were the comparative world crop failure of 1911, which raised the price of farm and food products, the exceptionally severe winter of 1911–12 and the industrial and trade expansion which set in as the year advanced.

In the year 1913 the general level of wholesale prices was 35·5 per cent. higher than the average prices of the period 1890–1899. During the first eight months the general tendency was downward—except in the prices of meats, which rose persistently and reached the highest level hitherto experienced. The prices of fodder and some food products fell as the result of the abundant crops of 1912, while the demand for many commodities was lessened on account of financial stringency and depression in trade. In the latter part of the year the prices rose again, the favourable agricultural prospect having enhanced business confidence, and crop shortages in other countries and reductions in the United States import duties increased the demand for many articles for export.

The relative prices of foodstuffs, in Canada, for each year since 1900, as compared with those of the decade 1890–1899, are shown below :—

Year.	Grains and Fodder.	Animals and Meats.	Dairy Products.	Fish.	Other Foods.
1890–1899	100·0	100·0	100·0	100·0	100·0
1900	99·9	103·4	109·0	106·4	96·4
1901	107·3	111·3	120·5	113·2	98·6
1902	116·1	122·2	106·9	110·2	98·4
1903	106·5	117·9	108·9	116·2	98·1
1904	115·5	111·3	107·2	119·5	101·8
1905	116·4	120·7	115·1	115·7	100·7
1906	118·5	130·1	120·2	121·8	103·1
1907	140·2	138·8	131·5	129·5	112·5
1908	148·3	129·6	136·3	120·5	110·3
1909	149·9	148·6	133·6	134·0	107·6
1910	140·7	163·6	135·7	145·1	111·3
1911	148·4	146·6	136·2	143·6	118·7
1912	167·3	160·8	159·0	155·7	126.0
1913	136·8	180·8	154·7	158·0	117·4

For all foodstuffs the relative prices during the last four years, as compared with 1890–99 were :—1910, 129·8 ; 1911, 133·1 ; 1912, 142·1 ; 1913, 138·5.

Prices in United States of America.

The averages of wholesale prices of various commodities in the United States of America during 1911 and 1912 were as follow :—

Commodity.	Average Wholesale Price.		Commodity.	Average Wholesale Price.	
	1911.	1912.		1911.	1912.
	s. d.	s. d.		s. d.	s. d.
Wheat ... ... bus.	4 1¼	4 4½	Cheese ... ... lb.	0 7	0 8¼
Barley ... ... „	4 7	4 3	Bacon, sides ... „	0 4½	0 5¼
Oats ... ... „	1 7¼	1 10	Ham ... ... „	0 7	0 7¼
Corn... ... ... „	2 5½	2 10¼	Eggs, new laid ... doz.	1 3	1 4½
Rye ... ... „	3 9	3 4	Milk ... ... qt.	0 1¼	0 1¾
Potatoes ... ... „	3 2½	3 9¾	Beef, fresh ... ... lb.	0 5	0 6
Butter—Creamery lb.	1 1¼	1 3¾	Mutton, dressed ... „	0 3¾	0 4¼
Dairy ... „	1 0¾	1 3			

An investigation into the movement of wholesale prices of commodities since 1890 has been conducted by the Bureau of Labour of the United States. In the following statement the course of relative prices of grain and various

food commodities since 1900 is shown, the average of prices for the decennium 1890–1899 being the basis of the comparison :—

Year.	Grain.	Meat.	Fish.	Butter.	Sugar.	Total Food.
1890–1899	100·0	100·0	100·0	100·0	100·0	100·0
1900	96·5	108·9	112·0	101·7	116·7	104·2
1901	115·0	116·1	108·0	97·7	104·9	105·9
1902	129·0	135·6	107·0	112·1	91·7	111·3
1903	115·3	123·5	122·6	105·7	96·4	107·0
1904	131·4	112·7	123·6	98·4	101·9	107·2
1905	123·8	116·6	126·4	112·8	110·2	108·7
1906	115·6	125·9	130·8	113·1	94·8	112·6
1907	148·3	132·8	128·3	128·5	97·0	117·8
1908	163·0	137·4	124·9	122·1	104·8	120·6
1909	164·6	151·8	116·8	131·7	102·3	124·7
1910	153·0	172·3	130·8	138·5	107·1	128·7
1911	171·4	149·2	143·5	122·8	114·7	131·3

The index number for food commodities was 139·5 in 1912, the wholesale prices having advanced by 39·5 per cent. as compared with the average prices for the years 1890–1899; the increase was most marked during the preceding seven years; the increase as compared with 1911 amounted to 6·2 per cent. In 1913 the food prices were 1·7 per cent. lower than in 1912, the index number being 137·1.

No attempt was made by the United States Bureau to investigate the cause of the rise and fall of prices. Variations in harvest have an important bearing on the movement of prices, as they not only contract or expand the supply and consequently tend to increase or decrease the price of a commodity, but also decrease or increase, to a greater or less degree, the purchasing power of the communities which are dependent in whole or in part upon such commodity. Other influences are—changes in demand due to changes in fashions, seasons, &c.; legislation changing internal-revenue taxes, import dues or bounties; inspection as to purity or adulteration; use of other articles as substitutes; and improvement in methods of production, which tend to give a better article for the same price, or an equal article for a lower price. Prices are affected also by cheapening of transportation or handling; commercial panic or depression; speculative manipulation of the supply or of the raw product; expanding or contracting credit; over-production; unusual demand owing to steady employment of consumers; short supply owing to disputes between labour and capital in industries of limited producing capacity. By organisation or combination, producers or manufacturers may gain a greater or less control of prices, or, on the other hand, effect economies in production or in transportation charges through ability to supply the article from the point of production or manufacture nearest the purchaser.

Sydney Retail Prices.

The following table exhibits the average retail prices in Sydney of eight standard commodities at intervals since 1870 :—

Year.	Bread per 2-lb. loaf.	Fresh Beef per lb.	Butter per lb.	Cheese per lb.	Sugar per lb.	Tea per lb.	Potatoes per cwt.	Maize per bushel.
	d.	d.	s. d.	s. d.	d.	s. d.	s. d.	s. d.
1870	3½	3½	1 3	0 6	4	2 0	5 0	3 4
1875	3	3½	1 3	0 9	4½	1 9	5 6	4 3
1880	3	3½	0 10	0 7	4	2 0	4 3	2 6
1885	3	4½	1 9	1 0	3	1 9	5 6	3 11
1890	3½	4	1 0	0 8	3½	1 6	6 0	3 10
1895	2¾	3	1 0	0 8	2½	1 6	4 3	2 9
1900	3	3½	0 11	0 7½	2¼	1 4	6 9	3 0
1901	3	5	1 0	0 8	2¼	1 3	7 6	3 6
1902	3¼	6	1 2	0 10	2½	1 3	7 6	5 10
1903	3¼	5½	0 11	0 9	2½	1 3	5 10	4 6
1904	2¾	5	0 10½	0 8	2½	1 3	4 0	2 9
1905	2¾	5½	1 1	0 8	2¼	1 3	10 6	4 0
1906	2¾	5½	1 1	0 8½	2½	1 3	10 6	3 9
1907	3	5½	1 1	0 8	2½	1 3	4 6	3 10
1908	3¼	5½	1 2½	0 10	2½	1 3	7 3	5 3
1909	3½	5½	1 1	0 10	2¾	1 3	7 3	4 9
1910	3½	5½	1 1	0 9	2½	1 3	7 6	4 9
1911	3½	5½	1 1	0 9	2¾	1 3	7 6	4 6
1912	3½	5½	1 3	0 11½	3	1 3	10 6	5 0
1913	3½	5½	1 2	0 10	3	1 3	7 6	4 5

In the list are included quotations for bread at per 2-lb. loaf. In most years the price has varied directly with that of wheat. In recent years the usual price is from 3d. to 3½d. per loaf.

In addition to the eight commodities which are given in the above statement, the following list of the average retail prices of articles largely used is of interest :—

Year.	Bacon per lb.	Eggs per doz.	Rice per lb.	Oatmeal per lb.	Coffee per lb.	Salt per lb.	Beer (col.) per gal.	Soap per lb.	Starch per lb.	Tobacco.	
										per lb. (local).	per lb. (imp.).
	s. d.	s. d.	d.	d.	s. d.	d.	s. d.	d.	s. d.	s. d.	s. d.
1870	0 10½	1 4	3	4	1 2	1	1 4	4	0 7	1 3	3 6
1875	0 9½	1 6	3	3	1 2	1½	3 0	3	0 5	2 0	3 9
1880	0 7½	1 4	3	3	1 5	0¾	2 0	3	0 5½	2 0	4 0
1885	0 10½	1 10	3	3	1 5	0¾	2 0	3	0 6½	3 0	6 0
1890	1 0½	1 6	4	3	2 0	1	2 0	3½	0 5	4 0	6 0
1895	0 7½	1 0	2½	2	1 9	0¾	2 0	2	0 4	4 0	6 0
1900	0 7½	0 11	2¼	2¼	1 6	0½	2 0	3	0 3½	4 0	6 0
1901	0 8½	1 3	2½	2¼	1 6	0½	2 0	3	0 4	4 0	6 0
1902	0 10	1 6	2½	2¼	1 6	0½	2 0	3	0 4	4 0	6 0
1903	0 10	1 6	3	2½	1 6	0¾	2 0	4	0 5	4 0	6 0
1904	0 8	1 1	2½	2½	1 6	0⅝	2 0	4	0 5	4 0	6 0
1905	0 9	1 0	2½	2½	1 6	0¾	2 0	3½	0 5	4 3	6 0
1906	0 9½	1 0	2½	2½	1 6	0¾	2 0	3½	0 5	4 3	6 0
1907	0 10	1 1	2½	2½	1 6	0¾	2 0	4	0 5	4 3	6 0
1908	0 10	1 3	2½	3	1 6	0¾	2 0	4	0 5	4 3	6 0
1909	0 11½	1 3	2½	3	1 6	0¾	2 0	4	0 5	4 3	6 0
1910	0 10	1 3	2½	2½	1 6	0¾	2 0	3¼	0 5	4 3	6 0
1911	0 9	1 3	2½	2½	1 6	0¾	2 0	3	0 5	4 3	6 0
1912	0 9½	1 6	2¾	3	1 6	0¾	2 0	3⅓	0 5½	4 6	6 0
1913	0 11	1 7	3	3	1 6½	0¾	2 0	3⅓	0 5¼	4 6	6 0

The above quotations are based on the prices charged in the shops throughout the metropolitan district.

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. For the year 1913 the prices have been collected in detail for each month :—

Article.	Jan.	Feb.	Mar.	Apl.	May.	June.	July.	Aug.	Sep.	Oct.	Nov.	Dec.
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Bread ... ... per 2 lb. loaf	0 3½	0 3½	0 3½	0 3½	0 3½	0 3½	0 3½	0 3½	0 3½	0 3½	0 3½	0 3½
Flour ... ... 25 lb. bag	2 10½	2 10½	2 10½	2 10½	2 10½	2 9	2 9	2 9	2 9	2 9	2 9	2 9
,, Self-raising ... 2 lb.	0 4⅜	0 4⅜	0 4⅜	0 4⅜	0 4⅜	0 4⅜	0 4⅜	0 4⅜	0 4⅜	0 4⅜	0 4⅜	0 4⅜
Tea ... ... lb.	1 3	1 3	1 3	1 3	1 3	1 3	1 3	1 3	1 3	1 3	1 3	1 3
Coffee ... ... ,,	1 6	1 6	1 6	1 6	1 6	1 6	1 6	1 7	1 7	1 7	1 7	1 7
Cocoa ... ... ½ ,,	0 4½	0 4½	0 4½	0 4½	0 4½	0 4½	0 4½	0 4½	0 4½	0 4½	0 4½	0 4½
Sugar ... ... lb.	0 2¾	0 2¾	0 2¾	0 2¾	0 2¾	0 2¾	0 2¾	0 2¾	0 2¾	0 2¾	0 2¾	0 2¾
Rice ... ... ,,	0 3	0 3	0 3	0 3	0 3	0 3	0 3	0 3	0 3	0 3	0 3	0 3
Sago ... ... ,,	0 2¾	0 2¾	0 2¾	0 2¾	0 2¾	0 2¾	0 2¾	0 2¾	0 2¾	0 2¾	0 2¾	0 2¾
Jam (Australian) ... ,,	0 5½	0 5½	0 5½	0 5½	0 5½	0 5½	0 5½	0 5½	0 5½	0 5½	0 5½	0 5½
Oatmeal ... ... 5 lb.	1 2	1 2	1 1½	1 1	1 1½	1 1½	1 1½	1 1½	1 1½	1 1½	1 1½	1 1½
Raisins ... ... lb.	0 6½	0 6½	0 6½	0 6½	0 6½	0 6½	0 6½	0 6½	0 6½	0 6½	0 6½	0 6½
Currants... ... ... ,,	0 7½	0 7½	0 7½	0 7½	0 7	0 7	0 7	0 7	0 7	0 7	0 7	0 7
Starch ... ... ,,	0 5½	0 5½	0 5½	0 5½	0 5½	0 5½	0 5½	0 5½	0 5½	0 5½	0 5½	0 5½
Blue ... ... doz. squares	0 8½	0 8½	0 8½	0 8½	0 8½	0 8½	0 8½	0 8½	0 8½	0 8½	0 8½	0 8½
Candles ... ... lb.	0 6½	0 6½	0 7	0 7	0 7	0 7	0 7	0 7	0 7	0 7	0 7	0 7
Soap ... ... ,,	0 3⅗	0 3⅗	0 3⅗	0 3⅗	0 3⅗	0 3⅗	0 3⅗	0 3⅗	0 3	0 3⅗	0 3⅗	0 3⅗
Potatoes... ... ... 14 ,,	1 1½	1 1½	1 1½	1 2	1 1	1 0	1 1½	1 1	1 1	0 1	0 0	11
Onions ... ... lb.	0 0¾	0 1⅜	0 1½	0 1½	0 1⅜	0 1⅜	0 1½	0 1½	0 1½	0 1½	0 1½	0 1⅜
Kerosene ... ... gal.	0 11½	1 0	1 0	1 0	1 0	1 0½	1 0½	1 0½	1 0½	1 0½	1 0½	1 0½
Milk ... ... qrt.	0 5	0 5½	0 6	0 5½	0 5	0 5	0 5	0 5	0 5	0 5	0 5	0 5
Butter ... ... lb.	1 1	1 0¾	1 1½	1 0¾	1 0¾	1 3⅛	1 2¾	1 2¾	1 2½	1 2¼	1 2	1 2¼
Cheese—												
New ... ... ,,	0 9½	0 8¾	0 9½	0 9¾	0 9¾	0 9¾	0 9¾	0 9¾	0 9¾	0 9½	0 9½	0 8¾
Matured ... ... ,,	9 10¾	0 10½	0 10¾	0 11½	0 10¾	0 10¾	0 10¾	10¾	0 10¾	0 10¾	0 10½	0 9¾
Eggs—												
New laid ... ... doz.	1 6¾	1 10½	2 3½	2 7	2 10	2 7	1 10½	1 3½	1 2¼	1 0¾	1 2¾	1 3¼
Fresh ... ... ,,	1 4¼	1 7¼	1 9	2 6½	2 1	2 1½	1 7	1 2	1 0¾	0 10¼	1 1½	1 1¼
Bacon—												
Middlecut ... ... lb.	1 0¾	1 2	1 1½	1 0¾	0 11¾	1 0½	1 0½	1 0¾	1 1½	1 2	1 1½	1 0¾
Shoulder ... ... ,,	0 8¼	0 8¾	0 8¼	0 8	0 7¾	0 8¼	0 8¾	0 8¾	0 9¾	0 9¼	0 9¾	0 9¼
Ham ... ... ,,	1 2¼	1 2½	1 2¼	1 1¼	1 0¼	1 0¼	1 0¼	1 1	1 2½	1 4¼	1 4¾	1 4¾
Beef (fresh)—												
Sirloin... ... ... ,,	0 5	0 5	0 5	0 5	0 5	0 5	0 5	0 5	0 5	0 5	0 4¾	0 5
Ribs ... ... ,,	0 4½	0 4½	0 4½	0 4½	0 4½	0 4½	0 4½	0 4½	0 4½	0 4½	0 4½	0 4¾
Flank ... ... ,,	0 4½	0 4½	0 4½	0 4½	0 4½	0 4½	0 4½	0 3¾	0 3¾	0 3¾	0 3¾	0 3¾
Shin (without bone) } Gravy beef ... } ,,	0 3½	0 3½	0 3½	0 3½	0 3½	0 3½	0 3½	0 3½	0 3½	0 3½	0 3½	0 3½
Steak—												
Rump ... ... ,,	0 7½	0 7½	0 7½	0 8	0 8	0 8	0 8	0 8	0 8	0 8	0 8	0 8
Shoulder ... ... ,,	0 3¾	0 3¾	0 3¾	0 3¾	0 3¾	0 3¾	0 3¾	0 3¾	0 3½	0 3¾	0 3¾	0 3¾
Buttock ... ... ,,	0 4	0 4	0 4	0 4	0 4	0 4	0 4	0 4	0 3¾	0 4	0 4	0 4
Beef (corned)—												
Round ... ... ,,	0 4½	0 4½	0 4½	0 4½	0 4½	0 4½	0 4½	0 4½	0 4½	0 4½	0 4½	0 4½
Brisket (with bone) ... ,,	0 2¾	0 2¾	0 2¾	0 2¾	0 2¾	0 2¾	0 2¾	0 2¾	0 2¾	0 2¾	0 2¾	0 2¾
,, (without bone) ,,	0 4	0 4	0 4	0 4	0 4	0 4	0 4	0 4	0 4	0 4	0 4	0 4
Mutton—												
Leg ... ... ,,	0 3¾	0 3¾	0 3¾	0 3¾	0 3¾	0 3¾	0 3¾	0 3¾	0 3¾	0 3¾	0 3¾	0 3¾
Shoulder ... ... ,,	0 3¼	0 3¼	0 3¼	0 3¼	0 3¼	0 3¼	0 3⅜	0 3⅜	0 3	0 3	0 3	0 3
Loin ... ... ,,	0 4¼	0 4¼	0 4¼	0 4¼	0 4¼	0 4¼	0 4¼	0 4	0 4	0 4	0 4	0 4
Neck ... ... ,,	0 3½	0 3½	0 3½	0 3½	0 3½	0 3½	0 3½	0 3½	0 3½	0 3½	0 3½	0 3½
Chops—												
Loin ... ... ,,	0 4¾	0 4¾	0 4¾	0 4¾	0 4¾	0 4¾	0 4¾	0 4¾	0 4¾	0 4¾	0 4¾	0 4¾
Leg ... ... ,,	0 4¾	0 4¾	0 4¾	0 4¾	0 4¾	0 4¾	0 4¾	0 4¾	0 4¾	0 4¾	0 4¾	0 4¾
Neck ... ... ,,	0 4¼	0 4¼	0 4¼	0 4¼	0 4¼	0 4	0 4¼	0 4	0 4	0 3¾	0 3¾	0 4
Lamb—												
Forequarter ... ... each	2 6	2 6	2 6	2 6	2 6	2 7½	2 6	2 6	2 3	2 3	2 3	2 3
Hindquarter ... ... ,,	3 6	3 6	3 9	3 9	3 9	3 9	3 9	3 6	3 6	3 6	3 6	3 6
Pork (fresh)—												
Leg ... ... lb.	0 8¼	0 8¼	0 8¼	0 8¾	0 8¾	0 8¼	0 8¼	0 8¼	0 8¾	0 9¼	0 9¼	0 9¼
Loin ... ... ,,	0 8¼	0 8¼	0 8¼	0 8½	0 8½	0 8¼	0 8¼	0 8¼	0 9	0 9½	0 9½	0 9½
Belly ... ... ,,	0 7½	0 7½	0 7½	0 7¾	0 7¾	0 7¾	0 7¾	0 7¾	0 7¾	0 8¼	0 9¼	0 8¾
Chops... ... ... ,,	0 8¼	0 8½	0 8¼	0 9	0 9	0 8½	0 8½	0 8½	0 9	0 10	0 10	0 9½

On the whole, the average prices of the main grocery lines showed little variation throughout the year. The price of flour was reduced in January and in July as a result of a decline in the price of wheat. The price for large quantities of sugar remained constant throughout 1913; the price for a single lb. was raised to 3d. in March, 1913, on account of an advance in grocers' wages; but such a small quantity is seldom purchased, and the average price shown in the table is based on the quantity usually purchased by householders. The price of rice was higher than in the previous year, but the price of sago was slightly lower. In March, 1913, the prices of candles and jam were raised in consequence of the higher rates of grocers' wages, as awarded by the Wages Board.

The price of oatmeal was lowered in March and April as a result of the improved yield of the oat crops. The price of raisins advanced slightly during 1913, but currants were obtainable at a lower price. Starch was reduced in price in November, 1912, and did not vary during 1913.

In average seasons the local production of potatoes is far below the demand, and the deficiency is met by importation from Tasmania and Victoria. Owing to the want of rain during the summer months, supplies of local produce were unusually light in 1912, and the prices very high. Towards the end of the year, when early crops became available, the price was reduced. In January, 1913, the prices dropped to a normal level, and did not vary greatly throughout the year.

As in the case of potatoes, the local production of onions is supplemented by importation, mainly from Victoria. The price was above the average during 1912, in consequence of the exhaustion of supplies from Victoria and Tasmania, and the scarcity of local produce. Supplies became more plentiful at the end of the year, and in 1913 the price was reduced considerably.

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. In 1913 the London prices were generally lower than in the previous year.

The movements in June and September were seasonal—the prices of butter usually advance at the beginning of winter, when supplies decrease, and drop with the approach of spring weather. The reduction in April was due to the beneficial autumnal rains in the eastern part of Australia and a fall in the London prices.

The prices of cheese were lower than in 1912, when they were unusually high owing to the unfavourable weather which caused a shortage of supply in Queensland and Victoria as well as in New South Wales. Increased production caused a reduction in January and February, 1913, but the prices advanced again in March and April owing to shrinkage in supplies, the surplus production of Queensland, formerly sent to Sydney market, being exported oversea. The decreases in the closing months of the year were seasonal.

The marketing of large numbers of pigs in the summer months, 1912, when fodder became scarce, caused a shortage later, which persisted until March, 1913, when the prices began to decline in consequence of the larger supplies resulting from the favourable season in the eastern states of Australia. In September and October the prices advanced as supplies of bacon became scarce owing to an extraordinary shortage of pigs in Australia and New Zealand. The price of hams was advanced towards the end of the year in response to the increased demand for the Christmas season.

The following statement shows the mean of the monthly prices of the commodities during 1912–13:—

Article.	Average Prices. 1912.	1913.	Article.	Average Prices. 1912.	1913.
	s. d.	s. d.		s. d.	s. d.
Bread ... ... per 2 lb. loaf	0 3½	0 3½	Beef (fresh)—Sirloin lb.	0 5	0 5
Flour ... ... 25-lb. bag	2 10½	2 9⅝	Ribs ... ,,	0 4¼	0 4½
,, self-raising ... 2 lb.	0 4½	0 4⅜	Flank ,,	0 4	0 4
Tea ... ... lb.	1 3	1 3	Shin without bone ,,	0 3¼	0 3⅜
Coffee ... ... ,,	1 6	1 6½	Gravy beef ,,		
Cocoa .. .. ¼ lb.	0 4¼	0 4¼	Steak—Rump ... ,,	0 7	0 7⅛
Sugar ... ... lb.	0 3	0 3	Shoulder ... ,,	0 3¾	0 3¾
Rice ... ... ,,	0 2⅞	0 3	Buttock ... ,,	0 4	0 4
Sago ... ... ,,	0 2¾	0 2⅝	Beef (corned)—Round ,,	0 4¼	0 4⅜
Jam (Australian) ... ,,	0 5⅛	0 5½	Brisket with bone ,,	0 2⅝	0 2¾
Oatmeal ... ... 5 lb.	1 2	1 1½	Brisket without bone ,,	0 3¼	0 4
Raisins ... ... lb.	0 6¼	0 6⅜	Mutton—Leg ... ,,	0 3¾	0 3¾
Currants ... ... ,,	0 7¼	0 7	Shoulder ... ,,	0 3	0 3⅛
Starch ... ... ,,	0 5½	0 5¼	Loin ... ,,	0 4	0 4⅛
Blue ... ... doz. squares	0 8¼	0 8¼	Neck ... ,,	0 3⅜	0 3⅜
Candles... ... ... lb.	0 6½	0 7	Chops—Loin... ... ,,	0 5⅛	0 4¾
Soap ... ... ,,	0 3⅓	0 3⅓	Leg ... ... ,,	0 4⅝	0 4⅝
Potatoes ... ... 14 lb.	1 10¾	1 0¾	Neck ... ,,	0 3⅝	0 4¼
Onions ... . lb.	0 2⅜	0 1¼	Lamb—Fore-quarter each	2 2	2 5
Kerosene ... ... gal.	0 11¾	1 0⅛	Hind-quarter ,,	3 2¾	3 6¼
Milk ... ... qt.	0 5	0 5⅛	Pork (fresh)—Leg ... lb.	0 8	0 8⅝
Butter ... ... lb.	1 3½	1 1⅞	Loin ... ,,	0 8	0 8¾
Cheese—New ... ... ,,	0 10⅝	0 9½	Belly... ,,	0 7	0 8
Matured ... ,,	1 0¼	0 10⅝	Chops ,,	0 8½	0 9
Eggs—New laid ... doz.	1 7¾	1 8½			
Fresh ... ... ,,	1 4¾	1 5¼			
Bacon—Middle cut ... lb.	0 11½	1 1			
Shoulder ... ,,	0 7½	0 8¾			
Ham ... ... ,,	0 11⅞	1 2¼			

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. A movement has been initiated in the United States of America with the object of arranging for the appointment of an international commission, which, by bringing together the statistics collected in various countries, would be enabled to conduct a comprehensive investigation into the causes of the high prices of necessities, and to make suggestions as to remedial measures.

Particulars given above in connection with the food supply of Sydney show that the prices of various food commodities have increased considerably in New South Wales during the past decade.

An important decision relating to the cost of living was given in February, 1914, in the Court of Industrial Arbitration of New South Wales, where an inquiry was conducted in order to obtain an authoritative declaration as to the living wage to serve as a basis of awards of wages by the Wages Boards.

The living wage is standardised as the wage which will do neither more nor less than enable a worker of the class to which the lowest wage would be awarded to maintain himself, his wife, and two children—the average dependent family—in a house of three rooms and a kitchen, with food, plain

and inexpensive, but quite sufficient in quantity and quality to maintain health and efficiency, and with an allowance for the following other expenses :—fuel, clothes, boots, furniture, utensils, rates, life insurance, savings, accident or benefit societies, loss of employment, union pay, books and newspapers, train and tram fares, sewing machine, mangle, school requisites, amusements and holiday, intoxicating liquors, tobacco, sickness and death, domestic help, unusual contingencies, religion or charity.

The evidence placed before the Court included statistical information supplied by this Bureau of Statistics, budgets collected by employers and employees, municipal records, and returns supplied by house and estate agents. The decision of the Court was that the living wage in Sydney, calculated on the basis shown above, is not more than £2 8s. per week.

In consideration of the budgets and other evidence it is estimated that the weekly expenditure is apportioned amongst the various items as follows :—

	£ s. d.
Food and groceries	1 2 0
Rent...	0 12 0
Other expenditure	0 14 0
	2 8 0

Cost of Living in New Zealand.

Information was collected by the Department of Labour of New Zealand regarding the cost of living during the period 1st October, 1910, and 30th September, 1911. The inquiry was limited to families of married men supporting children under 14 years of age and earning £250 per annum or less, the father being the sole breadwinner. The information was collected with reference to four towns, Auckland, Wellington, Christchurch, and Dunedin.

The value of the inquiry was impaired by the fact that only sixty-nine complete returns were received. For this reason the conclusions deduced therefrom cannot be regarded as satisfactory for comparison with other countries. The following statement shows the average weekly expenditure on the principal food commodities in relation to annual income :—

Average Weekly Expenditure on Food.	Annual Family Income.						
	Under £143.		£143–£169.		Over £169.		General Average.
	Over four Members.	Four Members or less.	Over four Members.	Four Members or less.	Over four Members.	Four Members or less.	
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Bread	2 9½	1 10½	2 5¾	1 9¾	2 9½	1 10	2 2¼
Meat	4 1¼	3 9½	6 7	4 6½	5 8	4 2¾	4 7¼
Vegetables and fruit ...	2 7	1 4½	1 10¼	2 7	3 1¾	2 7¾	2 5½
Milk	2 10	1 9	3 0¾	2 1¼	2 8¼	2 3½	2 4½
Butter and cheese ...	2 10	1 9½	2 11	2 5¼	3 11¼	2 7½	2 8¾
Sugar	1 1	0 9¾	1 8¼	0 11	1 6	0 10½	1 0¾
Tea and coffee ...	1 3	0 10¼	1 1¾	1 0¾	1 3	1 1	1 1
Other food	2 7¼	3 5	2 9¼	3 6½	4 7½	4 1	3 8
Total	20 1	15 7½	22 6	19 0	25 7¼	19 8	20 2
Returns	10	10	4	6	12	17	69

In May, 1912, a Royal Commission was appointed in New Zealand to conduct an inquiry relating to the cost of living. After allowing for change in the quality of articles consumed and eliminating the rise in the standard of living, the Commission found that the cost of living in New Zealand must have increased by at least 16 per cent. between the middle and later "nineties" and the present day. As to the directions of the increase it was found that the cost of food, which represents nearly 35 per cent. of the total expenditure, had risen much more than the average level of prices. Clothing had increased by 20 per cent., house rent 20 per cent., domestic attendance at least 100 per cent., and fuel 5 per cent. Lighting and the direct cost of education had decreased, and medical attendance showed little change.

In comparison with other countries the rise in the cost of living in New Zealand had been generally less than in the United States of America, Canada, and Germany, approximately the same as in the United Kingdom, and higher than in France.

The causes of the increased cost of living were briefly summarised as follow by the Commission :—

1. Increased supply of money (gold and credit) and increased velocity of circulation, which have outstripped increase in volume of trade.
2. Increased cost of production of farm products, and increased demand for foodstuffs produced in the country.
3. Rural depopulation abroad, and consequent slackened rate of production.
4. Local combinations, monopolies, and trusts, commercial and industrial, which raise prices directly to the consumer, while they tend to discourage initiative and self-reliance.
5. Diminution of natural fertility of the soil and of natural resources.
6. Increase in cost of distribution, due to increased transportation charges, excessive numbers engaged in distribution, and duplication of distributing agencies.
7. National waste involved in extravagence, individual and national; wasteful domestic methods, changes of fashions, and devotion of increasing proportion of wealth to non-productive uses.
8. Increased taxation, local and national.
9. Protective tariffs and trusts abroad raising first cost of imports.
10. New Zealand protective tariff.
11. Failure to attain national efficiency through education and technical training.
12. Higher standard of life.

As to remedial measures with a view to reducing the cost of necessaries, the Commission recommended the extension and improvement of the collection of statistics, particularly with regard to information to be used as a basis of economic legislation; the extension of the educational system—general, industrial, commercial agricultural, and domestic; extension of statutory powers regarding trusts and monopolies; the establishment of a permanent Board of Industrial Investigation, representative of the various classes of the people, and of expert economists to advise the Government on all matters affecting the industrial and economic condition of the people; revision of customs tariff, especially with regard to duties on common necessaries; a land policy to break down land monopoly in town and country; the improvement of housing conditions for workers and families in country districts; and encouragement of immigration. Subsidiary recommendations related to transport, municipalisation of markets and services, money-lending and bailments, and regulation of weights and measures.

Cost of Living in Canada.

The steady increase in the cost of living in Canada is illustrated in the following comparison prepared by the Canadian Department of Labour. The statement shows for the four years 1910–13 the average weekly expenditure on staple foods, fuel, lighting, and rent, based appoximately on the average consumption of each commodity, by a family of five, whose annual income amounts to 800 dollars (about £164).:—

Commodity.	Quantity.	Cost.			
		1910.	1911.	1912.	1913.
		s. d.	s. d.	s. d.	s. d.
Beef, sirloin steak	2 lb.	1 6¼	1 7½	1 8½	1 10
Beef, chuck roast	2 „	1 0½	1 1	1 1¾	1 2½
Veal, forequarter	1 „	0 6	0 6½	0 7	0 7¾
Mutton, roast, hindquarter ...	1 „	0 7¾	0 8¼	0 8¾	0 9½
Pork, roasting, fresh	1 „	0 8¾	0 8½	0 8¾	0 9½
Pork, salt	2 „	1 5	1 4	1 4¼	1 5⅓
Bacon, best, smoked	1 „	0 11½	0 11½	0 11½	1 0¼
Lard, pure leaf	2 „	1 7⅜	1 5¾	1 5¾	1 7
Eggs, fresh	1 doz.	1 3¼	1 3¾	1 4½	1 4¾
Eggs, packed	1 „	1 2	1 1⅜	1 3	1 1¾
Milk	6 qts.	1 10	1 11	2 0½	2 1½
Butter, dairy, tub	2 lb.	2 2	2 2½	2 5½	2 4½
Butter, creamery prints ...	1 „	1 3¼	1 3¾	1 5¼	1 4¾
Cheese, Canadian, old	1 „	0 8¾	0 9¼	0 10¼	0 10
Cheese, Canadian, new	1 „	0 8½	0 8½	0 9¾	0 9½
Bread, plain white	15 „	2 7¾	2 7¾	2 6¼	2 6¼
Flour, ordinary family	10 „	1 3¾	1 4¼	1 4¼	1 3¾
Rolled oats	5 „	0 10¼	0 10½	0 10⅜	0 10¾
Rice, good medium	2 „	0 5¼	0 5¼	0 5¾	0 5¾
Beans, hand-picked	2 „	0 5	0 5½	0 5⅜	0 6
Apples, evaporated	1 „	0 5½	0 6½	0 6⅜	6
Prunes, medium quality ...	1 „	0 5¾	0 6	0 6½	0 5¾
Sugar, granulated	4 „	0 11¾	0 11¾	1 0¼	0 11¾
Sugar, yellow	2 „	0 5¼	0 5¼	0 6	0 5½
Tea, black	¼ „	0 3	0 3	0 3¾	0 4½
Tea, green	¼ „	0 3⅝	0 3⅝	0 3⅝	0 4½
Coffee.....	¼ „	0 4¼	0 4¼	0 4⅜	0 4⅜
Potatoes	2 pks.	1 2	1 1½	2 1⅛	1 5¾
Vinegar, white wine	⅛ pt.	0 0¼	0 0¼	0 0½	0 0½
Starch, laundry	⅛ lb.	0 1½	0 1½	0 1½	0 1½
Coal, anthracite	1/16 ton	1 7½	1 8¼	2 1¼	2 3¼
Coal, bituminous	1/16 „	1 5	1 5½	1 6	1 7
Wood, hard, best	1/16 cord	1 8¼	1 9½	1 8⅜	1 9
Wood, soft	1/16 „	1 0½	1 3	1 2¾	1 3
Coal oil	1 gall.	1 0	0 11½	0 11¼	0 11¾
Rent	.....	15 8	16 11½	17 11¾	19 6¼
Total	.....	50 4	53 0	56 1	57 8

The weekly budget, which would have cost £2 10s. 4d. in 1910, cost £2 13s. in 1911; £2 16s. 1d. in 1912; and £2 17s 8d in 1913. The increase in 1911 over 1910 was 6·1 per cent., and in 1912, as compared with 1911, 5·8 per cent. In 1913 the advance was 1·7 per cent. over 1912 and 9·6 per cent. over 1910.

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