

COMMONWEALTH BUREAU OF CENSUS AND STATISTICS,  
MELBOURNE.

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OFFICIAL  
**YEAR BOOK**  
OF THE  
**COMMONWEALTH OF AUSTRALIA,**  
CONTAINING AUTHORITATIVE STATISTICS FOR THE PERIOD  
**1901-1919**  
AND CORRECTED STATISTICS FOR THE PERIOD 1788 TO 1900.

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Prepared under Instructions from  
The Minister of State for Home and Territories,

BY

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COMMONWEALTH STATISTICIAN.



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## PREFACE.

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By the Constitution of the Commonwealth of Australia, the Commonwealth is empowered "to make laws for the peace, order, and good government of the Commonwealth, with respect to," *inter alia*, "Census and Statistics." In the exercise of the power so conferred, a "Census and Statistics Act" was passed in 1905, and in the year following the "Commonwealth Bureau of Census and Statistics" was created. The first Official Year Book was published early in 1908. The publication here presented is the thirteenth Official Year Book issued under the authority of the Commonwealth Government.

The inclusion of the total available information in the more important branches of statistics enables this publication to be used wherever it is desired to make a comparative survey of the evolution of this portion of the British Empire. Not only are the results given for the Commonwealth as a whole, but also for each State therein.

The general arrangement of the work, which has received wide approval, corresponds with that of previous issues, and is shewn in the synopsis on pp. xi. to xxvii. immediately following.

In addition, however, to what may be called purely statistical matter, each issue contains special articles dealing at length with some particular subject or subjects of more or less permanent interest. These cannot of course be repeated year after year, but in some instances a brief condensation is given in subsequent issues. Though many articles in Year Books Nos. 1 to 12 have been reduced to synopses or deleted, sufficient indication is given to enable the subject to be traced in previous issues.

The present issue contains a specially-contributed article dealing with "Past Glacial Action in Australia," and it may be read in conjunction with articles dealing with the geology and physical features of the continent, which appeared in previous issues.

Amongst new matter incorporated in the various Sections, mention may be made (i) of the Conspectus of Laws relating to the Registration of Births, Deaths, and Marriages, which appears at the end of the Section dealing with "Vital Statistics," and (ii) of the Conspectus of the Constitution Acts of the Commonwealth and the States inserted in the Section "General Government." In the Section "Miscellaneous" special sub-sections have been devoted to (a) an Examination of the Development of Australian Population and the Effect thereon of the War, (b) the recent disastrous Epidemic of Influenza; and (c) International Currency.

The subject matter throughout is dealt with, as far as possible, from the following points of view, viz :—

(i) The development of the individual States. (ii) The progress of Australia as a whole from the earliest times. (iii) The statistical comparison of Australia with other leading countries of the world.

The full text of the Commonwealth Constitution Act and Amendments appears on pages 14 to 32.

A feature of this publication is the use made of maps and diagrams. As a rule, facts can be properly appreciated only by the use of graphs, and the progress of events, the characteristics of growth and decline, can in general be grasped much more readily graphically than numerically. The diagram or "graph" is a direct picture in which the relative magnitudes are preserved and by which instantaneous comparisons of a wide range of facts are made possible at a glance. The statistical data, however, are also given *in extenso* numerically.

The development of Australia has been in many instances very remarkable, and this could be shewn only by tables and graphs dating back to its beginning in 1788. In most cases accurate data are not available for years much before 1860. In such cases, therefore, it would appear sufficient at present to give continuous results from that year onwards.

The great mass of material embodied in each Year Book is always carefully examined, but it would be idle to hope that all error has been avoided. The Commonwealth Statistician desires to express appreciation of the opportunity afforded him of perfecting the matter of the Year Book, by those who have been kind enough to point out defects or make suggestions.

The corresponding years indicated in various sections of this book do not always necessarily refer to the same period, the year ending in some cases on 31st December, 30th June, 31st March, etc. The precise period for which returns are given is indicated where necessary.

Recent information or returns which have come to hand since the various Sections were sent to press may be found in the Appendix, p. 1149.

In conclusion, the Commonwealth Statistician desires to express his cordial thanks to the State Statisticians, to the responsible officers of the various Commonwealth and State Departments, and to others, who have kindly, and often at considerable trouble, supplied all desired information.

G. H. KNIBBS,

*Commonwealth Statistician.*

# INDEX TO SPECIAL ARTICLES, ETC., APPEARING IN PREVIOUS ISSUES.

These articles have appeared in former issues of the Commonwealth Year Book, but, owing to exigencies of space, they are not included in this publication.

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## STATISTICAL SUMMARY.

## STATISTICAL SUMMARY FOR THE COMMONWEALTH, 1871 TO 1918.

(Figures for 1919, where available, will be found in the Appendix, and, in some instances, have been incorporated in the various sections hereinafter.)

Heading.		Years.						
		1871.	1881.	1891.	1901.	1911.	1916.	1918.
Population ..	Males	928,918	1,247,059	1,736,617	2,004,836	2,377,920	2,401,064	2,473,297
	Females	771,970	1,059,677	1,504,368	1,820,077	2,190,787	2,474,261	2,567,182
	Total	1,700,888	2,306,736	3,240,985	3,824,913	4,568,707	4,875,325	5,030,479
Births ..	No.	63,625	80,004	110,187	102,945	122,193	131,426	125,739
	Rate	38.00	35.26	34.47	27.16	27.21	26.78	25.25
Deaths ..	No.	22,175	33,327	47,430	46,330	47,869	54,197	50,249
	Rate	13.24	14.69	14.84	12.22	12.22	11.04	10.09
Marriages ..	No.	11,623	17,244	23,862	27,753	39,482	40,289	33,141
	Rate	6.94	7.60	7.47	7.32	8.79	8.21	6.65
Agriculture—								
Wheat ..	Area, acs.	1,279,778	3,002,064	3,335,528	5,115,965	7,427,834	11,532,828	7,990,165
	Yld., bshl.	11,917,741	21,443,862	25,675,265	38,561,619	71,636,347	152,420,189	75,638,262
	Av. „	9.31	7.14	7.70	7.54	9.64	13.22	9.47
Oats ..	Area, acs.	225,492	194,816	246,129	461,430	610,857	844,140	768,152
	Yld., bshl.	4,251,630	4,795,997	5,726,256	9,789,854	9,561,771	14,018,009	10,441,080
	Av. „	18.85	24.62	23.27	21.22	15.50	16.61	13.50
Barley ..	Area, acs.	48,164	75,864	68,068	74,511	110,466	230,253	254,869
	Yld., bshl.	726,158	1,353,380	1,178,560	1,519,819	2,056,856	4,080,492	4,763,721
	Av. „	15.08	17.84	17.31	20.40	17.68	17.72	18.69
Maize ..	Area, acs.	142,078	165,777	284,428	294,849	340,065	380,072	286,812
	Yld., bshl.	4,576,635	5,726,266	9,261,922	7,034,786	8,939,855	8,526,136	6,912,153
	Av. „	32.21	34.54	32.56	23.86	26.29	23.68	24.10
Hay ..	Area, acs.	303,274	768,388	942,166	1,688,402	2,518,258	2,671,862	2,692,904
	Yld., tons	375,871	767,194	1,067,255	2,024,608	2,867,973	3,507,589	2,893,602
	Av. „	1.24	1.00	1.13	1.20	1.14	1.34	1.07
Potatoes <sup>1</sup> ..	Area, acs.	67,911	76,265	112,884	109,685	130,463	149,895	111,169
	Yld., tons	212,896	243,216	380,477	322,524	301,489	357,002	200,416
	Av. „	3.13	3.19	3.37	2.94	2.31	2.38	2.34
Sugar Cane <sup>4</sup> ..	Area, acs.	11,576	19,708	45,444	86,950	101,010	178,190	116,138
	Yld., tons	176,632	349,627	737,573	1,367,802	1,682,250	1,723,072	1,780,063
	Av. „	15.25	17.74	16.23	15.73	16.65	21.24	15.33
Vineyards ..	Area, acs.	16,253	14,570	48,882	63,677	60,602	63,394	70,058
	Wine, gal.	2,104,000	1,488,000	3,535,000	5,816,087	4,975,147	5,126,268	8,692,837
Total value all agricultural production ..		£ 8,941,000	15,519,000	16,480,000	23,835,000	38,774,000	60,207,000	58,080,000
Pastoral, dairying, etc.—								
Live Stock ..	Sheep No.	40,072,955	65,092,719	106,421,068	72,040,211	93,003,521	76,668,604	87,086,236
	Cattle „	4,277,228	8,010,991	11,112,112	8,491,428	11,828,954	10,467,737	12,738,822
Horses ..	No.	701,530	1,088,029	1,584,737	1,620,420	2,279,022	2,437,157	2,528,243
	Pigs „	586,017	703,188	845,888	931,309	1,110,721	1,006,387	913,902
Wool prod., lb. greasy ..	Butter production lbs.	179,000,000	332,759,000	631,587,000	543,131,661	726,408,625 <sup>4</sup>	547,702,295 <sup>4</sup>	657,911,710
	Cheese ..	„	„	47,433,564	101,671,066	211,573,745	182,470,778	181,802,675
Bacon and ham ..	„	„	„	19,146,929	11,575,692	15,886,712	23,408,872	23,790,240
	„	„	„	„	34,020,629	53,264,652	51,374,776	66,171,428
Total estimated value of pastoral and dairying production ..		£ 20,736,000	29,538,000	39,256,000	36,890,000	69,832,000	116,889,000	132,036,000
Mineral production—								
Gold ..	£	7,916,627	5,194,390	5,281,309	14,017,508	10,551,624	7,075,980	5,408,157
	Silver and lead ..	£ 36,528	45,622	3,736,352	2,367,687	3,022,177	4,407,807	6,014,977
Copper ..	£	830,242	714,003	367,373	2,215,431	2,564,778	4,633,525	4,464,787
	Tin ..	£ 24,020	1,145,889	560,502	448,234	1,209,973	915,506	1,432,294
Zinc ..	£	369	200	2,979	4,067	1,415,169	962,479	295,413
	Coal ..	£ 330,759	637,865	1,914,026	2,602,770	3,929,673	4,118,201	6,123,747
Total value all mineral production ..		£ 9,190,330	7,820,290	12,108,759	21,922,665	23,494,324	23,606,373	26,155,649
Forestry production—								
Quantity of local timber sawn or hewn 1,000 sup. ft.		„	„	„	452,131	593,345	454,363	472,394
Manufactories—								
No. of factories ..	Hands employed No.	„	„	„	„	14,455	15,010	15,421
	Wages paid ..	£	„	„	„	311,710	316,752	328,049
Total value of output ..	Value added in process of manufacture ..	£	„	„	„	27,528,703	33,828,840	38,379,268
	„	£	„	„	„	133,022,090	172,574,845	225,753,611
		£ 54,017,714	67,394,400	79,571,715				

<sup>1</sup> Partly estimated 1871 and 1881.

effective comparison is impossible.

<sup>2</sup> Information not available.<sup>3</sup> Owing to variation in classification and lack of information<sup>4</sup> Area of productive cane.<sup>5</sup> Season

ended 30th June, year following.

## STATISTICAL SUMMARY FOR THE COMMONWEALTH—continued.

Heading.	Years.						
	1871.	1881.	1891.	1901.	1911.	1916.	1918.
Shipping—							
Oversea vessels { No. ent. & cleared { ton.	2,748 1,312,642	3,284 2,549,364	3,778 4,726,307	4,028 6,541,991	4,174 9,984,801	2,986 7,694,442	2,614 6,180,486
Commerce—							
Imports oversea £	17,017,000	29,067,000	37,711,000	42,434,000	66,967,488	76,228,679	102,335,159
" per head £	10/3/3	12/16/2	11/16/0	11/3/11	14/18/3	15/12/9	20/6/10
Exports oversea £	21,725,000	27,528,000	36,043,000	49,668,000	79,482,258	97,955,482	113,963,976
" per head £	12/19/6	12/2/8	11/5/6	13/2/2	17/14/1	20/1/10	22/13/1
Total oversea trade £	38,742,000	56,595,000	73,754,000	92,130,000	146,449,746	174,184,161	216,299,135
" per head £	23/2/9	24/18/10	23/1/6	24/6/1	32/12/4	35/14/7	42/19/1
Customs and excise duties .. £	..	4,809,320	7,440,869	8,656,539	13,515,065	16,116,920	17,423,063
Principal Oversea Ex-ports—							
Wool { lbs. (greasy) £	176,635,800	328,369,200	619,259,800	518,018,100	720,364,900	452,596,500	676,305,700
Wheat { centals £	9,459,629	13,173,026	19,940,029	15,237,454	26,071,193	28,953,338	42,766,755
Flour { tons £	479,954	3,218,792	5,876,875	12,156,035	33,088,704	33,167,323	26,738,158
Butter { lbs. £	193,732	1,189,762	1,938,864	2,774,643	9,641,608	13,374,511	11,334,655
Skins and hides £	12,988	49,549	33,363	96,814	175,891	290,633	459,354
Tallow .. £	170,415	619,635	328,423	589,604	1,391,529	3,463,363	5,551,612
Meats .. £	1,812,700	1,298,800	4,239,500	34,607,400	101,722,100	75,361,900	41,114,800
Timber (undressed) £	45,813	39,383	206,868	1,451,168	4,637,362	5,338,848	3,193,086
Gold .. £	100,123	316,878	873,695	1,250,938	3,227,236	2,273,648	4,401,916
Silver and lead .. £	914,278	644,149	571,069	677,745	1,935,836	1,252,266	2,172,268
Copper .. £	566,780	362,965	460,894	2,611,244	4,303,159	8,861,157	9,207,787
Coal .. £	42,586	118,117	38,448	731,301	1,023,960	289,738	227,230
Govt. Railways—							
Lgh. of line open. mls.	970	3,832	9,541	12,577	16,079	20,738	22,180
Capital cost £	19,269,786	42,741,350	99,764,090	123,587,000	152,194,603	205,167,000	220,301,722
Gross revenue £	1,102,650	3,910,122	8,654,085	11,038,000	17,847,843	22,229,174	24,323,218
Working expenses £	608,332	2,141,735	5,630,182	7,149,000	11,054,383	16,249,387	17,665,661
Per cent. of work'g ex- penses on earnings %	55.17	54.77	65.06	64.76	61.94	73.10	72.63
Postal—							
Letters and postcards dealt with No.	24,382,000	67,640,000	157,297,000	220,853,000	453,885,410	584,148,939	553,959,000
" per head ..	14.54	29.61	49.07	58.26	101.08	119.82	110.12
Newspapers dealt with No.	3,336,000	32,063,000	85,280,000	102,727,000	139,603,510	146,857,674	135,970,006
" per head ..	7.95	16.66	26.61	27.10	31.09	30.12	27.03
Cheque-paying Banks—							
Note circulation £	2,456,487	3,978,711	4,417,269	3,406,175	876,428*	251,763*	224,739*
Coin & bullion held £	6,168,869	9,108,243	16,712,923	19,737,572	30,024,225	25,919,332	22,032,489
Advances .. £	26,039,573	57,732,824	129,741,583	89,167,499	116,769,133	134,239,247	192,070,161
Deposits .. £	21,856,959	53,849,455	98,345,338	90,965,530	147,103,081	196,665,369	244,482,241
Savings Banks—							
Number of depositors	100,713	250,070	614,741	964,553	1,600,112	2,418,297	2,830,593
Total deposits £	3,193,285	7,854,480	15,536,592	30,882,645	59,393,682	96,284,078	116,786,641
Aver. per depositor	31/14/2	31/8/2	25/5/6	32/0/4	37/2/4	39/16/5	41/5/2
" head of population £	1/18/9	3/10/5	4/18/7	8/3/0	13/8/5	19/12/10	23/5/0
State Schools—							
Number of schools ..	2,502	4,494	6,231	7,012	8,060	8,875	9,023
Teachers .. No.	4,641	9,028	12,564	14,500	16,971	23,389	24,853
Enrolment ..	236,710	432,320	561,153	638,478	693,850	751,126	779,687
Aver. attendance ..	137,767	255,143	350,773	450,246	463,799	569,306	612,174

\* Australian produce, except gold, which includes re-exports.

\* Decrease due to prohibition of re-issue

# CHRONOLOGICAL TABLE.

## CHRONOLOGICAL TABLE OF CHIEF EVENTS SINCE THE ESTABLISHMENT OF SETTLEMENT IN AUSTRALIA.

NOTE.—The Government was centralised in Sydney, New South Wales, up to 1825, when Tasmania (Van Diemen's Land) was made a separate colony. In the Table, the names now borne by the States serve to indicate the localities.

Year.

- 1788 N.S.W.—Arrival of "First Fleet" at Botany Bay. Land in vicinity being found unsuitable for settlement, the expedition moved to Sydney Cove (now Port Jackson). Formal possession of Port Jackson taken by Captain Phillip on 26th January. Formal proclamation of colony on 7th February. Population, 1,024. Branch settlement established at Norfolk Island. French navigator Lapérouse visited Botany Bay. First cultivation of wheat and barley. First grape vines planted.
- 1789 N.S.W.—First wheat harvest at Parramatta, near Sydney. Discovery of Hawkesbury River. Outbreak of small-pox amongst aborigines.
- 1790 N.S.W.—"Second Fleet" reached Port Jackson. Landing of the New South Wales Corps. Severe suffering through lack of provisions. First circumnavigation of Australia by Lieut. Ball.
- 1791 N.S.W.—First Exploration Map of Australia published. Arrival of "Third Fleet." Territorial seal brought by Governor King.
- 1792 N.S.W.—Visit of *Philadelphia*, first foreign trading vessel. Population, 4,203.
- 1793 N.S.W.—First free immigrants arrived in the *Bellona*. First Australian church opened at Sydney. Tas.—D'Entrecasteaux discovered the Derwent River.
- 1794 N.S.W.—Establishment of settlement at Hawkesbury River
- 1795 N.S.W.—Erection of the first printing press at Sydney. Descendants of strayed cattle discovered at Cowpastures, Nepean River.
- 1796 N.S.W.—First Australian theatre opened at Sydney. Coal discovered by fishermen at Newcastle.
- 1797 N.S.W.—Introduction of merino sheep from Cape of Good Hope.
- 1798 Tas.—Tasmania proved an island by voyage of Bass and Flinders.
- 1800 N.S.W.—First export of coal. First Custom House in Australia established at Sydney. Flinders' charts published. First issue of copper coin. Population, 5,995.
- 1801 N.S.W.—First colonial manufacture of blankets and linen.
- 1802 Vic.—Discovery of Port Phillip by Lieut. Murray. S.A.—Discovery of Spencer's and St. Vincent Gulfs by Flinders. Q'land.—Discovery of Port Curtis and Port Bowen by Flinders.
- 1803 N.S.W.—First Australian wool taken to England by Capt. Macarthur. Issue of "The Sydney Gazette," first Australian newspaper. Vic.—Attempted colonisation of Port Phillip by Collins. Discovery of Yarra by Grimes. Tas.—First settlement formed at Risdon by Lieut. Bowen.
- 1804 N.S.W.—Insurrection of convicts at Castle Hill. Vic.—Abandonment of settlement at Port Phillip. Tas.—Foundation of settlement at Hobart by Collins, and at Yorktown by Colonel Paterson.
- 1805 N.S.W.—First extensive sheep farm established at Camden by Capt. Macarthur. Portion of convicts from Norfolk Island transferred to Tasmania.
- 1806 N.S.W.—Shortage of provisions. Floods. Tas.—Settlement at Launceston.
- 1807 N.S.W.—Final shipment of convicts from Norfolk Island. First shipment of merchantable wool (245 lbs.) to England.
- 1808 N.S.W.—Deposition of Governor Bligh.
- 1810 N.S.W.—First post-office established at Sydney. First race meeting in Australia at Hyde Park, Sydney. Population, 11,590. Tas.—First Tasmanian newspaper printed.
- 1813 N.S.W.—Passage across Blue Mountains discovered by Wentworth, Lawson, and Blaxland. Macquarie River discovered by Evans.

## Year.

- 1814 N.S.W.—Australia, previously known as “New Holland,” received present name on recommendation of Flinders. Creation of Civil Courts.
- 1815 N.S.W.—Town of Bathurst founded by Governor Macquarie. First steam engine in Australia erected at Sydney. Lachlan River discovered by Evans. Tas.—Arrival of first immigrant ship with free settlers. First export of wheat to Sydney. Port Davey and Macquarie Harbour discovered by Capt. Kelly.
- 1816 N.S.W.—Botanic Garden formed at Sydney.
- 1817 N.S.W.—Oxley's first exploration inland. Discovery of Lakes George and Bathurst and the Goulburn Plains by Meehan and Hume. First bank in Australia opened at Sydney. Tas.—Great prosperity in wool and whaling industries.
- 1818 N.S.W.—Cessation of free immigration. Liverpool Plains, and the Peel, Hastings, and Manning Rivers discovered by Oxley, and Port Essington by Captain King.
- 1819 N.S.W.—First Australian Savings Bank at Sydney opened.
- 1820 N.S.W.—Foundation of Campbelltown. Clyde River discovered by Lieut. Johnson. Tas.—First importation of pure merino sheep.
- 1821 N.S.W.—Foundation of Philosophical (now Royal) Society. Population, 35,610. Tas.—Establishment of penal settlement at Macquarie Harbour. First Circuit Court held at Hobart.
- 1822 N.S.W.—Formation of Agricultural Society of N.S.W.
- 1823 N.S.W.—First Australian Constitution. Discovery of gold at Fish River by Assistant-Surveyor McBrien. Arrival in Sydney of Dr. John Dunmore Lang. Qld.—Brisbane River discovered by Oxley.
- 1824 N.S.W.—Became a Crown Colony. Executive Council formed. Establishment of Supreme Court at Sydney, and introduction of trial by jury. First Australian Enactment (Currency Bill) passed by the Parliament at Sydney. Proclamation of freedom of the press. First land regulations. First manufacture of sugar. Vic.—Hume and Hovell, journeying overland from Sydney, arrived at Corio Bay. Qld.—Penal settlement founded at Moreton Bay (Brisbane). Port Dundas Settlement formed at Melville Island, N. Terr.
- 1825 Tas.—Proclamation of Independence of Van Diemen's Land (Tasmania) and appointment of a nominated Legislative Council for the new colony.
- 1826 N.S.W.—Illawarra founded by Captain Bishop. Vic.—Settlement at Corinella, Western Port, formed by Captain Wright. W.A.—Military Settlement founded at King George's Sound, Albany, by Major Lockyer.
- 1827 N.S.W.—Colony became self-supporting. Feverish speculation in land and stock. Qld.—Darling Downs and the Condamine River discovered by Allan Cunningham. Fort Wellington established at Raffles Bay, N. Terr. Tas.—Copper ore discovered at Macquarie Harbour.
- 1828 N.S.W.—Second constitution. First Census. Sturt's expedition down Darling River. Cotton first grown in Sydney Botanical Gardens. Gas first used at Sydney. Richmond and Clarence Rivers discovered by Captain Rous. Vic.—Abandonment of settlement at Western Port. Qld.—Cunningham discovered a route from Brisbane to the Darling Downs, and explored Brisbane River to its source. Tas.—First land sales.
- 1829 N.S.W.—Sturt's expedition down Murrumbidgee River. New South Wales Act proclaimed. All English law, so far as circumstances of the Colony allowed, came into force. W.A.—Foundation of settlement at Swan River, under command of Lieut.-Governor Stirling. Perth also founded.
- 1830 N.S.W.—Insurrection of convicts at Bathurst. Sturt, voyaging down Murrumbidgee and Murray Rivers, arrived at Lake Alexandrina. Qld.—Murder of Captain Logan by convicts at Brisbane. Tas.—Trouble with natives. Black line organised to force aborigines into Tasman's Peninsula, but failed. Between 1830 and 1835, however, George Robinson, by friendly suasion, succeeded in gathering the small remnant of aborigines (203) into settlement on Flinders Island.
- 1831 N.S.W.—Crown lands first disposed of by public competition. Mitchell's explorations north of Liverpool Plains. Arrival at Sydney of first steamer, *Sophia Jane*, from England. S.S. *Surprise*, first steamship built in Australia, launched at Sydney. First coal shipped from Australian Agricultural Company's workings at Newcastle, N.S.W. First assisted immigration to N.S.W. S.A.—Adelaide district discovered by Captain Barker. Murder of Barker by aborigines at Lake Alexandrina. Wakefield's first colonisation committee. W.A.—Appointment of Executive and Legislative Council. First newspaper—“Fremantle Observer.” Lord Ripon's land regulations in N.S.W., W.A., and Tas.

## Year.

- 1832 N.S.W.—Savings Bank of N.S.W. established.
- 1833 N.S.W.—First School of Arts established at Sydney.
- 1834 N.S.W.—First settlement at Twofold Bay. Vic.—Settlement formed at Portland Bay by Henty Bros. Qld.—Leichhardt reached Gulf of Carpentaria. S.A.—Formation of the South Australian Association. Imperial Act Colonisation of S.A. W.A.—Severe reprisals against natives at Pinjarrah.
- 1835 N.S.W.—Establishment of depot at Fort Bourke on the Darling River, by Mitchell. Vic.—John Batman arrived at Port Phillip; made treaty with the natives for 600,000 acres of land; claim afterwards disallowed by Imperial Government. John Pascoe Fawcner founded Melbourne.
- 1836 N.S.W.—Mitchell's overland journey from Sydney to Cape Northumberland, Vic., "Squatting" formally recognised. Vic.—Proclamation of Port Phillip district as open for settlement. Captain Lonsdale first Resident Magistrate. S.A.—Settlement founded at Adelaide under Governor Hindmarsh.
- 1837 N.S.W.—Appointment in London of Select Committee on Transportation. Vic.—Melbourne planned and named by Governor Bourke. First Victorian post-office established in Melbourne. First sale of Crown lands in Melbourne. First overlanders from Sydney arrived at Port Phillip. S.A.—Adelaide planned by Captain Light. First newspaper published, and first sale of Crown lands.
- 1838 N.S.W.—Discontinuance of assignment of convicts. Drought and failure of crops. Frenzied speculation. Vic.—First Victorian paper published at Melbourne. Qld.—Settlement of German missionaries at Brisbane. S.A.—"Overlanding" of cattle from Sydney to Adelaide along the Murray route by Hawden and Bonney. Settlement at Port Essington, Northern Territory, formed by Captain Bremer.
- 1839 N.S.W.—Gold found at Vale of Clwydd by Count Strzelecki. Vic.—Appointment of Mr. C. J. La Trobe as Superintendent Port Phillip district. S.A.—Lake Torrens discovered by Eyre. Port Darwin discovered by Captain Stokes. W.A.—Murchison River discovered by Captain Grey.
- 1840 N.S.W.—Abolition of transportation to New South Wales. Land regulations—proceeds of sales to be applied to payment for public works and expenditure on immigration. Foundation of viticultural industry. Monetary crisis. Vic.—Determination of northern boundary. Colonists desire separation. Qld.—Penal settlement broken up and Moreton Bay district thrown open. S.A.—Incorporation of Adelaide. Eyre began his overland journey from Adelaide to King George's Sound. Tas.—Visit of the *Erebus* and *Terror* to Hobart. Sir J. D. Hooker investigated the island flora.
- 1841 N.S.W.—Gold found near Hartley by Rev. W. B. Clarke. Separation of New Zealand. W.A.—Completion of Eyre's overland journey from Adelaide to King George's Sound. Tas.—Renewal of transportation.
- 1842 N.S.W.—Incorporation of Sydney. Vic.—Incorporation of Melbourne. S.A.—Discovery of copper at Kapunda.
- 1843 N.S.W.—First Representative Constitution. First manufacture of tweed. Financial crisis. Qld.—Moreton Bay granted legislative representation. Tas.—Agitation against further introduction of convicts.
- 1844 S.A.—Sturt's last expedition inland. Qld.—Leichhardt's expedition from Condamine River to Port Essington.
- 1845 N.S.W.—Mitchell's explorations on the Barcoo. Qld.—Explorations by Mitchell and Kennedy. S.A.—Discovery of the Burra copper deposits. Sturt discovered Cooper's Creek. W.A.—First steam vessel (*H.M.S. Driver*) visited Fremantle.
- 1846 N.S.W.—Mr. Gladstone proposed to revive transportation. Initiation of meat preserving. Qld.—Foundation of settlement at Port Curtis. S.A.—Proclamation of North Australia. W.A.—Foundation of New Norcia Mission.
- 1847 N.S.W.—Crown Land Leases Act. Iron smelting commenced near Berrima. Overland mail established between Sydney and Adelaide. Vic.—Melbourne created a City. Qld.—Explorations by Leichhardt, Burnett, and Kennedy. W.A.—Issue of regulations for leasing Crown lands. First export of guano.
- 1848 N.S.W.—Attempts to revive transportation. Influx of Chinese. Qld.—Leichhardt's last journey. Kennedy speared by the blacks at York Peninsula. Chinese brought in as shepherds. W.A.—Copper and lead discovered in the Champion Bay district by the Messrs. Gregory.

## Year.

- 1849 N.S.W.—Indignation of colonists at arrival of convict ship *Hashemy*. Exodus of population to goldfields of California. Vic.—*Randolph* prevented from landing convicts. Qld.—Assignment of convicts per *Hashemy* to squatters on Darling Downs. W.A.—Commencement of transportation to Western Australia.
- 1850 N.S.W.—Final abolition of transportation. First sod of first Australian railway turned at Sydney. University incorporated. Vic.—Gold discovered at Clunes by Hon. W. Campbell. Representative government granted. S.A.—Representative government granted. W.A.—Pearl oysters found by Lieut. Helpman at Saturday Island Shoal. Tas.—Representative government granted. Discovery of coal at the Don and Mersey.
- 1851 N.S.W.—Payable gold discovered by Hargraves at Lewis Ponds and Summerhill Creeks. Telegraph first used. Vic.—Separation of Port Phillip—erected into independent colony under the name of Victoria. Discovery of gold in various localities. "Black Thursday," 6th Feb., a day of intense heat, when several persons died and a vast amount of damage to property was occasioned by fires. Qld.—Agitation for separation from New South Wales. S.A.—Financial depression. Tas.—Serious exodus of population to goldfields on mainland. W.A.—Proclamation of Legislative Council Act.
- 1852 N.S.W.—Destruction of Gundagai by flood—77 lives lost. Arrival of the *Chusan*, first P. and O. mail steamer from England. S.A.—First steamer ascends the Murray River to the junction with the Darling. Tas.—Meeting of first elective Council protests against transportation. Payable gold discovered at The Nook, near Fingal, and at Nine Mile Springs.
- 1853 Vic.—University established. Tas.—Abolition of transportation.
- 1854 N.S.W.—Russian war-scare and volunteer movement. Vic.—Opening of first Victorian railway—Flinders Street to Port Melbourne. Riots on Ballarat goldfields. Storming of the Eureka Stockade, 3rd Dec.
- 1855 N.S.W.—Opening of railway—Sydney to Parramatta. Introduction of responsible Government. Mint opened. Vic.—Proclamation of Constitution. Qld.—Gregory's expedition in search of Leichhardt. Tas.—Responsible government introduced.
- 1856 N.S.W.—First elective Parliament. Pitcairn Islanders placed on Norfolk Island, which was placed under jurisdiction of Governor of New South Wales. Vic.—First Parliament under responsible government. S.A.—Responsible government introduced. Tas.—First Parliament under responsible government. W.A.—A. C. Gregory's expedition in search of Leichhardt.
- 1857 N.S.W.—Heavy floods. Wreck of the *Dunbar* (119 lives lost), and *Catherine Adamson* (21 lives lost), at Sydney Heads. Select Committee on Federation. Vic.—Manhood suffrage established. S.A.—First Parliament under responsible government. Exploration by Babbage and Warburton. Passage of Torrens' Real Property Act.
- 1858 N.S.W.—Establishment of manhood suffrage and vote by ballot. Telegraphic communication between Sydney, Melbourne, and Adelaide. S.A.—Stuart's explorations. Qld.—The Canoona gold rush.
- 1859 Qld.—Proclamation of Queensland as separate colony. Tas.—First submarine cable, *via* Circular Head and King Island, to Cape Otway.
- 1860 N.S.W.—Disastrous floods on the Shoalhaven and at Araluen. Vic.—Burke and Wills left Melbourne on their journey across Continent. Qld.—First Parliament under responsible government. S.A.—Copper discoveries at Wallaroo and Moonta.
- 1861 N.S.W.—Anti-Chinese riots at Lambing Flat and Burrangong goldfields. Opening of first tramway in Sydney. Robertson's Land Acts. Messrs. Parkes and Dalley proceeded to London as emigration lecturers. Regulation of Chinese immigration. Vic.—Conference of Statisticians, Melbourne. Burke and Wills perished at Cooper's Creek, near Innamincka, S.A. W.A.—Exploration of F. Gregory in the North-west.
- 1862 N.S.W.—Raid by bushrangers on the Lachlan gold escort (£14,000 taken). Abolition of State aid to religion. Real Property Act. Vic.—C. Gavan Duffy's Land Act. Qld.—McKinlay's explorations. Heavy floods on Fitzroy River. S.A.—Stuart crossed the Continent from south to north. W.A.—Severe floods—damage to property, £30,000. First export of pearl-shell.
- 1863 N.S.W.—Bathurst and Canowindra "held up" by bushranger Gilbert. Vic.—Intercolonial conference at Melbourne. S.A.—Northern Territory taken over. W.A.—Initiation of settlement in the North-west district. Establishment of Post Office (now Government) Savings Bank.

## Year.

- 1864 N.S.W.—Frequent outrages by bushrangers. Qld.—First railway begun and opened. First sugar made from Queensland cane. W.A.—Messrs. Panton, Harding, and Goldwyer murdered by natives. Tas.—First successful shipment of English salmon ova.
- 1865 N.S.W.—Destruction by fire of St. Mary's Cathedral, Sydney.
- 1866 N.S.W.—Passage of Public Schools Act of (Sir) Henry Parkes. Qld.—Financial crisis. S.A.—Introduction of camels for exploration, etc.
- 1867 Vic.—Imposition of protective tariff. Qld.—Discovery of gold at Gympie.
- 1868 N.S.W.—Attempted assassination of the Duke of Edinburgh at Clontarf, near Sydney. Qld.—Passage of Act to regulate island labour traffic. W.A.—Arrival of the *Hougoumont*, last convict ship. Tas.—First sod of first railway (Launceston and Western) turned by Duke of Edinburgh.
- 1869 N.S.W.—Establishment of Eskbank Iron Company. Vic.—Reduction of property qualification for members and electors of Legislative Council. W.A.—First telegraph line opened from Perth to Fremantle. Tas.—Second cable opened.
- 1870 N.S.W.—Intercolonial Exhibition opened at Sydney. Imperial troops withdrawn. Vic.—Intercolonial Congress at Melbourne. S.A.—Commencement of transcontinental telegraph.
- 1871 N.S.W.—Permanent military force raised. Vic.—Increase of protective duties. W.A.—Passage of Elementary Education Act. Forrest's explorations. Tas.—Discovery of tin at Mount Bischoff. Launceston-Western railway opened for traffic.
- 1872 N.S.W.—International Exhibition at Sydney. Death of W. C. Wentworth. Vic.—Mint opened. Qld.—Discovery of tin at Stanthorpe, copper at Mt. Perry, coal at Wide Bay, gold at the Palmer. S.A.—Cable from Java to Port Darwin. Completion of transcontinental telegraph line. W.A.—Cyclonic storms—destruction of town of Roebourne. Tas.—Completion of direct telegraphic communication with England.
- 1873 N.S.W.—Intercolonial Conference at Sydney. First volunteer encampment. Inauguration of mail service with San Francisco. W.A.—Warburton crossed from transcontinental telegraph line to head of De Grey River.
- 1874 N.S.W.—Triennial Parliaments Act passed. Intercolonial Conference. Qld.—Dalrymple's discoveries on north-eastern seaboard. S.A.—Adelaide University founded. W.A.—Explorations by E. Giles. John and Alexander Forrest arrived at Overland Telegraph from Murchison.
- 1875 Qld.—Transfer of Port Albany Settlement to Thursday Island. S.A.—Wreck of the *Gothenburg*—Judge Wearing and other well-known Adelaide citizens drowned. Education Act passed. Explorations by Giles, Gosse, and Warburton. Tas.—Conference of Statisticians, Hobart.
- 1876 N.S.W.—Completion of cable—Sydney (La Perouse) to Wellington (Wakapuaka). Vic.—Members of Legislative Assembly increased to 86. W.A.—Violent gale at Exmouth Gulf, number of pearling vessels wrecked, 69 lives lost. Giles crosses colony from east to west. Tas.—Death of Truganini, last representative of Tasmanian aborigines.
- 1877 Vic.—Deadlock on question of payment to members. W.A.—Opening of telegraphic communications with South Australia. Tas.—Discovery of rich gold-bearing quartz reef at Beaconsfield.
- 1878 N.S.W.—Seamen's strike. Vic.—Visit to England of Victorian delegation re alteration of Victorian Constitution. "Black Wednesday"—wholesale dismissal of civil servants. Qld.—Restriction of Chinese immigration.
- 1879 N.S.W.—First artesian bore at Killara. International Exhibition at Garden Palace, Sydney. First steam tramway. First issue of silver coin from Mint. W.A.—Celebration of 50th anniversary of foundation of colony. A. Forrest's explorations in the Kimberley district, and discovery of the Fitzroy pastoral country.
- 1880 N.S.W.—Public Instruction Act passed. Sydney streets partially wood-paved. Vic.—Opening of first Victorian International Exhibition at Melbourne. Federal Conference, at Melbourne and Sydney.
- 1881 N.S.W.—Further restrictions on Chinese immigration. Vic.—Reduction of property qualification for members and electors of Legislative Council, number of members increased to 42. W.A.—Cyclone near Roebourne wrecked number of pearling vessels. On the Ashburton, 1,000 sheep destroyed by cyclone. First simultaneous Australian Census, population 2,250,194. Visit to Australia of T.R.H. Prince Albert Victor and Prince George of Wales.



## Year.

- 1882 N.S.W.—Garden Palace destroyed by fire. W.A.—Nugget of gold found between Roebourne and Cossack.
- 1883 N.S.W.—Discovery of silver at Broken Hill. Completion of railway between New South Wales and Victoria. Qld.—Annexation of New Guinea—repudiated by Imperial authorities.  
Federal Conference held at Sydney. Federal Council created.
- 1884 N.S.W.—Land legislation restricting sales by auction. Vic.—Appointment of First Public Service Board. W.A.—Stockdale's explorations.  
Federation Bill passed in Victoria and rejected in New South Wales. British protectorate declared over New Guinea.
- 1885 N.S.W.—Military contingent sent to the Sudan. Opening of the Broken Hill Proprietary Silver Mines. Qld.—Agitation for division of the colony. W.A.—Gold found by prospectors on the Margaret and Ord Rivers in the Kimberley district. Tas.—Silver-lead discovered at Mount Zeehan.
- 1886 N.S.W.—Industrial depression. Wreck of the *Ly-ee-Moon*, *Corinjamite*, and *Helen Nicol*. S.A.—Celebration of jubilee of foundation of province. W.A.—Proclamation of Kimberley goldfields. Tas.—Discovery of gold and copper at Mount Lyell.  
First session of Federal Council met at Hobart on the 26th January.
- 1887 N.S.W.—Disaster at Bulli coal mine (81 lives lost). Peat's Ferry (Hawkesbury River) railway accident. S.A.—International Exhibition at Adelaide. W.A.—Cyclone destroyed nearly the whole pearling fleet off the Ninety-Mile Beach—200 lives lost. Gold discovered at Southern Cross.  
Australasian Conference in London. Australasian Naval Defence Force Act passed.
- 1888 N.S.W.—Destructive bush fires. Centennial celebrations. Restrictive legislation against Chinese, imposing poll-tax of £100. Vic.—Second Victorian International Exhibition held at Melbourne. Members of Legislative Council increased to 48, and of Assembly to 95. Qld.—Railway communication opened between Sydney and Brisbane. W.A.—Favenc's explorations.  
Centenary of first settlement in Australia. Conference of Australian Ministers at Sydney to consider question of Chinese immigration. First meeting of the Australasian Association for the Advancement of Science held in Sydney. Imperial Defence Act passed.
- 1889 N.S.W.—Destructive floods, Hunter River. Qld.—Direct railway communication established between Brisbane and Adelaide. W.A.—Framing of new Constitution. Tas.—University founded.
- 1890 N.S.W.—Strike at Broken Hill. Maritime and shearers' strikes. Payment of members of Parliament. Destructive bush fires. Qld.—Wreck of the *Quetta*—146 lives lost. Floods and hurricanes. Industrial depression. W.A.—Responsible government granted.  
Meeting at Melbourne of Australasian Federation Conference. Pre-censal Conference of Statisticians at Hobart.
- 1891 N.S.W.—Election to Legislative Assembly of 35 Labour members. Arrival of Australian Auxiliary Squadron. Collapse of several building societies. Cessation of assisted immigration. W.A.—Discovery of gold on the Murchison. Federal Convention in Sydney, draft bill framed and adopted. Second simultaneous Australian census. Population, 3,174,392.
- 1892 N.S.W.—Broken Hill miners' strike. Run on Government Savings Bank. Women's College, Sydney University, opened. Vic.—Suspension of Railway Commissioners. W.A.—Discovery of gold by Messrs. Bayley and Ford at Coolgardie.
- 1893 N.S.W.—Departure by the *Royal Tar* of colonists for "New Australia." Electoral Act—"One man one vote." Financial crisis, chiefly affecting the eastern States. Qld.—Brisbane floods.
- 1894 N.S.W.—Shearers' strike. S.A.—Adult Suffrage Bill assented to. Industrial depression.
- 1895 N.S.W.—Crown Lands Act of 1895. Free-trade tariff. Land and income taxes introduced.  
Conference of Premiers at Hobart *re* Federation.
- 1896 N.S.W.—People's Federal Convention at Bathurst. S.A.—Departure of Calvert expedition.
- 1897 S.A.—Floods and storms at Adelaide. Death of Sir Thomas Elder. Earthquake and hurricane in Northern Territory. Town of Palmerston destroyed.
- 1897-8 Sessions of Federal Convention at Adelaide, Sydney, and Melbourne.

Year.

- 1898 N.S.W.—First surplus of wheat for export.  
Draft Federal Constitution Bill submitted to electors in Victoria, New South Wales, South Australia, and Tasmania. Requisite statutory number of votes not obtained in New South Wales.
- 1899 First contingent of Australian troops sent to South Africa. Conference of Premiers in Melbourne to consider amendments to Federal Constitution Bill. Referendum—Bill accepted by New South Wales, Victoria, Queensland, South Australia, and Tasmania.
- 1900 N.S.W.—Old-age pensions instituted. W.A.—Agitation for separation by gold-fields.  
Contingents of naval troops sent to China.  
Commonwealth Constitution Act received Royal Assent, 9th July. Mr. (afterwards Sir) Edmund Barton formed first Federal Ministry.
- 1901 Vic.—Old-age Pensions instituted.  
Proclamation of the Commonwealth at Sydney. First Federal Parliament opened at Melbourne by the Duke of Cornwall and York. Simultaneous Australasian Census—population of the Commonwealth, 3,773,801. Interstate freetrade established.
- 1902 N.S.W.—Disastrous explosion at Mount Kembla Colliery—95 lives lost. Women's franchise granted. Jubilee of Sydney University. S.A.—Reduction of number of members of both Houses of Parliament. W.A.—Opening of pumping station at Northam in connection with Goldfields water supply.  
First Federal Tariff.
- 1903 Vic.—Railway Strike (Enginemmen). W.A.—Coolgardie and Kalgoorlie water supply scheme completed.  
Inauguration of the Federal High Court. Conference of Statisticians in Melbourne.
- 1904 N.S.W.—Reduction of members of Legislative Assembly from 125 to 90.
- 1905 N.S.W.—Re-introduction of assisted immigration.
- 1906 Wireless telegraphy installed between Queenscliff, Vic., and Devonport, Tas. Conference of Statisticians of Australian States and New Zealand. Papua taken over by Commonwealth.
- 1907 N.S.W.—Telephone, Sydney to Melbourne, opened.  
Imperial Conference in London. Introduction of new tariff in Federal Parliament. Preference to United Kingdom. Allowance to Federal members of Parliament increased from £400 to £600.
- 1908 Vic.—Railway accident at Braybrook Junction (Sunshine)—44 killed, 412 injured; compensation paid, £126,000.  
Yass-Canberra chosen as site of Federal Capital. Interstate Premiers' Conference at Melbourne. Visit of American Fleet to Australia.
- 1909 N.S.W.—Miners' strikes at Broken Hill and Newcastle. Qld.—University established. S.A.—*Clan Ranald* foundered in St. Vincent's Gulf—40 drowned. W.A.—Cyclone at Broome.  
Imperial Defence Conference in London—Commonwealth ordered two destroyers and one first-class cruiser for fleet unit. Visit of Lord Kitchener to report and advise on Commonwealth military defence. Loss of the *Waratah* with 300 passengers and crew.
- 1910 Vic.—Railway accident at Richmond—9 killed, over 400 injured; compensation paid, £129,000. W.A.—Cyclone at Broome—several pearling vessels wrecked, three whites and many coloured fishermen drowned. Wreck of the *Pericles* off Cape Leeuwin.  
Rt. Hon. Sir G. H. Reid appointed High Commissioner for the Commonwealth in London. Referendum on financial relations between the Commonwealth and the States. Proclamation taking over Yass-Canberra (in New South Wales) as site for Federal Capital. Penny postage. Visit of Scottish Agricultural Commission. Dutch squadron visited Australia. Arrival of the *Yarra* and *Parramatta*, first vessels of Australian navy. Australian Notes Act passed and first Commonwealth notes issued. Admiral Sir R. Henderson visited Australia to advise on naval defence.

## Year.

- 1911 First Federal Census—population of the Commonwealth, 4,455,005. Transfer of Northern Territory to Commonwealth. Federal referenda relating to Monopolies and Industrial Legislation—proposals rejected. Introduction of compulsory military training. Launch of Commonwealth destroyer *Warrego* at Sydney. Establishment of penny postage to all parts of British Empire. Western Australian University founded.
- 1912 Commonwealth Bank opened. First payments of Maternity Bonus. First sod turned at Port Augusta of Trans-Australian Railway (Port Augusta to Kalgoorlie). Administrators to Northern and Federal Territories appointed. Gift of £1,000,000 to charities by Mrs. Walter Hall, Sydney, N.S.W.
- 1913 Arrival of battle cruiser *Australia*, and cruisers *Melbourne* and *Sydney*. Foundation stone of Commonwealth Building in London laid by the King. Federal Capital named Canberra and foundation stone laid. Appointment of Interstate Commission. Visit of Empire Trade Commission. Visit of Members of Empire Parliamentary Association.
- 1914 Visit of General Sir Ian Hamilton to report on military defence scheme. Double dissolution of Federal Parliament. Visit of British Association for the Advancement of Science. Serious drought affecting almost the whole of the Commonwealth.
- European War. Australian Navy transferred to Imperial Navy. Captured vessels added to Australian fleet. Submarine AE1 lost at sea whilst in service in the vicinity of New Britain. German Pacific possessions seized by Australian expeditionary force (military and naval). Australian troops offered to, and accepted by Imperial Government. By 31st December, 31,000 volunteers of all ranks had left Australia for service overseas. Portion of Australian army was also mobilised and kept under arms till the destruction of the German Pacific fleet. German Cruiser *Emden* destroyed at North Cocos Island by H.M.A.S. *Sydney*.
- 1915 Opening of Broken Hill Proprietary's Ironworks at Newcastle, N.S.W. Mr. Fisher appointed High Commissioner for the Commonwealth. Referendum for purpose of giving increased powers to the Commonwealth abandoned. Navy Department created. Formation of Australian Wheat Board. First War Loan, £13,389,000.
- Australian troops landed at Dardanelles on 25th April. Loss of Submarine AE2 in operations at the Dardanelles. Census taken of Wealth and Income, and of Males in Australia between ages of 17 and 60. Australian troops withdrawn from Gallipoli on 19th December.
- 1916 Record wheat harvest (180,000,000 bushels). Special recruiting campaign instituted. Australian troops transferred to France. Acquisition of steamships by the Commonwealth. First Military Service Referendum—proposal rejected. Moratorium Regulations passed. Second War Loan, £21,656,000.
- 1917 National Ministry formed. Third War Loan, £23,588,000. General strike. Kalgoorlie-Port Augusta railway completed. Second Military Service Referendum. Daylight Saving introduced and abandoned. Fourth War Loan, £21,584,000. Fifth War Loan, £21,214,000.
- 1918 Population of Australia reaches 5,000,000. Australian troops in France formed into an Army Corps, commanded by Lieut.-Gen. Sir John Monash. Cessation of hostilities and surrender of Germany. Sixth War Loan, £42,952,000. Seventh War Loan, £44,084,000. Repatriation Department created. Australia House (Strand, London) opened by the King. Australian representative for United States appointed. Death of Sir G. H. Reid. Death of Lord Forrest of Bunbury.
- 1919 Visit to Europe of Rt. Hon. W. M. Hughes, P.C., K.C., Prime Minister, as representative at Peace Conference. Epidemic of influenza. Seamen's strike. Strike of Broken Hill miners. Aerial flight England to Australia by Capt. Sir Ross Smith and Lieut. Sir Keith Smith. Death of Hon. Alfred Deakin. Conference in London re Double Income Tax. Visit to Australia of General Sir W. Birdwood. Visit of Admiral Lord Jellicoe. First Peace Loan, £25,000,000.
- 1920 Visit to Australia of H.R.H. the Prince of Wales. Aerial flight England to Australia by Lieuts. Parer and McIntosh. Death of Rt. Hon. Sir Edmund Barton. Death of Rt. Hon. Sir Samuel Griffith. Imperial Statistical Conference in London. Increase of allowance to Federal Members from £600 to £1000. Second Peace Loan, £25,000,000. Total War and Peace Loans raised to 30th September, 1920, approximately £238,630,000.

**OFFICIAL YEAR BOOK**  
**OF THE**  
**COMMONWEALTH OF AUSTRALIA, 1919,**  
**AND EARLIER YEARS.**

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**SECTION I.**  
**STATISTICAL ORGANISATION AND SOURCES OF**  
**INFORMATION.**

**§ 1. Introduction.**

1. *Development of Australian Statistics.*—In the first issue of the Commonwealth Official Year Book (No. 1, 1901–1907), an account was given of the origin and development of Australian Statistics; *vide* pp. 1 to 16 therein. Owing to considerations of space, however, this matter was considerably curtailed in succeeding Year Books, and appears in No. 4 on pp. 1 to 4. In the following issues, a still further curtailment has been made in order to make room for new matter.

Briefly, it may be stated that to the “Blue Books” compiled in Australia for the Imperial authorities, there succeeded, under Responsible Government, the statistics which each of the departments prepared for itself. State statistical departments were organised later, principally as collecting agencies of official and general information.

Owing to absence of co-ordination in collection and compilation due to the organisation independently of the various States bureaux, there were difficulties in so combining State statistics as to get a satisfactory statistic for Australia as a whole, and various conferences of State Statisticians did not completely rectify the divergencies that had arisen.

(i) *Creation of the Commonwealth Bureau of Census and Statistics.* Constitutionally, matters relating to “Census and Statistics” belong to the Commonwealth, and in 1906, under the authority of the Census and Statistics Act of 1905, providing for the taking of the Census and the collecting of general statistics, the Commonwealth Bureau of Census and Statistics was created. A conference of statistical representatives of Australian States and New Zealand, under the presidency of the Commonwealth Statistician, met in November and December, 1906. For a more or less complete presentation of the affairs of the Commonwealth and of its constituent parts, various desiderata were recognised, and a series of resolutions adopted by the conference. Identity of categories, simultaneity and identity in methods of collection, and uniformity in compilation, were the main features desired. A résumé of the resolutions of this conference is given in Year Book No. 1, pp. 12–16.

(ii) *Organisation of the Commonwealth Bureau of Census and Statistics.* In the organisation of the Bureau, while all classes of work may at any time be relegated to any officer, certain fields of activity are attended to mainly by the officers mentioned

hereunder, who, subject to the general direction of the Statistician, supervise the work of the different branches :—

JOHN STONHAM, M.A. (Sydney), Chief Compiler ; general administration, and Assistant Editorship of Official Year Book.

CHARLES HENRY WICKENS, A.I.A. Supervisor of Census, Population, Transport and Communication, and Production Statistics.

EDWARD TANNOCH MCPHEE. Shipping and Trade Statistics.

GERALD LIGHTFOOT, M.A. (Cambridge), Barrister at Law. Industrial and Social Statistics.<sup>(a)</sup>

FREDERICK DALGLISH ROSSITER, M.A. (Melbourne), Defence ; general control of Library, &c.

FREDERICK WILLIAM BARFORD, M.A. (Oxford), A.I.A. Financial and Vital Statistics.

(a) Since 1916, on loan to Commonwealth Institute of Science and Industry.

**2. Sources of Information.**—Statistical information is furnished (i) by the State Statistical Bureaux, either as a result of direct demand, or through the police and special collectors ; (ii) by Commonwealth and State Departments (see lists of publications in § 2 *infra*) ; (iii) in respect of returns of Trade, Customs and Excise, by the Trade and Customs Department ; (iv) by scientific and technical experts, specially requisitioned to write on particular subjects ; (v) by State Statisticians, as officers duly constituted under the Commonwealth Census and Statistics Act ; and (vi) by information supplied compulsorily, on the Commonwealth Statistician's demand.

**3. Maintenance of Secrecy.**—Under no circumstances can information supplied to a statistical office be used against the individual supplying it. All statistical enquiries are strictly impersonal, and the affairs of individuals or individual businesses are never disclosed. No other Government Department can make use of the Statistical Departments in order to acquire detailed information otherwise unavailable.

**4. Accuracy Essential.**—The importance of accurate statistical information is emphasised. The making of untrue statements is heavily penalised.

## § 2. Statistical Publications of Australia.

**1. Introductory.**—The official statistical publications of Australia may be divided bibliographically into two main divisions, viz. :—(1) Commonwealth publications dealing both individually and collectively with the several States of the Commonwealth, and (2) State publications dealing with individual States only. Besides these there are many other reports, etc., issued regularly, which though not wholly statistical, necessarily contain a considerable amount of statistical information. The more important of these published to August, 1920, are included in the lists given hereunder.

**2. Commonwealth Publications.**—Commonwealth publications may be grouped under two heads, viz. :—(i) Publications issued by the Commonwealth Statistician, and (ii) Parliamentary and Departmental Reports and Papers.

(i) *Publications issued by the Commonwealth Statistician.* The following is a list of statistical publications issued from the Commonwealth Bureau of Census and Statistics since its inauguration up to August, 1920. The Demography, Finance, Production, and Transport and Communication Bulletins cover statistics from 1901. The Year Book contains figures from earlier years.

*Australian Life Tables, 1901-1910. Australian Joint Life Tables, 1901-1910.*

*Census (1911) Bulletins.*—No. 1—Population of States and Territories ; No. 2—Persons of Non-European Race ; No. 3—Ages ; No. 4—Population of Counties, Local Government Areas, &c. ; No. 5—Population of Electoral Divisions, Provinces, and Districts ; No. 6—Birthplaces ; No. 7—Length of Residence in Australia ; No. 8—Religions ; No. 9—Education ; No. 10—Blindness and Deafmutism ; No. 11—Schooling ; No. 12—Conjugal Condition ; No. 13—Localities ; No. 14—Mortality Investigation ; No. 15—Families ; No. 16—Occupations ; No. 17—Occupied Dwellings.

*Census (1911) Results.*—Vol. I., Report, including Appendix A—Mathematical Theory of Population. Vol. II. (parts 1-8). Vol. III. (parts 9-14). Part 1—Ages; part 2—Birthplaces; part 3—Residence; part 4—Education; part 5—Schooling; part 6—Religions; part 7—Infirmities; part 8—Aliens; part 9—Conjugal; part 10—Families; part 11—Life Tables; part 12—Occupations, part 13—Dwellings; part 14—Summary.

*Finance*—Bulletins, 1907 to 1915-16 annually; 1916-17, 1917-18, and 1918-19 (one vol.); future issues biennially.

*Inquiry into the Cost of Living in Australia*, 1910-11.

*Labour and Industrial Statistics*—Explanatory Memorandum on the Proposed Scheme. Report No. 1—Prices, Price-Indexes and Cost of Living in Australia, 1912. No. 2—Trade Unionism, Unemployment, Wages, Prices, and Cost of Living in Australia, 1891 to 1912. No. 3—Manufacturing Industries in the Commonwealth, 1912. No. 4—Expenditure on Living in the Commonwealth, November, 1913; Price Indexes, their Nature and Limitations, &c. *Annual Reports*—Prices, Purchasing Power of Money, Wages, Trade Unions, Unemployment, and General Industrial Conditions: No. 5—1913-14; No. 6—1915; No. 7—1916; No. 8—1917; No. 9—1918.

*Labour Bulletins*—Quarterly, March, 1913 to June, 1917.\*

*Local Government in Australia*—July, 1919.

*Monthly Summary of Australian Statistics*—Bulletins Nos. 1 to 69, from January, 1912 to September, 1917\* (replacing the publication "Trade, Shipping, and Oversea Migration").

*Official Year Book of the Commonwealth of Australia*—Annually, 1907 to present issue (1920).

*Pocket Compendium of Australian Statistics*,† 1913, 1914, 1916, 1918, and 1919.

*Population and Vital Statistics Bulletins*—Determination of the Population of Australia, 1901 to 1906. Commonwealth Demography, annually, 1906 to 1910. Vital Statistics, annually, 1907 to 1910. Commonwealth Demography (comprising matter previously included in two last-named Bulletins), annually, 1911 to 1918. Vital Statistics, Quarterly, 1907 to June, 1911.\* The Nomenclature of Diseases and of Causes of Death, 1907. New Edition, 1910.

*Production*—Bulletins, annually, 1906 to 1917-8.

*Professional Papers*—No. 1—The Classification of Diseases and Causes of Death, from the standpoint of the Statistician; Nos. 2 and 3—On the Influence of Infantile Mortality on Birthrate (2 papers); No. 4—On the Statistical Opportunities of the Medical Profession; No. 5—Tuberculosis Duration Frequency Curves, and the number of existing cases ultimately fatal; No. 6—The Problems of Statistics; No. 7—The Evolution and Significance of the Census; No. 8—Census Taking‡; No. 9—Studies in Statistical Representation, I.—On the nature of the curve

$$y = Ax^{m_e} nx^p;$$

No. 10—Studies in Statistical Representation, II.—Statistical Application of the Fourier series; No. 11—Suicide in Australia; No. 12—An Extension of the Principle Underlying Woolhouse's Method of Graduation‡; No. 13—The First Commonwealth Census; No. 14—Mathematical Analysis of Climatological Physiology; No. 15—The International Nosological Classification, &c.; No. 16—Secular Progress of Pulmonary Tuberculosis and Cancer, &c.; No. 17—The Improvement in Infantile Mortality, &c.; No. 18—Secular and Annual Fluctuations of Deaths from Several Diseases, &c. No. 19—Investigations Concerning a Law of Infant Mortality‡; No. 20—Labour and Industrial Statistics§; No. 21—A Study in Proportional Representation||; No. 22—Studies in Statistical Representation, III.—Curves, their Logarithmic Homologues and Antilogarithmic Generatrices.¶

\* Discontinued. Information now included in *Quarterly Summary of Australian Statistics*.

† Formerly *Commonwealth Statistical Digest*.

‡ By C. H. Wickens, A.I.A. § By Gerald Lightfoot, M.A. || By F. W. Barford, M.A., A.I.A.

¶ By G. H. Knibbs, C.M.G., F.S.S., F.R.A.S., and F. W. Barford, M.A., A.I.A.

*Quarterly Summary of Australian Statistics*—first issue, No. 70, December, 1917 (replacing *Monthly Summary of Australian Statistics*).

*Railway Statistics*—Report on the Desirability of Improved Statistics of Government Railways in Australia, February, 1909.

*Shipping*—Shipping and Oversea Migration, annually, 1906 to 1915–16. (Discontinued.)

*Social Insurance*—Report to the Hon. the Minister of Trade and Customs, 1910.

*Social Statistics*—Bulletins, 1907 to 1915 annually; 1916, 1917, and 1918 (one vol.); future issues biennially.

*Superannuation for the Commonwealth Public Service*—Report to the Hon. the Minister of Home Affairs, 1910.

*The Australian Commonwealth: Its Resources and Production*—annually, 1908 to 1915.

*Trade and Customs*—Trade, and Customs and Excise Revenue, annually, 1906 to 1918–19.

Trade, Shipping, and Oversea Migration—monthly, January, 1907 to December, 1911.\*

*Transport and Communication*—Bulletins, 1906 to 1916 annually; 1917 and 1918 (one vol.); future issues biennially.

*Wealth*—The Private Wealth of Australia and its Growth, as ascertained by various methods, together with a Report of the War Census in 1915.

(ii) *Commonwealth Parliamentary and Departmental Reports and Papers*. The following are the principal official reports and papers containing statistical matter which have been issued since the inauguration of the Commonwealth:—

Advertising: Various publications issued by Department for External Affairs.

Arbitration: Returns of Awards, Conferences, Agreements, &c., of Arbitration Court.

Bank: Balance Sheets of Commonwealth Bank, and Reports of Auditor-General.

Bounties: Returns relating to payments.

Defence—Commonwealth Military Journal, quarterly, April, 1911 to June, 1916; Forces Lists—Military, Naval, Cadets; Staff and Gradation Lists, Australian Imperial Force; Journal of the Royal Military College; Manual of War Precautions, various editions; Memorandum by Admiral Sir Reginald Henderson on the Naval Defence of Australia; Report of Admiral Viscount Jellicoe on Naval Mission to Australia; Memorandum on Australian Military Defence and its progress since Federation; Memorandum on the Defence of Australia, by Field-Marshal Lord Kitchener; Military and Naval Orders; Records of Australian Contingents to the War in South Africa, 1899–1902, Relative Strength of Navies in the Pacific; Report to Admiralty on H.M. Australian Fleet (extracts); Report on Navy Administration; Expenditure on Naval Bases; Reports on Camps, Canteens at Camps, Courts of Inquiry, Small Arms Factory, Royal Military College, Naval College, Rifle Clubs, Musketry, Universal Training, Cadets, Physical Training, Army Medical Corps, Organisation and Distribution, Troopships, Naval Bases, Dockyards, Recruiting, Administration, Repatriation, Mobilisation, Finance, &c.; Reports of Royal Commission on Navy and Defence Administration; Report of Surgeon-General Fetherston on Army Medical Services; Report of Director of Naval Forces for 1906; Reports of the Military Board, 1905 and 1906; Report on an Inspection of the Military Forces of the Commonwealth by General Sir Ian Hamilton; Synopsis of Report on the Business Branches of the Department by Mr. R. McC. Anderson; Proposals for the Home Defence of Australia; Tables of War and Peace Organisation and Establishments, Tables of Establishments, Australian Imperial Force.

Economies Commission—Reports, &c.

\* Discontinued. Information since included in *Monthly Summary of Australian Statistics* to September 1917; thereafter in *Quarterly Summary of Australian Statistics*.

- Electoral—Report of Royal Commission on the Commonwealth Electoral Law and Administration; Returns under Representation Act 1905; Commissioners' Special Reports; Statistics of Commonwealth Elections and Referenda; Statement by Commonwealth Statistician *re* Inflation of Electoral Rolls.
- Factories—Reports on Clothing, Cordite, Small Arms, Woollen Cloth, and Harness and Leather Factories.
- Federal Capital: Papers and Designs; Reports on Administration.
- Fisheries: Reports of the Director on Fishing Experiments carried out by the F.I.S. "Endeavour"; Reports on Pearling Industry; Zoological and Biological Results of Fishing Experiments; Life and Work of H. C. Dannevig.
- Fruit Industry: Report of Royal Commission.
- High Commissioner of the Commonwealth: Reports, annual, 1910 to 1916. Reports on Australian Butter Market in England. Visit to Canada and United States.
- Historical Records of Australia. Series I., vols. I.—XII.
- Home Affairs: Schedule of the Department—Nos. 1 to 25 (No. 26 issued by Department of Works and Railways). Report on the Business Branches of the Department by Mr. R. McC. Anderson.
- Immigrants and Immigration Restriction. Annual returns from 1902.
- Industry and Manufactures—Annual Return of Bounties Paid under Manufactures Encouragement Act; Sugar Statistics, from 1901–2, *re* White and Black Labour, Production, Duties, Excise, Bounties, &c.; Report of Royal Commission on Sugar Industry; Reports and Bulletins on Industries (Wool, Apples, Wheat, Sugar, &c.); Reports and Recommendations of Royal Commission on Pearl Shelling Industry.
- Inter-State Commission. Reports, annual, from 1914–15, and special. Prices Investigations (various.)
- Invalid and Old-Age Pensions: Statements and Reports.
- Lands and Surveys: Report of Conference of Commonwealth Director and States Surveyors-General.
- Law: Reports, various. Statutory Rules. Ordinances and Papers relating to administration in the various Territories.
- Lighthouses: Reports of Inspections, &c.
- Medical—Reports of Institute of Tropical Medicine; Reports on Tropical Diseases; Reports on Death and Invalidity; Report on Secret Remedies; Quarantine Reports.
- Meteorologist—Bulletins of Climate and Meteorology; Rainfall Maps, Observations, &c.; Professional Papers and Charts (various); Monthly Weather and Meteorological Reports, from January, 1910; The Australian Environment, especially as controlled by Rainfall, by T. Griffith Taylor.
- Naturalization: Returns under Naturalization Act of 1903.
- New Guinea (late German): Statistics.
- Norfolk Island: Report of Administrator, annual, from 1915.
- Northern Territory—Report of the Government Resident for 1910; Annual Reports of Administrator from 1911; Bulletins Nos. 1 to 18; Miscellaneous Reports; Report of Royal Commission *re* Charges against Administrator, &c.
- Papua—Annual Reports from 1910–11; Handbooks, from 1904–5; Miscellaneous Reports; Report on Three-power Rule in New Guinea (by Lieut.-Governor of Papua); Statistics of (late) German New Guinea; *Rabaul Record*.
- Parliamentary Papers (miscellaneous). Reports of Committees, Commissions, Conferences, &c., *Hansards*.
- Patents and Trade Marks Statistics, 1904 to date.
- Postal: Report of Postal Services Royal Commission.
- Postmaster-General's Department—Statement of Business transacted and details of Receipts and Expenditure, 1907, 1908 and 1909; Annual Reports of Postmaster-General's Department from 1910; Report on the Business Management of Postmaster-General's Department, by Mr. Robert McC. Anderson.



- Prices—Reports on prices investigation, fair profits, &c.
- Privy Council : Reports of Judgments.
- Public Service Commissioner—Report, 1901-4 ; Annual Reports from 1905 ; and Public Service Lists, annual, from 1903.
- Public Works ; Reports of Parliamentary Standing Committee.
- Railways : Reports, various, *re* Gauges of Australian Railways, Unification of Gauges, Strategic Railways, &c. ; Staff Lists ; Reports of Engineer-in-Chief ; Report of Royal Commission ; Statements regarding Cost of Construction, Revenue, and Expenditure of Trans-Australian Railway.
- Repatriation ; Report of Activities, &c. ; Report of Trustees of Australian Soldiers' Repatriation Fund. *Repatriation* (monthly).
- Science and Industry. Memo. on the Organisation of Scientific Research Institutions in U.S.A., by G. Lightfoot, M.A. ; Reports of the Executive Council ; Recent Developments in the Organisation of National Industrial Research Institutions ; Bulletins, Nos. 1 to 16 ; Journal, monthly, from March, 1919.
- Shipping—Commonwealth Line of Steamships, Return of Voyages, &c. ; Merchant Tonnage and the Submarine ; Reports on Sea Carriage ; Reports of Federal Ship-building Tribunal.
- Social Insurance : Report by the Hon. Sir John Cockburn on the Hague Conference of 1910.
- Tariff—Tariff Guide, Annual, from 1903 ; also Customs and Tariff Schedules ; Reports on Tariff Investigation ; Tariff Decisions ; Customs Orders.
- Taxation and Land Tax—Annual Reports of Commissioner from 1910-11 ; Report of Royal Commission on Taxation of Leasehold Estates in Crown Lands.
- Trade and Customs—Report of Royal Commission on Meat Export Trade ; Trade and Customs Returns, 1903 to 1905 (by Government Statistician of New South Wales) ; Report of Royal Commission on Tasmanian Customs Leakage.
- Treasury—Correspondence relating to the Gold Reserve in respect to the issue of Australian Notes ; Budget, annual, from 1901-2 ; Estimates, annual, from 1901-2 ; also Supplementary Estimates ; Treasurer's Statements and Reports of Auditor-General, annual, from 1901-2 ; Treasury Notes issued to the various Banks of the Commonwealth ; Treasury Statements of Receipts and Expenditure (issued quarterly in the *Commonwealth Gazette*) ; Reports of Joint Committee on Public Accounts ; War Debts of the British Empire (by Hon. W. A. Watt) ; Statements and Reports regarding Maternity Allowances, Invalid and Old-Age Pensions, War Pensions, Dealings and Transactions under Commonwealth Inscribed Stock Act.
- Water : Report on Murray River Waters Act (annual) from 1917-18.
- Wool : Reports of Central Wool Committee ; Purchase of Wool Clip by Imperial Government.
- Works and Railways. Digest, No. 26 (Nos. 1 to 25 issued by the Department of Home Affairs).

**3. State Publications.**—The chief publications of each State are as follows :—

(i) **New South Wales.**—(a) *Publications by Government Statistician* :—

- Statistical Register (annual) ; Official Year Book of New South Wales (annual) ; Statesman's Year Book (annual) ; Vital Statistics (monthly and annual) ; Statistical Bulletin (monthly to December, 1919), thereafter quarterly ; Six States of Australia and New Zealand (annual) to 1905 ; Reports on Rural and Manufacturing Industries, and on Value of Production (annual and special) ; Population of New South Wales (quarterly) ; Comparative Legislation relating to the Industrial Classes ; Friendly Societies' Experience, 1900-1908.

(b) *Departmental Papers* :—

Annual Reports of Officials, Departments, Boards, Bureaux, &c., relating to—

Aborigines; Accounts; Agriculture; Art Gallery; Auditor-General; Botanical Gardens; Brickworks; Budget; Disaster Relief; Education; Estimates; Explosives; Factories and Shops (Minimum Wage, Early Closing, Shearers' Accommodation); Finance; Fisheries; Forestry; Friendly Societies; Garden Suburbs; Health; Immigration; Industrial Schools; Insane; Labour and Industry, and Labour Commission; Lands—Crown Lands, and Western Land Board; Leprosy; Local Government; Medical Officer; Microbiology; Miners' Accident Relief; Mines; Museum, and Technological Museum; National Park; Parliamentary Reports; Pharmacy; Police; Printing Office; Prisons; Public Library; Public Service; Public Works; Railways and Tramways; Reformatories; Registrar-General; Savings Bank; State Children's Relief; State Clothing Factory; State Debt Commission; State Industrial Undertakings; Trade Unions; University; Water Conservation and Irrigation.

Reports of Parliamentary Committees, Commissions, Conferences, &c.; *Hansards*; Agricultural Gazette (monthly); Industrial Gazette (monthly); Trade Reports; Records of the Geological Survey; Return of Gold Yields (quarterly); Statement of Assets and Liabilities of Public Companies (quarterly), and of Banks (quarterly); Railways and Tramways Report (quarterly); Observatory Reports and Bulletins; Report on Special War Expenditure; Synopsis of Voting at Elections.

(c) *Reports and Statements of Local Bodies as follows* :—

Fire Commissioners; Harbour Trusts; Hospitals; Municipalities; University; Water Supply and Sewerage Boards.

(ii) *Victoria*.—(a) *Publications by Government Statist* :—

Statistical Register (annual to 1916); Victorian Year Book (annual); Vital Statistics (annual and quarterly); Statistical Abstracts (quarterly to 1917); Returns of Oversea Imports and Exports (monthly); Reports on Rural and Manufacturing Industries, and on Value of Production (annual and special); Report on Friendly Societies (annual); Report on Trade Unions (annual).

(b) *Departmental Papers* :—

Annual Reports of Officials, Departments, Boards, Bureaux, &c., relating to—Aborigines; Accident Insurance; Accounts; Agriculture, and Agricultural Colleges; Astronomer; Auditor-General; Budget; Charitable Institutions; Coal Miners' Accident Relief; Coal Mines; Council of Judges; Country Roads; Education; Estimates; Explosives; Factories (Work-rooms, Shops, &c.); Finance; Forests; Friendly Societies; Health; Indeterminate Sentences; Inebriates' Institutions; Insane; Lands and Survey; Lands Purchase and Management; Licences Reduction; Marine; Mines; Neglected Children and Reformatory Schools; Observatory; Parliamentary Reports; Penal Establishments, Gaols, and Reformatory Prisons; Public Library, Museums, and National Gallery; Public Service; Railways (Railway Construction, Parliamentary Standing Committee, &c.); Rivers and Water Supply; Savings Banks; University; Wheat Marketing.

Reports of Parliamentary Committees, Commissions, Conferences, &c.; *Hansards*; Trade and Prices Reports; Memoirs and Bulletins of the Geological Survey; Return of Yield of Goldfields (quarterly); Returns under Acts relating to Banks and Currency, Public Companies, Electric Light and Power, &c.; Receipts and Disbursements (quarterly); Bank Liabilities and Assets (quarterly); Determinations of Wages Boards and Courts of Industrial Appeal; Summary of Wages and Conditions fixed by Wages Boards; Industrial Gazette (monthly).

(c) *Reports and Statements of Local Bodies as follows* :—

Fire Brigades Boards; Harbour Trusts; Hospitals and Benevolent Asylums; Municipalities; Tramway Boards; University; Waterworks Trusts; Melbourne and Metropolitan Board of Works.

(iii) *Queensland.—(a) Publications by Government Statistician :—*

Statistical Register (annual); Official Year Book, 1901; A.B.C. of Queensland Statistics (annual); Vital Statistics (annual and monthly); Reports on Rural and Manufacturing Industries (annual and special).

(b) *Departmental Papers :—*

Annual Reports of Officials, Departments, Boards, Bureaux, &c., relating to—Aborigines; Accounts; Advertising; Agent-General; Agricultural Bank, Agriculture and Stock; Analyst; Art Gallery; Auditor-General; Budget; Education; Estimates; Explosives; Finance; Forests; Friendly Societies; Government Relief; Harbours and Rivers; Health; Hospitals for Insane; Immigration; Industrial Undertakings; Insolvency; Insurance; Intestate Estates; Labour (Factories, Shops, &c.); Lands; Life Insurance and Annuities; Machinery and Scaffolding; Marine; Medicine (Tropical Medicine, Inspection of Schools, &c.); Mines; Orphanages; Papers; Police; Prisons; Public Library; Public Service; Public Works; Railways; Savings Bank; State Children's Department; State Enterprises; Sugar Experimental Stations and Central Sugar Mills; Taxation; Thursday Island; University; Water Supply; Workers' Dwellings.

Reports of Parliamentary Committees, Commissions, Conferences, &c.; *Hansards*; Blue Book (annual); Mining Journal (monthly); Reports of the Geological Survey; Reports on Sugar Industry; Industrial Gazette (monthly); Determinations of Wages Boards.

(c) *Reports and Statements of Local Bodies as follows :—*

Harbour Boards; Hospitals, Sanatoria, Asylums, &c.; Municipalities; University; Water Supply and Sewerage Boards.

(iv) *South Australia.—(a) Publications by the Under-Secretary and Government Statist :—*

Statistical Register (annual); Official Year Book, 1912 and 1913; Blue Book (annual); Statesman's Pocket Year Book (annual); Returns of Births and Deaths (monthly); Statistical Summary, 1836 to 1910; Reports on Rural and Manufacturing Industries (annual and special).

(b) *Departmental Papers :—*

Annual Reports of Officials, Departments, Boards, Bureaux, &c., relating to—Accounts; Advances to Settlers; Agent-General; Agriculture; Astronomer; Audit-Commissioner; Botanic Gardens; Budget; Destitution; Education; Estimates; Factories; Fisheries, and Oyster Fisheries; Forests; Gaols and Prisons; Hospitals for the Insane; Lands and Surveys; Local Government; Marine; Mines; National Park; Observatory; Parliamentary Papers; Police; Produce Department; Public Library, Museum and Art Gallery; Public Service; Public Works; Railways; Registrar-General; Savings Bank; State Children; Stock; Trade Unions; Water Supply; Woods and Forests.

Reports of Parliamentary Committees, Commissions, Conferences, &c.; *Hansards*; Agricultural Journal (monthly); Bulletins and Reports of Department of Agriculture, and of Chemistry, and of Science and Industry; Review of Mining Operations (half-yearly); Records and Reports of Geological Survey; Reports of Railway Commissioners (quarterly); Statements of Receipts and Disbursements (quarterly); Determinations of Wages Boards; Industrial Reports.

(c) *Reports and Statements of Local Bodies as follows :—*

Fire Brigades; Health Boards; Hospitals; Municipalities; Tramway Trust; University.

(v) *Western Australia.—(a) Publications by Government Statistician :—*

Statistical Register (annual); Year Book, 1900-03, 1902-4, 1905 (part); Blue Book (annual); Statistical Abstracts (quarterly, previously issued monthly to July, 1917); Population and Vital Statistics (annual and quarterly); Statistical View of Progress (annual); Reports on Rural and Manufacturing Industries, and on Trade and Shipping (annual and special).

(b) *Departmental Papers* :—

Annual Reports of Officials, Departments, Boards, Bureaux, &c., relating to—Aborigines; Agent-General; Agricultural Bank; Agriculture; Analyst; Astronomer; Auditor-General; Budget; Charities and Industrial and Reformatory Schools; Education; Estimates; Explosives; Factories (Health, Medical, Early Closing, &c.); Finance; Fisheries; Friendly Societies (Industrial Conciliation, Arbitration, Trade Unions); Geological Survey; Harbours; Insane; Labour; Lands and Surveys, and Lands Titles; Machinery; Mines; Museum and Art Gallery; Parliamentary Papers, Police; Prisons; Public Library; Public Service; Public Works; Railways; Savings Bank; Stock; Taxation; Trading Concerns; Water Supply, Sewerage and Drainage; Woods and Forests.

Reports of Parliamentary Committees, Commissions, Conferences, &c.; *Hansards*; Agricultural Journal (monthly); Gold and Mineral Exports (monthly); Reports and Bulletins of the Geological Survey; Bulletins of the Department of State Medicine and Public Health; Government Savings Bank Return (monthly); Financial Relations between the State of Western Australia and the Commonwealth; Proceedings before Boards of Conciliation and Courts of Arbitration; Superannuation, Public Service; Report on Principal Electoral Systems.

(c) *Reports and Statements of Local Bodies as follows* :—

Cemetery Boards; Fire Brigades; Harbour Trusts and Boards; Hospitals; Municipalities and Road Boards; University; Waterworks Boards.

(vi) *Tasmania*.—(a) *Publications by Government Statistician* :—

Statistical Register (annual); Statesman's Pocket Year Book, annual, from 1915; Statistical Summaries (annual); Vital Statistics and Migration (annual and monthly); Reports on Rural, &c., Production and Industries (annual and special).

(b) *Departmental Papers* :—

Annual Reports of Officials, Departments, Boards, Bureaux, &c., relating to—Accounts; Agent-General; Agricultural Bank; Agriculture; Auditor-General; Budget; Charitable Grants; Education; Estimates; Explosives; Factories; Finance; Friendly Societies and Trade Unions; Gaols; Health; Industrial; Lands and Survey; Machinery; Mines; Museum and Botanical Gardens; Neglected Children; Parliamentary Papers; Police; Public Library; Public Service; Public Works; Railways; Savings Banks; Stock; Taxes; Titles; University.

Reports of Parliamentary Committees, Commissions, Conferences, &c.; *Hansards*; Geological Survey Bulletins; Progress of the Mineral Industry (quarterly); Wages Boards Determinations; Statement of Public Debts Sinking Fund.

(c) *Reports and Statements of Local Bodies as follows* :—

Country Libraries; Drainage Board; Fire Brigade Board; Harbour Trusts; Hospitals; Industrial Schools; Marine Boards; Municipalities; University.

### § 3. Bibliography of Recent Works on Australia.

1. *General*.—It is hoped that the accompanying list of works dealing with Australia and Australian affairs generally, while not exhaustive, may prove of some service. The list refers to works published since the year 1901, and is additional to departmental official publications.

ACKERMANN, J. *Australia*. London, 1913.

AUSTRALIAN ANTARCTIC EXPEDITION. *Home of the Blizzard*. London, 1914.

AUSTRALIAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE. *Annual Reports of Proceedings*.

BERNAYS, C. A. *Queensland Politics during Sixty Years, 1859-1919*. Brisbane, 1919.

BRADY, E. J. *Australia Unlimited*. Melbourne, 1918.

BRITISH IMMIGRATION LEAGUE OF AUSTRALIA. *Annual Reports*.

BUCHANAN, A. W. *The Real Australia*. London, 1907.

BULLEN, FRANK T. *Advance Australia*. London, 1907.

CLARK, A. T. *Australian Constitutional Law*. Melbourne, 1905.

CLARK, VICTOR S. *The Labour Movement in Australasia*. London, 1906.

COGHLAN, SIR T. A. *Labour and Industry in Australia*. London, 1918.

COLLIER, JAMES. *Sir George Grey*. Christchurch, 1909.

COLLINGRIDGE, GEORGE. *First Discovery of Australia and New Guinea*. Sydney, 1906.

CRAMP, K. R. *State and Federal Constitutions of Australia*. Sydney, 1913.

CREED, DR. J. M. *My Recollections of Australia and Elsewhere, 1842-1914*. London, 1918.

D'AUNET, B. *L'Aurore Australe*. Melbourne, 1905; Paris, 1907.

- DUNCAN, N. *Australian Byways*. London, 1915.
- EVATT, H. R. *Federalism in Australia*. Sydney and London, 1918.
- FAVENC, E. *Explorers of Australia*. Melbourne, 1908.
- FEDERAL HANDBOOK ON AUSTRALIA. Melbourne, 1914.
- FITCHETT, Rev. Dr. W. H. *The New World of the South: I. Australia in the Making; II. The Romance of Australian History*. London, 1913.
- FOX, FRANK. *Peeps at Many Lands. Australia*. London, 1911.
- FRASER, J. FOSTER. *Australia: The Making of a Nation*. London, 1910.
- GAY, FLORENCE. *In Praise of Australia*. London, 1912.
- GILLES, WM. *Stories in English History for Young Australians*. Melbourne, 1905.
- GLYNN, HON. P. MCM. *The Federal Constitution—The Proposed Amendments*. Adelaide, 1915.
- GREGORY, J. W. *The Dead Heart of Australia*. London, 1906. *Australia and New Zealand (in Stanford's Compendium of Geography and Travel)*. London, 1907. *Australia*. Cambridge, 1916.
- GREY, J. G. *Australasia, Old and New*. London, 1901.
- GULLETT, H. S. *The Opportunity in Australia*. London, 1914.
- HARRIS, WALTER K. *Out back in Australia*. Second Edition, London, 1913; Berlin, 1914.
- HENDERSON, G. C. Sir George Grey. London, 1907.
- HOWITT, Dr. A. W. *The Native Tribes of South East Australia*. London, 1904.
- IMPERIAL FEDERATION LEAGUE. *Reprints of Lectures*.
- JACOMB, C. E. *God's Own Country*. London, 1914.
- JENKS, E. *History of the Australasian Colonies*. 3rd Edition, Cambridge, 1912.
- JOHNS, FRED. *Notable Australians*. Adelaide, 1906 and 1908. *Australasia's Prominent People*, London, 1914. *Fred Johns' Annual, showing Who's Who in Australasia*. Adelaide, 1912, 1913, 1914.
- JOHNSTON, SIR H. *Pioneers in Australasia*. London, 1913.
- JOSE, A. W. *History of Australasia*. Sydney, 1909 and 1911.
- KEENAN, J. J. *Commonwealth of Australia Inaugural Celebrations*. Sydney, 1907.
- KNOWLES, G. S. *The Acts of the Parliament of the Commonwealth of Australia from 1901 to 1911, and in force on January 1, 1912*. London, 1914.
- LEE, IDA (Mrs. C. B. Marriott.) *The Coming of the British to Australia. 1788-1829*. London, 1906.
- LEWIN, E. *The Commonwealth of Australia*. London, 1917.
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## SECTION II.

DISCOVERY, COLONISATION, AND FEDERATION OF  
AUSTRALIA.

## § 1. Early Knowledge of Australia.

A brief, though fairly comprehensive, account of the discovery and early knowledge of Australia was given in Year Book No. 1 (pp. 44 to 51). This account appeared in a condensed form in Year Books Nos. 2, 3, and 4. Bibliographical references to the subject were also given in Year Book No. 1 (p. 49). Exigencies of space prevent the inclusion of any further reference to this subject in the present issue.

## § 2. The Taking Possession of Australia.

Reference was made to the more important facts relating to the taking possession and annexation of Australia in each of the first four issues of this book: see preferably Year Book No. 4 (pp. 15 and 16). In so far as the annexation of the eastern parts is concerned, a full historical account of the period may be found in the "Historical Records of New South Wales," Vol. I., parts 1 and 2. For an account of the annexation of Western Australia, reference may be made to the West Australian Year Book, 1905, Part I.

## § 3. The Creation of the Several Colonies.

1. **Introduction.**—A historical summary of the facts relating to the creation of the several colonies, the separation of Victoria and Queensland, and the changes in the boundaries of certain of the colonies has appeared in previous issues of this book: see Year Book No. 4 (pp. 16 to 23). The main facts in this connection may be traced by reference to the maps in preceding issues (see Year Book, No. 4, pp. 17 and 18).

2. **No further Creation of Colonies after 1859.**—Since the separation of Queensland in 1859 no other creation of colonies has taken place in Australia, though the boundaries of New South Wales, Queensland, and South Australia were altered later, and the control of the Northern Territory was transferred from South Australia to the Commonwealth in 1911. In 1914, the boundary between Victoria and South Australia, which had been in dispute, was determined by the High Court. The dates of foundation of the Australasian colonies, and their areas at the close of 1859, were as shewn in the following table:—

DATES OF FOUNDATION OF AUSTRALASIAN COLONIES AND AREAS AS AT  
END OF 1859.

Colony.	Date of Annexation.	Date of Creation.	Date of First Permanent Settlement.	Area. Square Miles.
New South Wales .. ..	1770	1786	1788	1,020,412
Tasmania .. ..	1788	1825	1803	26,215
South Australia .. ..	1788	1834	1836	309,850
Victoria .. ..	1770	1851	1834	87,884
Queensland .. ..	1770	1859	1824	554,300
Western Australia .. ..	1829	1829	1829	975,920
New Zealand .. ..	1840	1841	1814	104,471(a)

(a) By proclamation dated 10th June, 1901, the area of the Dominion was increased by 280 square miles, making it now 104,751 square miles, by the inclusion of the Cook Group and other islands.

3. **Australasia, 1863 to 1900.**—The immense area generally known as Australasia had, by 1863, been divided into seven distinct colonies, the areas of which are shewn below. The areas of the Northern Territory and the Federal Capital Territory, which are now under the exclusive jurisdiction of the Commonwealth, are given separately.

On the 1st January, 1901, the colonies mentioned above, with the exception of New Zealand, were federated under the name of the "Commonwealth of Australia," the designation of "Colonies" being at the same time changed into that of "States." The total area of the Commonwealth is, therefore, 2,974,581 square miles. The dates of creation and the areas of the separate colonies and territories, as determined on the final adjustment of their boundaries, are shewn in the following table :—

**DATES OF CREATION AND AREAS OF THE SEVERAL COLONIES AND TERRITORIES.**

Colony.	Year of Formation into Separate Colony.	Present Area in Square Miles.	Colony.	Year of Formation into Separate Colony.	Present Area in Square Miles.
New South Wales	1786	309,432(a)	New Zealand ..	1841	104,751
Tasmania ..	1825	26,215	Victoria ..	1851	87,884
Western Australia	1829	975,920	Queensland ..	1859	670,500
South Australia	1834	380,070	Northern Territory	1863	523,620
(proper)			Federal Capital Territory ..	1911	940(6)
Commonwealth .. ..			2,974,581 square miles.		
Australasia .. ..			3,079,332 square miles.		

(a) Exclusive of Federal Capital Territory (Canberra and Jervis Bay).

(b) Prior to 1911 included with New South Wales.

4. **British New Guinea or Papua.**—Under the administration of the Commonwealth, but not included in it, is British New Guinea or Papua, finally annexed by the British Government in 1884. This Territory was for a number of years administered by the Queensland Government, but was transferred to the Commonwealth by proclamation on the 1st September, 1906, under the authority of the Papua Act (Commonwealth) of 16th November, 1905. The area of Papua is about 90,540 square miles. More extended reference to this dependency of the Commonwealth will be found in Section XXIX.

5. **Transfer of the Northern Territory to the Commonwealth.**—On the 7th December, 1907, the Commonwealth and the State of South Australia entered into an agreement for the surrender to and acceptance by the Commonwealth of the Northern Territory, subject to approval by the Parliaments of the Commonwealth and the State. This approval was given by the South Australian Parliament under the Northern Territory Surrender Act 1907 (assented to on the 14th May, 1908), and by the Commonwealth Parliament under the Northern Territory Acceptance Act 1910 (assented to on the 16th November, 1910). The Territory accordingly was transferred by proclamation to the Commonwealth on the 1st January, 1911. Further information may be found in Section XXXII. of this book on "The Northern Territory."

6. **Norfolk Island.**—Although administered for many years by the Government of New South Wales, this island was, until 1st July, 1914, a separate Crown colony. On that date it was taken over by the Federal Parliament as a territory of the Commonwealth. Further reference to the island will be found in the latter part of Section XXXIV.

#### **§ 4. Transfer of the Federal Capital Territory to the Commonwealth.**

On the 18th October, 1909, the Commonwealth and the State of New South Wales entered into an agreement for the surrender to and acceptance by the Commonwealth of an area of 912 square miles as the seat of Government of the Commonwealth. In December, 1909, Acts were passed by the Commonwealth and New South Wales Parliaments, approving the agreement, and on the 5th December, 1910, a proclamation was issued vesting the Territory in the Commonwealth on and from the 1st January, 1911. By the Jervis Bay Territory Acceptance Act 1915, an area of 28 square miles at Jervis Bay, surrendered by New South Wales according to an agreement made in 1913, was accepted by the Commonwealth. Further reference to this Territory will be found in Section XXXI. of this book.



### § 5. The Exploration of Australia.

A fairly complete, though brief, account of the Exploration of Australia was given in Year Book No. 2 (pp. 20 to 39). A brief summary of the more important facts relating to the subject was given in Year Books Nos. 3 and 4. Maps shewing the progress of Australian exploration may also be found in previous issues (see No. 8, p. 35).

### § 6. The Constitution of the States.

A brief and condensed statement of the constitutional history of the several States, shewing how their present Constitutions have been built up, may be found in Section II. of the second, third, and fourth issues of the Year Book. (See No. 4, pp. 27 to 32.)

A conspectus of the Acts of Constitution of the Commonwealth and the several States is given in Section No. XXV.

### § 7. The Federal Movement in Australia.

A summary was given in Year Book No. 1 (pp. 17 to 21) of the "Federal Movement in Australia" from its inception to its consummation; a synopsis thereof was given in Year Books Nos. 2, 3, and 4. (See No. 4, pp. 32 to 37.)

### § 8. Creation of the Commonwealth.

1. The Act.—The Commonwealth of Australia Constitution Act, 63 and 64 Vic., Chapter 12, namely, an Act to constitute the Commonwealth of Australia, was shewn *in extenso* in Year Book No. 1. In the Year Books Nos. 2, 3, and 4, a summary of the Act was given. As two amending Acts, namely, the Constitution Alteration (Senate Elections) Act 1906, and the Constitution Alteration (State Debts) Act 1909 have been passed, it was thought desirable to insert the Act, as amended, in full in Year Book No. 5 and subsequent issues.

#### THE COMMONWEALTH OF AUSTRALIA CONSTITUTION ACT, 63 & 64 VICT., CHAPTER 12.

*An Act to constitute the Commonwealth of Australia. [9th July, 1900.]*

**W**HEREAS the people of New South Wales, Victoria, South Australia, Queensland, and Tasmania, humbly relying on the blessing of Almighty God, have agreed to unite in one indissoluble Federal Commonwealth under the Crown of the United Kingdom of Great Britain and Ireland, and under the Constitution hereby established:

And whereas it is expedient to provide for the admission into the Commonwealth of other Australasian Colonies and possessions of the Queen:

Be it therefore enacted by the Queen's Most Excellent Majesty, by and with the advice and consent of the Lords Spiritual and Temporal, and Commons, in this present Parliament assembled, and by the authority of the same, as follows:—

1. This Act may be cited as the Commonwealth of Australia Constitution Act.
2. The provisions of this Act referring to the Queen shall extend to Her Majesty's heirs and successors in the sovereignty of the United Kingdom.
3. It shall be lawful for the Queen, with the advice of the Privy Council, to declare by proclamation that, on and after a day therein appointed, not being later than one year after the passing of this Act, the people of New South Wales, Victoria, South Australia, Queensland, and Tasmania, and also, if Her Majesty is satisfied that the people of Western Australia have agreed thereto, of Western Australia, shall be united in a Federal Commonwealth under the name of the Commonwealth of Australia. But the Queen may, at any time after the proclamation, appoint a Governor-General for the Commonwealth.
4. The Commonwealth shall be established, and the Constitution of the Commonwealth shall take effect, on and after the day so appointed. But the Parliaments of the several colonies may at any time after the passing of this Act make any such laws, to come into operation on the day so appointed, as they might have made if the Constitution had taken effect at the passing of this Act.

5. This Act, and all laws made by the Parliament of the Commonwealth under the Constitution, shall be binding on the courts, judges, and people of every State and of every part of the Commonwealth, notwithstanding anything in the laws of any State; and the laws of the Commonwealth shall be in force on all British ships, the Queen's ships of war excepted, whose first port of clearance and whose port of destination are in the Commonwealth.

6. "The Commonwealth" shall mean the Commonwealth of Australia as established under this Act.

"The States" shall mean such of the colonies of New South Wales, New Zealand, Queensland, Tasmania, Victoria, Western Australia, and South Australia, including the northern territory of South Australia, as for the time being are parts of the Commonwealth, and such colonies or territories as may be admitted into or established by the Commonwealth as States: and each of such parts of the Commonwealth shall be called "a State."

"Original States" shall mean such States as are parts of the Commonwealth at its establishment.

7. The Federal Council of Australasia Act, 1885, is hereby repealed, but so as not to affect any laws passed by the Federal Council of Australasia and in force at the establishment of the Commonwealth.

Any such law may be repealed as to any State by the Parliament of the Commonwealth, or as to any colony not being a State by the Parliament thereof.

8. After the passing of this Act the Colonial Boundaries Act, 1895, shall not apply to any colony which becomes a State of the Commonwealth; but the Commonwealth shall be taken to be a self-governing colony for the purposes of that Act.

9. The Constitution of the Commonwealth shall be as follows:—

## THE CONSTITUTION.

This Constitution is divided as follows:—

Chapter I.—The Parliament:—	Chapter III.—The Judicature:
Part I.—General:	Chapter IV.—Finance and Trade:
Part II.—The Senate:	Chapter V.—The States:
Part III.—The House of Representatives:	Chapter VI.—New States:
Part IV.—Both Houses of the Parliament:	Chapter VII.—Miscellaneous:
Part V.—Powers of the Parliament:	Chapter VIII.—Alteration of the Constitution.
Chapter II.—The Executive Government:	
The Schedule.	

## CHAPTER I.—THE PARLIAMENT.

### PART I.—GENERAL.

1. The legislative power of the Commonwealth shall be vested in a Federal Parliament, which shall consist of the Queen, a Senate, and a House of Representatives, and which is hereinafter called "The Parliament," or "The Parliament of the Commonwealth."

2. A Governor-General appointed by the Queen shall be Her Majesty's representative in the Commonwealth, and shall have and may exercise in the Commonwealth during the Queen's pleasure, but subject to this Constitution, such powers and functions of the Queen as Her Majesty may be pleased to assign to him.

3. There shall be payable to the Queen out of the Consolidated Revenue Fund of the Commonwealth, for the salary of the Governor-General, an annual sum which, until the Parliament otherwise provides, shall be ten thousand pounds.

The salary of a Governor-General shall not be altered during his continuance in office.

4. The provisions of this Constitution relating to the Governor-General extend and apply to the Governor-General for the time being, or such person as the Queen may appoint to administer the Government of the Commonwealth; but no such person shall be entitled to receive any salary from the Commonwealth in respect of any other office during his administration of the Government of the Commonwealth.

5. The Governor-General may appoint such times for holding the sessions of the Parliament as he thinks fit, and may also from time to time, by Proclamation or otherwise, prorogue the Parliament, and may in like manner dissolve the House of Representatives.

After any general election the Parliament shall be summoned to meet not later than thirty days after the day appointed for the return of the writs.

The Parliament shall be summoned to meet not later than six months after the establishment of the Commonwealth.

6. There shall be a session of the Parliament once at least in every year, so that twelve months shall not intervene between the last sitting of the Parliament in one session and its first sitting in the next session.

#### PART II.—THE SENATE.

7. The Senate shall be composed of senators for each State, directly chosen by the people of the State, voting, until the Parliament otherwise provides, as one electorate.

But until the Parliament of the Commonwealth otherwise provides, the Parliament of the State of Queensland, if that State be an Original State, may make laws dividing the State into divisions and determining the number of senators to be chosen for each division, and in the absence of such provision the State shall be one electorate.

Until the Parliament otherwise provides there shall be six senators for each Original State. The Parliament may make laws increasing or diminishing the number of senators for each State, but so that equal representation of the several Original States shall be maintained and that no Original State shall have less than six senators.

The senators shall be chosen for a term of six years, and the names of the senators chosen for each State shall be certified by the Governor to the Governor-General.

8. The qualification of electors of senators shall be in each State that which is prescribed by this Constitution, or by the Parliament, as the qualification for electors of members of the House of Representatives; but in the choosing of senators each elector shall vote only once.

9. The Parliament of the Commonwealth may make laws prescribing the method of choosing senators, but so that the method shall be uniform for all the States. Subject to any such law, the Parliament of each State may make laws prescribing the method of choosing the senators for that State.

The Parliament of a State may make laws for determining the times and places of elections of senators for the State.

10. Until the Parliament otherwise provides, but subject to this Constitution, the laws in force in each State, for the time being, relating to elections for the more numerous House of the Parliament of the State shall, as nearly as practicable, apply to elections of senators for the State.

11. The Senate may proceed to the despatch of business, notwithstanding the failure of any State to provide for its representation in the Senate.

12. The Governor of any State may cause writs to be issued for elections of senators for the State. In case of the dissolution of the Senate the writs shall be issued within ten days from the proclamation of such dissolution.

13. As soon as may be after the Senate first meets, and after each first meeting of the Senate following a dissolution thereof, the Senate shall divide the senators chosen for each State into two classes, as nearly equal in number as practicable; and the places of the senators of the first class shall become vacant at the expiration of [the third year] *three years*,<sup>1</sup> and the places of those of the second class at the expiration of [the sixth year] *six years*,<sup>2</sup> from the beginning of their term of service; and afterwards the places of senators shall become vacant at the expiration of six years from the beginning of their term of service.<sup>3</sup>

The election to fill vacant places shall be made [in the year at the expiration of which] *within one year before*<sup>1</sup> the places are to become vacant.

For the purpose of this section the term of service of a senator shall be taken to begin on the first day of [January] *July*<sup>1</sup> following the day of his election, except in the cases of the first election and of the election next after any dissolution of the Senate, when it shall be taken to begin on the first day of [January] *July*<sup>1</sup> preceding the day of his election.<sup>2-4</sup>

14. Whenever the number of senators for a State is increased or diminished, the Parliament of the Commonwealth may make such provision for the vacating of the places of senators for the State as it deems necessary to maintain regularity in the rotation.

15. If the place of a senator becomes vacant before the expiration of his term of service, the Houses of Parliament of the State for which he was chosen shall, sitting and voting together, choose a person to hold the place until the expiration of the term, or until the election of a successor as hereinafter provided, whichever first happens. But if the Houses of Parliament of the State are not in session at the time when the vacancy is notified, the Governor of the State, with the advice of the Executive Council thereof, may appoint a person to hold the place until the expiration of fourteen days after the beginning of the next session of the Parliament of the State, or until the election of a successor, whichever first happens.

At the next general election of members of the House of Representatives, or at the next election of senators for the State, whichever first happens, a successor shall, if the term has not then expired, be chosen to hold the place from the date of his election until the expiration of the term.

The name of any senator so chosen or appointed shall be certified by the Governor of the State to the Governor-General.

16. The qualifications of a senator shall be the same as those of a member of the House of Representatives.

17. The Senate shall, before proceeding to the despatch of any other business, choose a senator to be the President of the Senate; and as often as the office of President becomes vacant the Senate shall again choose a senator to be the President.

The President shall cease to hold his office if he ceases to be a senator. He may be removed from office by a vote of the Senate, or he may resign his office or his seat by writing addressed to the Governor-General.

18. Before or during any absence of the President, the Senate may choose a senator to perform his duties in his absence.

19. A senator may, by writing addressed to the President, or to the Governor-General if there is no President or if the President is absent from the Commonwealth, resign his place, which thereupon shall become vacant.

20. The place of a senator shall become vacant if for two consecutive months of any session of the Parliament he, without the permission of the Senate, fails to attend the Senate.

1. As amended by section 2 of the Constitution Alteration (Senate Elections) 1906. The words in square brackets have been repealed; amendments are shown in italics.

2. Under sections 3 and 4 of the Constitution Alteration (Senate Elections) 1906, it was also provided that—

(a) The terms of service of the senators whose places would, but for this Act, become vacant at the expiration of the year One thousand nine hundred and nine are extended until the thirtieth day of June One thousand nine hundred and ten.

(b) The terms of service of the senators whose places would, but for this Act, become vacant at the expiration of the year One thousand nine hundred and twelve are extended until the thirtieth day of June One thousand nine hundred and thirteen.

(c) This Act shall not be taken to alter the time of beginning of the term of service of any senator elected in the year One thousand nine hundred and six.

3. A bill was passed by the Commonwealth Parliament on the 2nd September, 1915, for the submission to the electors of a proposed law to alter section 13 by inserting after *three years* the words *and two months*, and after *six years* where mentioned the words *and four months*.

4. It was also proposed by the bill alluded to above to alter the foregoing paragraph so as to read thus:—For the purposes of this section the term of service of the senators elected in the year One thousand nine hundred and fourteen shall be taken to have begun on the first day of October, One thousand nine hundred and fourteen, and the term of service of a senator elected to fill a vacancy thereafter occurring in rotation shall be taken to begin on the day on which the place he is to fill becomes vacant, and the term of service of senators elected at an election next after a dissolution of the Senate shall be taken to begin on the day of the first meeting of the House of Representatives after dissolution. A writ was issued for a referendum (to be taken on the 11th December, 1915, at the same time as referendums for the alteration of the legislative powers of the Commonwealth), but the writs were withdrawn under authority of Act 51 of 1915. See also note to section 51.

21. Whenever a vacancy happens in the Senate, the President, or if there is no President or if the President is absent from the Commonwealth the Governor-General, shall notify the same to the Governor of the State in the representation of which the vacancy has happened.

22. Until the Parliament otherwise provides, the presence of at least one-third of the whole number of the senators shall be necessary to constitute a meeting of the Senate for the exercise of its powers.

23. Questions arising in the Senate shall be determined by a majority of votes, and each senator shall have one vote. The President shall in all cases be entitled to a vote; and when the votes are equal the question shall pass in the negative.

### PART III.—THE HOUSE OF REPRESENTATIVES.

24. The House of Representatives shall be composed of members directly chosen by the people of the Commonwealth, and the number of such members shall be, as nearly as practicable, twice the number of the senators.

The number of members chosen in the several States shall be in proportion to the respective numbers of their people, and shall, until the Parliament otherwise provides, be determined, whenever necessary, in the following manner:—

- (i) A quota shall be ascertained by dividing the number of the people of the Commonwealth, as shewn by the latest statistics of the Commonwealth, by twice the number of the senators:
- (ii) The number of members to be chosen in each State shall be determined by dividing the number of the people of the State, as shewn by the latest statistics of the Commonwealth, by the quota; and if on such division there is a remainder greater than one-half of the quota, one more member shall be chosen in the State.

But notwithstanding anything in this section, five members at least shall be chosen in each Original State.

25. For the purposes of the last section, if by the law of any State all persons of any race are disqualified from voting at elections for the more numerous House of the Parliament of the State, then, in reckoning the number of the people of the State or of the Commonwealth, persons of that race resident in that State shall not be counted.

26. Notwithstanding anything in section twenty-four, the number of members to be chosen in each State at the first election shall be as follows:—

New South Wales	..	23	South Australia	..	6
Victoria	..	20	Tasmania	..	5
Queensland	..	8			

Provided that if Western Australia is an Original State, the numbers shall be as follows:—

New South Wales	..	26	South Australia	..	7
Victoria	..	23	Western Australia	..	5
Queensland	..	9	Tasmania	..	5

27. Subject to this Constitution, the Parliament may make laws for increasing or diminishing the number of the members of the House of Representatives.

28. Every House of Representatives shall continue for three years from the first meeting of the House, and no longer, but may be sooner dissolved by the Governor-General.

29. Until the Parliament of the Commonwealth otherwise provides, the Parliament of any State may make laws for determining the divisions in each State for which members of the House of Representatives may be chosen, and the number of members to be chosen for each division. A division shall not be formed out of parts of different States.

In the absence of other provision, each State shall be one electorate.

30. Until the Parliament otherwise provides, the qualification of electors of members of the House of Representatives shall be in each State that which is prescribed by the law of the State as the qualification of electors of the more numerous House of Parliament of the State; but in the choosing of members each elector shall vote only once.<sup>1</sup>

1. The franchise qualification was determined by the Commonwealth Franchise Act 1902.

31. Until the Parliament otherwise provides, but subject to this Constitution, the laws in force in each State for the time being relating to elections for the more numerous House of the Parliament of the State shall, as nearly as practicable, apply to elections in the State of members of the House of Representatives.

32. The Governor-General in Council may cause writs to be issued for general elections of members of the House of Representatives.

After the first general election, the writs shall be issued within ten days from the expiry of a House of Representatives or from the proclamation of a dissolution thereof.

33. Whenever a vacancy happens in the House of Representatives, the Speaker shall issue his writ for the election of a new member, or if there is no Speaker or if he is absent from the Commonwealth the Governor-General in Council may issue the writ.

34. Until the Parliament otherwise provides, the qualifications of a member of the House of Representatives shall be as follows :—

- (i) He must be of the full age of twenty-one years, and must be an elector entitled to vote at the election of members of the House of Representatives, or a person qualified to become such elector, and must have been for three years at the least a resident within the limits of the Commonwealth as existing at the time when he is chosen:—
- (ii) He must be a subject of the Queen, either natural-born or for at least five years naturalized under a law of the United Kingdom, or of a Colony which has become or becomes a State, or of the Commonwealth, or of a State.

35. The House of Representatives shall, before proceeding to the despatch of any other business, choose a member to be the Speaker of the House, and as often as the office of Speaker becomes vacant the House shall again choose a member to be the Speaker.

The Speaker shall cease to hold his office if he ceases to be a member. He may be removed from office by a vote of the House, or he may resign his office or his seat by writing addressed to the Governor-General.

36. Before or during any absence of the Speaker, the House of Representatives may choose a member to perform his duties in his absence.

37. A member may by writing addressed to the Speaker, or to the Governor-General if there is no Speaker or if the Speaker is absent from the Commonwealth, resign his place, which thereupon shall become vacant.

38. The place of a member shall become vacant if for two consecutive months of any session of the Parliament he, without the permission of the House, fails to attend the House.

39. Until the Parliament otherwise provides, the presence of at least one-third of the whole number of the members of the House of Representatives shall be necessary to constitute a meeting of the House for the exercise of its powers.

40. Questions arising in the House of Representatives shall be determined by a majority of votes other than that of the Speaker. The Speaker shall not vote unless the numbers are equal, and then he shall have a casting vote.

#### PART IV.—BOTH HOUSES OF THE PARLIAMENT.

41. No adult person who has or acquires a right to vote at elections for the more numerous House of the Parliament of a State shall, while the right continues, be prevented by any law of the Commonwealth from voting at elections for either House of the Parliament of the Commonwealth.

42. Every senator and every member of the House of Representatives shall before taking his seat make and subscribe before the Governor-General, or some person authorized by him, an oath or affirmation of allegiance in the form set forth in the schedule to this Constitution.

43. A member of either House of the Parliament shall be incapable of being chosen or of sitting as a member of the other House.

## 44. Any person who—

- (i) Is under any acknowledgment of allegiance, obedience, or adherence to a foreign power, or is a subject or a citizen or entitled to the rights or privileges of a subject or a citizen of a foreign power : or
- (ii) Is attainted of treason, or has been convicted and is under sentence, or subject to be sentenced, for any offence punishable under the law of the Commonwealth or of the State by imprisonment for one year or longer : or
- (iii) Is an undischarged bankrupt or insolvent : or
- (iv) Holds any office of profit under the Crown, or any pension payable during the pleasure of the Crown out of any of the revenues of the Commonwealth : or
- (v) Has any direct or indirect pecuniary interest in any agreement with the Public Service of the Commonwealth otherwise than as a member and in common with the other members of an incorporated company consisting of more than twenty-five persons :

shall be incapable of being chosen or of sitting as a senator or a member of the House of Representatives.

But sub-section iv. does not apply to the office of any of the Queen's Ministers of State for the Commonwealth, or of any of the Queen's Ministers for a State, or to the receipt of pay, half-pay, or a pension by any person as an officer or member of the Queen's navy or army, or to the receipt of pay as an officer or member of the naval or military forces of the Commonwealth by any person whose services are not wholly employed by the Commonwealth.

## 45. If a senator or member of the House of Representatives—

- (i) Becomes subject to any of the disabilities mentioned in the last preceding section : or
- (ii) Takes the benefit, whether by assignment, composition, or otherwise, of any law relating to bankrupt or insolvent debtors : or
- (iii) Directly or indirectly takes or agrees to take any fee or honorarium for services rendered to the Commonwealth, or for services rendered in the Parliament to any person or State :

his place shall thereupon become vacant.

46. Until the Parliament otherwise provides, any person declared by this Constitution to be incapable of sitting as a senator or as a member of the House of Representatives shall, for every day on which he so sits, be liable to pay the sum of one hundred pounds to any person who sues for it in any court of competent jurisdiction.

47. Until the Parliament otherwise provides, any question respecting the qualification of a senator or of a member of the House of Representatives, or respecting a vacancy in either House of the Parliament, and any question of a disputed election to either House, shall be determined by the House in which the question arises.

48. Until the Parliament otherwise provides, each senator and each member of the House of Representatives shall receive an allowance of four hundred pounds a year, to be reckoned from the day on which he takes his seat.<sup>1</sup>

49. The powers, privileges, and immunities of the Senate and of the House of Representatives, and of the members and the committees of each House, shall be such as are declared by the Parliament, and until declared shall be those of the Commons House of Parliament of the United Kingdom, and of its members and committees, at the establishment of the Commonwealth.

## 50. Each House of the Parliament may make rules and orders with respect to—

- (i) The mode in which its powers, privileges, and immunities may be exercised and upheld ;
- (ii) The order and conduct of its business and proceedings either separately or jointly with the other House.

1. By the Parliamentary Allowances Act 1907, the amount of the allowance was increased to £600 a year; and by the Parliamentary Allowances Act 1920 to £1,000 a year. (The latter Act also apportioned special allowances to the President of the Senate; the Speaker of the House of Representatives; the Chairmen of Committees in both Houses; and the Opposition Leaders in both Houses.)

PART V.—POWERS OF THE PARLIAMENT.<sup>1 2 3</sup>

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 :<sup>1 2</sup>
- (ii) Taxation ; but so as not to discriminate between States or parts of States :
- (iii) Bounties on the production or export of goods, but so that such bounties shall be uniform throughout the Commonwealth :
- (iv) Borrowing money on the public credit of the Commonwealth :
- (v) Postal, telegraphic, telephonic, and other like services :
- (vi) The naval and military defence of the Commonwealth and of the several States, and the control of the forces to execute and maintain the laws of the Commonwealth :
- (vii) Lighthouses, lightships, beacons and buoys :
- (viii) Astronomical and meteorological observations :
- (ix) Quarantine :
- (x) Fisheries in Australian waters beyond territorial limits :
- (xi) Census and statistics :
- (xii) Currency, coinage, and legal tender :
- (xiii) Banking, other than State banking ; also State banking extending beyond the limits of the State concerned, the incorporation of banks, and the issue of paper money :

1. Two proposed laws for the alteration of the Constitution were submitted to the people for acceptance or rejection on the 26th April, 1911. They were (A) The Constitution Alteration (Legislative Powers) 1910, and (B) the Constitution Alteration (Monopolies) 1910.

(A) *Constitution Alteration (Legislative Powers) 1910.* The object of this proposed law was to extend the powers of the Commonwealth Government (under section 51 of the Constitution) in four directions, viz.—(a) Trade and Commerce, (b) Corporations, (c) Industrial matters, and (d) Trusts and monopolies.

(a) *Trade and Commerce.* In Section 51, para. (i.) of the Constitution, it was proposed to omit the words "with other countries, and among the States," so as to give the Commonwealth Parliament power to legislate with respect to trade and commerce, without limitation.

(b) *Corporations.* It was proposed to omit the words (para. xx.) "Foreign corporations, and trading or financial corporations formed within the limits of the Commonwealth," and to insert in lieu thereof the words—"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."

(c) *Industrial Matters.* In para. xxxv. it was proposed to omit the words "Conciliation and arbitration for the prevention and settlement of industrial disputes extending beyond the limits of any one State," and to insert in lieu thereof 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."

(d) *Trusts and Monopolies.* It was proposed to amend Section 51 of the Constitution by adding at the end thereof the following paragraph :—" (xl.) Combinations and monopolies in relation to the production, manufacture, or supply of goods or services."

(B) *Constitution Alteration (Monopolies) 1910.* The object of this proposed law was to alter the Constitution by inserting, after Section 51 thereof, the following section :—" 51A. When each House of Parliament, in the same session, has by resolution declared that the industry or business of producing, manufacturing, or supplying goods, or of supplying any specified services, is the subject of any 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."

Neither of the proposed laws was approved by the people.

On the 31st May, 1913, the date of the Parliamentary elections, the same proposed alterations were again submitted to the people as five distinct laws, with an additional one whereby the conditions of employment and the settlement of disputes relating thereto in the several State railway services might be brought within the jurisdiction of the Commonwealth. All six proposed laws were negatived by the people.—See section XXV. §2.

2. On the 15th July, 1915, the Commonwealth Parliament passed a bill for the submission to the electors of proposed laws to amend the Constitution in regard to the legislative powers of the Commonwealth Parliament. The proposed amendments differed somewhat from those submitted to the electors in the years 1911 and 1913. Thus in regard to (A) (b) *Corporations* (see 1 above) it was proposed to specifically exclude municipal and governmental corporations. (A) (c) was modified to read thus after "to insert in lieu (in their stead) the words"—"Including (a) Labour, (b) Employment and unemployment, (c) The terms and conditions of labour and employment in any trade, industry, occupation, or calling, (d) The rights and obligations of employers and employees, (e) Strikes and lockouts, (f) The maintenance of industrial peace, (g) The settlement of industrial disputes. With regard to railway disputes it was proposed to insert after paragraph (xxxv.) of section 51 the following paragraph :—" (xxxv. A.) Conciliation and arbitration for the prevention and settlement of industrial disputes in relation to employment in the railway service of a State. (A) (A) was modified to read (xl.) Trusts, combinations, monopolies, and arrangements in relation to (a) the production, manufacture, or supply of goods, or the supply of services, or (b) the ownership of the means of production, manufacture, or supply of goods, or supply of services. (ii) (see 1 above) was modified as follows :—"After "has by resolution" the words "passed by an absolute majority of its members" were added, and an additional subsection was inserted to the effect that the section was not to apply to any industry or business conducted or carried on by the Government of a State, or any public authority constituted under a State. Writs were issued for referendums to be held on the 11th December, 1915, but they were withdrawn under Act 51 of 1915.

3. On 28th October, 1919, a further submission of proposals to alter the Constitution was decreed by Parliament. These also related to the extension of the legislative powers of the Commonwealth in regard to industrial disputes, and to the nationalization of monopolies. Neither of the proposals was approved by the people.



- (xiv) Insurance, other than State insurance ; also State insurance extending beyond the limits of the State concerned :
- (xv) Weights and measures :
- (xvi) Bills of exchange and promissory notes :
- (xvii) Bankruptcy and insolvency :
- (xviii) Copyrights, patents of inventions and designs, and trade marks :
- (xix) Naturalization and aliens :
- (xx) Foreign corporations, and trading or financial corporations formed within the limits of the Commonwealth :<sup>1</sup>
- (xxi) Marriage :
- (xxii) Divorce and matrimonial causes ; and in relation thereto, parental rights, and the custody and guardianship of infants :
- (xxiii) Invalid and old-age pensions :
- (xxiv) The service and execution throughout the Commonwealth of the civil and criminal process and the judgments of the Courts of the States :
- (xxv) The recognition throughout the Commonwealth of the laws, the public Acts and records, and the judicial proceedings of the States :
- (xxvi) The people of any race, other than the aboriginal race in any State, for whom it is deemed necessary to make special laws :
- (xxvii) Immigration and emigration :
- (xxviii) The influx of criminals :
- (xxix) External affairs :
- (xxx) The relations of the Commonwealth with the islands of the Pacific :
- (xxxi) The acquisition of property on just terms from any State or person for any purpose in respect of which the Parliament has power to make laws :
- (xxxii) The control of railways with respect to transport for the naval and military purposes of the Commonwealth :
- (xxxiii) The acquisition, with the consent of a State, of any railways of the State on terms arranged between the Commonwealth and the State :
- (xxxiv) Railway construction and extension in any State with the consent of that State :
- (xxxv) Conciliation and arbitration for the prevention and settlement of industrial disputes extending beyond the limits of any one State :<sup>1</sup>
- (xxxvi) Matters in respect of which this Constitution makes provision until the Parliament otherwise provides :
- (xxxvii) Matters referred to the Parliament of the Commonwealth by the Parliament or Parliaments of any State or States, but so that the law shall extend only to States by whose Parliaments the matter is referred, or which afterwards adopt the law :
- (xxxviii) The exercise within the Commonwealth, at the request or with the concurrence of the Parliaments of all the States directly concerned, of any power which can at the establishment of this Constitution be exercised only by the Parliament of the United Kingdom or by the Federal Council of Australasia :
- (xxxix) Matters incidental to the execution of any power vested by this Constitution in the Parliament or in either House thereof, or in the Government of the Commonwealth, or in the Federal Judicature, or in any department or officer of the Commonwealth.

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

- (i) The seat of Government of the Commonwealth, and all places acquired by the Commonwealth for public purposes :
- (ii) Matters relating to any department of the public service the control of which is by this Constitution transferred to the Executive Government of the Commonwealth :
- (iii) Other matters declared by this Constitution to be within the exclusive power of the Parliament.

1. See footnotes 1, 2, and 3 on previous page.

53. Proposed laws appropriating revenue or moneys, or imposing taxation, shall not originate in the Senate. But a proposed law shall not be taken to appropriate revenue or moneys, or to impose taxation, by reason only of its containing provisions for the imposition or appropriation of fines or other pecuniary penalties, or for the demand or payment or appropriation of fees for licenses, or fees for services under the proposed law.

The Senate may not amend proposed laws imposing taxation, or proposed laws appropriating revenue or moneys for the ordinary annual services of the Government.

The Senate may not amend any proposed laws so as to increase any proposed charge or burden on the people.

The Senate may at any stage return to the House of Representatives any proposed law which the Senate may not amend, requesting, by message, the omission or amendment of any items or provisions therein. And the House of Representatives may, if it thinks fit, make any of such omissions or amendments, with or without modifications.

Except as provided in this section, the Senate shall have equal power with the House of Representatives in respect of all proposed laws.

54. The proposed law which appropriates revenue or moneys for the ordinary annual services of the Government shall deal only with such appropriation.

55. Laws imposing taxation shall deal only with the imposition of taxation, and any provisions therein dealing with any other matter shall be of no effect.

Laws imposing taxation, except laws imposing duties of customs or of excise, shall deal with one subject of taxation only; but laws imposing duties of customs shall deal with duties of customs only, and laws imposing duties of excise shall deal with duties of excise only.

56. A vote, resolution, or proposed law for the appropriation of revenue or moneys shall not be passed unless the purpose of the appropriation has in the same session been recommended by message of the Governor-General to the House in which the proposal originated.

57. If the House of Representatives passes any proposed law, and the Senate rejects or fails to pass it, or passes it with amendments to which the House of Representatives will not agree, and if after an interval of three months the House of Representatives, in the same or the next session, again passes the proposed law with or without any amendments which have been made, suggested, or agreed to by the Senate, and the Senate rejects or fails to pass it, or passes it with amendments to which the House of Representatives will not agree, the Governor-General may dissolve the Senate and the House of Representatives simultaneously. But such dissolution shall not take place within six months before the date of the expiry of the House of Representatives by effluxion of time.

If after such dissolution the House of Representatives again passes the proposed law, with or without any amendments which have been made, suggested, or agreed to by the Senate, and the Senate rejects or fails to pass it, or passes it with amendments to which the House of Representatives will not agree, the Governor-General may convene a joint sitting of the members of the Senate and of the House of Representatives.

The members present at the joint sitting may deliberate and shall vote together upon the proposed law as last proposed by the House of Representatives, and upon amendments, if any, which have been made therein by one House and not agreed to by the other, and any such amendments which are affirmed by an absolute majority of the total number of the members of the Senate and House of Representatives shall be taken to have been carried, and if the proposed law, with the amendments, if any, so carried is affirmed by an absolute majority of the total number of members of the Senate and House of Representatives, it shall be taken to have been duly passed by both Houses of the Parliament, and shall be presented to the Governor-General for the Queen's assent.

58. When a proposed law passed by both Houses of the Parliament is presented to the Governor-General for the Queen's assent, he shall declare, according to his discretion, but subject to this Constitution, that he assents in the Queen's name, or that he withholds assent, or that he reserves the law for the Queen's pleasure.

The Governor-General may return to the House in which it originated any proposed law so presented to him, and may transmit therewith any amendments which he may recommend, and the Houses may deal with the recommendation.

59. The Queen may disallow any law within one year from the Governor-General's assent, and such disallowance on being made known by the Governor-General by speech or message to each of the Houses of the Parliament, or by Proclamation, shall annul the law from the day when the disallowance is so made known.

60. A proposed law reserved for the Queen's pleasure shall not have any force unless and until within two years from the day on which it was presented to the Governor-General for the Queen's assent the Governor-General makes known, by speech or message to each of the Houses of Parliament, or by Proclamation, that it has received the Queen's assent.

#### CHAPTER II.—THE EXECUTIVE GOVERNMENT.

61. The executive power of the Commonwealth is vested in the Queen and is exercisable by the Governor-General as the Queen's representative, and extends to the execution and maintenance of this Constitution, and of the laws of the Commonwealth.

62. There shall be a Federal Executive Council to advise the Governor-General in the government of the Commonwealth, and the members of the Council shall be chosen and summoned by the Governor-General and sworn as Executive Councillors, and shall hold office during his pleasure.

63. The provisions of this Constitution referring to the Governor-General in Council shall be construed as referring to the Governor-General acting with the advice of the Federal Executive Council.

64. The Governor-General may appoint officers to administer such departments of State of the Commonwealth as the Governor-General in Council may establish.

Such officers shall hold office during the pleasure of the Governor-General. They shall be members of the Federal Executive Council, and shall be the Queen's Ministers of State for the Commonwealth.

After the first general election no Minister of State shall hold office for a longer period than three months unless he is or becomes a senator or a member of the House of Representatives.

65. Until the Parliament otherwise provides, the Ministers of State shall not exceed seven in number, and shall hold such offices as the Parliament prescribes, or, in the absence of provision, as the Governor-General directs.<sup>1</sup>

66. There shall be payable to the Queen, out of the Consolidated Revenue Fund of the Commonwealth, for the salaries of the Ministers of State, an annual sum which, until the Parliament otherwise provides, shall not exceed twelve thousand pounds a year.<sup>1</sup>

67. Until the Parliament otherwise provides, the appointment and removal of all other officers of the Executive Government of the Commonwealth shall be vested in the Governor-General in Council, unless the appointment is delegated by the Governor-General in Council or by a law of the Commonwealth to some other authority.

68. The command in chief of the naval and military forces of the Commonwealth is vested in the Governor-General as the Queen's representative.

69. On a date or dates to be proclaimed by the Governor-General after the establishment of the Commonwealth the following departments of the public service in each State shall be transferred to the Commonwealth :—<sup>2</sup>

Posts, telegraphs, and telephones :	Lighthouses, lightships, beacons, and buoys :
Naval and military defence :	Quarantine.

But the departments of customs and of excise in each State shall become transferred to the Commonwealth on its establishment.

70. In respect of matters which, under this Constitution, pass to the Executive Government of the Commonwealth, all powers and functions which at the establishment of the Commonwealth are vested in the Governor of a Colony, or in the Governor of a Colony with the advice of his Executive Council, or in any authority of a Colony, shall vest in the Governor-General, or in the Governor-General in Council, or in the authority exercising similar powers under the Commonwealth, as the case requires.

1. By the Ministers of State Acts 1915 and 1917, the Ministers of State may exceed seven, but shall not exceed nine. £15,300 annually was allotted by these Acts for their salaries; and £800 per annum each was added by the Parliamentary Allowances Act 1920.

2. As to departments and dates of transfer see Section XIX.—COMMONWEALTH FINANCE, § 1 hereinafter.

CHAPTER III.—THE JUDICATURE.

71. The judicial power of the Commonwealth shall be vested in a Federal Supreme Court, to be called the High Court of Australia, and in such other federal courts as the Parliament creates, and in such other courts as it invests with federal jurisdiction. The High Court shall consist of a Chief Justice, and so many other Justices, not less than two, as the Parliament prescribes.

72. The Justices of the High Court and of the other courts created by the Parliament—

- (i) Shall be appointed by the Governor-General in Council :
- (ii) Shall not be removed except by the Governor-General in Council, on an address from both Houses of the Parliament in the same session, praying for such removal on the ground of proved misbehaviour or incapacity :
- (iii) Shall receive such remuneration as the Parliament may fix : but the remuneration shall not be diminished during their continuance in office.

73. The High Court shall have jurisdiction, with such exceptions and subject to such regulations as the Parliament prescribes, to hear and determine appeals from all judgments, decrees, orders, and sentences—

- (i) Of any Justice or Justices exercising the original jurisdiction of the High Court :
- (ii) Of any other federal court, or court exercising federal jurisdiction ; or of the Supreme Court of any State, or of any other court of any State from which at the establishment of the Commonwealth an appeal lies to the Queen in Council :

(iii) Of the Inter-State Commission, but as to questions of law only :

and the judgment of the High Court in all such cases shall be final and conclusive.

But no exception or regulation prescribed by the Parliament shall prevent the High Court from hearing and determining any appeal from the Supreme Court of a State in any matter in which at the establishment of the Commonwealth an appeal lies from such Supreme Court to the Queen in Council.

Until the Parliament otherwise provides, the conditions of and restrictions on appeals to the Queen in Council from the Supreme Courts of the several States shall be applicable to appeals from them to the High Court.

74. No appeal shall be permitted to the Queen in Council from a decision of the High Court upon any question, howsoever arising, as to the limits *inter se* of the Constitutional powers of the Commonwealth and those of any State or States, or as to the limits *inter se* of the Constitutional powers of any two or more States, unless the High Court shall certify that the question is one which ought to be determined by Her Majesty in Council.

The High Court may so certify if satisfied that for any special reason the certificate should be granted, and thereupon an appeal shall lie to Her Majesty in Council on the question without further leave.

Except as provided in this section, this Constitution shall not impair any right which the Queen may be pleased to exercise by virtue of Her Royal prerogative to grant special leave of appeal from the High Court to Her Majesty in Council. The Parliament may make laws limiting the matters in which such leave may be asked, but proposed laws containing any such limitation shall be reserved by the Governor-General for Her Majesty's pleasure.

75. In all matters—

- (i) Arising under any treaty :
- (ii) Affecting consuls or other representatives of other countries :
- (iii) In which the Commonwealth, or a person suing or being sued on behalf of the Commonwealth, is a party :
- (iv) Between States, or between residents of different States, or between a State and a resident of another State :
- (v) In which a writ of Mandamus or prohibition or an injunction is sought against an officer of the Commonwealth :

the High Court shall have original jurisdiction.

76. The Parliament may make laws conferring original jurisdiction on the High Court in any matter—

- (i) Arising under this Constitution, or involving its interpretation :
- (ii) Arising under any laws made by the Parliament :
- (iii) Of Admiralty and maritime jurisdiction :
- (iv) Relating to the same subject-matter claimed under the laws of different States.

77. With respect to any of the matters mentioned in the last two sections the Parliament may make laws—

- (i) Defining the jurisdiction of any federal court other than the High Court :
- (ii) Defining the extent to which the jurisdiction of any federal court shall be exclusive of that which belongs to or is invested in the courts of the States :
- (iii) Investing any court of a State with federal jurisdiction.

78. The Parliament may make laws conferring rights to proceed against the Commonwealth or a State in respect of matters within the limits of the judicial power.

79. The federal jurisdiction of any court may be exercised by such number of judges as the Parliament prescribes.

80. The trial on indictment of any offence against any law of the Commonwealth shall be by jury, and every such trial shall be held in the State where the offence was committed, and if the offence was not committed within any State the trial shall be held at such place or places as the Parliament prescribes.

#### CHAPTER IV.—FINANCE AND TRADE.

81. All revenues or moneys raised or received by the Executive Government of the Commonwealth shall form one Consolidated Revenue Fund, to be appropriated for the purposes of the Commonwealth in the manner and subject to the charges and liabilities imposed by this Constitution.

82. The costs, charges, and expenses incident to the collection, management, and receipt of the Consolidated Revenue Fund shall form the first charge thereon ; and the revenue of the Commonwealth shall in the first instance be applied to the payment of the expenditure of the Commonwealth.

83. No money shall be drawn from the Treasury of the Commonwealth except under appropriation made by law.

But until the expiration of one month after the first meeting of the Parliament the Governor-General in Council may draw from the Treasury and expend such moneys as may be necessary for the maintenance of any department transferred to the Commonwealth and for the holding of the first elections for the Parliament.

84. When any department of the public service of a State becomes transferred to the Commonwealth, all officers of the department shall become subject to the control of the Executive Government of the Commonwealth.

Any such officer who is not retained in the service of the Commonwealth shall, unless he is appointed to some other office of equal emolument in the public service of the State, be entitled to receive from the State any pension, gratuity, or other compensation, payable under the law of the State on the abolition of his office.

Any such officer who is retained in the service of the Commonwealth shall preserve all his existing and accruing rights, and shall be entitled to retire from office at the time, and on the pension or retiring allowance, which would be permitted by the law of the State if his service with the Commonwealth were a continuation of his service with the State. Such pension or retiring allowance shall be paid to him by the Commonwealth ; but the State shall pay to the Commonwealth a part thereof, to be calculated on the proportion which his term of service with the State bears to his whole term of service, and for the purpose of the calculation his salary shall be taken to be that paid to him by the State at the time of transfer.

Any officer who is, at the establishment of the Commonwealth, in the public service of a State, and who is, by consent of the Governor of the State with the advice of the Executive Council thereof, transferred to the public service of the Commonwealth, shall have the same rights as if he had been an officer of a department transferred to the Commonwealth and were retained in the service of the Commonwealth.

85. When any department of the public service of a State is transferred to the Commonwealth—

- (i) All property of the State of any kind, used exclusively in connexion with the department, shall become vested in the Commonwealth; but, in the case of the departments controlling customs and excise and bounties, for such time only as the Governor-General in Council may declare to be necessary;
- (ii) The Commonwealth may acquire any property of the State, of any kind used, but not exclusively used in connexion with the department; the value thereof shall, if no agreement can be made, be ascertained in, as nearly as may be, the manner in which the value of land, or of an interest in land, taken by the State for public purposes is ascertained under the law of the State in force at the establishment of the Commonwealth;
- (iii) The Commonwealth shall compensate the State for the value of any property passing to the Commonwealth under this section: if no agreement can be made as to the mode of compensation, it shall be determined under laws to be made by the Parliament;
- (iv) The Commonwealth shall, at the date of the transfer, assume the current obligations of the State in respect of the department transferred.

86. On the establishment of the Commonwealth, the collection and control of duties of customs and of excise, and the control of the payment of bounties, shall pass to the Executive Government of the Commonwealth.

87. During a period of ten years after the establishment of the Commonwealth and thereafter until the Parliament otherwise provides, of the net revenue of the Commonwealth from duties of customs and of excise not more than one-fourth shall be applied annually by the Commonwealth towards its expenditure.

The balance shall, in accordance with this Constitution, be paid to the several States, or applied to the payment of interest on debts of the several States taken over by the Commonwealth.<sup>1</sup>

88. Uniform duties of customs shall be imposed within two years after the establishment of the Commonwealth.<sup>2</sup>

89. Until the imposition of uniform duties of customs—

- (i) The Commonwealth shall credit to each State the revenues collected therein by the Commonwealth.
- (ii) The Commonwealth shall debit to each State—
  - (a) The expenditure therein of the Commonwealth incurred solely for the maintenance or continuance, as at the time of transfer, of any department transferred from the State to the Commonwealth;
  - (b) The proportion of the State, according to the number of its people, in the other expenditure of the Commonwealth.
- (iii) The Commonwealth shall pay to each State month by month the balance (if any) in favour of the State.

90. On the imposition of uniform duties of customs the power of the Parliament to impose duties of customs and of excise, and to grant bounties on the production or export of goods, shall become exclusive.

On the imposition of uniform duties of customs all laws of the several States imposing duties of customs or of excise, or offering bounties on the production or export of goods, shall cease to have effect, but any grant of or agreement for any such bounty lawfully made by or under the authority of the Government of any State shall be taken to be good if made before the thirtieth day of June, one thousand eight hundred and ninety-eight, and not otherwise.

91. Nothing in this Constitution prohibits a State from granting any aid to or bounty on mining for gold, silver, or other metals, nor from granting, with the consent of both Houses of the Parliament of the Commonwealth expressed by resolution, any aid to or bounty on the production or export of goods.

1. This has been known as the Braddon clause. The Surplus Revenue Act 1910 provides for the termination of this clause as from the 31st December, 1910, and for the payment to the States of twenty-five shillings per head of population until the 30th June, 1920, or thereafter, until Parliament otherwise provides, subject to certain adjustments for the year ended 30th June, 1911. For further information see Section XIX. hereinafter.

2. Uniform customs duties were imposed by the Customs Tariff 1902, as from 8th October, 1901.

92. On the imposition of uniform duties of customs, trade, commerce, and intercourse among the States, whether by means of internal carriage or ocean navigation, shall be absolutely free.

But notwithstanding anything in this Constitution, goods imported before the imposition of uniform duties of customs into any State, or into any Colony which, whilst the goods remain therein, becomes a State, shall, on thence passing into another State within two years after the imposition of such duties, be liable to any duty chargeable on the importation of such goods into the Commonwealth, less any duty paid in respect of the goods on their importation.

93. During the first five years after the imposition of uniform duties of customs and thereafter until the Parliament otherwise provides—

(i) The duties of customs chargeable on goods imported into a State and afterwards passing into another State for consumption, and the duties of excise paid on goods produced or manufactured in a State and afterwards passing into another State for consumption, shall be taken to have been collected not in the former but in the latter State :

(ii) Subject to the last sub-section, the Commonwealth shall credit revenue, debit expenditure, and pay balances to the several States as prescribed by the period preceding the imposition of uniform duties of customs.<sup>1</sup>

94. After five years from the imposition of uniform duties of customs, the Parliament may provide, on such basis as it deems fair, for the monthly payment to the several States of all surplus revenue of the Commonwealth.

95. Notwithstanding anything in this Constitution, the Parliament of the State of Western Australia, if that State be an original State, may, during the first five years after the imposition of uniform duties of customs, impose duties of customs on goods passing into that State and not originally imported from beyond the limits of the Commonwealth ; and such duties shall be collected by the Commonwealth.

But any duty so imposed on any goods shall not exceed during the first of such years the duty chargeable on the goods under the law of Western Australia in force at the imposition of uniform duties, and shall not exceed during the second, third, fourth, and fifth of such years respectively, four-fifths, three-fifths, two-fifths, and one-fifth of such latter duty, and all duties imposed under this section shall cease at the expiration of the fifth year after the imposition of uniform duties.

If at any time during the five years the duty on any goods under this section is higher than the duty imposed by the Commonwealth on the importation of the like goods, then such higher duty shall be collected on the goods when imported into Western Australia from beyond the limits of the Commonwealth.

96. During a period of ten years after the establishment of the Commonwealth and thereafter until the Parliament otherwise provides, the Parliament may grant financial assistance to any State on such terms and conditions as the Parliament thinks fit.

97. Until the Parliament otherwise provides, the laws in force in any Colony which has become or becomes a State with respect to the receipt of revenue and the expenditure of money on account of the Government of the Colony, and the review and audit of such receipt and expenditure, shall apply to the receipt of revenue and the expenditure of money on account of the Commonwealth in the State in the same manner as if the Commonwealth, or the Government or an officer of the Commonwealth, were mentioned whenever the Colony, or the Government or an officer of the Colony, is mentioned.

98. The power of the Parliament to make laws with respect to trade and commerce extends to navigation and shipping, and to railways the property of any State.

99. The Commonwealth shall not, by any law or regulation of trade, commerce, or revenue, give preference to one State or any part thereof over another State or any part thereof.

100. The Commonwealth shall not, by any law or regulation of trade or commerce, abridge the right of a State or of the residents therein to the reasonable use of the waters of rivers for conservation or irrigation.

1. The Surplus Revenue Act 1908, which was amended by the Surplus Revenue Act 1910, states that the provisions of Section 93 of the Constitution shall expire on the date of the commencement of the Surplus Revenue Act 1908, that is, on 13th June, 1908, and also makes provisions in lieu of the expired provisions. The Surplus Revenue Act 1910 repeals the greater part of the provisions of the Act of 1908. See footnote to Section 87 of this Act.

101. There shall be an Inter-State Commission, with such powers of adjudication and administration as the Parliament deems necessary for the execution and maintenance, within the Commonwealth, of the provisions of this Constitution relating to trade and commerce, and of all laws made thereunder.<sup>1</sup>

102. The Parliament may by any law with respect to trade or commerce forbid, as to railways, any preference or discrimination by any State, or by any authority constituted under a State, if such preference or discrimination is undue and unreasonable, or unjust to any State, due regard being had to the financial responsibilities incurred by any State in connexion with the construction and maintenance of its railways. But no preference or discrimination shall, within the meaning of this section, be taken to be undue and unreasonable, or unjust to any State, unless so adjudged by the Inter-State Commission.

103. The members of the Inter-State Commission—

- (i) Shall be appointed by the Governor-General in Council :
- (ii) Shall hold office for seven years, but may be removed within that time by the Governor-General in Council, on an address from both Houses of Parliament in the same session praying for such removal on the ground of proved misbehaviour or incapacity :
- (iii) Shall receive such remuneration as the Parliament may fix ; but such remuneration shall not be diminished during their continuance in office.

104. Nothing in this Constitution shall render unlawful any rate for carriage of goods upon a railway, the property of a State, if the rate is deemed by the Inter-State Commission to be necessary for the development of the territory of the State, and if the rate applies equally to goods within the State and to goods passing into the State from other States.

105. The Parliament may take over from the States their public debts [as existing at the establishment of the Commonwealth],<sup>2</sup> or a proportion thereof according to the respective numbers of their people as shewn by the latest statistics of the Commonwealth, and may convert, renew, or consolidate such debts, or any part thereof ; and the State shall indemnify the Commonwealth in respect of the debts taken over, and thereafter the interest payable in respect of the debts shall be deducted and retained from the portions of the surplus revenue of the Commonwealth payable to the several States, or if such surplus is insufficient, or if there is no surplus, then the deficiency or the whole amount shall be paid by the several States.

#### CHAPTER V.—THE STATES.

106. The Constitution of each State of the Commonwealth shall, subject to this Constitution, continue as at the establishment of the Commonwealth, or as at the admission or establishment of the State, as the case may be, until altered in accordance with the Constitution of the State.

107. Every power of the Parliament of a Colony which has become or becomes a State, shall, unless it is by this Constitution exclusively vested in the Parliament of the Commonwealth or withdrawn from the Parliament of the State, continue as at the establishment of the Commonwealth, or as at the admission or establishment of the State, as the case may be.

108. Every law in force in a Colony which has become or becomes a State, and relating to any matter within the powers of the Parliament of the Commonwealth, shall, subject to this Constitution, continue in force in the State ; and, until provision is made in that behalf by the Parliament of the Commonwealth, the Parliament of the State shall have such powers of alteration and of repeal in respect of any such law as the Parliament of the Colony had until the Colony became a State.

109. When a law of a State is inconsistent with a law of the Commonwealth, the latter shall prevail, and the former shall, to the extent of the inconsistency, be invalid.

110. The provisions of this Constitution relating to the Governor of a State extend and apply to the Governor for the time being of the State, or other chief executive officer or administrator of the government of the State.

1. The Commission was brought into existence in 1913, under Act No. 33 of 1912.

2. Under Section 2 of the Constitution Alteration (State Debts) 1909, the words in square brackets are omitted.



111. The Parliament of a State may surrender any part of the State to the Commonwealth; and upon such surrender, and the acceptance thereof by the Commonwealth, such part of the State shall become subject to the exclusive jurisdiction of the Commonwealth.

112. After uniform duties of customs have been imposed, a State may levy on imports or exports, or on goods passing into or out of the State, such charges as may be necessary for executing the inspection laws of the State; but the net produce of all charges so levied shall be for the use of the Commonwealth; and any such inspection laws may be annulled by the Parliament of the Commonwealth.

113. All fermented, distilled, or other intoxicating liquids passing into any State or remaining therein for use, consumption, sale, or storage, shall be subject to the laws of the State as if such liquids had been produced in the State.

114. A State shall not, without the consent of the Parliament of the Commonwealth, raise or maintain any naval or military force, or impose any tax on property of any kind belonging to the Commonwealth, nor shall the Commonwealth impose any tax on property of any kind belonging to a State.

115. A State shall not coin money, nor make anything but gold and silver coin a legal tender in payment of debts.

116. The Commonwealth shall not make any laws for establishing any religion, or for imposing any religious observance, or for prohibiting the free exercise of any religion, and no religious test shall be required as a qualification for any office or public trust under the Commonwealth.

117. A subject of the Queen, resident in any State, shall not be subject in any other State to any disability or discrimination which would not be equally applicable to him if he were a subject of the Queen resident in such other State.

118. Full faith and credit shall be given, throughout the Commonwealth, to the laws, the public Acts and records, and the judicial proceedings of every State.

119. The Commonwealth shall protect every State against invasion and, on the application of the Executive Government of the State, against domestic violence.

120. Every State shall make provision for the detention in its prisons of persons accused or convicted of offences against the laws of the Commonwealth, and for the punishment of persons convicted of such offences, and the Parliament of the Commonwealth may make laws to give effect to this provision.

#### CHAPTER VI.—NEW STATES.

121. The Parliament may admit to the Commonwealth or establish new States, and may upon such admission or establishment make or impose such terms and conditions, including the extent of representation in either House of the Parliament, as it thinks fit.

122. The Parliament may make laws for the government of any territory surrendered by any State to and accepted by the Commonwealth, or of any territory placed by the Queen under the authority of and accepted by the Commonwealth, or otherwise acquired by the Commonwealth, and may allow the representation of such territory in either House of the Parliament to the extent and on the terms which it thinks fit.

123. The Parliament of the Commonwealth may, with the consent of the Parliament of a State, and the approval of the majority of the electors of the State voting upon the question, increase, diminish, or otherwise alter the limits of the State, upon such terms and conditions as may be agreed on, and may, with the like consent, make provision respecting the effect and operation of any increase or diminution or alteration of territory in relation to any State affected.

124. A new State may be formed by separation of territory from a State, but only with consent of the Parliament thereof, and a new State may be formed by the union of two or more States or parts of States, but only with the consent of the Parliaments of the States affected.

CHAPTER VII.—MISCELLANEOUS.

125. The seat of Government of the Commonwealth shall be determined by the Parliament, and shall be within territory which shall have been granted to or acquired by the Commonwealth, and shall be vested in and belong to the Commonwealth, and shall be in the State of New South Wales, and be distant not less than one hundred miles from Sydney.

Such territory shall contain an area of not less than one hundred square miles, and such portion thereof as shall consist of Crown lands shall be granted to the Commonwealth without any payment therefor.

The Parliament shall sit at Melbourne until it meet at the seat of Government.

126. The Queen may authorise the Governor-General to appoint any person, or any persons jointly or severally, to be his deputy or deputies within any part of the Commonwealth, and in that capacity to exercise during the pleasure of the Governor-General such powers and functions of the Governor-General as he thinks fit to assign to such deputy or deputies, subject to any limitations expressed or directions given by the Queen : but the appointment of such deputy or deputies shall not affect the exercise by the Governor-General himself of any power or function.

127. In reckoning the numbers of the people of the Commonwealth, or of a State or other part of the Commonwealth, aboriginal natives shall not be counted.

CHAPTER VIII.—ALTERATION OF THE CONSTITUTION.<sup>1</sup>

128. This Constitution shall not be altered except in the following manner :—

The proposed law for the alteration thereof must be passed by an absolute majority of each House of the Parliament, and not less than two nor more than six months after its passage through both Houses the proposed law shall be submitted in each State to the electors qualified to vote for the election of members of the House of Representatives.<sup>2</sup>

But if either House passes any such proposed law by an absolute majority, and the other House rejects or fails to pass it or passes it with any amendment to which the first-mentioned House will not agree, and if after an interval of three months the first-mentioned House in the same or the next session again passes the proposed law by an absolute majority with or without any amendment which has been made or agreed to by the other House, and such other House rejects or fails to pass it or passes it with any amendment to which the first-mentioned House will not agree, the Governor-General may submit the proposed law as last proposed by the first-mentioned House, and either with or without any amendments subsequently agreed to by both Houses, to the electors in each State qualified to vote for the election of the House of Representatives.

When a proposed law is submitted to the electors the vote shall be taken in such manner as the Parliament prescribes. But until the qualification of electors of members of the House of Representatives becomes uniform throughout the Commonwealth, only one-half the electors voting for and against the proposed law shall be counted in any State in which adult suffrage prevails.

And if in a majority of the States a majority of the electors voting approve the proposed law, and if a majority of all the electors voting also approve the proposed law, it shall be presented to the Governor-General for the Queen's assent.

No alteration diminishing the proportionate representation of any State in either House of the Parliament, or the minimum number of representatives of a State in the House of Representatives, or increasing, diminishing, or otherwise altering the limits of the State, or in any manner affecting the provisions of the Constitution in relation thereto, shall become law unless the majority of the electors voting in that State approve the proposed law.

1. The Constitution has been altered by the following Acts :—The Constitution Alteration (Senate Elections) 1906 (No. 1 of 1907) ; and the Constitution Alteration (State Debts) 1909 (No. 3 of 1910).

2. The Referendum (Constitution Alteration) Act 1906-1919, provides the necessary machinery for the submission to the electors of any proposed law for the alteration of the Constitution.

## SCHEDULE.

## OATH.

I, *A.B.*, do swear that I will be faithful and bear true allegiance to Her Majesty Queen Victoria, Her heirs and successors according to law. So HELP ME GOD !

## AFFIRMATION.

I, *A.B.*, do solemnly and sincerely affirm and declare that I will be faithful and bear true allegiance to Her Majesty Queen Victoria, Her heirs and successors according to law.

(NOTE.—*The name of the King or Queen of the United Kingdom of Great Britain and Ireland for the time being is to be substituted from time to time.*)

2. **The Royal Proclamation.**—The preceding Act received the Royal assent on the 9th July, 1900. This made it lawful to declare that the people of Australia should be united in a Federal Commonwealth. This proclamation, made on the 17th September, 1900, constituted the Commonwealth as from the 1st January, 1901 : it reads as follows :—

BY THE QUEEN.

## A PROCLAMATION.

(Signed) VICTORIA R.

WHEREAS by an Act of Parliament passed in the Sixty-third and Sixty-fourth Years of Our Reign, intituled “An Act to constitute the Commonwealth of *Australia*,” it is enacted that it shall be lawful for the Queen, with the advice of the Privy Council, to declare by Proclamation, that, on and after a day therein appointed, not being later than One Year after the passing of this Act, the people of *New South Wales, Victoria, South Australia, Queensland, and Tasmania*, and also, if Her Majesty is satisfied that the people of *Western Australia* have agreed thereto, of *Western Australia*, shall be united in a Federal Commonwealth under the name of the Commonwealth of *Australia*.

And whereas We are satisfied that the people of *Western Australia* have agreed thereto accordingly.

We therefore, by and with the advice of Our Privy Council, have thought fit to issue this Our Royal Proclamation, and We do hereby declare that on and after the First day of *January* One thousand nine hundred and one, the people of *New South Wales, Victoria, South Australia, Queensland, Tasmania, and Western Australia* shall be united in a Federal Commonwealth under the name of the Commonwealth of *Australia*.

Given at Our Court at *Balmoral* this Seventeenth day of *September*, in the Year of Our Lord One thousand nine hundred, and in the Sixty-fourth Year of Our Reign.

GOD SAVE THE QUEEN.

## § 9. Commonwealth Legislation.

1. **The Commonwealth Parliaments.**—The first Parliament of the Commonwealth was convened by proclamation dated 29th April, 1901, by His Excellency the late Marquis of Linlithgow, then Earl of Hopetoun, Governor-General. It was opened on the 9th May following by H.R.H. the Duke of Cornwall and York, who had been sent to *Australia* for that purpose by His Majesty the King; the Rt. Hon. Sir Edmund Barton, P.C., G.C.M.G., K.C., being Prime Minister.

The following table gives the number and duration of Parliaments since Federation :—

COMMONWEALTH PARLIAMENTS, 1901 TO 1920.

	Date of Opening.	Date of Dissolution.
First Parliament .. ..	29th April, 1901 ..	23rd November, 1903
Second „ .. ..	2nd March, 1904 ..	12th October, 1906
Third „ .. ..	20th February, 1907 ..	19th February, 1910
Fourth „ .. ..	1st July, 1910 ..	23rd April, 1913
Fifth „ .. ..	9th July, 1913 ..	30th July, 1914*
Sixth „ .. ..	8th October, 1914 ..	26th March, 1917
Seventh „ .. ..	14th June, 1917 ..	3rd November, 1919
Eighth „ .. ..	26th February, 1920 ..	—

\* On this occasion, the Governor-General, acting on the advice of the Ministry, and under section 57 of the Constitution, granted a dissolution of both the Senate and the House of Representatives, this being the first occasion since Federation on which a dissolution of both Houses had occurred.

The Debates of these Parliaments will be found in Volumes I. to LXXXI. of the Parliamentary Debates, as follows :—

First Parliament,	1st Session,	Vols.	I. to	XII., pp.	1 to 16,744
"	2nd	"	XIII. "	XVII., "	1 " 6,440
Second Parliament,	1st	"	XVIII. "	XXIV., "	1 " 8,618
"	2nd	"	XXV. "	XXX., "	1 " 7,461
"	3rd	"	XXXI. "	XXXV., "	1 " 6,491
Third Parliament,	1st	"	XXXVI. 1ST PART	"	1 " 141
"	2nd	"	XXXVI. 2ND PART to	XLVI., "	1 " 12,203
"	3rd	"	XLVII. to	XLVIII., "	1 " 3,180
"	4th	"	XLIX. "	LIV., "	1 " 7,296
Fourth Parliament,	1st	"	LV. "	LIX., "	1 " 6,893
"	2nd	"	LX. "	LXIII., "	1 " 4,983
"	3rd	"	LXIV. "	LXIX., "	1 " 7,568
Fifth Parliament,	1st	"	LXX. "	LXXII., "	1 " 4,798
"	2nd	"	LXXIII. "	LXXIV., "	1 " 2,658
Sixth Parliament,	1st	"	LXXV. "	LXXXI., "	1 " 11,708
Seventh Parliament,	1st	"	LXXXII. 1ST PART	"	1 " 76
"	2nd	"	LXXXII. 2ND PART TO	XC	1 " 14,038
Eighth Parliament,					incomplete

2. **The Several Administrations.**—The following tabular statements shew the names of the several Governors-General, and the constitution of the Ministries which have directed the administration of the affairs of the Commonwealth since its creation :—

(a) GOVERNORS-GENERAL.

Rt. Hon. EARL OF HOPETOUN (afterwards MARQUIS OF LINLITHGOW), P.C., K.T., G.C.M.G., G.C.V.O.	Sworn 1st January, 1901; recalled 9th May, 1902.
Rt. Hon. HALLAM BARON TENNYSON, G.C.M.G. (Act. Governor-General).	Sworn 17th July, 1902.
Rt. Hon. HALLAM BARON TENNYSON, G.C.M.G. (Governor-General).	Sworn 9th January, 1903; recalled 21st January, 1904.
Rt. Hon. HENRY STAFFORD BARON NORTHCOTE, P.C., G.C.M.G., G.C.I.E., C.B.	Sworn 21st January, 1904; recalled 8th September, 1908.
Rt. Hon. WILLIAM HUMBLE EARL OF DUDLEY, P.C., G.C.M.G., G.C.V.O., etc.	Sworn 9th September, 1908; recalled 31st July, 1911.
Rt. Hon. THOMAS BARON DENMAN, P.C., G.C.M.G., K.C.V.O.	Sworn 31st July, 1911; recalled 16th May, 1914.
Rt. Hon. SIR RONALD CRAUFURD MUNRO FERGUSON, P.C., G.C.M.G.	Sworn 18th May, 1914.

(b) BARTON ADMINISTRATION, 1st January, 1901, to 23rd September, 1903.

DEPARTMENTS.	MINISTERS.
External Affairs ..	Rt. Hon. SIR EDMUND BARTON, P.C., G.C.M.G., K.C.
Attorney-General ..	Hon. ALFRED DEAKIN.
Home Affairs ..	{ Hon. SIR WILLIAM JOHN LYNE, K.C.M.G. (to 7/8/'03). Rt. Hon. SIR JOHN FORREST, P.C., G.C.M.G. (from 7/8/'03).*
Treasurer ..	Rt. Hon. SIR GEORGE TURNER, P.C., K.C.M.G.
Trade and Customs ..	{ Rt. Hon. CHARLES CAMERON KINGSTON, P.C., K.C. (resigned 24/7/'03). Hon. SIR WILLIAM JOHN LYNE, K.C.M.G. (from 7/8/'03).
Defence ..	{ Hon. SIR JAMES ROBERT DICKSON, K.C.M.G. (died 10/1/'01). Rt. Hon. SIR JOHN FORREST, P.C., G.C.M.G. (17/1/'01 to 7/8/'03).*
Postmaster-General ..	{ Hon. JAMES GEORGE DRAKE (from 7/3/'03). Rt. Hon. SIR JOHN FORREST, P.C., G.C.M.G. (to 17/1/'01).*
Vice-President Executive Council	Hon. RICHARD EDWARD O'CONNOR, K.C.
Without Portfolio ..	{ Hon. N. E. LEWIS (to 23/4/'01).† Hon. SIR PHILIP OAKLEY FYSH, K.C.M.G. (26/4/'01 to 7/8/'03).

\* Created Lord Forrest of Bunbury, 1913.

† K.C.M.G., 1902.

## (c) FIRST DEAKIN ADMINISTRATION, 23rd September, 1903, to 26th April, 1904.

DEPARTMENTS.	MINISTERS.
External Affairs .. ..	Hon. ALFRED DEAKIN.
Trade and Customs .. ..	Hon. SIR WILLIAM JOHN LYNE, K.C.M.G.
Treasurer .. ..	Rt. Hon. SIR GEORGE TURNER, P.C., K.C.M.G.
Home Affairs .. ..	Rt. Hon. SIR JOHN FORREST, P.C., G.C.M.G.*
Attorney-General .. ..	Hon. JAMES GEORGE DRAKE.
Postmaster-General .. ..	Hon. SIR PHILIP OAKLEY FYSH, K.C.M.G.
Defence .. ..	Hon. AUSTIN CHAPMAN.
Vice-President Executive Council	Hon. THOMAS PLAYFORD.

## (d) WATSON ADMINISTRATION, 26th April to 17th August, 1904.

DEPARTMENTS.	MINISTERS.
Treasurer .. ..	Hon. JOHN CHRISTIAN WATSON.
External Affairs .. ..	Hon. WILLIAM MORRIS HUGHES.†
Attorney-General .. ..	Hon. HENRY BOURNES HIGGINS, K.C.
Home Affairs .. ..	Hon. EGERTON LEE BATCHELOR.
Trade and Customs .. ..	Hon. ANDREW FISHER.‡
Defence .. ..	Hon. ANDERSON DAWSON.
Postmaster-General .. ..	Hon. HUGH MAHON.
Vice-President Executive Council	Hon. GREGOR MCGREGOR.

## (e) REID-MCLEAN ADMINISTRATION, 17th August, 1904, to 4th July, 1905.

DEPARTMENTS.	MINISTERS.
External Affairs .. ..	Rt. Hon. GEORGE HOUSTOUN REID, P.C., K.C.§
Trade and Customs .. ..	Hon. ALLAN MCLEAN.
Attorney-General .. ..	Hon. SIR JOSIAH HENRY SYMON, K.C.M.G., K.C.
Treasurer .. ..	Rt. Hon. SIR GEORGE TURNER, P.C., K.C.M.G.
Home Affairs .. ..	Hon. DUGALD THOMSON.
Defence .. ..	Hon. JAMES WHITESIDE MCCAY.
Postmaster-General .. ..	Hon. SYDNEY SMITH.
Vice-President Executive Council	Hon. JAMES GEORGE DRAKE.

## (f) SECOND DEAKIN ADMINISTRATION, 4th July, 1905, to 12th November, 1908.

DEPARTMENTS.	MINISTERS.
External Affairs .. ..	Hon. ALFRED DEAKIN.
Attorney-General .. ..	{ Hon. ISAAC ALFRED ISAACS, K.C. (to 12/10/'06). Hon. LITTLETON ERNEST GROOM (from 12/10/'06).
Trade and Customs .. ..	{ Hon. SIR WILLIAM JOHN LYNE, K.C.M.G. (to 30/7/'07). Hon. AUSTIN CHAPMAN (from 30/7/'07).
Treasurer .. ..	{ Rt. Hon. SIR JOHN FORREST, P.C., G.C.M.G. (to 30/7/'07).* Hon. SIR WILLIAM JOHN LYNE (from 30/7/'07).
Postmaster-General .. ..	{ Hon. AUSTIN CHAPMAN (to 30/7/'07). Hon. SAMUEL MAUGER (from 30/7/'07).
Defence .. ..	{ Hon. THOMAS PLAYFORD (to 24/1/'07). Hon. THOMAS THOMSON EWING (from 24/1/'07).¶
Home Affairs .. ..	{ Hon. LITTLETON ERNEST GROOM (to 12/10/'06). Hon. THOMAS THOMSON EWING (from 12/10/'06 to 24/1/'07).¶ Hon. JOHN HENRY KEATING (from 24/1/'07).
Vice-President Executive Council	{ Hon. THOMAS THOMSON EWING (to 12/10/'06).¶ Hon. JOHN HENRY KEATING (from 12/10/'06 to 20/2/'07). Hon. ROBERT WALLACE BEST (from 20/2/'07).¶
Honorary Ministers .. ..	{ Hon. J. H. KEATING (from 5/7/'05 to 12/10/'06). Hon. S. MAUGER (from 12/10/'06 to 30/7/'07). Hon. J. HUME COOK (from 28/1/'08).

\* Created Lord Forrest of Bunbury, 1918. † P.C., 1916. ‡ P.C., 1911. § K.C.M.G., 1909; G.C.M.G., 1911; G.C.B., 1916. || K.C.M.G., 1918. ¶ K.C.M.G., 1908.

## (g) FIRST FISHER ADMINISTRATION, 12th November, 1908, to 2nd June, 1909.

DEPARTMENTS.	MINISTERS.
Treasurer .. ..	Hon. ANDREW FISHER.*
Attorney-General .. ..	Hon. WILLIAM MORRIS HUGHES.†
External Affairs .. ..	Hon. EGERTON LEE BATCHELOR.
Home Affairs .. ..	Hon. HUGH MAHON.
Postmaster-General .. ..	Hon. JOSIAH THOMAS.
Defence .. ..	Hon. GEORGE FOSTER PEARCE.
Trade and Customs .. ..	Hon. FRANK GWYNNE TUDOR.
Vice-President Executive Council	Hon. GREGOR MCGREGOR.
Honorary Minister .. ..	Hon. JAMES HUTCHISON.

## (h) THIRD DEAKIN ADMINISTRATION, 2nd June, 1909, to 29th April, 1910.

DEPARTMENTS.	MINISTERS.
Prime Minister (without Portfolio)	Hon. ALFRED DEAKIN.
Defence .. ..	Hon. JOSEPH COOK.‡
Treasurer .. ..	Rt. Hon. SIR JOHN FORREST, P.C., G.C.M.G.§
Trade and Customs .. ..	Hon. SIR ROBERT WALLACE BEST, K.C.M.G.
External Affairs .. ..	Hon. LITTLETON ERNEST GROOM.
Attorney-General .. ..	Hon. PATRICK MCMAHON GLYNN.
Postmaster-General .. ..	Hon. SIR JOHN QUICK.
Home Affairs .. ..	Hon. GEORGE WARBURTON FULLER.
Vice-President Executive Council	Hon. EDWARD DAVIS MILLEN.
Honorary Minister .. ..	Colonel The Hon. JUSTIN FOX GREENLAW FOXTON, C.M.G.

## (i) SECOND FISHER ADMINISTRATION, 29th April, 1910, to 24th June, 1913.

DEPARTMENTS.	MINISTERS.
Treasurer .. ..	Hon. ANDREW FISHER.*
Attorney-General .. ..	Hon. WILLIAM MORRIS HUGHES.†
External Affairs .. ..	{ Hon. EGERTON LEE BATCHELOR (died Oct., 1911).
	{ Hon. JOSIAH THOMAS (from 14/10/11).
	{ Hon. JOSIAH THOMAS (to 14/10/11).
Postmaster-General .. ..	{ Hon. CHARLES EDWARD FRAZER (from 14/10/11).
Defence .. ..	Hon. GEORGE FOSTER PEARCE.
Trade and Customs .. ..	Hon. FRANK GWYNNE TUDOR.
Home Affairs .. ..	Hon. KING O'MALLEY.
Vice-President Executive Council	Hon. GREGOR MCGREGOR.
	Hon. EDWARD FINDLEY.
Honorary Ministers .. ..	{ Hon. CHARLES EDWARD FRAZER (to 14/10/11).
	{ Hon. ERNEST ALFRED ROBERTS (from 23/10/11).

## (j) COOK ADMINISTRATION, 24th June, 1913, to 17th September, 1914.

DEPARTMENTS.	MINISTERS.
Home Affairs .. ..	Hon. JOSEPH COOK.‡
Treasurer .. ..	Rt. Hon. SIR JOHN FORREST, P.C., G.C.M.G.§
Attorney-General .. ..	Hon. WILLIAM HILL IRVINE, K.C.
Defence .. ..	Hon. EDWARD DAVIS MILLEN.
External Affairs .. ..	Hon. PATRICK MCMAHON GLYNN, K.C.
Trade and Customs .. ..	Hon. LITTLETON ERNEST GROOM.
Postmaster-General .. ..	Hon. AGAR WYNNE.
Vice-President Executive Council	Hon. JAMES HIERS MCCOLL.
	{ Hon. JOHN SINGLETON CLEMONS.
Honorary Ministers .. ..	{ Hon. WILLIAM HENRY KELLY.

\* P.C., 1911.    † P.C., 1916.    ‡ P.C., 1914; G.C.M.G., 1918.    § Created Lord Forrest of Bunbury, 1918.    || K.C.M.G., 1914.

## (k) THIRD FISHER ADMINISTRATION, 17th September, 1914, to 27th October, 1915.

DEPARTMENTS.	MINISTERS.
Treasurer .. ..	Rt. Hon. ANDREW FISHER, P.C.
Attorney-General .. ..	Hon. WILLIAM MORRIS HUGHES.*
Defence .. ..	Hon. GEORGE FOSTER PEARCE.
Trade and Customs .. ..	Hon. FRANK GWYNNE TUDOR.
External Affairs .. ..	{ Hon. JOHN ANDREW ARTHUR (died December, 1914).
	{ Hon. HUGH MAHON (from 14/12/14).
Home Affairs .. ..	Hon. WILLIAM OLIVER ARCHIBALD.
Postmaster-General .. ..	Hon. WILLIAM GUTHRIE SPENCE.
Minister for the Navy .. ..	Hon. JENS AUGUST JENSEN (from 12/7/15).
Vice-President Executive Council	Hon. ALBERT GARDINER.
Assistant Ministers .. ..	{ Hon. HUGH MAHON (to 14/12/14).
	{ Hon. JENS AUGUST JENSEN (to 12/7/15).
	{ Hon. EDWARD JOHN RUSSELL.

## (l) FIRST HUGHES ADMINISTRATION from 27th October, 1915, to 14th Nov., 1916.

DEPARTMENTS.	MINISTERS.
Prime Minister and Attorney-General .. ..	Hon. WILLIAM MORRIS HUGHES.*
Defence .. ..	Hon. GEORGE FOSTER PEARCE.
Trade and Customs .. ..	{ Hon. FRANK GWYNNE TUDOR (to 14/9/16).
	{ Hon. WILLIAM MORRIS HUGHES (from 29/9/16).
Treasurer .. ..	Hon. WILLIAM GUY HIGGS.†
Minister for the Navy .. ..	Hon. JENS AUGUST JENSEN.
Home Affairs .. ..	Hon. KING O'MALLEY.
External Affairs .. ..	Hon. HUGH MAHON.
Postmaster-General .. ..	Hon. WILLIAM WEBSTER.
Vice-President Executive Council	Hon. ALBERT GARDINER.†
Assistant Minister .. ..	Hon. EDWARD JOHN RUSSELL.†

## (m) SECOND HUGHES ADMINISTRATION from 14th Nov., 1916, to 17th Feb., 1917.

DEPARTMENTS.	MINISTERS.
Prime Minister and Attorney-General .. ..	Rt. Hon. WILLIAM MORRIS HUGHES, P.C.
Minister for Defence .. ..	Hon. GEORGE FOSTER PEARCE.
Minister for the Navy .. ..	Hon. JENS AUGUST JENSEN.
Postmaster-General .. ..	Hon. WILLIAM WEBSTER.
Treasurer .. ..	Hon. ALEXANDER POYNTON.
Minister for Trade and Customs ..	Hon. WILLIAM OLIVER ARCHIBALD.
Minister for Home Affairs .. ..	Hon. FREDERICK WILLIAM BAMFORD.
Minister for Works .. ..	Hon. PATRICK JOSEPH LYNCH.
Vice-President Executive Council	Hon. WILLIAM GUTHRIE SPENCE.
Assistant Ministers .. ..	{ Hon. EDWARD JOHN RUSSELL.
	{ Hon. WILLIAM HENRY LAIRD SMITH.

## (n) AUSTRALIAN NATIONAL WAR GOVERNMENT from 17th February, 1917, to 8th January, 1918.

DEPARTMENTS.	MINISTERS.
Prime Minister and Attorney-General .. ..	Rt. Hon. WILLIAM MORRIS HUGHES, P.C.
Minister for the Navy .. ..	Rt. Hon. JOSEPH COOK, P.C.‡
Treasurer .. ..	Rt. Hon. SIR JOHN FORREST, P.C., G.C.M.G.§
Minister for Defence .. ..	Hon. GEORGE FOSTER PEARCE.
Vice-President Executive Council	{ Hon. EDWARD DAVIS MILLEN.
	{ Hon. LITTLETON ERNEST GROOM (from 16/11/17).
Minister for Repatriation .. ..	Hon. EDWARD DAVIS MILLEN (from 28/9/17).
Minister for Works and Railways	Hon. WILLIAM ALEXANDER WATT.
Minister for Home and Territories	Hon. PATRICK McMAHON GLYNN, K.C.
Minister for Trade and Customs ..	Hon. JENS AUGUST JENSEN.
Postmaster-General .. ..	Hon. WILLIAM WEBSTER.
Honorary Ministers .. ..	{ Hon. LITTLETON ERNEST GROOM.
	{ Hon. EDWARD JOHN RUSSELL.

\* P.C., 1916.  
 Bunbury, 1918.

† Resigned 27/10/16.  
 || P.C., 1920.

‡ G.C.M.G., 1918.

§ Created Lord Forrest of

## (c) AUSTRALIAN NATIONAL WAR GOVERNMENT from 10th January, 1918.

DEPARTMENTS.	MINISTERS.
Prime Minister and Attorney-General .. ..	Rt. Hon. WILLIAM MORRIS HUGHES, P.C., K.C.
Minister for the Navy .. ..	Rt. Hon. JOSEPH COOK, P.C.*
Treasurer .. ..	{ Rt. Hon. LORD FORREST, P.C., G.C.M.G. (to 27/3/18; died 4th September, 1918). Hon. WILLIAM ALEXANDER WATT† (from 27/3/18; resigned 15/6/20).
Minister for Defence .. ..	Hon. GEORGE FOSTER PEARCE.
Minister for Repatriation .. ..	Hon. EDWARD DAVIS MILLEN.
Minister for Works and Railways .. ..	{ Hon. WILLIAM ALEXANDER WATT.† Hon. LITTLETON ERNEST GROOM (from 27/3/18).
Minister for Home and Territories .. ..	{ Hon. PATRICK McMAHON GLYNN, K.C. (to 3/2/20). Hon. ALEXANDER POYNTON (from 4/2/20).
Minister for Trade and Customs .. ..	{ Hon. JENS AUGUST JENSEN (to 13/12/18). Hon. WILLIAM ALEXANDER WATT† (from 13/12/18). Hon. WALTER MASSY GREENE (from 17/1/19).
Postmaster-General .. ..	{ Hon. WILLIAM WEBSTER (to 3/2/20). Hon. GEORGE HENRY WISE (from 4/2/20).
Vice-President Executive Council .. ..	{ Hon. LITTLETON ERNEST GROOM. Hon. EDWARD JOHN RUSSELL (from 27/3/18). Hon. EDWARD JOHN RUSSELL (to 27/3/18).
Honorary Ministers .. ..	{ Hon. ALEXANDER POYNTON (from 26/3/18 to 4/2/18). Hon. GEORGE HENRY WISE (from 26/3/18 to 4/2/18). Hon. WALTER MASSY GREENE (from 26/3/18 to 17/1/19). Hon. RICHARD BEAUMONT ORCHARD (from 26/3/18 to 31/1/19). Hon. SIR GRANVILLE DE RYRIE, K.C.M.G., C.B., V.D. (from 4/2/20). Hon. WILLIAM HENRY LAIRD SMITH (from 4/2/20).

\* G.C.M.G., 1918.

† P.C., 1920.

A further list of the Ministers of State for the Commonwealth, arranged according to the respective offices occupied, is given in the section of this book dealing with the subject of General Government (see Section XXV.).

3. **The Course of Legislation.**—The actual legislation by the Commonwealth Parliament up to the end of the 1919 session is indicated in alphabetical order in "Vol. XVII. of the Acts of the Parliament of the Commonwealth of Australia, passed in the session of 1919, with Tables, Appendix and Indexes." A "Chronological Table of Acts passed from 1901 to 1919, shewing how they are affected by subsequent legislation or lapse of time" is also given, and further "A Table of Commonwealth Legislation," for the same period, "in relation to the several provisions of the Constitution," is furnished. Reference may be made to these for complete information. The nature of Commonwealth legislation, up to December, 1919, and its relation to the several provisions of the Constitution, are set forth in the following tabular statement:—

**ANALYTIC TABLE OF COMMONWEALTH LEGISLATION  
FROM 1901 to DECEMBER, 1919, IN RELATION TO THE SEVERAL PROVISIONS  
OF THE CONSTITUTION.†**

Section of Constitution.	Short Title of Commonwealth Act.*
	<b>AMENDMENT OF THE CONSTITUTION.</b>
	Constitution Alteration (Senate Elections) 1906. Constitution Alteration (State Debts) 1909.
	<b>PARLIAMENTARY AND ELECTORAL LAW.</b>
8—30	<b>PARLIAMENTARY FRANCHISE—</b> <i>Commonwealth Franchise Act 1902.*</i> Commonwealth Electoral (War-time) Act 1917–1919. Commonwealth Electoral Act 1918–1919.

\* Acts whose short titles are printed in italics with a \* have been repealed or have expired.

† This table has been prepared by Sir Robert Garran, Solicitor-General to the Commonwealth.



ANALYTIC TABLE OF COMMONWEALTH LEGISLATION, ETC.—*continued.*

Section of Constitution.	Short Title of Commonwealth Act.*
	PARLIAMENTARY AND ELECTORAL LAW— <i>continued.</i>
9—34	ELECTIONS— Commonwealth Electoral Act 1902-1911.† Senate Elections Act 1903. Commonwealth Electoral (War-time) Act 1917-1919. Commonwealth Electoral Act 1918-1919.
24	DETERMINATION OF NUMBER OF MEMBERS OF HOUSE OF REPRESENTATIVES— Representation Act 1905. Representation Act 1916.
47	DISPUTED ELECTIONS AND QUALIFICATIONS— Commonwealth Electoral Act 1902-1911, Part XVI.† <i>Disputed Elections and Qualifications Act 1907.*</i> Commonwealth Electoral Act 1918-1919, ss. 183-201.
48	ALLOWANCES TO MEMBERS— <i>Parliamentary Allowances Act 1902.*</i> Parliamentary Allowances Act 1907.
49	PRIVILEGES OF PARLIAMENT— Parliamentary Papers Act 1908.
	GENERAL LEGISLATION.
51—(i)	TRADE AND COMMERCE—EXTERNAL AND INTERSTATE— Sea Carriage of Goods Act 1904 [ <i>Bills of Lading</i> ]. Secret Commissions Act 1905. Commerce (Trade Descriptions) Act 1905 [ <i>Merchandise Marks</i> ]. Australian Industries Preservation Act 1906-1910 [ <i>Trusts and Dumping</i> ]. Spirits Act 1906-1918. <i>Seamen's Compensation Act 1909.*</i> Customs (Inter-State Accounts) Act 1910. Northern Territory Acceptance Act 1910-1919 (s. 13). Seamen's Compensation Act 1911. Navigation Act 1912-1919. Norfolk Island Act 1913 (s. 15). Trading with the Enemy Act 1914-1916. Meat Export Trade Commission Act 1914. Enemy Contracts Annulment Act 1915. Freight Arrangements Act 1915-1917. River Murray Waters Act 1915. Sugar Purchase Act 1915-1917.
(ii)	TAXATION— <i>Machinery Acts</i> — Customs Act 1901-1916. Beer Excise Act 1901-1918. Distillation Act 1901-1918. Excise Act 1901-1918. Spirits Act 1906-1918. Excise Procedure Act 1907. Australian Notes Act 1910-1914 (s. 12). Land Tax Assessment Act 1910-1916. Estate Duty Assessment Act 1914-1916. Income Tax Assessment Act 1915-1918. Entertainments Tax Assessment Act 1916. War-time Profits Tax Assessment Act 1917-1918.

\* Acts whose short titles are printed in italics with a \* have been repealed or have expired.

† With the exception of s. 210 of the *Commonwealth Electoral Act 1902*, and s. 18 of the *Commonwealth Electoral Act 1905*, the *Commonwealth Electoral Act 1902-1911* has been repealed by the *Commonwealth Electoral Act 1918*. See *Gazette*, 25th November, 1918, p. 2257, and *Gazette*, 21st March, 1919, p. 401.

ANALYTIC TABLE OF COMMONWEALTH LEGISLATION, ETC.—*continued.*

Section of Constitution.	Short Title of Commonwealth Act.*
	GENERAL LEGISLATION— <i>continued.</i>
51 (ii)	<p>TAXATION—<i>continued.</i>  <i>Taxing Acts—</i>  Customs Tariff 1902.  <i>Customs Tariff 1906 [Agricultural Machinery].*</i>  Customs Tariff (South African Preference) 1906; <i>amended by Customs Tariff 1908 (s. 9).</i>  Customs Tariff 1908; <i>amended by Customs Tariff Amendment 1908, and Customs Tariff 1910, and Customs Tariff 1911.</i>  Excise Tariff 1902; <i>amended by Sugar Rebate Abolition Act 1903, Excise Tariff 1905,* Excise Tariff (Amendment) 1906,* Excise Tariff 1908; and Excise (Sugar) Act 1910.*</i>  Excise Tariff 1906 [Agricultural Machinery]; 1906 [Spirits].  Excise Tariff 1908; <i>amended by Excise Tariff (Starch) 1908.</i>  Bank Notes Tax Act 1910.  Land Tax Act 1910–1918.  Sugar Excise Repeal Act 1912.  <i>Excise Tariff 1913.*</i>  Estate Duty Act 1914.  Income Tax Acts 1915.  Income Tax Act 1916.  Entertainments Tax Act 1916–1919.  Customs Tariff Validation Act 1917.  Excise Tariff Validation Act 1917.  War-time Profits Tax Act 1917.  Income Tax Act 1917.  Income Tax Act 1918.  Income Tax Act 1919.  Land Tax Act 1919.  Customs Tariff Validation Act 1919.  Excise Tariff Validation Act 1919.</p>
(iii)	<p>BOUNTIES ON PRODUCTION OR EXPORT—  <i>Sugar Bounty Acts 1903,* 1905,* 1910,* 1912.*</i>  Bounties Act 1907–1912.  <i>Manufactures Encouragement Act 1908–1914.*</i>  <i>Shale Oil Bounties Act 1910.*</i>  Sugar Bounty Abolition Act 1912.  Wood Pulp and Rock Phosphate Bounties Act 1912–1917.  <i>Sugar Bounty Act 1913.*</i>  <i>Iron Bounty Act 1914–1915.*</i>  Shale Oil Bounty Act 1917.  Apple Bounty Act 1918.  Iron and Steel Bounty Act 1918.</p>
(iv)	<p>BORROWING MONEY ON THE PUBLIC CREDIT OF THE COMMONWEALTH—  Commonwealth Inscribed Stock Act 1911–1918. Loan Act 1911–1914, 1912–1914, 1913–1914, 1914, 1915, 1918, 1919.  <i>Naval Loan Act 1909.*</i>  Naval Loan Repeal Act 1910.  Treasury Bills Act 1914–1915.  War Loan (United Kingdom) Act 1914–1917.  War Loan Act (No. 1) 1915.  War Loan (United Kingdom) Act 1915–1917.  War Loan Act (No. 3) 1915.  Sugar Purchase Act 1915–1917.  Freight Arrangements Act 1915–1917.  States Loan Act 1916.  War Loan Act (No. 1) 1916.  War Loan Act (United Kingdom, No. 2) 1916.  States Loan Act 1917.  War Loan Act 1917.  Loans Sinking Fund Act 1918.  War Loan Act 1918.  War Loan Securities Repurchase Act 1918.  Tasmanian Loan Redemption Act 1919.  Loans Securities Act 1919.</p>

\* Acts whose short titles are printed in italics with a \* have been repealed or have expired.

ANALYTIC TABLE OF COMMONWEALTH LEGISLATION, ETC.—*continued.*

Section of Constitution.	Short Title of Commonwealth Act.*
	- GENERAL LEGISLATION— <i>continued.</i>
51 (v)	POSTAL, TELEGRAPHIC, AND TELEPHONIC SERVICES— Post and Telegraph Act 1901–1916. Post and Telegraph Rates Act 1902–1918. Wireless Telegraphy Act 1905–1919. Tasmanian Cable Rates Act 1906. Telegraph Act 1909. Postal Rates Act 1910. Purchase Telephone Lines Acquisition Act 1911. Pacific Cable Act 1911.
(vi)	NAVAL AND MILITARY DEFENCE— <i>General—</i> Naval Agreement Act 1903–1912. <i>Naval Loan Act 1909.*</i> Naval Loan Repeal Act 1910. Defence Act 1903–1918. Telegraph Act 1909. Naval Defence Act 1910–1918. Defence Lands Purchase Act 1913. Control of Naval Waters Act 1918. Deceased Soldiers' Estates Act 1918–1919. <i>War Legislation—</i> Patents, Trade Marks and Designs Act 1914–1915. Trading with the Enemy Act 1914–1916. War Precautions Act 1914–1918. War Census Act 1915–1916. Enemy Contracts Annulment Act 1915. War Pensions Act 1914–1916. <i>Australian Soldiers' Repatriation Fund Act 1916.*</i> Military Service Referendum Act 1916. <i>Daylight Saving Act 1916.*</i> Patents Act (Partial Suspension) Act 1916. Unlawful Associations Act 1916–1917. Wheat Storage Act 1917. Daylight Saving Repeal Act 1917. Australian Soldiers' Repatriation Act 1917–1918. Defence (Civil Employment) Act 1918. War Service Homes Act 1918–1919. Commercial Activities Act 1919. Moratorium Act 1919. Treaty of Peace Act 1919. Termination of the Present War (Definition) Act 1919. Land, Mining, Shares and Shipping Act 1919. Legal Proceedings Control Act 1919.
(vii)	LIGHTHOUSES, LIGHTSHIPS, BEACONS AND BUOYS— Lighthouses Act 1911–1919.
(viii)	ASTRONOMICAL AND METEOROLOGICAL OBSERVATIONS— Meteorology Act 1906.
(ix)	QUARANTINE— Quarantine Act 1908–1915.
(xi)	CENSUS AND STATISTICS— Census and Statistics Act 1905. War Census Act 1915–1916.
(xii)	CURRENCY, COINAGE, AND LEGAL TENDER— Coinage Act 1909. Australian Notes Act 1910–1914.
(xiii)	BANKING, OTHER THAN STATE BANKING, ETC.— Commonwealth Bank Act 1911–1914.
(xiv)	INSURANCE— Life Assurance Companies Act 1905. Marine Insurance Act 1909.
(xvi)	BILLS OF EXCHANGE AND PROMISSORY NOTES— Bills of Exchange Act 1909–1912.

\* Acts whose short titles are printed in italics with a \* have been repealed or have expired.

ANALYTIC TABLE OF COMMONWEALTH LEGISLATION, ETC.—*continued.*

Section of Constitution.	Short Title of Commonwealth Act.*
	GENERAL LEGISLATION— <i>continued.</i>
51 (xviii)	COPYRIGHT, PATENTS, DESIGNS, AND TRADE MARKS— Customs Act 1901-1916 (s. 52 (a), 57). Patents Act 1903-1909. Trade Marks Act 1905-1919. <i>Copyright Act 1905.*</i> Designs Act 1906-1912. Patents, Trade Marks and Designs Act 1910. Copyright Act 1912. Patents, Trade Marks and Designs Act 1914-1915. Patents Act (Partial Suspension) Act 1916.
(xix)	NATURALIZATION AND ALIENS— Naturalization Act 1903-1917.
(xxii)	MARRIAGE AND DIVORCE— Matrimonial Causes (Expeditionary Forces) Act 1919.
(xxiii)	INVALID AND OLD-AGE PENSIONS— Invalid and Old-age Pensions Act 1908-1919.
(xxiv)	SERVICE AND EXECUTION THROUGHOUT COMMONWEALTH OF PROCESS AND JUDGMENTS OF STATE COURTS— <i>Service and Execution of Process Act 1905.*</i> Service and Execution of Process Act 1901-1918.
(xxv)	RECOGNITION OF STATE LAWS, RECORDS, ETC.— State Laws and Records Recognition Act 1901.
(xxvi)	PEOPLE OF ANY RACE, OTHER THAN ABORIGINAL—SPECIAL LAWS— Pacific Island Labourers Act 1901-1906. <i>Commonwealth Franchise Act 1902* (s. 4).</i> Naturalization Act 1903-1917 (s. 5). Commonwealth Electoral Act 1918-1919 (s. 39).
(xxvii)	IMMIGRATION AND EMIGRATION— Immigration Act 1901-1912. Pacific Island Labourers Act 1901-1906. Contract Immigrants Act 1905. Emigration Act 1910.
(xxviii)	INFUX OF CRIMINALS— Immigration Act 1901-1912 (s. 3 (ga), (gb) ).
(xxix)	EXTERNAL AFFAIRS— Extradition Act 1903. High Commissioner Act 1909.
(xxx)	RELATIONS WITH PACIFIC ISLANDS— Pacific Island Labourers Act 1901-1906. Nauru Island Agreement Act 1919.
(xxxi)	ACQUISITION OF PROPERTY FOR PUBLIC PURPOSES— <i>Property for Public Purposes Acquisition Act 1901.*</i> <i>Seat of Government Act 1904.*</i> Lands Acquisition Act 1906-1916. Lands Acquisition Act 1912. Seat of Government Act 1908. Seat of Government Acceptance Act 1909. Seat of Government (Administration) Act 1910 (s. 10). Northern Territory (Administration) Act 1910. Defence Lands Purchase Act 1913. Purchase Telephone Lines Acquisition Act 1911. Kalgoorlie to Port Augusta Railway Lands Act 1918. Lands Acquisition (Defence) Act 1918. War Service Homes Act 1918-1919 (s. 16).
(xxxii)	CONTROL OF RAILWAYS FOR DEFENCE PURPOSES— Defence Act 1903-1918 (ss. 64-66, 80, 124). War Precautions Act 1914-1918 (s. 4 (1) (c) ).
(xxxiv)	RAILWAY CONSTRUCTION AND EXTENSION IN ANY STATE WITH THE CONSENT OF THAT STATE— Kalgoorlie to Port Augusta Railway Act 1911-1912. Commonwealth Railways Act 1917.

\* Acts whose short titles are printed in italics with a \* have been repealed or have expired.

ANALYTIC TABLE OF COMMONWEALTH LEGISLATION, ETC.—*continued.*

Section of Constitution.	Short Title of Commonwealth Act.*
	GENERAL LEGISLATION— <i>continued.</i>
51 (xxxv)	CONCILIATION AND ARBITRATION FOR THE PREVENTION AND SETTLEMENT OF INDUSTRIAL DISPUTES EXTENDING BEYOND THE LIMITS OF ANY ONE STATE—
(xxxix)	Commonwealth Conciliation and Arbitration Act 1904-1918. MATTERS INCIDENTAL TO THE EXECUTION OF POWERS—
	Acts Interpretation Act 1901-1918. <i>Punishment of Offences Act 1901.*</i> Acts Interpretation Act 1904-1916. Amendments Incorporation Act 1905-1918. Rules Publication Act 1903-1916. Commonwealth Public Service Act 1902-1918. Jury Exemption Act 1905. Royal Commissions Act 1902-1912. Evidence Act 1905. Commonwealth Salaries Act 1907. Excise Procedure Act 1907. Statutory Declarations Act 1911. Arbitration (Public Service) Act 1911. Commonwealth Inscribed Stock Act 1911-1918. Maternity Allowance Act 1912. Commonwealth Workmen's Compensation Act 1912. Committee of Public Accounts Act 1913. Commonwealth Public Works Committee Act 1913-1914. Meat Export Trade Commission Act 1914. Crimes Act 1914-1915. Commonwealth Public Service (Acting Commissioner) Act 1916. Solicitor-General Act 1916. Commonwealth Public Works Committee Act 1917. Committee of Public Accounts Act 1917. Australian Soldiers' Repatriation Act 1917-1918. Sugar Industry Commission Act 1919.
	EXECUTIVE GOVERNMENT.
65	NUMBER OF MINISTERS— <i>Ministers of State Act 1915.*</i> Ministers of State Act 1917.
67	APPOINTMENT AND REMOVAL OF OFFICERS— Commonwealth Public Service Act 1902-1918. Papua Act 1905 (s. 19). Defence Act 1903-1918 (s. 63). High Commissioner Act 1909 (ss. 8, 9). Northern Territory Acceptance Act 1910-1919 (ss. 11, 12). Norfolk Island Act 1913 (ss. 7, 9). Commonwealth Public Service (Acting Commissioner) Act 1916. Solicitor-General Act 1916. Commonwealth Railways Act 1917 (ss. 5-15, 46-54). Defence (Civil Employment) Act 1918. War Service Homes Act 1918-1919, ss. 5-15.
	THE JUDICATURE.
71-80	CONSTITUTION AND PROCEDURE OF THE HIGH COURT— Judiciary Act 1903-1915. High Court Procedure Act 1903-1915.
73	APPELLATE JURISDICTION OF THE HIGH COURT— Judiciary Act 1903-1915. Papua Act 1905 (s. 43). Inter-State Commission Act 1912 (s. 42). Land Tax Assessment Act 1910-1916 (s. 46). Norfolk Island Act 1913 (s. 11). Estate Duty Assessment Act 1914-1916 (s. 28). Income Tax Assessment Act 1915-1918 (s. 37). War-time Profits Tax Assessment Act 1917-1918 (s. 29).

\* Acts whose short titles are printed in italics with a \* have been repealed or have expired.

ANALYTIC TABLE OF COMMONWEALTH LEGISLATION, ETC.—*continued.*

Section of Constitution.	Short Title of Commonwealth Act.*
<b>THE JUDICATURE—<i>continued.</i></b>	
76 (i)	ORIGINAL JURISDICTION OF HIGH COURT— (1) <i>In matters arising under the Constitution or involving its interpretation—</i>
	Judiciary Act 1903–1915 (ss. 23, 30).
(ii)	(2) <i>In matters arising under Laws made by the Parliament—</i>
	Customs Act 1901–1916 (ss. 221, 227, 245).
	Excise Act 1901–1918 (ss. 109, 115, 134).
	Post and Telegraph Act 1901–1916 (ss. 29, 43).
	<i>Property for Public Purposes Acquisition Act 1901*</i> (ss. 12–17, 25, 52, 55 (b), 58).
	Commonwealth Electoral Act 1902–1911† (ss. 193, 206AA).
	Judiciary Act 1903–1915.
	Defence Act 1903–1918 (s. 91).
	Patents Act 1903–1909 (ss. 47, 58, 67, 75–77, 84–87A, 111).
	Commonwealth Conciliation and Arbitration Act 1904–1918 (s. 31).
	Trade Marks Act 1905–1919 (ss. 34, 35, 44, 45, 70–72, 95).
	<i>Copyright Act 1905*</i> (s. 73 (2)).
	Copyright Act 1912 (s. 37 (2)).
	Australian Industries Preservation Act 1906–1910 (ss. 10, 11, 13, 21, 22, 26).
	Referendum (Constitution Alteration) Act 1906–1919 (ss. 27, 31).
	Lands Acquisition Act 1906–1916 (ss. 10, 11, 24, 36–39, 45, 46, 50, 54, 56, 59).
	<i>Disputed Elections and Qualifications Act 1907*</i> (ss. 2, 6).
	Navigation Act 1912–1919 (ss. 383, 385).
	Trading with the Enemy Act 1914–1916 (ss. 9c, 9p).
	Commonwealth Electoral Act 1918–1919 (ss. 183, 202).
(iii)	(3) <i>In matters of Admiralty and Maritime Jurisdiction—</i>
	Judiciary Act 1903–1915 (ss. 30, 30A).
77 (ii)	EXCLUDING JURISDICTION OF STATE COURTS—
	Judiciary Act 1903–1915 (ss. 38, 38A, 39, 57, 59).
(iii)	INVESTING STATE COURTS WITH FEDERAL JURISDICTION—
	Customs Act 1901–1916 (ss. 221, 227, 245).
	Excise Act 1901–1918 (ss. 109, 115, 134).
	Post and Telegraph Act 1901–1916 (ss. 29, 43).
	<i>Punishment of Offences Act 1901.*</i>
	Commonwealth Electoral Act 1902–1911† (s. 193).
	<i>Claims against the Commonwealth Act 1902.*</i>
	Defence Act 1903–1918 (s. 91).
	Judiciary Act 1903–1915 (ss. 17, 39, 68).
	Patents Act 1903–1909 (ss. 30, 47, 58, 67, 75–77, 84–87A, 111).
	Commonwealth Conciliation and Arbitration Act 1904–1918 (ss. 44–46, 48).
	Trade Marks Act 1905–1919 (ss. 34, 35, 44, 45).
	<i>Copyright Act 1905*</i> (s. 60, 73).
	Designs Act 1906–1912 (s. 25, 39).
	Copyright Act 1912 (ss. 14–17).
	Land Tax Assessment Act 1910–1916 (s. 44).
	Navigation Act 1912–1919 (ss. 91, 92, 318–20, 330–3, 335, 395).
	Estate Duty Assessment Act 1914–1916 (s. 24).
	Income Tax Assessment Act 1915–1918 (s. 37).
	War-time Profits Tax Assessment Act 1917–1918 (s. 28).
78	RIGHT TO PROCEED AGAINST COMMONWEALTH OR STATE—
	Judiciary Act 1903–1915 (ss. 56–67).

\* Acts whose short titles are printed in italics with a \* have been repealed or have expired.

† See footnote † at p. 38 *supra*.

ANALYTIC TABLE OF COMMONWEALTH LEGISLATION, ETC.—*continued.*

Section of Constitution.	Short Title of Commonwealth Act.*
FINANCE.	
81	APPROPRIATION OF MONEYS— Appropriation and Supply Acts 1901–1914. Audit Act 1901–1917 (ss. 36–37, 62a).
83	PAYMENT OF MONEYS— Audit Act 1901–1917 (ss. 31–37, 62a).
93	CREDITING OF REVENUE AND DEBITING OF EXPENDITURE— Surplus Revenue Acts 1908, 1909, 1910.
94	DISTRIBUTION OF SURPLUS REVENUE— Surplus Revenue Acts 1908, 1909, 1910.
96	ASSISTANCE TO STATES— Tasmania Grant Act 1912. Tasmania Grant Act 1913.
97	AUDIT OF PUBLIC ACCOUNTS— Audit Act 1901–1917.
98	NAVIGATION AND SHIPPING— Sea-Carriage of Goods Act 1904. Navigation Act 1912–1919. River Murray Waters Act 1915.
100	USE OF WATERS— River Murray Waters Act 1915.
101–104	INTER-STATE COMMISSION— Inter-State Commission Act 1912.
THE STATES.	
118	RECOGNITION OF STATE LAWS, RECORDS, ETC.— State Laws and Records Recognition Act 1901.
119	PROTECTION OF STATES FROM INVASION AND VIOLENCE— Defence Act 1903–1918 (s. 51).
TERRITORIES.	
122	GOVERNMENT OF TERRITORIES— Papua Act 1905. Wireless Telegraphy Act 1905–1919. Seat of Government Acceptance Act 1909. Patents Act 1903–1909 (s. 4a). Northern Territory Acceptance Act 1910–1919. Seat of Government (Administration) Act 1910. Northern Territory (Administration) Act 1910. Pine Creek to Katherine River Railway Survey Act 1912. Pine Creek to Katherine River Railway Act 1913. Norfolk Island Act 1913. Jervis Bay Territory Acceptance Act 1915.
MISCELLANEOUS.	
125	SEAT OF GOVERNMENT— <i>Seat of Government Act 1904.*</i> Seat of Government Act 1908. Seat of Government Acceptance Act 1909. Seat of Government (Administration) Act 1910.
128	ALTERATION OF CONSTITUTION— Referendum (Constitution Alteration) Act 1906–1919. Constitution Alteration (Senate Elections) Act 1906. Constitution Alteration (State Debts) Act 1909. <i>Compulsory Voting Act 1915.*</i>

\* Acts whose short titles are printed in italics with a \* have been repealed or have expired.

## SECTION III.

## PHYSIOGRAPHY.

## § 1. General Description of Australia.

1. **Geographical Position.**—The Australian Commonwealth, which includes the island continent of Australia proper and the island of Tasmania, is situated in the Southern Hemisphere, and comprises in all an area of about 2,974,581 square miles, the mainland alone containing about 2,948,366 square miles. Bounded on the west and east by the Indian and Pacific Oceans respectively, it lies between longitudes 113° 9' E. and 153° 39' E., while its northern and southern limits are the parallels of latitude 10° 41' S. and 39° 8' S., or, including Tasmania, 43° 39' S. On its north are the Timor and Arafura Seas and Torres Strait, on its south the Southern Ocean and Bass Strait.<sup>1</sup>

*Tropical and Temperate Regions.* Of the total area of Australia the lesser portion lies within the tropics. Assuming, as is usual, that the latitude of the Tropic of Capricorn is 23° 30' S.,<sup>2</sup> the areas within the tropical and temperate zones are approximately as follows:—

## AREAS OF TROPICAL AND TEMPERATE REGIONS

## OF STATES AND TERRITORY WITHIN TROPICS.

Areas.	Queensland.	Western Australia.	Northern Territory.	Total.
	Sq. miles.	Sq. miles.	Sq. miles.	Sq. miles.
Within Tropical Zone .. ..	359,000	364,000	426,320	1,149,320
Within Temperate Zone .. ..	311,500	611,920	97,300	1,020,720
Ratio of Tropical part to whole State ..	0.535	0.373	0.814	0.530
Ratio of Temperate part to whole State	0.465	0.627	0.186	0.470

Thus the tropical part is roughly about one-half (0.530) of the three territories mentioned above, or about five-thirteenths of the whole Commonwealth (0.386). See hereafter Meteorology—page 53.

2. **Area of Australia compared with that of other Countries.**—That the area of Australia is greater than that of the United States of America, that it is four-fifths of that of Canada, that it is nearly one-fourth of the area of the whole of the British Empire, that it is more than three-fourths of the whole area of Europe, that it is more than 25 times as large as any one of the following, viz., the United Kingdom, Hungary, Italy, the Transvaal, and Ecuador, are facts which are not always adequately realised. It is this great size, taken together with the fact of the limited population, that gives to the problems of Australian development their unique character, and its clear comprehension is essential in any attempt to understand those problems.

The relative magnitudes may be appreciated by a reference to the following table, which shows how large Australia is compared with the countries referred to, or *vice versa*. Thus, to take line 1, we see that Europe is about  $1\frac{3}{10}$  times (1.29828) as large as Australia, or that Australia is about three-quarters (more accurately 0.77) of the area of Europe.

1. The extreme points are "Steep Point" on the west, "Cape Byron" on the east, "Cape York" on the north, "Wilson's Promontory" on the south, or, if Tasmania be included, "South East Cape." The limits, according to the 1903-4 edition of "A Statistical Account of Australia and New Zealand," p. 2, and, according to Volume XXV. of the Encyclopedia Britannica, tenth edition, p. 787, are respectively 113° 5' E., 153° 16' E., 10° 39' S., and 39° 11½' S., but these figures are obviously defective. A similar inaccuracy appears in the XI. edition of the Encyclopedia.

2. Its correct value for 1920 is 23° 26' 58.89", and it decreases about 0.47" per annum.



## SIZE OF AUSTRALIA IN COMPARISON WITH THAT OF OTHER COUNTRIES.

Commonwealth of Australia .. .. 2,974,581 square miles.			
Country.	Area.	Australian Commonwealth in comparison with—	In comparison with Australian C'wealth.
	Sq. miles.		
<b>Continents—</b>			
Europe .. .. .	3,861,992	0.77	1.29833
Asia .. .. .	16,742,231	0.18	5.62843
Africa .. .. .	12,313,717	0.24	4.13965
North and Central America and West Indies..	8,547,598	0.35	2.87355
South America .. .. .	7,355,087	0.40	2.47265
Australasia and Polynesia .. .. .	3,457,472	0.86	1.16234
Total, exclusive of Arctic and Antarctic Conts.	52,278,097	0.06	17.57495
<b>Europe—</b>			
Russia (inclusive of Poland, Ciscaucasia & Finland) .. .. .	2,122,998	1.40	0.71371
Austria-Hungary (inclusive of Bosnia & Herzegovina) .. .. .	261,259	11.39	0.08783
Germany .. .. .	208,780	14.25	0.07019
France .. .. .	207,054	14.37	0.06961
Spain .. .. .	194,778	15.27	0.06548
Sweden .. .. .	173,035	17.19	0.05817
Norway .. .. .	124,643	23.86	0.04190
United Kingdom .. .. .	121,633	24.46	0.04089
Italy .. .. .	110,632	26.89	0.03719
Denmark (inclusive of Iceland) .. .. .	55,291	53.80	0.01859
Rumania .. .. .	53,489	55.61	0.01798
Bulgaria .. .. .	47,750	62.29	0.01605
Greece .. .. .	41,933	70.94	0.01410
Portugal .. .. .	35,490	83.81	0.01193
Serbia .. .. .	33,891	87.77	0.01139
Switzerland .. .. .	15,976	186.19	0.00537
Netherlands .. .. .	12,582	236.42	0.00423
Albania .. .. .	11,500	258.66	0.00387
Belgium .. .. .	11,373	261.55	0.00382
Turkey .. .. .	10,882	273.35	0.00366
Montenegro .. .. .	5,603	530.89	0.00188
Luxemburg .. .. .	998	2980.54	0.00034
Andorra .. .. .	191	15573.72	0.00006
Malta .. .. .	118	25208.31	0.00004
Liechtenstein .. .. .	65	45762.78	0.00002
San Marino .. .. .	38	78278.45	0.00001
Monaco .. .. .	8	371822.63	..
Gibraltar .. .. .	2	1487290.50	..
Total, Europe .. .. .	3,861,992	0.77	1.29833
<b>Asia—</b>			
Russia (inclusive of Transcaucasia, Siberia, Steppes, Transcaspia, Turkestan and inland waters) .. .. .	6,641,587	0.45	2.23278
China and Dependencies .. .. .	3,913,560	0.76	1.31567
British India .. .. .	1,093,074	2.72	0.36747
Independent Arabia .. .. .	1,000,000	2.97	0.33618
Feudatory Indian States .. .. .	709,555	4.19	0.23854
Persia .. .. .	628,000	4.74	0.21112
Turkey .. .. .	602,842	4.93	0.20266
Dutch East Indies .. .. .	583,210	5.10	0.19606
Japan (and Dependencies).. .. .	261,276	11.38	0.08784

SIZE OF AUSTRALIA IN COMPARISON WITH OTHER COUNTRIES—*continued*..

Country.	Area.	Australian Commonwealth in comparison with—	In comparison with Australian C'wealth.
	Sq. miles.		
<i>ASIA—continued—</i>			
Afghanistan .. .. .	245,000	12.14	0.08236
Siam .. .. .	195,000	15.25	0.06556
Philippine Islands (incls. of Sulu Archipelago)	114,400	26.00	0.03846
Laos .. .. .	111,940	26.57	0.03763
Bokhara .. .. .	83,000	35.84	0.02790
Omán .. .. .	82,000	36.28	0.02757
British Borneo and Sarawak .. .. .	73,106	40.69	0.02458
Cambodia .. .. .	67,724	43.92	0.02277
Annam .. .. .	61,718	48.20	0.02075
Nepál .. .. .	54,000	55.08	0.01815
Tonking .. .. .	46,223	64.35	0.01554
Federated Malay States .. .. .	27,506	108.14	0.00925
Ceylon .. .. .	25,481	116.74	0.00857
Khiva .. .. .	24,000	123.94	0.00807
Malay Protectorate (including Johore) .. .. .	23,486	126.65	0.00790
Cochin China .. .. .	21,988	135.28	0.00739
Bhutan .. .. .	20,000	148.73	0.00672
Aden and Dependencies .. .. .	9,005	330.33	0.00303
Timor, &c. (Portuguese Indian Archipelago)	7,330	405.81	0.00246
Brunei .. .. .	4,000	743.64	0.00134
Cyprus .. .. .	3,584	829.96	0.00120
Kiauchau (Neutral Zone) .. .. .	2,500	1189.83	0.00084
Goa, Damao, and Diu .. .. .	1,638	1815.98	0.00055
Straits Settlements .. .. .	1,600	1859.11	0.00054
Sokotra .. .. .	1,382	2152.37	0.00046
Hong Kong and Dependencies .. .. .	391	7607.62	0.00013
Wei-hai-wei .. .. .	285	10437.13	0.00010
Bahrein Islands .. .. .	250	11898.32	0.00008
Kiauchau (German) .. .. .	200	14872.91	0.00007
French India (Pondicherry, &c) .. .. .	196	15176.43	0.00007
Kwang Chau Wan .. .. .	190	15655.67	0.00006
Macao, &c. .. .. .	4	743645.25	..
Total, Asia .. .. .	16,742,231	0.18	5.62843
<i>Africa—</i>			
French Sahara .. .. .	1,544,000	1.93	0.51906
Sudan .. .. .	1,014,400	2.93	0.34102
Belgian Congo .. .. .	909,654	3.27	0.30581
French Equatorial Africa .. .. .	669,000	4.45	0.22491
Senegambia and Niger .. .. .	568,273	5.23	0.19104
Angola .. .. .	517,000	5.75	0.17381
French Military District of the Niger .. .. .	502,000	5.93	0.16876
Union of South Africa .. .. .	473,096	6.29	0.15905
Rhodesia .. .. .	440,000	6.76	0.14792
Portuguese East Africa .. .. .	428,132	6.95	0.14393
Tripoli and Benghazi .. .. .	406,000	7.33	0.13649
Abyssinia .. .. .	400,000	7.44	0.13447
German East Africa .. .. .	384,180	7.74	0.12915
Egypt .. .. .	350,000	8.50	0.11766
Mauretania .. .. .	344,967	8.62	0.11597
Algeria (including Algerian Sahara) .. .. .	343,500	8.66	0.11548
Nigeria and Protectorate .. .. .	336,000	8.85	0.11296
German South-west Africa .. .. .	322,200	9.23	0.10832
Bechuanaland Protectorate .. .. .	275,000	10.82	0.09245
British East Africa Protectorate .. .. .	246,822	12.05	0.08298
Morocco .. .. .	231,500	12.85	0.07783
Madagascar .. .. .	228,000	13.05	0.07665
Kamerun .. .. .	191,130	15.56	0.06425

SIZE OF AUSTRALIA IN COMPARISON WITH OTHER COUNTRIES—*continued.*

Country.	Area.	Australian Commonwealth in comparison with—	In comparison with Australian C'wealth.
	Sq. miles.		
<b>AFRICA—<i>continued</i>—</b>			
Italian Somaliland .. .. .	139,430	21.33	0.04687
Ivory Coast .. .. .	125,000	23.80	0.04202
Rio de Oro, &c. .. .. .	109,200	27.24	0.03671
Uganda Protectorate .. .. .	109,119	27.26	0.03668
French Guinea .. .. .	95,000	31.31	0.03194
Gold Coast Protectorate (with Nth. Territories)	80,000	37.18	0.02689
Senegal .. .. .	74,012	40.19	0.02488
British Somaliland .. .. .	68,000	43.74	0.02286
Tunis .. .. .	50,000	59.49	0.01681
French Somali Coast .. .. .	46,000	64.66	0.01546
Eritrea .. .. .	45,800	64.95	0.01540
Liberia .. .. .	40,000	74.36	0.01345
Nyassaland Protectorate .. .. .	39,573	75.17	0.01330
Dahomey .. .. .	39,000	76.27	0.01311
Togoland .. .. .	33,700	88.27	0.01133
Sierra Leone and Protectorate .. .. .	31,000	95.95	0.01042
Portuguese Guinea .. .. .	25,000	118.98	0.00840
Basutoland .. .. .	11,716	253.89	0.00394
Spanish Guinea (Rio Muni, &c.) .. .. .	9,470	314.11	0.00318
Swaziland .. .. .	6,678	445.43	0.00225
Gambia and Protectorate .. .. .	4,504	660.43	0.00151
Cape Verde Islands .. .. .	1,480	2009.85	0.00050
Zanzibar .. .. .	1,020	2916.26	0.00034
Réunion .. .. .	970	3066.58	0.00033
Fernando Po, &c. .. .. .	814	3654.28	0.00027
Mauritius and Dependencies .. .. .	809	3676.86	0.00027
Comoro Islands .. .. .	650	4576.25	0.00022
St. Thomas and Principe Islands .. .. .	454	6551.94	0.00015
Seychelles .. .. .	156	19067.83	0.00005
Mayotte, &c. .. .. .	140	21247.01	0.00005
Spanish North and West Africa .. .. .	87	34190.59	0.00003
St. Helena .. .. .	47	63288.96	0.00002
Ascension .. .. .	34	87487.68	0.00001
<b>Total, Africa .. .. .</b>	<b>12,313,717</b>	<b>0.24</b>	<b>4.13965</b>
<b>North and Central America and West Indies—</b>			
Canada .. .. .	3,729,665	0.80	1.25385
United States (exclusive of Alaska, &c.) .. .. .	2,973,890	1.00	0.99977
Mexico .. .. .	767,198	3.88	0.25792
Alaska .. .. .	590,884	5.03	0.19864
Newfoundland and Labrador .. .. .	162,734	18.28	0.05471
Nicaragua .. .. .	49,200	60.46	0.01654
Guatemala .. .. .	48,290	61.60	0.01623
Greenland .. .. .	46,740	63.64	0.01571
Honduras .. .. .	44,275	67.18	0.01488
Cuba .. .. .	44,164	67.35	0.01485
Costa Rica .. .. .	23,000	129.33	0.00773
San Domingo .. .. .	18,045	164.84	0.00607
Salvador .. .. .	13,176	225.76	0.00443
Haiti .. .. .	10,204	291.51	0.00343
British Honduras .. .. .	8,598	345.96	0.00289
Bahamas .. .. .	4,404	675.43	0.00148
Jamaica .. .. .	4,207	707.05	0.00141
Porto Rico .. .. .	3,606	824.90	0.00121
Trinidad and Tobago .. .. .	1,974	1506.88	0.00066
Leeward Islands .. .. .	715	4160.25	0.00024
Guadeloupe and Dependencies .. .. .	680	4374.38	0.00023
Windward Islands .. .. .	527	5644.37	0.00018

\* Danish colony only. Total area has been estimated as between 827,000 and 850,000 square miles.

SIZE OF AUSTRALIA IN COMPARISON WITH OTHER COUNTRIES—*continued.*

Country.	Area.	Australian Commonwealth in comparison with—	In comparison with Australian C'wealth.
	Sq. miles.		
<b>N. &amp; C. AMERICA &amp; W. INDIES—<i>continued</i>—</b>			
Curaçao and Dependencies .. ..	403	7381.09	0.00014
Martinique .. ..	385	7726.18	0.00013
Turks and Caicos Islands .. ..	224	13279.38	0.00008
Barbados .. ..	166	17919.16	0.00006
Virgin Islands of U.S.A., late Danish West Indies	132	22534.70	0.00004
St. Pierre and Miquelon .. ..	93	31984.74	0.00003
Bermudas .. ..	19	156556.89	..
Total, N. and C. America and W. Indies ..	8,547,598	0.35	2.87355
<b>South America—</b>			
Brazil .. ..	3,275,510	0.91	1.10117
Argentine Republic .. ..	1,153,119	2.58	0.38766
Peru .. ..	722,461	4.12	0.24288
Bolivia .. ..	514,155	5.79	0.17285
Colombia (exclusive of Panama) .. ..	440,846	6.75	0.14820
Venezuela .. ..	398,594	7.46	0.13400
Chile .. ..	289,829	10.26	0.09744
Paraguay .. ..	165,000	18.03	0.05547
Ecuador .. ..	116,000	25.64	0.03900
British Guiana .. ..	89,480	33.24	0.03008
Uruguay .. ..	72,153	41.23	0.02426
Dutch Guiana .. ..	46,060	64.58	0.01548
Panama .. ..	32,380	91.86	0.01089
French Guiana .. ..	32,000	92.96	0.01076
Falkland Islands .. ..	6,500	457.63	0.00219
South Georgia .. ..	1,000	2974.58	0.00034
Total, South America .. ..	7,355,087	0.40	2.47265
<b>Australasia and Polynesia—</b>			
Commonwealth of Australia .. ..	2,974,581	1.00	1.00000
Dutch New Guinea .. ..	151,789	19.60	0.05103
New Zealand and Dependencies .. ..	104,751	28.40	0.03522
Papua .. ..	90,540	32.85	0.03044
Kaiser Wilhelm Land .. ..	70,000	42.49	0.02353
Bismarck Archipelago .. ..	15,570	191.05	0.00523
British Solomon Islands .. ..	14,586	203.93	0.00490
New Caledonia and Dependencies .. ..	8,548	347.99	0.00287
Fiji .. ..	7,083	419.96	0.00238
Hawaii .. ..	6,449	461.25	0.00217
German Solomon Islands, &c. .. ..	5,160	576.47	0.00173
New Hebrides .. ..	5,100	583.25	0.00171
French Establishments in Oceania .. ..	1,520	1956.96	0.00051
German Samoa .. ..	1,000	2974.58	0.00034
Tonga .. ..	250	11898.32	0.00008
Guam .. ..	225	13220.36	0.00008
Gilbert and Ellice Islands .. ..	208	14300.87	0.00007
Samoa (U.S.A. part) .. ..	102	29162.56	0.00003
Norfolk Island .. ..	10	297458.10	..
Total, Australasia and Polynesia .. ..	3,457,472	0.86	1.16234
<b>British Empire .. ..</b>	<b>12,780,381</b>	<b>0.23</b>	<b>4.29653</b>

It should be noted that in the table above the figures quoted for areas refer to conditions prevailing prior to the outbreak of war.

3. **Relative Size of Political Subdivisions.**—As already stated, Australia consists of six States and the Northern and Federal Territories. The areas of these, in relation to one another and to the total of Australia, are shewn in the following table:—

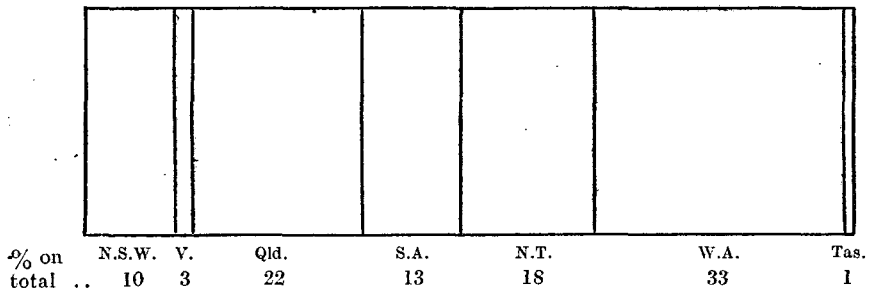
**RELATIVE SIZE OF STATES, TERRITORIES, AND COMMONWEALTH.**

State or Territory.	Area.	Ratio which the Area of each State and Territory bears to that of other States, Territories, and Commonwealth.							
		N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	N. Ter.	C'with.
	Sq. miles.								
New South Wales	309,432	1.000	3.521	0.461	0.814	0.317	11.804	0.591	0.104
Victoria ..	87,884	0.284	1.000	0.131	0.231	0.090	3.352	0.168	0.030
Queensland ..	670,500	2.167	7.629	1.000	1.764	0.687	25.577	1.280	0.225
South Australia	380,070	1.228	4.325	0.567	1.000	0.389	14.498	0.726	0.128
West. Australia	975,920	3.154	11.105	1.456	2.568	1.000	37.228	1.864	0.328
Tasmania ..	26,215	0.085	0.298	0.039	0.069	0.027	1.000	0.050	0.009
North. Territory	523,620	1.692	5.958	0.781	1.378	0.537	19.974	1.000	0.176
Federal Territory	940	0.003	0.011	0.001	0.002	0.001	0.036	0.002	0.000 <sup>1</sup>
Commonwealth	2,974,581	9.613	33.847	4.436	7.826	3.048	113.469	5.681	1.000

1. The correct decimal is 0.0003.

Thus, looking at the top line, New South Wales is seen to be over three-and-a-half times as large as Victoria (3.521) and less than one-half the size of Queensland (0.461); or again, looking at the bottom line, the Commonwealth is shewn to be more than nine-and-a-half times as large as New South Wales (9.613), and nearly thirty-four times as large as Victoria (33.847).

These relative magnitudes are shewn in the small diagram below. It may be added that Papua (or British New Guinea), with its area of 90,540 square miles, is 0.030 of the area of the Commonwealth. The comparatively small size of the Federal Territory prevents its being shewn in this diagram.



4. **Coastal Configuration.**—There are no striking features in the configuration of the coast; the most remarkable indentations are the Gulf of Carpentaria on the north and the Great Australian Bight on the south. The Cape York Peninsula on the extreme north is the only other remarkable feature in the outline. In Year Book No. 1, an enumeration of the features of the coast-line of Australia was given (see pp. 60 to 68).

(i) *Coast-line.* The lengths of coast-line, exclusive of minor indentations, both of each State and of the whole continent, are shewn in the following table:—

### SQUARE MILES OF TERRITORY PER MILE OF COAST LINE.

STATES, TERRITORY, AND CONTINENT.

State.	Coast-line.	Area ÷ Coast-line.	State.	Coast-line.	Area ÷ Coast-line.
	Miles.	Sq. miles.		Miles.	Sq. miles.
New South Wales <sup>1</sup>	700	443	South Australia	1,540	247
Victoria ..	680	129	Western Australia	4,350	224
Queensland ..	3,000	223	Continent <sup>2</sup> ..	11,310	261
Northern Territory	1,040	503	Tasmania ..	900	29

1. Including Federal Territory.

2. Area 2,948,366 square miles.

For the entire Commonwealth this gives a coast-line of 12,210 miles, and an average of 244 square miles for one mile of coast-line. According to Strelbitski, Europe has only 75 square miles of area to each mile of coast-line, and, according to recent figures, England and Wales have only one-third of this, viz., 25 square miles.

(ii) *Historical Significance of Coastal Names.* It is interesting to trace the voyages of some of the early navigators by the names bestowed by them on various coastal features—thus Dutch names are found on various points of the Western Australian coast, in Nuyt's Archipelago, in the Northern Territory and in the Gulf of Carpentaria; Captain Cook can be followed along the coasts of New South Wales and Queensland; Flinders' track is easily recognised from Sydney southwards, as far as Cape Catastrophe, by the numerous Lincolnshire names bestowed by him; and the French navigators of the end of the eighteenth and the beginning of the nineteenth century have left their names all along the Western Australian, South Australian, and Tasmanian coasts.

5. *Geographical Features of Australia.*—In each of the earlier issues of this Year Book fairly complete information has been given concerning some special geographical element. Thus No. 1 Year Book, pp. 60–68, contains an enumeration of Coastal features; No. 2, pp. 66–67, deals with Hydrology; No. 3, pp. 59–72, with Orography; No. 4, pp. 59–82, with the Lakes of Australia; No. 5, pp. 51–80, with the Islands of Australia; No. 6, pp. 55–66, with the Mineral Springs of Australia; No. 7, pp. 56–58, with the Salient Features in the Geological History of Australia, with special reference to changes of climate. A special article dealing with the plains and peneplains of Australia appeared in No. 12 Year Book, pp. 82–88. This practically completes the description of the ordinary physical features.

## § 2. The Fauna of Australia.

An authoritative article describing in some detail the principal features of the Fauna of Australia was given in Year Books No. 1 (see pp. 103 to 109) and No. 2 (see pp. 111 to 117), while a synoptical statement appeared in No. 3 (see pp. 73 to 76). Considerations of space, however, preclude the inclusion in this issue of more than a passing reference to the subject.

## § 3. The Flora of Australia.

In Year Books No. 1 (see pp. 109 to 114) and No. 2 (see pp. 117 to 122) a fairly complete though brief account was given of the Flora of Australia, and in Year Book No. 3 similar information in a greatly condensed form will be found on pp. 76 to 78. Space in this issue will not permit of more than a mere reference to preceding volumes.

A special article dealing with Australian fodder plants, contributed by J. H. Maiden, Esq., F.L.S., Government Botanist of New South Wales, and Director of the Botanic Gardens, Sydney, appeared in Official Year Book No. 6, pp. 1190–6. A special article on the grasses and saltbushes of Australia, contributed by E. Breakwell, B.A., B.Sc., Agrostologist at the Botanic Gardens, Sydney, appeared in Year Book No. 9,

pp. 84-90. Year Book No. 10 contained two special articles; one dealing with Australian eucalyptus timbers, contributed by R. T. Baker, F.L.S., appeared on pp. 85 to 92, and one by H. G. Smith, F.C.S., dealing with the chemical products of Australian eucalypts, appeared on pp. 92-8.

#### § 4. Seismology in Australia.

A brief statement regarding the position of seismology and seismological record in Australia appeared in Year Book No. 4, pp. 82 and 83.

#### § 5. The Geology of Australia.

1. **General.**—Independent and authoritative sketches of the geology of each State were given in Year Books No. 1 (see pp. 73 to 103) and No. 2 (see pp. 78 to 111). Want of space has precluded the insertion of these sketches in the present issue of the Year Book, and it has not been considered possible to give anything like a sufficient account of the geology of Australia by presenting here a mere condensation of these sketches. Reference must, therefore, be made to either Year Book No. 1 or No. 2, *ut supra*.

2. **Geological Map of Australia.**—The map shewing the geographical distribution of the more important geological systems and formations, which appeared on page 51 of Year Book No. 12 and in preceding issues, has been discontinued pending the preparation of a new map embodying later information.

3. **The Plains and Peneplains of Australia.**—A special article dealing with this subject appears on pp. 82-88 of Year Book No. 12.

4. **The Building Stones of Australia.**—Independent and authoritative descriptions of the building stones of each State (with the exception of Queensland) will be found in Official Year Book No. 9, pp. 446-466.

A special article dealing with "The Building Stones of Queensland" will be found on pp. 89-95 of Year Book No. 12.

5. **Past Glacial Action in Australia.**—A special article on this subject will be found in Section XXXIV. (Miscellaneous) hereinafter.

#### § 6. Climate and Meteorology of Australia.<sup>1</sup>

1. **Introductory.**—In preceding Year Books some account was given of the history of Australian meteorology, including reference to the development of magnetic observations and the equipment for the determination of various climatological records. (See Year Book No. 3, pp. 79, 80.) In Year Book No. 4, pp. 84 and 87, will be found a short sketch of the creation and organisation of the Commonwealth Bureau of Meteorology and a résumé of the subjects dealt with at the Meteorological Conference of 1907. Space will not permit of the inclusion of this matter in the present issue.

2. **Meteorological Publications.**—The following publications are issued daily from the Central Meteorological Bureau, viz. :—(i) Weather charts. (ii) Rainfall maps. (iii) Bulletins, Victorian and Interstate, shewing pressure, temperature, wind, rain, cloud extent, and weather. Similar publications are also issued from the divisional offices in each of the State Capitals.

The Bulletins of Climatology are as follow :—No. 1.—A general discussion of the climate and meteorology of Australia, illustrated by one map and diagrams. No. 2.—A discussion of the rainfall over Australia during the ten years 1897-1906 compared with the normal, illustrated by one map. No. 3.—Notes and statistics of the remarkable flood rains over south-eastern Australia during the winter of 1909, illustrated by five maps and diagrams. No. 4.—A discussion of the monthly and seasonal rainfall over Australia, illustrated by one map and diagram. No. 5.—An investigation into the possibility of forecasting the approximate winter rainfall for Northern Victoria, illustrated by two diagrams. No. 6.—The physiography of the Federal Territory at Canberra, illustrated by a relief map and 21 plates. No. 7.—On the climate of the Yass-Canberra district, illustrated by one map. No. 8.—Physiography of Eastern

<sup>1</sup> Prepared from data supplied by the Commonwealth Meteorologist, H. A. Hunt, Esquire, F.R. Met. Soc.

Australia, with 28 text illustrations. No. 9.—The climate of Australia, with charts and diagrams, prepared for the Federal Handbook of Australia. No. 10.—Relation between cirrus directions as observed in Melbourne and the approach of the various storm systems affecting Victoria, illustrated by a number of charts. No. 11.—The climatic control of Australian production, with 43 illustrations. No. 12.—A graphical method of shewing the daily weather, and especially cloud types, with two graphs. No. 13.—Initial investigations in the upper air of Australia, with 35 illustrations. No. 14.—The control of settlement by humidity and temperature, with 21 charts and diagrams. No. 15.—Tropical Control of Australian Rainfall, illustrated by maps and diagrams.

Commencing with January, 1910, the "Australian Monthly Weather Report," containing statistical records from representative selected stations, with rain maps and diagrams, &c., is being published. Complete rainfall and other climatological data are published in annual volumes of meteorological statistics for each State separately.

The first text book of Australian meteorology, "Climate and Weather of Australia," was published in 1913.

**3. General Description of Australia.**—In the general description of Australia, page 45, it is pointed out that a considerable portion (0.530) of three divisions of the Australian Commonwealth is north of the tropic of Capricorn, that is to say, within the States of Queensland and Western Australia, and the Northern Territory, no less than 1,149,320<sup>1</sup> square miles belong to the tropical zone, and 1,020,720 to the temperate zone. The whole area of the Commonwealth within the temperate zone, however, is 1,825,261<sup>2</sup> square miles, thus the tropical part is about 0.386, or about five-thirteenths of the whole, or the "temperate" region is half as large again as the "tropical" (more accurately 1.591). By reason of its insular geographical position, and the absence of striking physical features, Australia is, on the whole, less subject to extremes of weather than are regions of similar area in other parts of the globe; and latitude for latitude Australia is, on the whole, more temperate.

The altitudes of the surface of Australia range up to a little over 7,300 feet, hence its climate embraces a great many features, from the characteristically tropical to what is essentially alpine, a fact indicated in some measure by the name Australian Alps given to the southern portion of the great Dividing Range.

While on the coast the rainfall is often abundant and the atmosphere moist, in some portions of the interior the rainfall is very limited, and the atmosphere dry. The distribution of forest, as might be expected, and its climatic influence, is consequently very variable. In the interior there are on the one hand fine belts of trees, on the other there are large areas which are treeless, and where the air is hot and parched in summer. Again, on the coast, even as far south as latitude 35°, the vegetation is tropical in its luxuriance, and also somewhat so in character. Climatologically, therefore, Australia may be said to present a great variety of features. The various climatological characteristics will be referred to in detail.

**4. Meteorological Divisions.**—The Commonwealth Meteorologist has divided Australia, for climatological and meteorological purposes, into five divisions. The boundaries between these may be thus defined:—(a) Between divisions I. and II., the boundary between South and Western Australia, viz., the 129th meridian of east longitude; (b) between divisions II. and III., starting at the Gulf of Carpentaria, along the Norman River to Normanton, thence a straight line to Wilcannia on the Darling River, New South Wales; (c) between divisions II. and IV., from Wilcannia along the Darling River to its junction with the Murray; (d) between divisions II. and V., from the junction of the Darling and Murray Rivers, along the latter to Encounter Bay; (e) between divisions III. and IV., starting at Wilcannia, along the Darling, Barwon, and Dumaresq Rivers to the Great Dividing Range, and along that range and along the watershed between the Clarence and Richmond Rivers to Evans Head on the east coast of Australia; (f) between divisions IV. and V., from the junction of the Darling and Murray Rivers along the latter to its junction with the Murrumbidgee, along the Murrumbidgee to the Tumut River, and along the Tumut River to Tumut, thence a straight line to Cape Howe; (g) division V. includes Tasmania.

1. In the article "Australia" in the *Encyclopædia Britannica*, Vol. II., p. 946 (XI. edition), this area is given as 1,145,000 square miles.

2. Given as 1,801,700 square miles in the work above quoted, where, however, the statistics are said "to refer only to the continental States of the Federation, not to Tasmania."



The population included within these boundaries at the Census of the 3rd April, 1911, was approximately as follows :—

Division	I.	II.	III.	IV.	V.
Population	282,000	429,000	607,000	1,540,000	1,597,000

In these divisions the order in which the capitals occur is as follows :—(i) Perth, (ii) Adelaide, (iii) Brisbane, (iv) Sydney, (v) Melbourne and Hobart; and for that reason the climatological and meteorological statistics will be set forth in the indicated order in this publication.

*Special Climatological Stations.* The latitudes, longitudes, and altitudes of special stations, the climatological features of which are graphically represented hereinafter, are as follows :—

#### SPECIAL CLIMATOLOGICAL STATIONS.

Locality.	Height above Sea Level.	Latitude. S.	Longitude. E.	Locality.	Height above Sea Level.	Latitude. S.	Longitude. E.
	Feet.	deg. min.	deg. min.		Feet.	deg. min.	deg. min.
Perth ..	197	31 57	115 50	Darwin ..	97	12 28	130 51
Adelaide ..	140	34 56	138 35	Daly Waters	691	16 16	133 23
Brisbane ..	137	27 28	153 2	Alice Springs	1,926	23 38	133 37
Sydney ..	133	33 52	151 12	Dubbo ..	870	32 18	148 35
Melbourne ..	115	37 49	144 58	Laverton, W.A.	1,530	28 40	122 23
Hobart ..	177	42 53	147 20	Coolgardie ..	1,389	30 57	121 10

5. *Temperatures.*—In respect of Australian temperatures generally it may be pointed out that the isotherm for 70° Fahrenheit extends in South America and South Africa as far south as latitude 33°, while in Australia it reaches only as far south as latitude 30°, thus shewing that, on the whole, Australia has a more temperate climate when compared latitude for latitude with other places in the Southern Hemisphere.

The comparison is even more favourable when the Northern Hemisphere is included therein, for in the United States the 70° isotherm extends in several of the western States as far north as latitude 41°. In Europe the same isotherm reaches almost to the southern shores of Spain, passing, however, afterwards along the northern shores of Africa till it reaches the Red Sea, when it bends northward along the eastern shore of the Mediterranean till it reaches Syria. In Asia nearly the whole of the land area south of latitude 40° N. has a higher isothermal value than 70°.

The extreme range of shade temperatures in summer and winter in a very large part of Australia amounts to probably only 81°. In Siberia, in Asia, the similar range is no less than 171°, and in North America 153°, or approximately double the Australian range.

Along the northern shores of the Australian continent the temperatures are very equable. At Darwin, for example, the difference in the means for the hottest and coldest months is only 8.3°, and the extreme readings for the year, that is, the highest maximum in the hottest month and the lowest reading in the coldest month, shew a difference of under 50°.

Coming southward the extreme range of temperature increases gradually on the coast, and in a more pronounced way inland.

The detailed temperature results for the several capitals of the States of Australia are shewn in the *Climatological Tables* hereinafter.

(i) *Hottest and Coldest Parts.* A comparison of the temperatures recorded at coast and inland stations shews that, in Australia as in other continents, the range increases with increasing distance from the coast.

In the interior of Australia, and during exceptionally dry summers, the temperature occasionally reaches or exceeds  $120^{\circ}$  in the shade, and during the dry winters the major portion of the country to the south of the tropics is subject to ground frosts. An exact knowledge of temperature disposition cannot be determined until the interior becomes more settled, but from data procurable it would appear that the hottest area of the continent is situated in the northern part of Western Australia about the Marble Bar and Nullagine goldfields, where the maximum shade temperature during the summer sometimes exceeds  $100^{\circ}$  for days, and even weeks, continuously. The coldest part of the Commonwealth is the extreme south-east of New South Wales and extreme east of Victoria, namely, the region of the Australian Alps. Here the temperature seldom, if ever, reaches  $100^{\circ}$ , even in the hottest of seasons.

Tasmania, although occasionally hot winds may cross the Straits and cause the temperature to rise to  $100^{\circ}$  in the low-lying parts, as a whole enjoys a most moderate and equable range of temperature throughout the year.

(ii) *Monthly Maximum and Minimum Temperatures.* The mean monthly maximum and minimum temperatures can be best shewn by means of graphs, which exhibit the nature of the fluctuation of each for the entire year. In the diagram (on page 65) for nine representative places in Australia, the upper heavy curves shew the mean maximum, the lower heavy curves the mean minimum temperatures based upon daily observations. On the same diagram the thin curves shew the relative humidities (see next paragraph).

6. *Relative Humidity.*—Next after temperature the degree of humidity may be regarded as of great importance as an element of climate; and the characteristic differences of relative humidity between the various capitals of Australia call for special remark. For six representative places the variations of humidity are shewn on the graph on page 65, which gives results based upon daily observations of the dry and wet bulb thermometers. Hitherto difficulties have been experienced in many parts of Australia in obtaining satisfactory observations for a continuous period of any length. For this reason it has been thought expedient to refer to the record of humidity at first order stations only, where the results are thoroughly reliable. Throughout, the degree of humidity given will be what is known as *relative humidity*, that is, the percentage of aqueous vapour actually existing to the total possible if the atmosphere were saturated.

The detailed humidity results for the several State capitals are given in the *Climatological Tables* hereinafter. From these, it is seen that, in respect of relative humidity, Sydney and Hobart have the first place, while Brisbane, Melbourne, Perth, and Adelaide follow in the order stated, Adelaide being the driest. The graphs on page 65 shew the annual variations in humidity. It will be observed that the *relative humidity* is ordinarily but not invariably great when the temperature is low.

7. *Evaporation.*—The rate and quantity of evaporation in any territory is influenced by the prevailing temperature, and by atmospheric humidity, pressure and movement. In Australia the question is of perhaps more than ordinary importance, since in its drier regions water has often to be conserved in "tanks" and dams. The magnitude of the economic loss by evaporation will be appreciated from the records on pages 67 and 75 to 80, which shew that the yearly amount varies from about 32 inches at Hobart to 95 inches at Alice Springs in the centre of the Continent.

(i) *Monthly Evaporation Curves.* The curves shewing the mean monthly evaporation in various parts of the Commonwealth will disclose how characteristically different

1. In Australia artificial storage ponds or reservoirs are called "tanks."

are the amounts for the several months in different localities. The evaporation for characteristic places is shewn on the diagram shewing also rainfalls (see page 66).

(ii) *Loss by Evaporation.* In the interior of Australia the possible evaporation is greater than the actual rainfall. Since, therefore, the loss by evaporation depends largely on the exposed area, tanks and dams so designed that the surface shall be a minimum are advantageous. Similarly, the more protected from the direct rays of the sun and from winds, by means of suitable tree planting, the less will be the loss by evaporation: these matters are of more than ordinary concern in the drier districts of Australia.

8. *Rainfall.*—As even a casual reference to climatological maps, indicating the distribution of rainfall and prevailing direction of wind, would clearly shew, the rainfall of any region is determined mainly by the direction and route of the prevailing winds, by the varying temperatures of the earth's surface over which they blow, and by the physiographical features generally.

Australia lies within the zone of the south-east trade and prevailing westerly winds. The southern limit of the south-east trade strikes the eastern shores at about 30° south latitude, and with very few exceptions, the heaviest rains of the Australian continent are precipitated along the Pacific slopes to the north of that latitude, the varying quantities being more or less regulated by the differences in elevation of the shores and of the chain of mountains, upon which the rain-laden winds blow, from the New South Wales northern border to Thursday Island. The converse effect is exemplified on the north-west coast of Western Australia, where the prevailing winds, blowing from the interior of the continent instead of from the ocean, result in the lightest coastal rain in Australia.

The westerly winds, which skirt the southern shores, are responsible for the very reliable, although generally light to moderate, rains enjoyed by the south-western portion of Western Australia, by the south-eastern agricultural areas of South Australia, by a great part of Victoria, and by the whole of Tasmania.

(i) *Factors determining Distribution and Intensity of Rainfall.*

(ii) *Time of Rainfall.*

In Year Book No. 6 (see pp. 72 to 74) some notes were given of the various factors governing the distribution, intensity and period of Australian rainfall.

(iii) *Wettest and Driest Regions.* The wettest known part of Australia is on the north-east coast of Queensland, between Port Douglas and Cardwell, where three stations situated on, or adjacent to, the Johnstone and Russell Rivers have an average annual rainfall of between 148 and 166 inches. The maximum and minimum falls there are:—Goondi, 241.53 in 1894 and 67.88 inches in 1915, or a range of 173.65 inches; Innisfail, 211.24 in 1894 and 69.87 inches in 1902, or a range of 141.37 inches; Harvey's Creek, 238.45 in 1901 and 80.47 inches in 1902, or a range of 157.98 inches.

On four occasions more than 200 inches have been recorded at Goondi, the last of these being in 1910, when 204.82 inches were registered. The record at this station covers a period of 33 years.

Harvey's Creek in the shorter period of 20 years has twice exceeded 200 inches, the total for 1910 being 201.28 inches.

The driest known part of the continent is about the Lake Eyre district in South Australia (the only part of the continent below sea level), where the annual average is but 5 inches, and where the fall rarely exceeds 10 inches for the twelve months.

The inland districts of Western Australia were at one time regarded as the driest part of Australia, but authentic observations in recent years over the settled districts in the east of that State shew that the annual average is from 10 to 12 inches.

(iv) *Quantities and Distribution of Rainfall generally.* The departure from the normal rainfall increases greatly and progressively from the southern to the northern shores of the continent, and similarly also at all parts of the continent subject to capricious

monsoonal rains, as the comparisons hereunder will shew. The general distribution is best seen from the map on page 72, shewing the areas subject to average annual rainfalls lying between certain limits. The areas enjoying varying quantities of rainfall determined from the latest available information are shewn in the following table :—

## DISTRIBUTION OF AVERAGE RAINFALL.

Average Annual Rainfall.	N.S.W.	Victoria.	Queensland.	South Australia.	Northern Territory	Western Australia.	Tasmania.	Commonwealth.
	sqr. mls.	sqr. mls.	sqr. mls.	sqr. mls.	sqr. mls.	sqr. mls.	sqr. mls.	sqr. mls.
Under 10 inches	44,997	nil	91,012	317,600	138,190	513,653	nil	1,105,452
10—15 "	77,268	19,912	87,489	33,405	141,570	232,815	nil	592,459
15—20 "	57,639	12,626	112,738	14,190	62,920	89,922	937	350,972
20—30 "	77,202	29,317	213,779	13,827	93,470	95,404	7,559	530,558
30—40 "	30,700	14,029	69,880	984	40,690	40,750	4,588	201,621
Over 40 "	22,566	12,000	95,602	64	46,780	3,376	10,101	190,489
Total area ..	310,372	87,884	670,500	380,070	523,620	975,920	26,215	2,974,581

\* Over an area of 3,030 square miles no records are available.

Referring first to the capital cities, the complete records of which are given on the following page, it is seen that Sydney with a normal rainfall of 48.40 inches occupies the chief place, Brisbane, Perth, Melbourne, Hobart and Adelaide following in that order, Adelaide with 21.01 inches being the driest. The extreme range from the wettest to the driest year is greatest at Brisbane (72.09 inches) and least at Adelaide (19.48 inches).

In order to shew how the rainfall is distributed throughout the year in various parts of the continent, the figures of representative towns have been selected. (See map on page 71.) Darwin, typical of the Northern Territory, shews that in that region nearly the whole of the rainfall occurs in the summer months, while little or none falls in the middle of the year. The figures for Perth, as representing the south-western part of the continent, are the reverse, for while the summer months are dry, the winter ones are very wet. In Melbourne and Hobart the rain is fairly well distributed throughout the twelve months, with a maximum in October in the former, and in November in the latter. The records at Alice Springs and Daly Waters indicate that in the central parts of Australia the wettest months are in the summer and autumn. In Queensland, as in the Northern Territory, the heaviest rains fall in the summer months, but good averages are also maintained during the other seasons.

On the coast of New South Wales, the first six months of the year are the wettest, with a maximum in the autumn: the averages during the last six months are fair and moderately uniform. In general it may be said that one-third of the area of the continent, principally in the eastern and northern parts, enjoys an annual average rainfall of from 20 to 50 or more inches, the remaining two-thirds receiving generally from about 10 to 20 inches.

(v) *Curves of Rainfall and Evaporation.* The relative amounts of rainfall and evaporation at different times through the year are best seen by referring to the graphs for a number of characteristic places. (See page 66.) It will be recognised at once how large is the evaporation when water is fully exposed to the direct rays of the sun, and to wind.

(vi) *Tables of Rainfall.* The table of rainfall for a long period of years for each of the various Australian capitals affords information as to the variability of the fall in successive years, and the list of the more remarkable falls furnishes information as to what may be expected on particular occasions.

## RAINFALL AT THE AUSTRALIAN CAPITALS, 1840 TO 1919.

Year.	PERTH.			ADELAIDE.			BRISBANE.			SYDNEY.			MELBOURNE.			HOBART.		
	Amount.	No. of Days.	10 Years' Means.	Amount.	No. of Days.	10 Years' Means.	Amount.	No. of Days.	10 Years' Means.	Amount.	No. of Days.	10 Years' Means.	Amount.	No. of Days.	10 Years' Means.	Amount.	No. of Days.	10 Years' Means.
	in.	in.		in.	in.		in.	in.		in.	in.		in.	in.		in.	in.	
1840	..	..	..	24.23	99	..	29.32	..	..	58.52	150	..	22.57	..	..	..	..	..
1	..	..	..	17.96	93	..	49.31	..	..	76.31	142	..	30.18	..	..	13.95	74	..
2	..	..	..	20.32	122	..	28.81	..	..	48.32	138	..	31.16	..	..	23.60	88	..
3	..	..	..	17.19	104	..	51.67	..	..	62.78	168	..	21.54	..	..	13.43	87	..
4	..	..	..	16.88	136	..	63.20	..	..	70.66	156	..	30.74	..	..	26.25	94	..
5	..	..	..	18.83	125	..	39.09	..	..	62.01	133	..	23.93	..	..	16.68	76	..
6	..	..	..	26.89	114	..	31.41	..	41.83	43.83	139	..	30.53	..	..	21.96	99	..
7	..	..	..	27.61	109	..	..	..	(7 yr.)	42.81	142	..	30.18	..	..	13.86	89	..
8	..	..	..	19.74	111	21.07	42.59	..	..	59.17	155	58.27	33.15	..	28.22	23.62	115	19.24
9	..	..	..	23.44	110	(9 yr.)	..	..	..	21.49	140	(9 yr.)	44.25	..	(9 yr.)	33.52	103	(8 yr.)
1850	..	..	..	19.56	84	..	..	..	..	44.88	157	..	26.98	..	..	14.51	70	..
1	..	..	..	30.86	128	..	..	..	..	35.14	142	..	..	..	..	17.98	107	..
2	..	..	..	27.44	118	..	..	..	..	43.79	143	..	..	..	..	23.62	119	..
3	..	..	..	27.08	128	..	..	..	..	46.12	130	..	..	..	..	14.52	113	..
4	..	..	..	15.35	105	..	..	..	..	29.29	136	..	..	..	..	30.54	109	..
5	..	..	..	23.15	124	..	..	..	..	52.86	138	..	28.21	..	..	18.25	131	..
6	..	..	..	24.93	118	..	..	..	..	43.31	116	..	29.76	134	..	22.73	152	..
7	..	..	..	22.15	105	..	..	..	..	50.95	135	..	28.90	138	..	17.14	113	..
8	..	..	..	22.55	107	23.75	43.00	..	..	39.60	129	40.75	26.01	158	..	33.07	129	22.59
9	..	..	..	14.85	95	..	35.00	..	..	42.01	137	..	21.82	156	..	23.31	159	..
1860	..	..	..	19.67	119	..	54.63	144	..	82.76	180	..	25.38	133	..	21.05	142	..
1	..	..	..	24.04	147	..	69.45	155	..	59.36	157	..	29.16	159	..	23.19	167	..
2	..	..	..	21.85	119	..	28.27	98	..	23.99	108	..	22.08	139	..	21.72	148	..
3	..	..	..	23.68	145	..	68.83	146	..	47.08	152	..	36.42	165	..	40.67	163	..
4	..	..	..	19.75	121	..	47.00	114	..	69.12	185	..	27.40	144	..	28.11	142	..
5	..	..	..	15.51	108	..	24.11	52	..	36.15	140	..	15.94	119	..	23.07	146	..
6	..	..	..	20.11	116	..	51.18	142	..	36.91	156	..	22.41	107	..	23.55	127	..
7	..	..	..	19.05	112	..	61.04	112	..	59.56	140	..	25.79	133	..	22.27	139	..
8	..	..	..	19.99	113	19.85	35.98	110	47.55	42.98	161	49.99	18.27	120	24.47	18.08	112	25.00
9	..	..	..	14.74	117	..	54.39	114	..	48.00	150	..	24.58	129	..	23.87	131	..
1870	..	..	..	23.84	119	..	79.06	154	..	64.47	179	..	33.77	129	..	27.53	123	..
1	..	..	..	23.25	137	..	45.45	119	..	52.27	141	..	30.17	125	..	18.25	131	..
2	..	..	..	22.66	146	..	49.22	131	..	37.12	161	..	32.52	136	..	31.76	160	..
3	..	..	..	21.00	139	..	62.02	138	..	73.40	176	..	25.61	134	..	23.43	157	..
4	..	..	..	17.23	127	..	38.71	135	..	63.60	173	..	28.10	134	..	21.09	138	..
5	..	..	..	29.21	157	..	67.03	162	..	46.25	153	..	32.87	158	..	29.25	182	..
6	28.73	100	..	13.43	110	..	53.42	130	..	45.69	156	..	24.04	134	..	23.63	173	..
7	20.48	103	..	21.95	135	..	30.28	119	..	59.66	147	..	24.10	124	..	20.82	165	..
8	39.72	143	29.64	22.08	112	21.24	56.33	134	53.59	49.77	129	54.03	25.36	116	28.11	29.76	183	25.24
9	41.34	106	(3 yr.)	20.69	130	..	67.30	157	..	63.19	167	..	19.28	127	..	21.07	210	..
1880	31.79	116	..	22.48	142	..	49.12	134	..	29.51	142	..	28.48	147	..	..	..	..
1	24.78	101	..	18.02	135	..	29.39	117	..	40.99	163	..	24.08	134	..	..	..	..
2	35.68	109	..	15.70	134	..	42.62	121	..	42.28	112	..	22.40	131	..	30.69	..	..
3	39.65	122	..	26.76	161	..	32.22	114	..	46.92	157	..	23.71	130	..	24.05	161	..
4	31.96	92	..	18.74	138	..	43.49	136	..	44.04	159	..	25.85	128	..	21.55	171	..
5	33.44	110	..	15.89	133	..	26.85	112	..	39.91	145	..	26.94	123	..	28.29	176	..
6	28.90	89	..	14.42	141	..	53.66	152	..	39.43	152	..	24.00	128	..	21.39	189	..
7	87.52	105	..	25.70	164	..	81.54	212	..	60.16	190	..	32.39	153	..	24.21	174	..
8	27.83	117	33.20	14.55	131	10.30	33.08	143	45.93	23.01	132	42.94	19.42	123	24.66	18.45	151	23.71
9	39.96	123	..	30.87	143	..	49.36	155	..	57.16	186	..	27.14	125	..	30.80	180	(8 yr.)
1890	46.73	126	..	25.78	139	..	73.02	162	..	81.42	184	..	24.21	140	..	27.51	173	..
1	30.33	93	..	14.01	113	..	41.68	143	..	55.30	200	..	26.73	126	..	23.25	160	..
2	31.23	122	..	21.53	137	..	64.98	146	..	69.26	189	..	24.96	124	..	18.62	120	..
3	40.12	145	..	21.49	129	..	88.26	147	..	49.90	209	..	26.80	140	..	27.46	146	..
4	23.72	103	..	20.78	134	..	44.02	143	..	38.22	188	..	22.60	138	..	27.39	141	..
5	33.01	123	..	21.28	130	..	59.11	105	..	31.86	170	..	17.04	131	..	25.40	121	..
6	31.50	103	..	15.17	121	..	44.97	121	..	42.40	157	..	25.16	124	..	21.61	135	..
7	27.17	106	..	15.42	119	..	42.53	115	..	42.52	136	..	25.85	117	..	20.45	153	..
8	31.76	118	33.55	20.75	116	20.71	60.06	131	56.80	43.17	143	51.12	15.61	102	23.61	20.40	164	24.29
9	32.40	107	..	18.84	119	..	38.85	141	..	55.90	174	..	28.87	116	..	20.68	170	..
1900	36.61	124	..	21.68	133	..	34.41	110	..	66.54	170	..	28.09	139	..	19.14	135	..
1	36.75	122	..	18.01	124	..	38.48	110	..	40.10	149	..	27.45	113	..	25.11	149	..
2	27.06	93	..	16.02	123	..	16.17	87	..	43.07	180	..	23.08	102	..	21.85	150	..
3	35.69	140	..	25.47	134	..	49.27	136	..	38.62	173	..	28.43	130	..	25.86	139	..
4	34.35	125	..	20.31	117	..	33.23	124	..	45.93	158	..	29.72	128	..	22.41	139	..
5	34.61	116	..	22.28	131	..	36.76	108	..	35.03	145	..	25.64	129	..	23.09	168	..
6	32.37	121	..	26.51	127	..	42.85	125	..	31.89	160	..	22.29	114	..	23.31	156	..
7	40.12	132	..	17.78	125	..	31.46	119	..	31.32	132	..	22.26	102	..	25.92	166	..
8	30.52	106	34.05	24.56	125	21.15	44.01	125	36.55	45.65	167	43.41	17.72	130	25.36	16.50	148	23.20
9	39.11	107	..	27.69	138	..	34.06	111	..	32.45	177	..	25.86	171	..	27.20	170	..

## RAINFALL AT THE AUSTRALIAN CAPITALS—continued.

Year.	PERTH.			ADELAIDE.			BRISBANE.			SYDNEY.			MELBOURNE.			HOBART.		
	Amount.	No. of Days.	10 Years' Means.	Amount.	No. of Days.	10 Years' Means.	Amount.	No. of Days.	10 Years' Means.	Amount.	No. of Days.	10 Years' Means.	Amount.	No. of Days.	10 Years' Means.	Amount.	No. of Days.	10 Years' Means.
	in.	..	in.	in.	..	in.	in.	..	in.	in.	..	in.	in.	..	in.	in.	..	in.
1910	37.02	135	..	24.62	116	..	49.00	133	..	46.91	160	..	24.61	167	..	25.22	205	..
11	23.38	108	..	15.99	127	..	35.21	128	..	50.24	155	..	36.61	168	..	26.78	193	..
12	27.85	123	..	19.57	116	..	41.30	114	..	47.51	172	..	20.37	157	..	23.14	181	..
13	38.28	141	..	18.16	102	..	40.81	115	..	57.70	141	..	21.17	157	..	19.36	165	..
14	20.21	128	..	11.39	91	..	33.99	141	..	56.42	149	..	18.57	129	..	15.42	154	..
15	43.61	164	..	19.38	117	..	25.66	93	..	34.83	117	..	20.95	167	..	20.91	196	..
16	35.16	128	..	28.16	142	..	52.80	136	..	44.91	161	..	38.04	170	..	43.39	203	..
17	45.64	146	..	28.90	153	..	40.92	127	..	52.40	151	..	30.57	171	..	30.02	214	..
18	39.58	138	34.98	17.41	107	21.13	24.95	121	37.87	42.99	149	46.64	27.13	160	26.39	26.04	179	25.82]
19	80.66	120	..	17.21	108	..	19.36	96	..	58.71	152	..	24.89	141	..	22.48	153	..
Aver. No. of Yrs.	..	..	33.60	..	..	20.96	..	..	45.42	..	..	48.40	..	..	26.17	..	..	23.74
			(44)			(81)			(70)			(80)			(76)			(77)

NOTE.—The above average Rainfall figures for Brisbane, Sydney, and Melbourne differ slightly from the mean annual falls given in the Climatological Tables on pp. 75-80, which are for a less number of years.

9. Remarkable Falls of Rain.—The following are the more remarkable falls of rain in the States of New South Wales, Queensland, Western Australia, Victoria, and Tasmania, and in the Northern Territory, which have occurred within a period of twenty-four hours:—

## HEAVY RAINFALLS, NEW SOUTH WALES, UP TO 1919, INCLUSIVE.

Name of Town or Locality.	Date.	Amnt.	Name of Town or Locality.	Date.	Amnt.
		ins.			ins.
Anthony ..	28 Mar., 1887	17.14	Maitland W. ..	9 Mar., 1893	14.79
" ..	15 Jan., 1890	13.13	Major's Creek ..	14 Feb., 1898	12.32
Araluen ..	15 Feb., 1898	13.36	Marrickville ..	9 Mar., 1913	10.40
Bega ..	27 " 1919	17.88	Morpeth ..	9 " 1893	21.52
Bellingen ..	4 Mar., "	13.16	Mount Kembla ..	13 Jan., 1911	18.25
Berry ..	13 Jan., 1911	12.05	Mt. Pleasant ..	24 Mar., 1914	10.30
Billambil ..	14 Mar., 1894	12.94	Murwillumbah ..	29 May, 1919	10.10
Bomaderry ..	13 Jan., 1911	13.03	Nepean Tunnel ..	14 Feb., 1898	12.30
Broger's Creek ..	14 Feb., 1898	20.05	Nethercote ..	27 " 1919	14.39
" ..	19 July, 1910	12.22	Nowra ..	13 Jan., 1911	13.00
" ..	13 Jan., 1911	20.83	Numbugga ..	27 Feb., 1919	17.87
" ..	24 July, 1918	10.30	Orara Upper ..	4 Mar., 1919	14.00
" ..	26 Feb., 1919	11.01	Padstow Park ..	9 " 1913	10.64
Bulli Mountain ..	13 " 1898	17.14	Prospect ..	28 May, 1889	12.37
Burrigate ..	27 " 1919	16.38	Raleigh Central ..	10 Nov., 1917	13.20
Camden Haven ..	22 Jan., 1895	12.23	Richmond ..	28 May, 1889	12.18
Candelo ..	27 Feb., 1919	18.58	Rosemount ..	23 Mar., 1914	12.62
Castle Hill ..	28 May, 1889	13.49	Rooty Hill ..	27 May, 1889	11.85
Colombo Lyttleton ..	5 Mar., 1893	12.17	Taree ..	28 Feb., 1892	12.24
Comboyne ..	18 May, 1914	10.68	Terara ..	26 " 1873	12.57
Condong ..	27 Mar., 1887	18.66	The Hill(Shell Harb.)	24 Mar., 1914	12.00
Cordeaux River ..	14 Feb., 1898	22.58	Tomago ..	9 " 1893	13.76
" ..	13 Jan., 1911	14.52	Tongarra Farm ..	14 Feb., 1898	15.12
Dapto West ..	14 Feb., 1898	12.05	Toothdale ..	27 " 1919	13.51
Dunheved ..	28 May, 1889	12.40	Towamba ..	5 Mar., 1893	20.00
Dunoon ..	9 Nov., 1917	10.02	Tweed River Heads ..	9 Nov., 1917	13.50
Eden ..	27 Feb., 1919	11.05	Sherwood ..	17 June, 1914	10.00
Holy Flat ..	12 Mar., 1887	12.00	Stockyard Mt. ..	24 Mar., "	10.72
" ..	28 Feb., 1892	12.24	South Head (near Sydney)	29 Apr., 1841	20.12
Jamberoo ..	23 Mar., 1914	10.22	" ..	16 Oct., 1844	20.41
" ..	24 " "	11.28	Unanderra ..	24 Mar., 1914	11.68
Katoomba ..	7 Apr., 1913	10.50	Urunga ..	9 Nov., 1917	10.29
Kembla Heights ..	13 Jan., 1911	17.46	Verona ..	27 Feb., 1919	10.91
Kingswood ..	26 Feb., 1919	13.55	Wollongong ..	24 Mar., 1914	12.50
Leconfield ..	9 Mar., 1893	14.53			
Madden's Creek ..	13 Jan., 1911	18.68			

## HEAVY RAINFALLS, QUEENSLAND, UP TO 1919, INCLUSIVE.

Name of Town or Locality.	Date.	Amnt.	Name of Town or Locality.	Date.	Amnt.
		ins.			ins.
Adelaide Park ..	23 Jan., 1918	12.00	Collaroy ..	23 Jan., 1918	18.06
Allomba (Cairns) ..	30 " 1913	13.50	Cooktown ..	22 " 1903	12.49
Anglesey ..	26 Dec., 1909	18.20	" ..	23 " 1914	13.98
" ..	10 Feb., 1915	12.00	Cooran ..	1 Feb., 1893	13.62
Atherton (Cairns) ..	31 Jan., 1913	16.69	" ..	26 Dec., 1908	14.08
Ayr ..	20 Sep., 1890	14.58	Cooroy ..	9 June, 1893	13.60
Babinda (Cairns) ..	31 Jan., 1913	12.79	" ..	10 Jan., 1898	13.50
" ..	1 Feb., ..	20.51	Crohamhurst		
" ..	24 Jan., 1916	22.30	(Blackall Range)	2 Feb., 1893	35.71
" ..	25 " ..	13.45	" ..	9 June, ..	13.31
" ..	19 " 1918	13.53	" ..	9 Jan., 1898	19.55
Banyan (Cardwell)	31 " 1913	13.79	" ..	6 Mar., ..	16.01
Barrine (Cairns) ..	31 " ..	13.34	" ..	26 Dec., 1909	13.85
Batheaston ..	27 Dec., 1916	10.00	" ..	10 Feb., 1915	12.98
Bloombsbury ..	14 Feb., 1893	17.40	Crow's Nest ..	2 Aug., 1908	11.17
" ..	10 Jan., 1901	16.62	Croydon ..	29 Jan., ..	15.00
Blue Mountain ..	22 " 1918	13.00	Cryna (Beaudesert)	21 " 1887	14.00
" ..	23 " ..	13.00	Dungeness ..	16 Mar., 1893	22.17
Bowen ..	13 Feb., 1893	14.65	" ..	17 Apr., 1894	14.00
Boynedale ..	9 " 1915	11.20	Dunira ..	9 Jan., 1898	18.45
Bracewell ..	9 " ..	11.59	" ..	6 Mar., ..	15.95
Brisbane ..	21 Jan., 1887	18.31	Eddington (Clonferry)	23 Jan., 1891	10.33
Bromby Park(Bowen)	14 Feb., 1893	13.28	Emscote Farm ..	10 Feb., 1915	13.22
Brookfield ..	14 Mar., 1908	14.95	Emu Park ..	18 Jan., 1913	12.75
Buderim Mountain	11 Jan., 1898	26.20	Enoggera Railway	14 Mar., 1908	12.14
Bundaberg ..	16 " 1913	16.94	Ernest Junction ..	14 " "	13.00
Burketown ..	15 " 1891	13.58	Fairymead Planta-		
" ..	12 Mar., 1903	14.52	tion (Bundaberg)	16 Jan., 1913	15.32
Burnett Head			Finch Hatton ..	23 " 1918	11.06
(Bundaberg) ..	16 Jan., 1913	15.22	" ..	11 Mar., ..	11.31
Burpengary ..	10 Feb., 1915	11.11	Flat Top Island ..	22 Dec., 1909	12.96
Bustard Head ..	17 Jan., 1913	14.93	Floraville ..	6 Jan., 1897	10.79
Cairns ..	11 Feb., 1889	14.74	" ..	11 Mar., 1903	12.86
" ..	21 Apr., ..	12.40	Flying Fish Point ..	7 Apr., 1912	16.06
" ..	5 " 1891	14.08	" ..	31 Jan., 1913	16.10
" ..	11 Feb., 1911	15.17	Gatecombe Head		
" ..	2 Apr., ..	20.16	(Gladstone) ..	18 " "	12.88
" ..	31 Jan., 1913	13.94	Gin Gin ..	16 " 1905	13.61
" ..	24 " 1916	12.28	" ..	16 " 1913	12.27
Calliope ..	9 Feb., 1915	12.09	Gladstone ..	18 Feb., 1888	12.37
Cape Grafton ..	5 Mar., 1896	13.37	" ..	31 Jan., 1893	14.62
Carbrook ..	11 Jan., 1918	14.03	" ..	4 Feb., 1911	18.83
" ..	23 " "	22.66	" ..	9 " 1915	10.10
" ..	24 " "	15.77	Glen Boughton ..	5 Apr., 1894	18.50
Cardwell ..	30 Dec., 1889	12.00	" ..	31 Jan., 1913	14.92
" ..	23 Mar., 1890	12.00	" ..	24 " 1916	14.02
" ..	18 " 1904	18.24	Glen Prairie ..	18 Apr., 1904	12.18
" ..	3 Apr., 1911	12.84	Gold Creek Reservoir	14 Mar., 1908	12.50
Carmilla ..	22 Jan., 1918	13.92	Goldsborough(Cairns)	31 Jan., 1913	19.92
" ..	23 " "	15.92	" ..	1 Feb., ..	12.22
" ..	24 " "	13.73	Goodwood(Bund'g)	16 Jan., ..	13.07
Clare ..	26 " 1896	15.30	Goondi Mill(Innisfail)	6 Apr., 1894	15.69
Clermont ..	28 Dec., 1916	12.28	" ..	18 " 1899	14.78
Coen ..	17 Feb., 1914	12.03	" ..	24 Jan., 1900	13.30
Collaroy ..	30 Jan., 1896	14.25	" ..	29 Dec., 1903	17.83
" ..	28 Dec., 1916	12.79	" ..	10 Feb., 1911	17.68
" ..	22 Jan., 1918	11.17	" ..	31 Mar., "	12.38

HEAVY RAINFALLS, QUEENSLAND—*continued.*

Name of Town or Locality.	Date.	Amnt.	Name of Town or Locality.	Date.	Amnt.
		<i>ins.</i>			<i>ins.</i>
Goondi Mill (Innisfail)	1 Apr., 1911	13.60	Innisfail (formerly	11 Feb., 1911	14.48
" " "	6 " 1912	15.55	Geraldton) ..	1 Apr., " "	12.35
Goondi ..	30 Jan., 1913	24.10	" " "	2 " " "	15.00
Goorganga ..	23 " 1918	18.17	" " "	7 " 1912	20.50
Granada (formerly			" " "	8 " " "	12.15
Donaldson) ..	27 " 1891	11.29	" " "	31 Jan., 1913	20.91
" " "	8 " 1911	13.50	" " "	16 " " "	14.58
" " "	9 " " "	14.30	Invicta (Kolan R.)	6 Mar., 1898	13.60
Halifax ..	5 Feb., 1899	15.37	Isis Junction ..	23 Jan., 1918	10.28
" " "	6 Jan., 1901	15.68	Kabra ..	20 " 1892	13.61
" " "	8 Apr., 1912	12.75	Kamerunga (Cairns)	6 Apr., 1894	14.04
Hambledon Mill ..	13 Jan., 1909	13.80	" " "	5 " 1895	12.31
" " "	2 " 1911	18.61	" " "	11 Feb., 1911	13.07
" " "	10 Feb., "	13.97	" " "	1 Apr., "	14.20
" " "	30 Mar., "	13.04	" " "	2 " " "	21.00
" " "	31 " "	14.95	" " "	31 Jan., 1913	16.00
" " "	1 Apr., "	19.62	" " "	23 " 1918	22.31
" " "	30 Jan., 1913	17.32	Koumala ..	24 " " "	20.65
Hampden ..	23 " 1918	17.30	" " "	31 " 1913	12.69
" " "	24 " " "	17.19	Kulara (Cairns) ..	6 Mar., 1899	14.12
Harvey Creek ..	8 Mar., 1899	17.72	Kuranda (Cairns) ..	20 Apr., 1903	14.16
" " "	25 Jan., 1900	12.53	" " "	14 Jan., 1909	12.37
" " "	25 May, 1901	14.00	" " "	11 Feb., 1911	16.30
" " "	14 Mar., 1903	12.10	" " "	17 Mar., "	15.10
" " "	11 Jan., 1905	16.96	" " "	31 " "	18.60
" " "	28 " 1906	12.29	" " "	1 Apr., "	24.30
" " "	14 " 1909	14.40	" " "	2 " " "	28.80
" " "	3 " 1911	27.75	" " "	31 Jan., 1913	16.34
" " "	11 Feb., "	12.88	" " "	10 " 1895	10.25
" " "	1 Apr., "	13.61	Lake Nash ..	20 Mar., 1901	10.02
" " "	2 " " "	16.46	" " "	2 Feb., 1893	15.15
" " "	31 Jan., 1913	24.72	Landsborough ..	9 June, "	12.80
" " "	24 " 1916	13.17	" " "	26 Dec., 1909	14.00
Houghton Valley	26 " 1896	18.10	" " "	10 Mar., 1904	15.07
Herberton ..	31 " 1913	14.00	Low Island ..	31 " 1911	14.70
Hillcrest (Mooloolah)	26 Dec., 1909	13.35	" " "	1 Apr., "	15.30
Holmwood (Woodf'd)	2 Feb., 1893	16.19	" " "	17 Feb., 1906	13.35
" " "	10 Jan., 1898	12.40	Lucinda ..	10 Mar., 1906	14.60
Homebush ..	3 Feb., "	12.04	" " "	3 " 1917	17.00*
Howard ..	15 Jan., 1905	19.55	Lyndon (via Brixton)	21 Jan., 1887	12.85
Huntley ..	27 Dec., 1916	18.94	Lytton ..	23 Dec., 1909	13.96
Ingham ..	18 Jan., 1894	12.60	Mackay ..	21 Jan., 1918	24.70†
" " "	6 " 1901	13.59	" " "	22 " "	17.25‡
" " "	25 Dec., 1903	12.30	" " "	23 " "	13.61
" " "	11 Mar., 1918	12.68	" " "		
Inkerman ..	21 Sep., 1890	12.93	Sugar Experimental		
" " "	24 Jan., 1918	12.70	Farm, Mackay ..	23 Dec., 1909	12.00
Inneshowen			" " "	21 Jan., 1918	16.80
(Johnstone River)	30 Dec., 1889	14.01	" " "	22 " "	17.20
Innisfail (formerly			" " "	23 " "	13.61
Geraldton) ..	11 Feb., "	17.13	Macnade Mill ..	18 " 1894	12.56
" " "	31 Dec., "	12.45	" " "	17 Apr., "	14.26
" " "	6 Apr., 1894	16.02	" " "	5 Feb., 1899	15.20
" " "	18 " 1899	13.20	" " "	6 Jan., 1901	23.33
" " "	24 Jan., 1900	15.22	" " "	7 Mar., 1914	12.44
" " "	29 Dec., 1903	21.22	" " "	4 " 1915	22.00

\* Mr. Jas. Laidlaw, of Lyndon, states that this fell in 4 hours. † 37½ hours. ‡ 22½ hours.



HEAVY RAINFALLS, QUEENSLAND—*continued.*

Name of Town or Locality.	Date.	Amnt.	Name of Town or Locality.	Date.	Amnt.
		ins.			ins.
Maleny ..	26 Dec., 1909	14.76	Port Douglas ..	17 Mar., 1911	16.10
Mapleton ..	14 Mar., 1908	14.29	" ..	1 Apr., ..	31.53
" ..	26 Dec., 1909	15.72	Princhester ..	23 Jan., 1918	10.00
" ..	10 Feb., 1915	12.75	Proserpine ..	23 ..	18.17
Marlborough ..	17 .., 1888	14.24	Ravenswood ..	24 Mar., 1890	17.00
" ..	22 Jan., 1918	13.70	Redcliffe ..	21 Jan., 1887	14.00
Milton ..	14 Mar., 1908	12.24	" ..	16 Feb., 1893	17.35
" ..	9 Feb., 1915	10.15	Reid River ..	2 .., 1917	11.15
Mirani ..	12 Jan., 1901	16.59	Rosedale ..	6 Mar., 1898	12.60
" ..	23 .., 1918	13.50	" ..	16 Jan., 1913	18.90
" ..	24 ..	12.25	Sandgate ..	16 Feb., 1893	14.03
Miriam Vale (B'berg)	17 .., 1913	15.80	Sarina ..	23 Jan., 1918	22.60
" ..	9 Feb., 1915	10.22	Somerset ..	28 .., 1903	12.02
Mooloolah ..	13 Mar., 1892	21.53	Spill Creek ..	21 .., 1918	11.07
" ..	2 Feb., 1893	19.11	Stanwell ..	22 ..	11.70
" ..	6 Mar., 1898	14.43	" ..	23 ..	11.05
Mornington Island	18 Jan., 1919	14.85	St. Helens (Mackay)	24 Feb., 1888	12.00
Mount Crosby ..	14 Mar., 1908	14.00	St. Lawrence ..	17 ..	12.10
Mount Cuthbert ..	8 Jan., 1911	18.00	" ..	30 Jan., 1896	15.00
Mount Molloy ..	31 Mar., ..	20.00	Tewantin ..	30 Mar., 1904	12.30
" ..	1 Apr., ..	20.00	The Caves ..	23 Jan., 1918	12.60
" ..	2 ..	20.00	The Hollow (Mackay)	23 Feb., 1888	15.12
Mount Mee ..	10 Feb., 1915	12.00	Thornborough ..	20 Apr., 1903	18.07
Mourilyan ..	14 Jan., 1909	13.00	Townsville ..	24 Jan., 1892	19.20
" ..	3 .., 1911	12.70	" ..	28 Dec., 1903	15.00
" ..	11 Feb., ..	17.40	Victoria Mill ..	6 Jan., 1901	16.67
" ..	1 Apr., ..	13.20	Walsh River ..	1 Apr., 1911	13.70
" ..	7 .., 1912	18.97	Warren ..		
" ..	31 Jan., 1913	15.05	Farm ..	22 Jan., 1918	11.42
Mundoolun ..	21 .., 1887	17.95	Woodford ..	2 Feb., 1893	14.93
Musgrave ..	6 Apr., 1894	13.71	Woodlands (Yepp'n)	25 Mar., 1890	14.25
Nambour ..	9 Jan., 1898	21.00	" ..	31 Jan., 1893	23.07
" ..	7 Mar., ..	13.28	" ..	9 Feb., 1896	13.97
" ..	27 Dec., 1909	16.80	" ..	7 Jan., 1898	14.50
Nerang ..	15 June, 1892	12.35	Woody Island ..	16 .., 1913	12.66
Netherdale ..	22 Jan., 1918	19.50	Woombye ..	26 Dec., 1909	13.42
" ..	11 Mar., ..	12.25	Wootha ..	10 Feb., 1915	15.93
North Kolan			Wycarbah ..	21 Jan., 1918	10.80
(Bundaberg) ..	6 Jan., 1913	12.90	" ..	22 ..	10.64
North Pine ..	16 Feb., 1893	14.97	Yandina ..	1 Feb., 1893	20.08
Nundah ..	14 Mar., 1908	12.00	" ..	9 June, ..	12.70
Oxenford ..	14 ..	15.65	" ..	9 Jan., 1898	19.25
Palmwoods ..	4 Feb., 1893	12.30	" ..	7 Mar., ..	13.52
" ..	10 Jan., 1898	15.85	" ..	28 Dec., 1909	15.80
" ..	7 Mar., ..	13.02	Yarrabah ..	11 Feb., 1911	12.00
" ..	25 Dec., 1909	17.75	" ..	2 Apr., ..	30.65
Peachester ..	26 ..	14.91	" ..	24 Jan., 1916	27.20
Pialba (Marybor'gh)	16 Jan., 1913	17.22	" ..	25 ..	18.60
Pittsworth ..	11 Mar., 1890	14.68	Yeppoon ..	31 .., 1893	20.05
Plane Creek (Mackay)	26 Feb., 1913	27.73	" ..	8 .., 1898	18.05
Point Archer ..	23 Jan., 1914	13.47	" ..	3 Feb., 1906	14.90
Port Douglas ..	5 Mar., 1887	13.00	" ..	3 .., 1911	14.92
" ..	10 .., 1904	16.34	" ..	18 Jan., 1913	13.00
" ..	11 Jan., 1905	14.68	" ..	8 Oct., 1914	21.70

NOTE.—In Queensland falls of 12 or more inches within 20 miles of the coast or 10 or more inches inland are taken.

## HEAVY RAINFALLS, WESTERN AUSTRALIA, UP TO 1919, INCLUSIVE.

Name of Town or Locality.	Date.	Amnt.	Name of Town or Locality.	Date.	Amnt.
		ins.			ins.
Ascot .. ..	8 Feb., 1912	8.85	Point Torment ..	17 Dec., 1906	11.86
" .. ..	9 " "	5.85	Port George IV. ..	17 Jan., 1915	11.24
Balla Balla ..	21 Mar., 1899	14.40	Roebourne ..	3 Apr., 1898	11.44
Bamboo Creek ..	22 " "	10.10	Roeback Plains ..	5 Jan., 1917	14.01
Boodarie ..	21 " "	14.53	" ..	6 " 1917	22.36
Broome ..	6 Jan., 1917	14.00	Tambray ..	6 Mar., 1900	10.00
" ..	7 " "	6.20	" ..	3 " 1903	10.47
Carlton ..	11 " 1906	10.64	Thangoo ..	17-19 Feb. '96	24.18
Cossack ..	3 Apr., 1898	12.82	" ..	28 Dec., 1898	11.55
" ..	16 " 1900	13.23	Whim Creek ..	2 Apr., 1898	7.08
Croydon ..	3 Mar., 1903	12.00	" ..	3 " "	29.41
Derby ..	29 Dec., 1898	13.09	" ..	6 Mar., 1900	10.03
" ..	30 " "	7.14	" ..	3 " 1903	10.44
" ..	6 Jan., 1917	5.97	Woodbrook ..	2 Apr., 1898	3.80
" ..	7 " "	16.47	" ..	3 " 1898	8.78
Exmouth Gulf ..	2 Feb., 1918	12.50	Woodstock ..	21 Mar., 1912	13.00
Fortescue ..	3 May, 1890	23.36	Wyndham ..	27 Jan., 1890	11.60
Frazier Downs ..	3 Mar., 1916	12.25	" ..	4 Mar., 1919	12.50
Kerdiary ..	7 Feb., 1901	12.00	" ..	11 Jan., 1903	9.98
Meda ..	2 Mar., 1916	10.55	" ..	12 " "	6.64
Millstream ..	5 " 1900	10.00	Yardil Creek ..	3 Feb., 1918	10.00
Obagama ..	28 Feb., 1910	12.00	Yeeda ..	2 Mar., 1916	10.70
Pilbarra ..	2 Apr., 1898	14.04	" ..	6 Jan., 1917	10.20
Point Cloates ..	20 Jan., 1909	10.87	" ..	7 " "	11.75

## HEAVY RAINFALLS, NORTHERN TERRITORY, UP TO 1919, INCLUSIVE.

Name of Town or Locality.	Date.	Amnt.	Name of Town or Locality.	Date.	Amnt.
		ins.			ins.
Bonrook ..	24 Dec., 1915	10.60	Cosmopolitan Gold		
Borroloola ..	14 Mar., 1899	14.00	Mine ..	24 Dec., 1915	10.60
Brock's Creek ..	4 Jan., 1914	10.68	Lake Nash ..	21 Mar., 1901	10.25
" ..	24 Dec., 1915	14.33	Pine Creek ..	8 Jan., 1897	10.35
Burrundie ..	4 Jan., 1914	11.61	Darwin ..	7 " 1897	11.67

## HEAVY RAINFALLS, VICTORIA, UP TO 1919, INCLUSIVE.

Name of Town or Locality.	Date.	Amnt.	Name of Town or Locality.	Date.	Amnt.
		ins.			ins.
Balook ..	26 Sept., 1917	5.32	Mt. Buffalo ..	6 June, 1917	8.53
" ..	27 " "	7.23	" ..	7 " "	6.56
" ..	28 " "	2.08			

## HEAVY RAINFALLS, TASMANIA, UP TO 1919, INCLUSIVE.

Name of Town or Locality.	Date.	Amnt.	Name of Town or Locality.	Date.	Amnt.
		ins.			ins.
Gould's Country ..	8-10 Mar., '11	15.33	Mathinna ..	8-10 Mar., '11	15.79
Lottah ..	8-10 " "	18.10	The Springs ..	30-31 Jan., '16	10.75

10. **Snowfall.**—Light snow has been known to fall even as far north, occasionally, as latitude  $31^{\circ}$  S., and from the western to the eastern shores of the continent. During exceptional seasons it has fallen simultaneously over two-thirds of the State of New South Wales, and has extended at times along the whole of the Great Dividing Range, from its southern extremity in Victoria as far north as Toowoomba in Queensland. During the winter snow covers the ground to a great extent on the Australian Alps for several months, where also the temperature falls below zero Fahrenheit during the night, and in the ravines around Kosciuszko and similar localities the snow never entirely disappears.

The antarctic "V"-shaped disturbances are always associated with our most pronounced and extensive snowfalls. The depressions on such occasions are very steep in the vertical area, and the apexes are unusually sharp-pointed and protrude into very low latitudes, sometimes even to the tropics.

11. **Hail.**—Hail falls throughout Australia most frequently along the southern shores of the continent in the winter, and over south-eastern Australia during the summer months. The size of the hailstones generally increases with distance from the coast, a fact which lends strong support to the theory that hail is brought about by ascending currents. Rarely does a summer pass without some station experiencing a fall of stones exceeding in size an ordinary hen-egg, and many riddled sheets of light-gauge galvanised iron bear evidence of the weight and penetrating power of the stones.

Hail storms occur most frequently in Australia when the barometric readings indicate a flat and unstable condition of pressure. They are almost invariably associated with tornadoes or tornadic tendencies, and on the east coast the clouds from which the stones fall are generally of a remarkable sepia-coloured tint.

12. **Barometric Pressures.**—The mean annual barometric pressure (corrected to sea-level and standard gravity) in Australia varies from 29.80 inches on the north coast to 29.92 inches over the central and 30.03 inches in the southern parts of the continent. In January the mean pressure ranges from 29.76 inches in the northern and central areas to 29.95 inches in the southern. The July mean pressure ranges from 29.90 inches at Darwin to 30.12 inches at Alice Springs. Barometer readings, corrected to mean sea-level and standard gravity, have, under anticyclonic conditions in the interior of the continent, ranged as high as 30.77 inches (at Kalgoorlie on the 28th July, 1901) and have fallen as low as 27.55 inches. This lowest record was registered at Mackay during a tropical hurricane on the 21st January, 1918. An almost equally abnormal reading of 27.88 inches was recorded at Innisfail during a similar storm on the 10th March, 1918. The mean annual fluctuations of barometric pressure for the capitals of Australia are shewn on page 67.

13. **Wind.**—Notes on the distinctive wind currents in Australia were given in preceding Year Books (see No. 6, page 83) and are here omitted to save space.

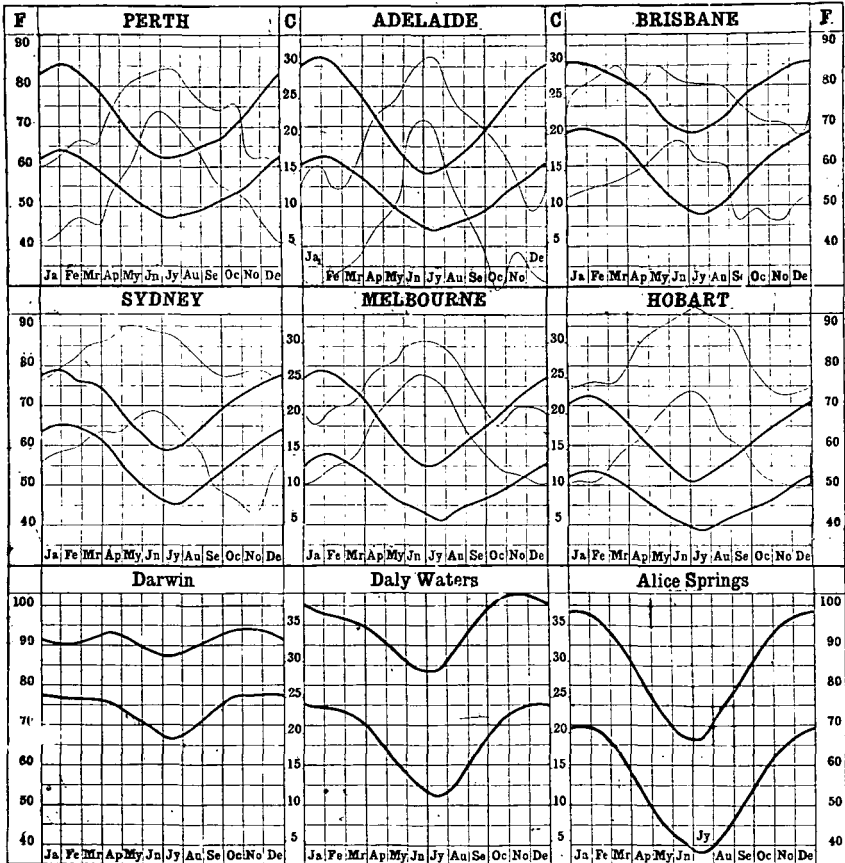
14. **Cyclones and Storms.**—The "elements" in Australia are ordinarily peaceful, and although severe cyclones have visited various parts, more especially coastal areas, such visitations are rare, and may be properly described as erratic.

During the winter months the southern shores of the continent are subject to cyclonic storms, evolved from the V-shaped depressions of the southern low-pressure belt. They are felt most severely over the south-western parts of Western Australia, to the south-east of South Australia, in Bass Straits, including the coast line of Victoria, and on the west coast of Tasmania. Apparently the more violent wind pressures from these cyclones are experienced in their northern half, that is, in that part of them which has a north westerly to a south-westerly circulation.

Occasionally the north-east coast of Queensland is visited by hurricanes from the north-east tropics. During the first four months of the year these hurricanes appear to have their origin in the neighbourhood of the South Pacific Islands, their path being a parabolic curve of south-westerly direction. Only a small percentage, however, reach Australia, the majority recurring in their path to the east of New Caledonia.

Very severe cyclones, popularly known as "Willy Willies," are peculiar to the north-west coast of Western Australia from the months of November to April inclusive. They apparently originate in the ocean, in the vicinity of Cambridge Gulf, and travel in a south-westerly direction with continually increasing force, displaying their greatest energy near Cossack and Onslow, between latitudes  $20^{\circ}$  and  $22^{\circ}$  South. The winds in these storms, like those from the north-east tropics, are very violent and destructive,

GRAPHS SHEWING ANNUAL FLUCTUATIONS OF MEAN MAXIMUM AND MINIMUM TEMPERATURE AND HUMIDITY IN SEVERAL PARTS OF THE COMMONWEALTH OF AUSTRALIA.



EXPLANATION OF THE GRAPHS OF TEMPERATURE AND HUMIDITY.—In the above graphs in which the heavy lines denote "temperature" and the thin lines "humidity," the fluctuations of mean temperature and mean humidity are shown throughout the year. These curves are plotted from the data given in the Climatological Tables hereinafter. The temperatures are shown in degrees Fahrenheit, the inner columns giving the corresponding values in Centigrade degrees. Humidities have not been obtained for Darwin, Daly Waters, and Alice Springs.

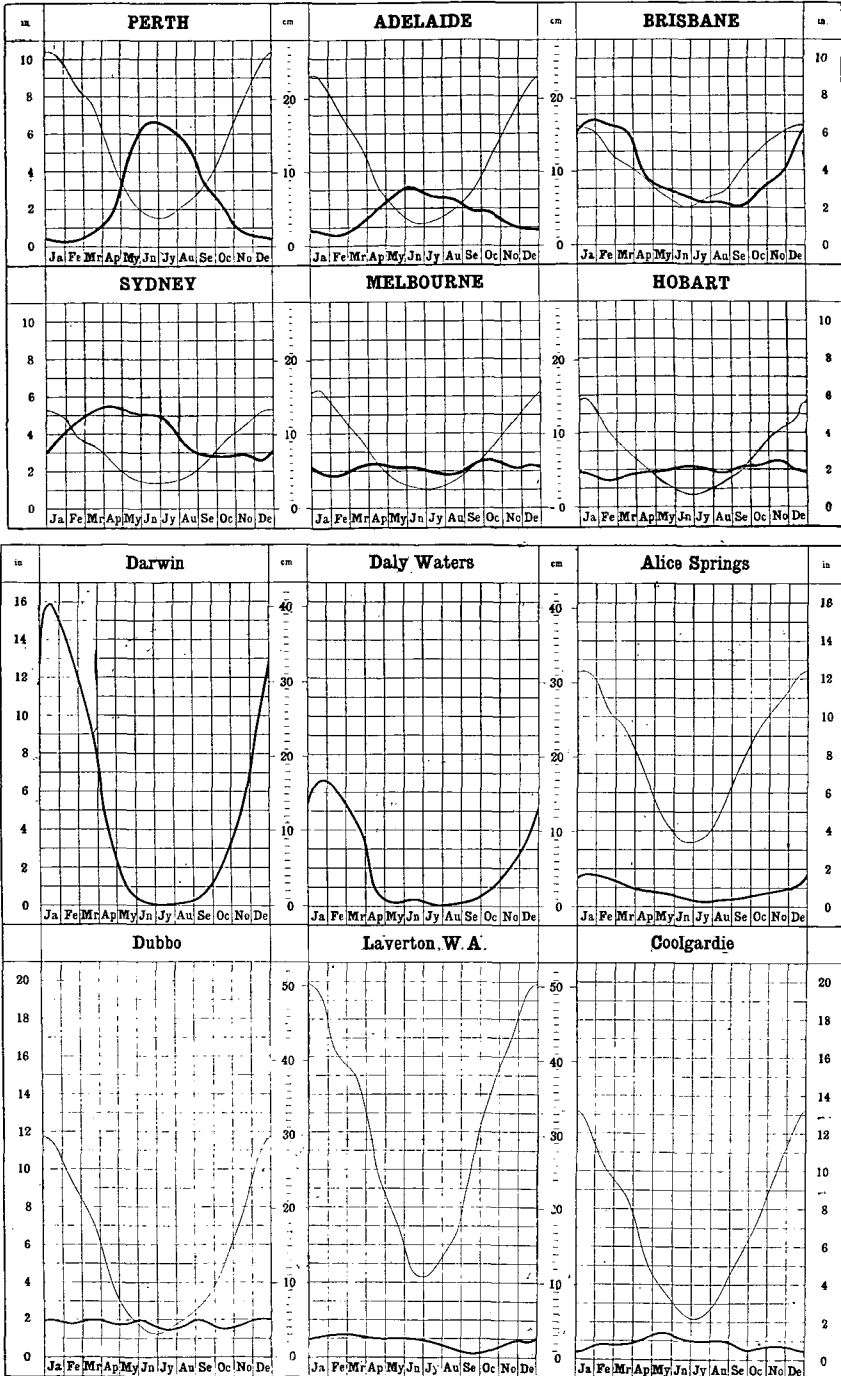
For the thin lines the degree numbers represent relative humidities, or the percentages of actual saturation (absolute saturation = 100).

The upper temperature line represents the mean of the maximum, and the lower line the mean of the minimum results; thus the curves also show the progression of the range between maximum and minimum temperatures throughout the year. The humidity curves show the highest and lowest values of the mean monthly humidity at 9 a.m. recorded during a series of years.

INTERPRETATION OF THE GRAPHS.—The curves denote mean monthly values. Thus, taking for example, the temperature graphs for Perth, the mean readings of the maximum and minimum temperatures for a number of years on 1st January would give respectively about 83° Fahr. and 62° Fahr. Thus the mean range of temperature on that date is the difference, viz., 21°. Similarly, observations about 1st June would give respectively about 66° Fahr. and 51° Fahr., or a range of 15°.

In a similar manner it will be seen that the greatest mean humidity, say for March, is about 66° and the least mean humidity for the month 46°; in other words, at Perth the degree of saturation of the atmosphere by aqueous vapour for the month of March ranges between 66% and 46%.

GRAPHS SHEWING ANNUAL FLUCTUATIONS OF MEAN RAINFALL AND MEAN EVAPORATION IN SEVERAL PARTS OF THE COMMONWEALTH OF AUSTRALIA.



**EXPLANATION OF THE GRAPHS OF RAINFALL AND EVAPORATION.**—On the preceding graphs thick lines denote rainfall and thin lines evaporation, and shew the fluctuation of the mean rate of fall *per month* throughout the year. The results, plotted from the Climatological Tables hereinafter, are shewn in inches (see the outer columns), and the corresponding metric scale (centimetres) is shewn in the two inner columns. The evaporation is not given for Darwin and Daly Waters.

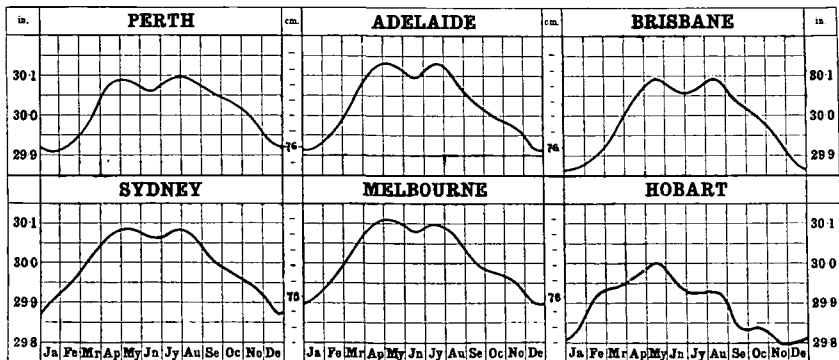
At Perth, Adelaide, Brisbane, Melbourne, Hobart, Alice Springs, and Coolgardie the results have been obtained from jacketed tanks sunk in the ground. At Sydney and Dubbo sunken tanks without water jackets are used, whilst at Laverton (W.A.) the records are taken from a small portable jacketed evaporation dish of 8 inches in diameter.

**INTERPRETATION OF THE GRAPHS.**—The distance for any date from the zero line to the curve represents the average number of inches, reckoned as per month, of rainfall at that date. Thus, taking the curves for Adelaide, on the 1st January the rain falls on the average at the rate of about four-fifths of an inch per month, or, say, at the rate of about  $9\frac{1}{2}$  inches per year. In the middle of June it falls at the rate of nearly 3 inches per month, or, say, at the rate of about 36 inches per year. At Dubbo the evaporation is at the rate of nearly  $11\frac{1}{2}$  inches per month about the middle of January, and only about  $1\frac{1}{2}$  inches at the middle of June.

TABLE SHEWING MEAN ANNUAL RAINFALL AND EVAPORATION IN INCHES AT THE PLACES SHEWN ON PRECEDING PAGE, AND REPRESENTED BY THE GRAPHS.

		Rainfall.	Evapora- tion.			Rainfall.	Evapora- tion.
Perth	..	33.60	65.86	Darwin	..	61.73	—
Adelaide	..	20.96	54.47	Daly Waters	..	26.22	—
Brisbane	..	45.60	51.20	Alice Springs	..	10.61	95.42
Sydney	..	48.19	37.86	Dubbo	..	22.20	66.37
Melbourne	..	25.55	38.74	Laverton, W.A.	..	9.90	141.42
Hobart	..	23.74	32.37	Coolgardie	..	10.16	87.72

GRAPHS SHEWING ANNUAL FLUCTUATIONS OF MEAN BAROMETRIC PRESSURE FOR THE CAPITALS OF THE SEVERAL STATES OF THE COMMONWEALTH OF AUSTRALIA.



**EXPLANATION OF THE GRAPHS OF BAROMETRIC PRESSURE.**—On the above graphs the lines representing the yearly fluctuation of barometric pressure at the State capital cities are means for long periods, and are plotted from the Climatological Tables given hereinafter. The pressures are shewn in inches on about  $2\frac{1}{2}$  times the natural scale, and the corresponding pressures in centimetres are also shewn in the two inner columns, in which each division represents one millimetre.

**INTERPRETATION OF THE BAROMETRIC GRAPHS.**—Taking the Brisbane graph for purposes of illustration, it will be seen that the mean pressure on 1st January is about 29.87 inches, and there are maxima in the middle of May and August of about 30.09 inches.

Chart indicating the area affected and period of duration of the Longest Heat Waves when the Maximum Temperature for consecutive 24 hours reached or exceeded 90° Fah.

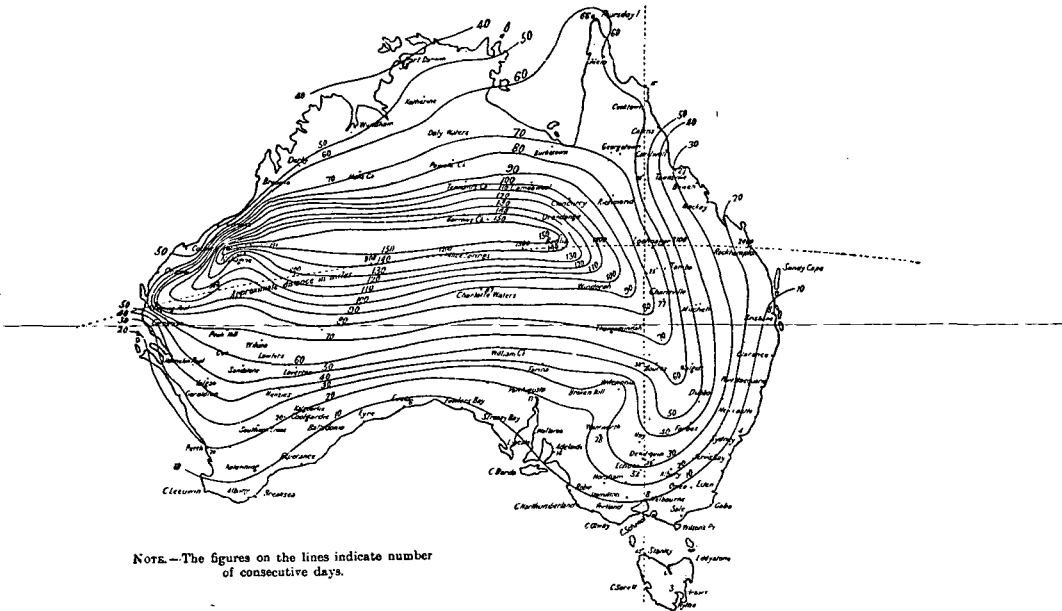
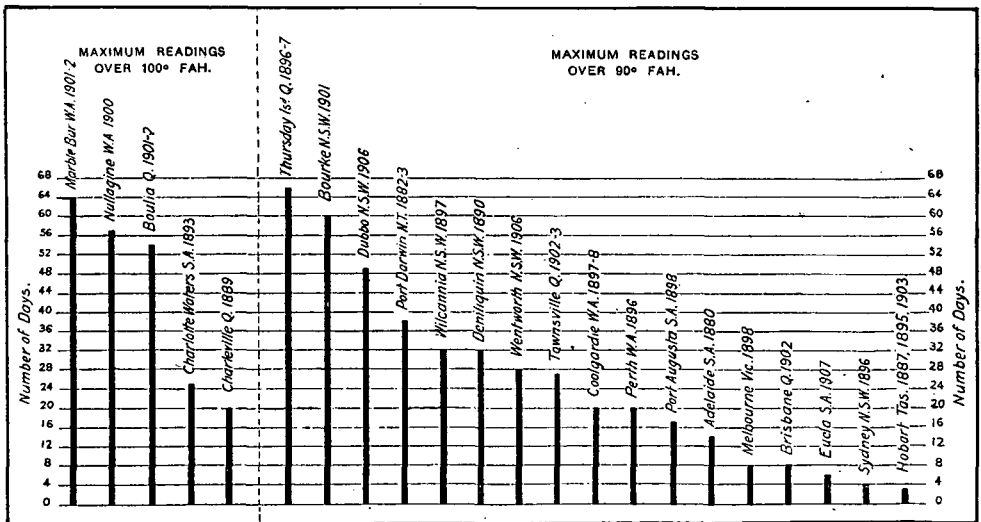
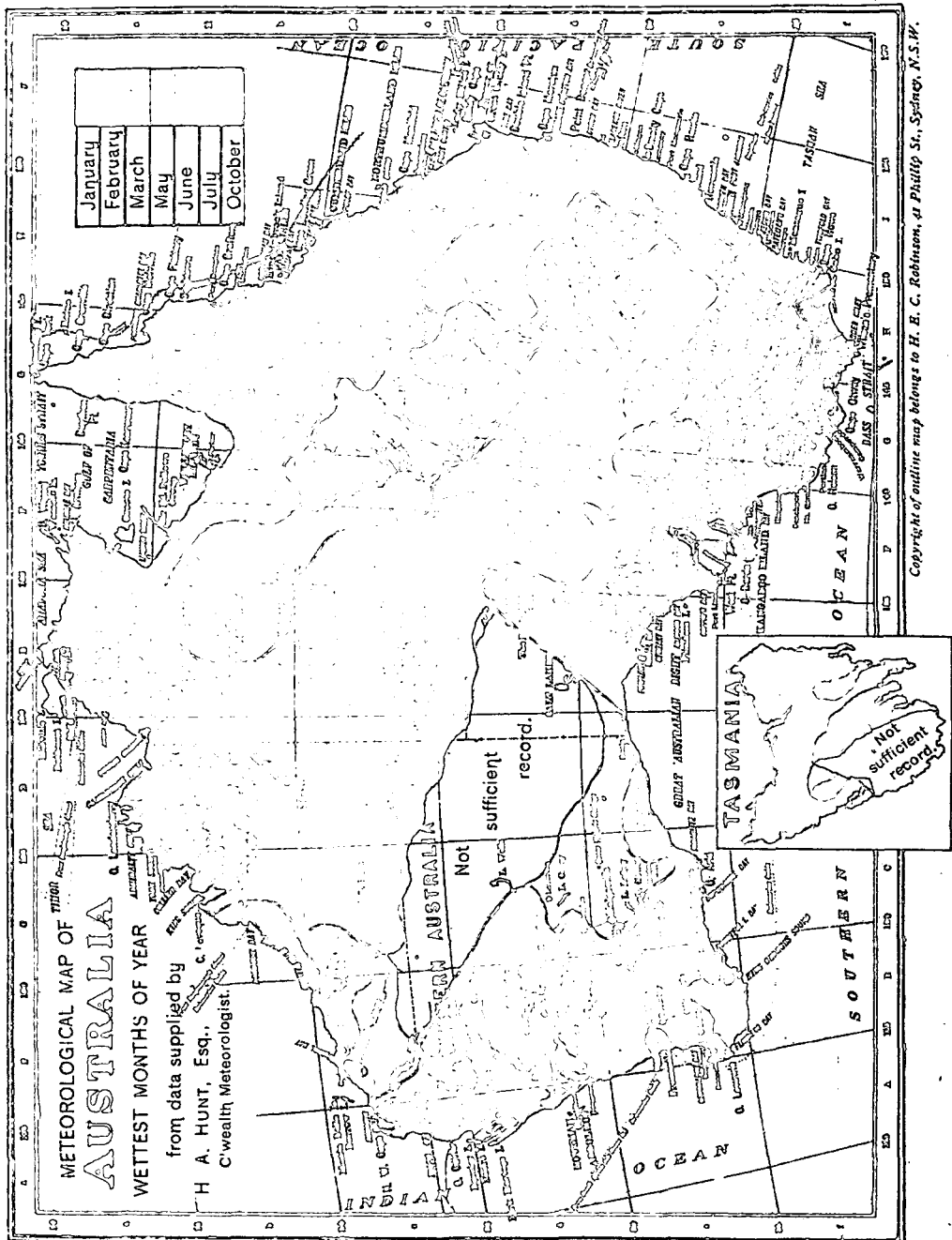


Diagram showing the greatest number of consecutive days on which the Temperature in the shade was over 100° and also over 90° at the places indicated.



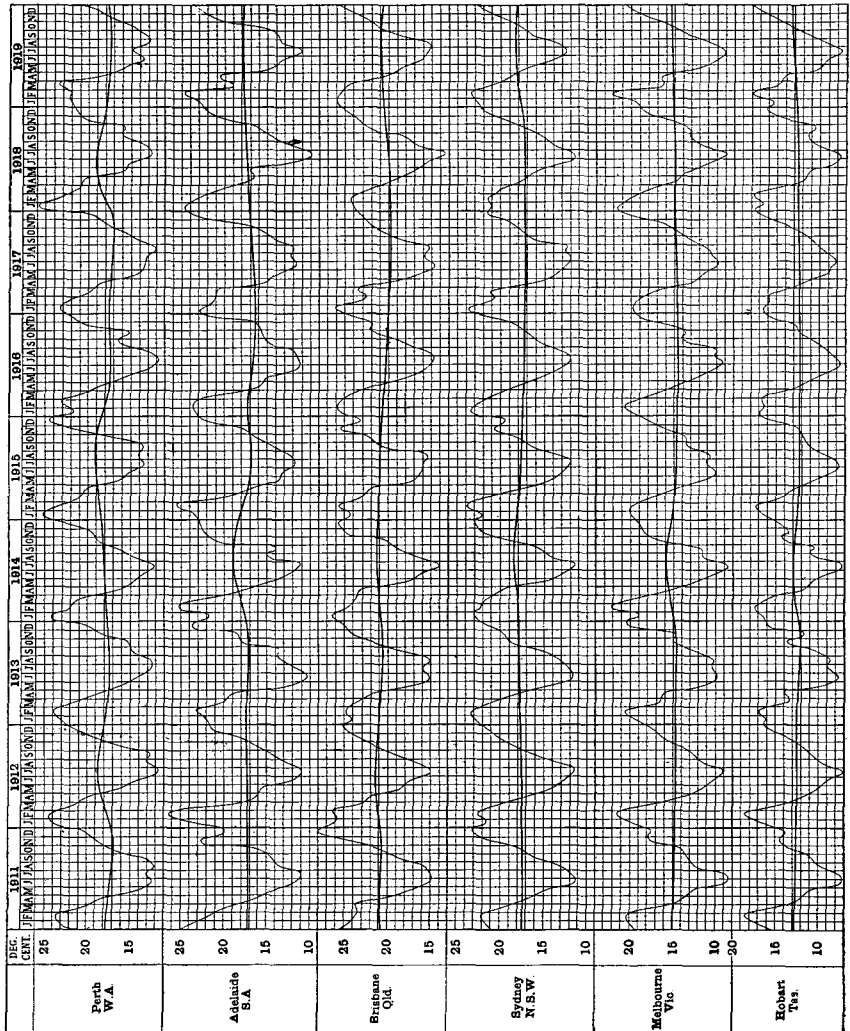


### METEOROLOGICAL SUB-DIVISIONS.

- |                         |                     |                         |                         |                          |     |
|-------------------------|---------------------|-------------------------|-------------------------|--------------------------|-----|
| <b>WEST AUSTRALIA.</b>  | No.                 | No.                     | No.                     | No.                      | No. |
| 1. East Kimberley.      | 11. Upper North.    | 22. Central Coast.      | 33. Central Tableland.  | 43. North Central.       |     |
| 2. West Kimberley.      | 12. North-East.     | 23. South-East Coast.   | 33a. Metropolitan.      | 44. Northern Country.    |     |
| 3. North-West.          | 13. Lower North.    | 24. Darling Downs.      | 34. Cent. Westn. Slope. | 45. Mallee.              |     |
| Gascoyne.               | 14. Central.        | 25. Meranoa.            | 35. Cent. Westn. Plain. | 46. Wimmera.             |     |
| South-West.             | 15. Murray Valley.  | 26. South-West.         | 36. Riverina.           | 47. Western.             |     |
| Eucie.                  | 16. South-East.     |                         | 37. South-West Slope.   |                          |     |
| Eastern.                |                     |                         | 38. Southern Tableland. |                          |     |
|                         |                     |                         | 39. South Coast.        |                          |     |
| <b>SOUTH AUSTRALIA.</b> | <b>QUEENSLAND.</b>  | <b>NEW SOUTH WALES.</b> | <b>VICTORIA.</b>        | <b>TASMANIA.</b>         |     |
| 4. Northern Territory.  | 17. Peninsular.     | 27. Western.            | 40. Gippsland.          | 48. Northern.            |     |
| 9. Far North and N.W.   | 18. Gulf.           | 28. North-West Plain.   | 41. North-East.         | 49. W. Coast Mt. Region. |     |
| 10. West.               | 19. Far West.       | 29. North-West Slope.   | 42. Central.            | 50. Central Plateau.     |     |
|                         | 20. Central.        | 30. Northern Tableland. |                         | 51. Midland.             |     |
|                         | 21. Nth-East Coast. | 31. North Coast.        |                         | 52. East Coast.          |     |
|                         |                     | 32. Hunter & Manning.   |                         | 53. Derwent.             |     |
|                         |                     |                         |                         | 54. South-Eastern.       |     |



DIAGRAM SHEWING THE MEAN MONTHLY, AND MEAN ANNUAL TEMPERATURES OF THE PRINCIPAL AUSTRALIAN CITIES FROM 1911 TO 1919.



#### EXPLANATION OF GRAPH.

The six light continuous curves shew the fluctuations of mean monthly temperatures of the Australian capitals from 1911 to 1919.

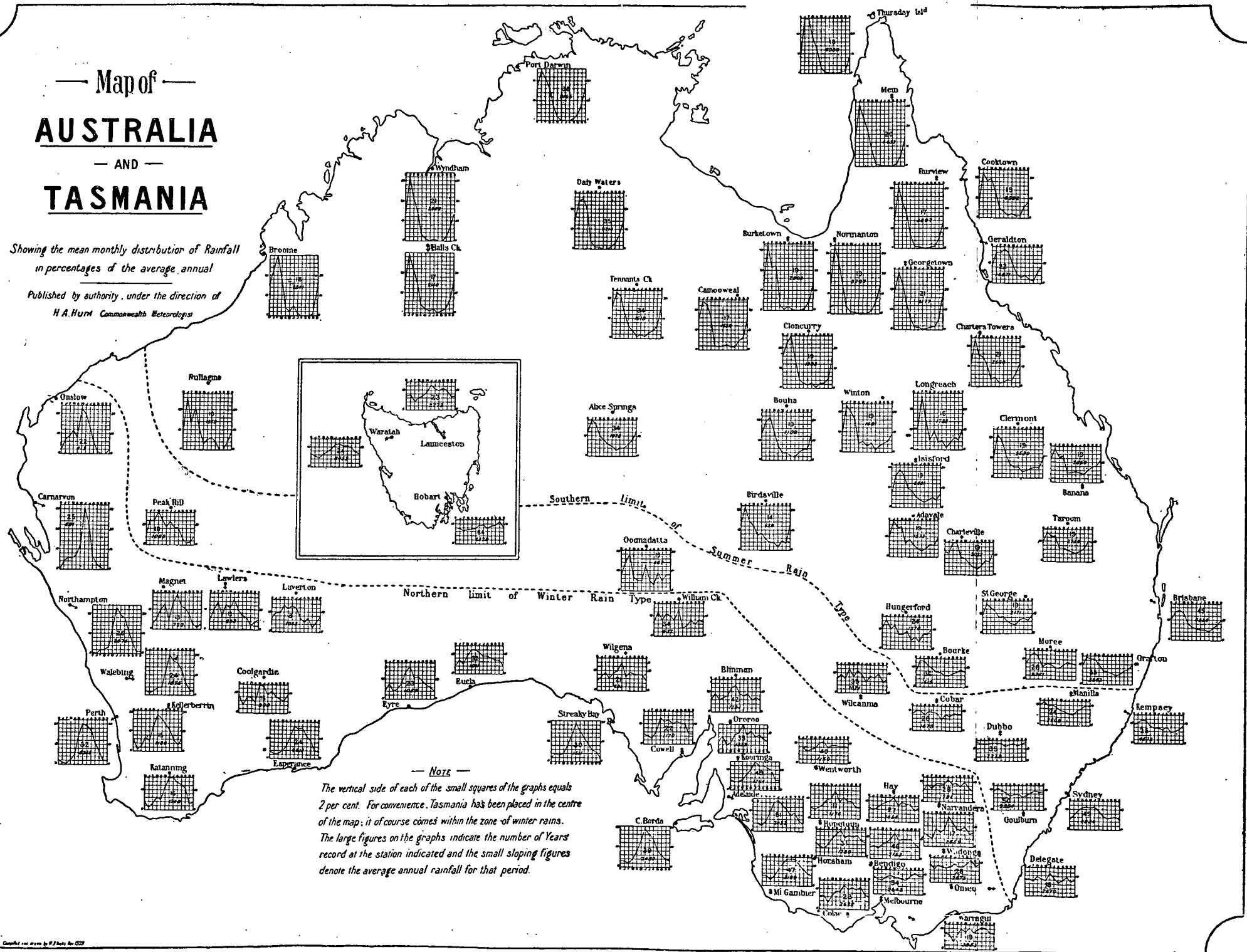
The six heavy curves similarly shew the fluctuations of the mean annual temperatures of the Australian capitals from 1911 to 1919.

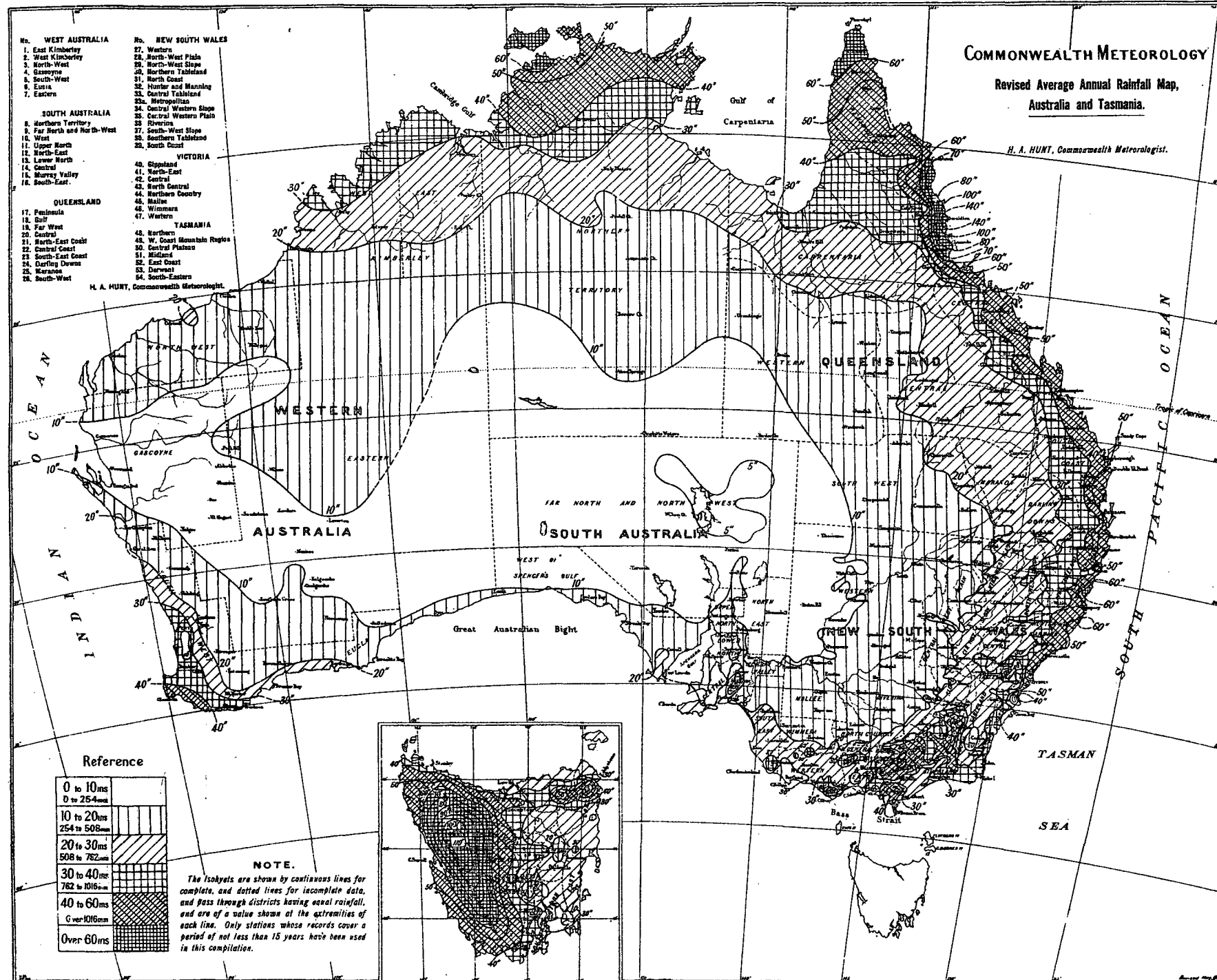
The base of each small square denotes one month, and the vertical side  $2^{\circ}$  Centigrade or  $3.6^{\circ}$  Fahrenheit.

— Map of —  
**AUSTRALIA**  
 — AND —  
**TASMANIA**

Showing the mean monthly distribution of Rainfall  
 in percentages of the average annual

Published by authority, under the direction of  
 H.A. Hurn, Commonwealth Meteorologist





causing great havoc amongst the pearl-fishers. The greatest velocities are usually to be found in the south-eastern quadrant of the cyclones, with north-east to east winds. After leaving the north-west coast, these storms either travel southwards, following the coast-line, or cross the continent to the Great Australian Bight. When they take the latter course their track is marked by torrential rains, as much as 29.41 inches, for example, being recorded in 24 hours at Whim Creek from one such occurrence. Falls of 10 inches and over have frequently been recorded in the northern interior of Western Australia from similar storms.

Some further notes on severe cyclones and on "Southerly Bursters," a characteristic feature of the eastern part of Australia, will be found in previous issues of the Year Book (see No. 6, pp. 84, 85, 86).

**15. Influences affecting Australian Climate.**—Australian history does not cover a sufficient period, nor is the country sufficiently occupied, to ascertain whether or not the advance of settlement has materially affected the climate as a whole. Local changes therein, however, have taken place, a fact which suggests that settlement and the treatment of the land have a distinct effect on local conditions. For example, the mean temperature of Sydney shows a rise of two-tenths of a degree during the last twenty years, a change probably brought about by the great growth of residential and manufacturing buildings within the city and in the surrounding suburbs during that period. Again, low-lying lands on the north coast of New South Wales, that originally were seldom subject to frosts, have, with the denudation of the surrounding hills from forests, experienced annual visitations, the probable explanation being that, through the absence of trees, the cold air of the high lands now flows, unchecked and untempered, down the sides of the hills to the valleys and lower lands.

(i) *Influences of Forests on Climate.* As already indicated, forests doubtless exercise a great influence on local climate, and hence, to the extent that forestal undertakings will allow, the weather can be controlled by human agency. The direct action of forests is an equalising one; thus, especially in equatorial regions and during the warmest portion of the year, they considerably reduce the mean temperature of the air. They also reduce the diurnal extremes of shade temperatures by altering the extent of radiating surface, by evaporation, and by checking the movement of air. While decreasing evaporation from the ground, they increase the relative humidity. Vegetation greatly diminishes the rate of flow-off of rain and the washing away of surface soil. Thus, when a region is protected by trees, a steadier water supply is ensured, and the rainfall is better conserved. In regions of snowfall the supply of water to rivers is similarly regulated, and without this and the sheltering influence of ravines and "gullies," watercourses supplied mainly by melting snow would be subject to alternate periods of flooding and dryness. This is borne out in the inland rivers. Thus, the River Murray, which has never been known to run dry, derives its steadiness of flow mainly through the causes above indicated.

(ii) *Direct Influences of Forests on Rainfall.* Whether forests have a direct influence on rainfall is a debatable question, some authorities alleging that precipitation is undoubtedly induced by forests, while others contend the opposite.

Sufficient evidence exists, however, to establish that, even if the rainfall has not increased, the beneficial effect of forest lands in tempering the effects of the climate is more than sufficient to disclose the importance of their protection and extension.

It is the rapid rate of evaporation, induced by both hot and cold winds, which injures crops and makes life uncomfortable on the plains. Whether the forest aids in increasing precipitation there may be doubt, but nobody can say that it does not check the winds and the rapid evaporation due to them.

Trees as wind-breaks have been successfully planted in central parts of the United States, and there is no reason why similar experiments should not be successful in many parts of our treeless interior. The belts should be planted at right angles to the direction of the prevailing parching winds, and if not more than half a mile apart will afford shelter to the enclosed areas.

In previous issues some notes on observations made in other countries were added (see Year Book No. 6, pp. 86 and 95).

**16. Comparison of Rainfalls and Temperatures.**—For the purpose of comparison the following lists of rainfalls and temperatures are given for various important cities throughout the world, for the site of the Federal capital, and for the capitals of the Australian States.

### COMPARISONS OF RAINFALLS AND TEMPERATURES OF CITIES OF THE WORLD WITH THOSE OF AUSTRALIA.

Place.	Height above M.S.L.	Annual Rainfall.			Temperature.					
		Average.	Highest.	Lowest.	* Mean Summer.	† Mean Winter.	Highest on Record.	Lowest on Record.	Average Hottest Month.	Average Coldest Month.
	Ft.	Ins.	Ins.	Ins.	Fahr.	Fahr.	Fahr.	Fahr.	Fahr.	Fahr.
Amsterdam ..	6	27.29	40.59	17.60	63.2	36.8	90.0	4.1	64.4	35.4
Auckland ..	125	43.31	69.72	26.32	66.1	52.5	91.0	31.9	67.2	51.8
Athens ..	351	15.48	33.32	4.55	79.2	49.1	106.5	19.6	81.1	47.5
Bergen ..	146	89.10	102.80	73.50	56.5	34.5	88.5	4.8	57.0	33.6
Berlin ..	115	22.95	30.01	14.25	64.7	32.2	98.6	— 13.0	66.0	30.0
Berne ..	1,877	36.30	58.23	24.69	62.2	30.1	91.4	— 3.6	64.4	28.0
Bombay ..	37	71.15	114.89	33.41	83.5	75.1	100.0	— 55.9	84.3	74.2
Breslau ..	482	22.00	28.01	16.45	63.3	30.0	100.0	— 23.4	65.5	29.3
Brussels ..	323	25.35	41.18	17.73	62.6	36.0	95.5	— 4.4	63.7	34.5
Budapest ..	500	25.20	35.28	16.79	68.6	30.2	98.6	— 5.1	70.4	28.8
Buenos Ayres ..	72	36.82	80.73	21.53	73.6	51.5	103.1	— 25.0	74.2	50.5
Calcutta ..	21	61.98	89.32	39.38	84.9	67.1	108.2	— 34.2	85.4	65.5
Capetown ..	40	25.50	36.72	17.71	68.1	54.7	102.0	— 48.2	69.2	63.7
Caracas ..	3,420	30.03	47.36	23.70	68.3	65.3	87.8	— 23.0	72.3	24.0
Chicago ..	823	35.45	45.86	24.52	69.2	25.4	103.0	— 21.3	61.6	42.4
Christchurch ..	25	25.45	35.30	13.54	61.1	33.4	95.7	— 21.1	66.6	23.9
Christiania ..	82	22.52	31.73	16.26	61.0	24.4	95.0	— 65.0	22.6	79.1
Colombo ..	40	83.83	139.70	51.60	81.5	79.9	95.8	— 13.0	75.7	42.0
Constantinople ..	245	28.75	42.74	14.78	74.0	43.5	103.6	— 13.0	62.2	31.4
Copenhagen ..	40	22.35	28.78	13.94	60.7	32.1	99.5	— 15.3	63.4	31.6
Dresden ..	115	27.66	34.49	17.72	62.9	32.4	93.4	— 13.3	60.5	41.7
Dublin ..	47	26.68	35.56	16.60	59.4	42.0	87.2	— 23.0	57.9	42.0
Dunedin ..	300	37.06	53.90	22.15	57.3	43.1	94.0	— 41.1	76.7	62.8
Durban ..	260	40.79	71.27	27.24	75.6	64.4	110.6	— 5.0	57.2	38.3
Edinburgh ..	441	25.21	32.05	16.44	55.8	38.8	87.7	— 66.2	22.2	32.2
Geneva ..	1,528	33.48	46.89	21.14	64.4	33.7	—	—	75.4	45.5
Genoa ..	157	51.29	108.22	28.21	73.8	46.8	94.5	— 6.6	58.0	38.4
Glasgow ..	184	38.49	56.18	29.05	52.7	41.0	84.9	— 4.0	62.7	38.6
Greenwich ..	159	24.12	35.54	16.38	61.3	39.3	100.0	— 32.0	51.8	58.1
Hong Kong ..	110	84.10	119.72	45.83	81.3	60.3	97.0	— 23.3	68.2	48.9
Johannesburg ..	5,750	31.63	50.00	21.66	65.4	54.4	94.0	— 14.8	61.8	30.6
Leipzig ..	384	24.69	31.37	17.10	63.1	31.5	97.3	— 32.5	70.2	49.3
Lisbon ..	312	29.18	62.79	17.32	69.6	51.3	94.1	— 9.4	62.8	38.7
London ..	18	24.04	38.20	18.23	61.2	39.3	100.0	— 57.5	87.0	75.3
Madras ..	22	49.06	88.41	18.45	86.7	76.0	113.0	— 10.5	75.7	39.7
Madrid ..	2,149	16.23	27.48	9.13	73.0	41.2	107.1	— 11.5	72.1	43.3
Marseilles ..	246	21.88	43.04	12.28	70.3	45.3	100.4	— 44.5	66.1	11.9
Moscow ..	526	18.94	29.28	12.07	63.4	14.7	99.5	— 23.9	75.4	46.8
Naples ..	489	34.00	50.58	21.75	73.6	48.0	99.1	— 6.0	74.5	30.3
New York ..	314	42.47	59.68	28.78	72.1	31.7	100.0	— 33.0	69.7	12.0
Ottawa ..	294	33.40	44.44	26.36	67.2	14.1	98.5	— 14.1	65.8	36.1
Paris ..	165	21.92	29.56	16.44	63.5	37.1	101.1	— 5.0	79.2	23.6
Pekin ..	143	24.40	36.00	18.00	77.7	26.6	114.0	— 34.3	66.3	10.1
Quebec ..	296	40.46	47.37	32.12	63.5	12.4	95.5	— 17.2	76.1	44.6
Rome ..	166	32.57	57.38	12.72	74.3	46.0	104.2	— 29.0	61.0	50.0
San Francisco ..	155	22.83	38.82	9.31	59.0	51.0	101.0	— 10.2	79.7	37.4
Shanghai ..	14	44.13	62.52	27.91	77.4	39.4	102.9	— 63.4	81.5	78.3
Singapore ..	8	91.99	158.68	32.71	81.2	78.6	94.2	— 22.0	62.1	25.7
Stockholm ..	146	18.31	25.46	11.78	59.7	27.0	91.8	— 38.2	63.7	15.2
Petrograd ..	16	21.30	29.52	13.75	61.1	17.4	97.0	— 15.4	77.7	37.1
Tokio ..	70	59.17	77.10	45.72	73.9	38.9	97.9	— 8.0	76.3	39.9
Trieste ..	85	42.94	63.14	26.57	73.9	41.3	99.5	— 21.8	69.4	6.1
Vienna ..	663	24.50	33.90	16.50	65.7	30.4	97.7	— 15.0	76.8	32.9
Vladivostok ..	55	19.54	33.60	9.39	63.9	11.0	95.7	— 30.0	62.4	47.5
Washington ..	75	43.80	61.33	18.79	74.7	34.5	104.0	— 0.8	65.1	29.5
Wellington (N.Z.) ..	110	49.70	67.68	30.02	61.7	48.4	88.0	—	—	—
Zürich ..	1,542	45.15	78.27	29.02	63.3	31.3	94.1	—	—	—

#### FEDERAL CAPITAL SITE.

	{ 2,000 to 2,900 }	22.27	41.29	10.45	68.5	44.2	101.0	20.0	69.5	43.0
Canberra (Dist.)										
Queanbeyan										

#### THE STATE CAPITALS.

Perth ..	197	33.60	46.73	20.21	72.9	55.9	107.9	34.2	74.0	55.1
Adelaide ..	140	20.96	30.87	11.39	73.1	53.0	116.3	32.0	74.1	51.6
Brisbane ..	137	45.60	88.26	16.17	76.7	59.7	108.9	36.1	77.2	58.3
Sydney ..	133	48.19	82.76	21.49	71.0	53.6	108.5	35.9	71.7	52.5
Melbourne ..	115	25.55	44.25	15.61	66.6	50.0	111.2	27.0	67.5	48.6
Hobart ..	177	23.74	43.39	13.43	61.7	46.7	105.2	27.0	62.4	45.4

\* Mean of the three hottest months. † Mean of the three coldest months.

17. Climatological Tables.—The means, averages, extremes, totals, &c., for a number of climatological elements have been determined from long series of observations at the Australian capitals up to and including the year 1919. These are given in the tables following.

## CLIMATOLOGICAL DATA FOR PERTH, W.A.

LAT. 31° 57' S., LONG. 115° 50' E. HEIGHT ABOVE M.S.L. 197 FT.

BAROMETER, WIND, EVAPORATION, LIGHTNING, CLOUDS, AND CLEAR DAYS.

Month.	Bar. corrected to 32° F. M. Sea Level and Standard Gravity from 9 a.m. and 3 p.m. readings.	Wind.				Mean Amount of Evaporation. (inches)	No. of Days Lightning.	Mean Amount of Clouds, 9 a.m. 3 p.m. & 9 p.m.	No. of Clear Days.
		Greatest Number of Miles in one day.	Mean Hourly Pressure. (lbs.)	Total Miles.	Prevailing Direction.				
No. of yrs. over which observation extends	35	22	22	22	22	21	22	23	23
January ..	29.906	797 27/98	0.69	11,323	S S E	10.45	1.7	2.6	14.2
February ..	29.926	650 6/08	0.63	9,833	S S E	8.58	1.4	2.9	11.2
March ..	29.989	651 6/13	0.54	10,075	S S E	7.60	1.3	3.2	11.5
April ..	30.073	955 25/00	0.42	8,510	S E	4.70	1.2	4.3	7.3
May ..	30.085	768 5/12	0.36	8,082	E N E	2.77	1.9	5.1	5.4
June ..	30.061	861 27/10	0.33	8,036	N	1.75	2.0	5.8	3.2
July ..	30.092	949 11/99	0.39	8,447	N	1.69	2.5	5.4	5.0
August ..	30.084	966 15/03	0.42	8,884	W	2.37	1.6	5.3	4.8
September ..	30.060	864 11/05	0.49	9,203	S W	3.32	1.5	4.9	5.6
October ..	30.032	809 6/16	0.54	9,940	S S W	5.22	1.1	4.8	5.8
November ..	29.989	777 18/97	0.60	10,224	S	7.63	1.4	3.8	7.9
December ..	29.920	672 31/98	0.65	10,952	S	9.78	1.5	2.9	12.2
Year { Totals	—	—	—	113,568	—	65.86	19.1	—	94.1
Averages ..	30.019	—	0.51	9,464	S	—	—	4.2	—
Extremes ..	—	966 15/8/03	—	—	—	—	—	—	—

## TEMPERATURE AND SUNSHINE.

Month.	Mean Temperature (Fahr.).			Extreme Shade Temperature (Fahr.).		Extreme Range.	Extreme Temperature (Fahr.).		Mean Hours of Sunshine.
	Mean Max.	Mean Min.	Mean.	Highest.	Lowest.		Highest in Sun.	Lowest on Grass.	
No. of yrs. over which observation extends	23	23	23	23	23	23	22	21	22
January ..	84.3	63.2	73.8	107.0 16/97 & 9/18	50.6 25/01	56.4	177.3 22/14	42.4 25/02	324.5
February ..	84.6	63.3	74.0	107.3 12/15	47.7 1/02	59.6	169.0 4/99	39.8 1/13	273.0
March ..	81.1	60.7	70.9	106.1 6/14	45.8 8/03	60.3	167.0 19/18	36.7 8/03	267.8
April ..	75.8	57.0	66.4	99.7 9/10	39.3 20/14	60.4	157.0 8/16	31.0 20/14	215.6
May ..	68.6	52.3	60.4	90.4 2/07	34.3 11/14	56.1	139.1 7/14	25.3 11/14	181.4
June ..	63.8	49.4	56.6	81.7 2/14	36.3 29/14	45.4	135.5 9/14	29.0 20/16	144.2
July ..	62.6	47.6	55.1	74.1 17/19	34.2 7/16	39.9	133.2 13/15	25.2 6/7/16	169.3
August ..	63.8	48.1	56.0	81.0 12/14	35.3 31/08	45.7	143.2 23/18	27.9 10/11	186.3
September ..	66.0	50.3	58.1	90.9 30/18	38.9 17/13	52.0	153.6 29/16	29.2 21/16	203.3
October ..	69.1	52.7	60.9	93.4 17/06	40.9 4/17	52.5	154.0 29/14	30.5 4/17	236.0
November ..	75.2	56.5	65.8	104.6 24/13	42.0 1/04	62.6	166.6 23/15	35.5	289.6
December ..	80.6	60.5	70.6	107.9 20/04	48.0 2/10	59.9	168.7 25/15	39.1 2/10	326.8
Year { Averages	73.0	55.1	64.0	—	—	—	—	—	2818.0†
Extremes ..	—	—	—	107.9 20/12/04	34.2 7/7/16	73.7	177.3 22/11/14	25.2 6, 7/7/16	—

\* 6/1910 and 14/1912.

† Total for Year.

## HUMIDITY, RAINFALL, AND DEW.

Month.	Rel. Hum. (%)			Rainfall. (inches).				Dew (inches).	
	Mean 9 a.m.	Highest Mean.	Lowest Mean.	Mean Monthly.	Mean No. of Days Rain.	Greatest Monthly.	Least Monthly.	Greatest in One Day.	Mean No. of Days Dew.
No. of yrs. over which observation extends	23	23	23	44	44	44	44	44	23
January ..	53	61	42	0.34	3	2.17 1879	nil	1.74 28/79	2.7
February ..	54	65	46	0.46	2	2.98 1915	nil	1.63 26/15	3.1
March ..	57	66	46	0.72	4	4.50 1896	nil	1.53 17/76	5.7
April ..	64	72	53	1.63	7	4.97 1882	0.05	2.62 30/04	9.2
May ..	72	81	61	4.70	14	12.13 1879	0.98	2.80 20/79	12.5
June ..	78	83	72	6.76	17	12.11 1890	2.16	2.65 16/00	11.8
July ..	78	84	72	6.52	17	11.29 1917	2.42	2.876 3/00	13.3
August ..	74	79	67	5.64	18	10.33 1882	0.46	1902 2/79	11.3
September ..	68	75	58	3.33	14	7.72 1903	0.34	1916 1.73 23/09	9.1
October ..	62	75	54	2.13	12	7.97 1890	0.49	1892 1.38 15/10	5.6
November ..	55	63	50	0.79	6	2.78 1916	nil	1891 1.11 30/03	4.1
December ..	52	62	44	0.58	4	3.05 1888	nil	1886 1.72 1/88	3.0
Year { Totals	—	—	—	33.60	118	—	—	—	91.4
Averages ..	62	—	—	—	—	—	—	—	—
Extremes ..	—	84	42	—	—	12.13 5/79	nil.	2.00 4/7/91	—

\* 1888, 1894, 1897, and 1911. † 1885, 1891, 1896, 1903, and 1913. ‡ 1877, 1884, and 1886. § 1890 and 1894. || 1890 and 1894.

§ January, February, March, November, and December, various years.

## CLIMATOLOGICAL DATA FOR ADELAIDE, S.A.

LAT. 34° 56' S., LONG. 138° 35' E. HEIGHT ABOVE M.S.L. 140 FT.

BAROMETER, WIND, EVAPORATION, LIGHTNING, CLOUDS, AND CLEAR DAYS.

Month.	Bar. corrected to 32° F. Mm. Sea Level and Standard Gravity from 9 a.m. and 3 p.m. readings.	Wind.				Mean Amount of Evaporation (inches).	No. of Days Lightning.	Mean Amount of Clouds, 9 a.m. & 3 p.m. & 9 p.m.	No. of Clear Days.	
		Greatest Number of Miles In One Day.	Mean Hourly Pressure. (lbs.)	Total Miles.	Prevailing Direction.					
No. of yrs. over which observation extends	63	42	42	42	42	50	48	52	38	
January .. .. .	29.916	758	19/99	0.34	7,914	S	8.98	2.3	3.5	8.2
February .. .. .	29.952	691	22/96	0.30	6,821	S S E	7.31	2.0	3.4	7.0
March .. .. .	30.036	628	9/12	0.25	6,761	S	5.80	2.2	4.0	6.7
April .. .. .	30.120	773	10/96	0.22	6,177	S x W	3.39	1.7	5.0	3.9
May .. .. .	30.126	760	9/80	0.21	6,227	N	2.01	1.8	5.8	1.7
June .. .. .	30.099	750	12/78	0.25	6,638	N	1.24	2.1	6.1	1.4
July .. .. .	30.131	674	25/82	0.25	6,793	N	1.30	1.7	5.3	1.7
August .. .. .	30.098	773	31/97	0.28	7,196	N N W	1.87	2.2	5.6	2.3
September .. ..	30.040	720	2/87	0.31	7,378	W	2.84	2.4	5.2	3.1
October .. .. .	29.999	768	28/98	0.34	7,971	S W x W	4.76	3.4	4.9	3.9
November .. ..	29.975	677	2/04	0.33	7,600	S S W	6.52	3.7	4.6	5.1
December .. ..	29.920	675	12/91	0.34	7,968	S S W	8.45	2.7	3.8	7.3
Year { Totals .. ..	—	—	—	—	—	—	54.47	23.2	—	52.3
Year { Averages .. ..	30.034	—	—	0.23	7,120	S W x S	—	—	4.8	—
Year { Extremes .. ..	—	773*	—	—	—	—	—	—	—	—

\* 10/4/96 and 31/8/97.

## TEMPERATURE AND SUNSHINE.

Month.	Mean Temperature (Fahr.).			Extreme Shade Temperature (Fahr.).		Extreme Range.	Extreme Temperature (Fahr.).		No. of Hours of Sunshine.				
	Mean Max.	Mean Min.	Mean	Highest.	Lowest.		Highest in Sun.	Lowest on Grass.					
No. of yrs. over which observation extends	63	63	63	63	63	63	42	59	38				
January .. ..	86.5	61.6	74.1	116.3	26/58	45.1	21/84	71.2	180.0	18/82	36.5	14/79	309.6
February .. ..	86.1	62.1	74.1	113.6	12/99	45.5	23/18	68.1	170.5	10/00	36.7	†	263.2
March .. .. .	80.7	58.9	69.8	108.0	12/61	41.8	—/57	63.2	174.0	17/83	33.8	27/80	237.4
April .. .. .	73.2	54.6	63.9	98.0	10/66	39.6	15/59	58.4	155.0	17/83	30.2	16/17	177.4
May .. .. .	65.5	50.1	57.8	88.3	5/66	36.9	*	51.4	148.2	12/79	25.9	10/91	148.6
June .. .. .	60.3	46.7	53.5	76.0	23/65	32.5	27/76	43.5	138.8	18/79	22.9	12/13	121.2
July .. .. .	58.8	44.5	51.6	74.0	11/06	32.0	24/08	42.0	134.5	26/90	23.3	25/11	137.8
August .. ..	62.0	45.9	54.0	85.0	31/11	32.3	17/59	52.7	140.0	31/92	23.5	7/88	162.4
September ..	66.3	47.8	57.0	90.7	23/82	32.7	4/58	58.0	160.5	23/82	26.2	15/08	184.3
October .. ..	72.5	51.4	61.9	102.3	30/19	36.0	—/57	66.8	158.8	19/82	27.8	2/18	227.9
November ..	78.6	55.3	67.0	113.5	21/65	40.8	2/09	72.7	166.9	20/78	31.5	2/09	262.0
December ..	83.5	58.9	71.2	114.2	14/76	43.0	†	71.2	175.7	7/99	32.5	4/84	304.0
Year {Averages ..	72.8	53.2	63.0	—	—	—	—	—	—	—	—	—	2,535.8§
Extremes ..	—	—	—	116.3	32.0	84.3	180.0	22.9	—	—	—	—	—
				26/1/58	24/7/08				18/1/82	12/6/13			

\* 26/1895 and 24/1904.

† 16/1861 and 4/1906.

‡ 24/78 and 23/18.

§ Total for year.

## HUMIDITY, RAINFALL, AND DEW.

Month.	Rel. Hum. (%)				Rainfall (inches).				Dew (inches).			
	Mean 9 a.m.	Highest Mean.	Lowest Mean.	Mean Monthly.	Mean No. of Days Rain.	Greatest Monthly.	Least Monthly.	Greatest in One Day.	Mean Amount of Dew.	Mean No. of days Dew.		
No. of yrs. over which observation extends	52	52	52	81	81	81	81	81	—	—	—	48
January ..	38	59	30	0.71	4	4.00	1850	nil	2.30	2/89	—	4
February ..	41	56	33	0.65	4	2.89	1919	nil	2.24	14/13	—	6
March ..	47	58	36	1.04	6	4.60	1878	nil	3.50	5/78	—	11
April ..	56	72	44	1.81	9	6.78	1853	0.06	1910	3.15	5/60	14
May ..	68	76	49	2.72	14	7.75	1875	0.20	1891	2.75	1/53	16
June ..	77	84	69	3.08	15	8.58	1916	0.42	1886	1.97	26/16	16
July ..	76	87	69	2.63	17	5.38	1865	0.37	1899	1.75	10/65	17
August ..	69	77	54	2.51	16	6.24	1852	0.35	1914	2.23	19/51	16
September ..	61	72	44	1.98	14	4.64	1840	0.45	1896	1.42	25/93	16
October ..	51	67	29	1.72	11	3.83	1870	0.17	1914	2.24	16/08	12
November ..	43	57	37	1.15	8	3.55	1851	0.04	1885	1.88	28/58	7
December ..	39	50	33	0.96	6	3.98	1861	nil	1904	2.42	23/13	5
Year { Totals ..	—	—	—	20.96	124	—	—	—	—	—	—	140
Extremes ..	—	87	29	—	—	8.58	6/16	nil	3.50	5/3/78	—	—

\* 1848, 1849, 1878, and 1906.

† 1848, 1860, &amp;c.

‡ 1859, &amp;c.

§ January, February, March, and December, various years.

## CLIMATOLOGICAL DATA FOR BRISBANE, QUEENSLAND.

LAT. 27° 28' S., LONG. 153° 2' E. HEIGHT ABOVE M.S.L. 137 FT.

BAROMETER, WIND, EVAPORATION, LIGHTNING, CLOUDS, AND CLEAR DAYS.

Month.	Bar. corrected to 32° F. Mm. Sea Level and Standard Gravity from 9 a.m. and 3 p.m. readings.	Wind.				Mean Amount of Evaporation (inches).	No. of Days Lightning.	Mean Amount of Clouds, 9 a.m. to 3 p.m. & 9 p.m.	No. of Clear Days.
		Greatest Number of Miles in one day.	Mean Hourly Pressure. (lbs.)	Total Miles.	Prevailing Direction.				
No. of yrs. over which observation extends	33	9	9	9	33	11	33	23	11
January ..	29.869	315 24/14	0.09	4,154	E	6.558	5.4	5.7	3.1
February ..	29.894	340 10/15	0.13	4,412	S E	5.149	5.2	5.3	1.9
March ..	29.948	305 29/16	0.08	3,966	S E & S	4.622	4.3	5.3	4.4
April ..	30.043	252 13/19	0.08	3,566	S	3.659	3.2	4.6	8.1
May ..	30.086	245 29/19	0.07	3,632	S	2.779	2.8	4.4	8.2
June ..	30.061	307 23/16	0.07	3,452	S	2.100	2.1	4.1	8.6
July ..	30.068	279 19/17	0.07	3,506	S-W	2.312	2.4	3.7	12.0
August ..	30.090	250 22/17	0.08	3,794	S	2.765	3.5	3.5	11.4
September ..	30.028	239 25/17	0.08	3,575	S	3.088	5.7	3.5	12.2
October ..	29.998	325 25/18	0.09	4,134	N-E	5.108	6.8	4.0	7.9
November ..	29.950	265 27/14	0.11	4,277	N & N E	5.906	8.1	4.8	5.9
December ..	29.886	295 21/13	0.14	4,980	N E & E	6.522	8.3	5.2	2.8
Year { Totals ..	—	—	—	—	S to E and N E	51.198	57.3	—	86.5
Year { Averages ..	29.993	—	0.09	3,954	—	—	—	4.6	—
Year { Extremes ..	—	340 10/2/15	—	—	—	—	—	—	—

## TEMPERATURE AND SUNSHINE.

Month.	Mean Temperature (Fahr.).			Extreme Shade Temperature (Fahr.).		Extreme Range.	Extreme Temperature (Fahr.).		Mean Hours of Sunshine.
	Mean Max.	Mean Min.	Mean.	Highest.	Lowest.		Highest in Sun.	Lowest on Grass.	
No. of yrs. over which observation extends	33	33	33	33	33	33	33	33	11
January ..	85.5	68.8	77.2	108.9 14/02	58.8 4/93	50.1	166.4 10/17	49.9 4/93	218.9
February ..	84.6	68.3	76.5	101.9 11/04	58.7 *	43.2	165.2 6/10	49.3 9/89	199.9
March ..	82.4	66.4	74.4	99.4 5/19	52.4 29/13	47.0	160.0 1/87	45.4 29/13	198.3
April ..	79.1	61.6	70.4	95.2 †	48.6 17/00	46.6	153.8 11/16	37.0 17/00	204.7
May ..	73.4	55.3	64.4	88.8 18/97	41.3 24/99	47.5	147.0 1/10	29.8 8/97	189.7
June ..	69.3	50.8	60.1	88.9 19/18	36.3 29/08	52.6	136.0 3/18	25.4 23/88	159.3
July ..	68.4	48.2	58.3	83.4 28/98	36.1 †	47.3	146.1 20/15	23.9 11/90	190.5
August ..	71.3	49.8	60.6	87.5 28/07	37.4 6/87	50.1	141.9 20/17	27.1 9/99	217.2
September ..	75.9	54.7	65.3	95.2 16/12	40.7 1/96	54.5	155.5 26/03	30.4 1/89	231.0
October ..	79.9	59.9	69.9	101.4 18/93	43.3 3/99	58.1	157.4 31/18	34.9 8/89	247.3
November ..	83.0	64.1	73.6	106.1 18/13	48.5 2/05	57.6	162.3 7/89	33.8 1/05	236.5
December ..	85.3	67.4	76.4	105.9 26/93	56.4 13/12	49.5	160.4 7/14	49.1 3/94	241.2
Year { Averages ..	78.2	59.6	68.9	—	—	—	—	—	2535.0
Year { Extremes ..	—	—	—	108.9 14/1/02	36.1 †	72.8	166.4 10/1/17	23.9 11/7/90	—

\* 10 and 11/04. † 9/96 and 5/03.

‡ 12/94 and 2/96.

## HUMIDITY, RAINFALL, AND DEW.

Month.	Rel. Hum. (%).			Rainfall (inches).					Dew (inches).	
	Mean 9 a.m.	Highest Mean.	Lowest Mean.	Mean Monthly.	Mean No. of Days Rain.	Greatest Monthly.	Least Monthly.	Greatest in One Day.	Mean Amount of Dew.	Mean No. of Days Dew.
No. of yrs. over which observation extends	33	33	33	68	60	68	68	—	—	33
January ..	67	79	53	6.42	14	27.72 1895	0.32 1919	18.31 21/87	—	4.2
February ..	70	82	55	6.48	14	40.39 1893	0.58 1849	8.36 16/93	—	4.7
March ..	73	85	56	5.92	16	34.04 1870	nil 1849	11.18 14/08	—	7.7
April ..	73	79	60	3.60	12	15.23 1867	0.04 1897	4.47 13/16	—	10.9
May ..	74	85	64	2.94	10	13.85 1876	nil 1846	5.82 9/79	—	11.5
June ..	73	82	67	2.56	8	14.03 1873	nil 1847	6.01 9/93	—	9.5
July ..	74	81	61	2.22	8	8.46 1889	nil 1841	3.54 †	—	11.0
August ..	70	80	61	2.21	8	14.67 1879	nil *	4.89 12/87	—	8.7
September ..	65	76	47	2.06	8	5.43 1886	0.10 1907	2.46 2/94	—	8.5
October ..	61	72	49	2.65	9	9.99 1882	0.14 1900	1.95 20/89	—	6.6
November ..	60	72	46	3.63	10	12.40 1917	nil 1842	4.46 16/86	—	3.3
December ..	63	67	52	4.91	12	13.99 1910	0.35 1865	6.60 28/71	—	2.7
Year { Totals ..	—	—	—	45.60	129	—	—	—	—	89.3
Year { Averages ..	69	—	—	—	—	40.39	—	—	—	—
Year { Extremes ..	—	85	46	—	—	2/1893	nil ‡	18.31 21/1/87	—	—

\* 1862, 1869, 1880.

† 15/70, 16/89.

‡ March, May, June, July, August, and November, various years.



## CLIMATOLOGICAL DATA FOR SYDNEY, N.S.W.

LAT. 33° 52' S., LONG. 151° 12' E. HEIGHT ABOVE M.S.L. 133 FT.

BAROMETER, WIND, EVAPORATION, LIGHTNING, CLOUDS, AND CLEAR DAYS.

Month.	Bar. corrected to 32° F. Mm. Sea Level and Standard Gravity from 24 hourly readings.	Wind.				Mean Amount of Evaporation (inches).	No. of Days Lightning.	Mean Amount of Clouds, 9 a.m. to 3 p.m., & 9 p.m.	No. of Clear Days.
		Greatest Number of Miles in one day.	Mean Hourly Pressure. (lbs.)	Total Miles.	Prevailing Direction.				
No. of yrs. over which observation extends	61	53	53	53	53	40	60	58	56
January ..	29.902	721 1/71	0.36	8,172	N E	5.238	4.7	5.8	2.0
February ..	29.946	871 12/69	0.32	7,097	N E	4.056	4.3	6.1	1.3
March ..	30.011	943 20/70	0.25	6,777	N E	3.477	4.2	5.6	1.9
April ..	30.075	803 6/82	0.22	6,146	N E	2.489	4.0	5.0	2.6
May ..	30.084	758 6/98	0.22	6,374	W	1.702	3.4	4.8	3.2
June ..	30.061	712 7/00	0.28	6,976	W	1.389	2.2	4.8	3.5
July ..	30.080	930 17/79	0.28	7,130	W	1.487	2.5	4.4	4.1
August ..	30.076	756 22/72	0.25	6,862	W	1.812	3.2	4.1	4.5
September ..	30.012	964 6/74	0.29	7,132	W	2.621	4.1	4.3	4.2
October ..	29.972	926 4/72	0.32	7,755	N E	3.755	4.9	5.0	2.5
November ..	29.930	720 13/68	0.33	7,619	N E	4.511	5.5	5.6	1.6
December ..	29.886	938 3/84	0.36	8,047	N E	5.321	5.7	5.6	1.9
Year { Totals ..	30.003	—	0.28	7,166	N E	37.858	48.7	—	33.6
Extremes ..	—	964 6/9/74	—	—	—	—	—	5.1	—

## TEMPERATURE AND SUNSHINE.

Month.	Mean Temperature (Fahr.).			Extreme Shade Temperature (Fahr.).		Extreme Range.	Extreme Temperature (Fahr.).		Mean Hours of Sunshine.		
	Mean Max.	Mean Min.	Mean	Highest.	Lowest.		Highest in Sun.	Lowest on Grass.			
No. of yrs. over which observation extends	61	61	61	61	61	61	61	61	9		
January .. ..	78.5	64.9	71.7	108.5	13/96	51.2	14/65	57.3	164.3 26/16	44.2 18/97	198.9
February .. .	77.4	64.9	71.2	101.0	19/66	49.3	28/63	51.7	162.1 16/98	43.4 25/91	172.4
March .. .. .	75.5	63.0	69.3	102.6	3/69	48.8	14/86	53.8	150.3 4/89	39.9 17/13	186.9
April .. .. .	71.1	58.1	64.6	89.0	4/09	44.6	27/64	44.4	144.1 10/77	33.3 24/09	141.4
May .. .. .	65.1	52.1	58.6	88.0	1/19	40.2	22/59	43.3	129.7 1/96	29.3 25/17	118.7
June .. .. .	60.6	48.2	54.4	74.7	24/72	38.1	29/62	36.6	123.0 14/78	28.1 24/11	105.3
July .. .. .	59.1	45.8	52.5	74.9	17/71	35.9	12/90	39.0	124.7 19/77	24.0 4/93	120.5
August .. .	62.4	47.6	54.0	82.0	31/84	36.8	3/72	45.2	149.0 30/78	26.1 4/09	165.8
September ..	66.7	51.4	59.1	92.3	27/19	40.8	18/64	50.3	142.2 12/78	30.1 17/05	179.1
October .. .	71.1	55.8	63.5	99.7	19/98	43.3	2/96	56.4	151.9 *	32.7 9/05	195.2
November ..	74.4	59.6	67.0	102.7	21/78	45.8	1/05	56.9	158.5 28/99	36.0 6/06	183.5
December ..	77.3	62.9	70.1	107.5	21/04	49.3	2/59	58.2	171.5 4/88	41.5 6/09	191.8
Year {Averages ..	69.9	56.2	63.0	—	—	—	—	—	—	—	1950.5†
Extremes ..	—	—	—	108.5 13/1/96	35.9 12/7/90	72.6	171.5 4/12/88	24.0 4/7/93	—	—	—

\* 30 and 31/14.

† Total for year.

## HUMIDITY, RAINFALL, AND DEW.

Month.	Rel. Hum. (%).			Rainfall (inches).					Dew (inches).		
	Mean 9 a.m.	Highest Mean.	Lowest Mean.	Mean Monthly.	Mean No. of Days Rain.	Greatest Monthly.		Least Monthly.	Greatest in One Day.	Mean Amount of Dew.	Mean No. Days Dew.
No. of yrs. over which observation extends	61	61	61	61	61	61		61	61	60	60
January .. .. .	69	78	58	3.56	14.0	15.26	1911	0.42	1888	7.08 13/11	0.002 1.2
February .. .. .	72	81	59	4.55	14.2	18.56	1873	0.34	1902	8.90 25/73	0.004 2.0
March .. .. .	74	85	63	5.11	15.0	18.70	1870	0.42	1876	6.52 9/13	0.008 3.3
April .. .. .	77	87	63	5.43	13.4	24.49	1861	0.06	1868	7.52 29/60	0.016 5.5
May .. .. .	76	90	66	5.21	15.1	23.03	1919	0.18	1860	8.36 28/89	0.022 6.8
June .. .. .	78	89	68	5.00	12.7	16.30	1885	0.19	1902	5.17 16/84	0.018 5.3
July .. .. .	77	88	65	4.83	12.5	13.21	1900	0.12	1862	5.72 28/08	0.016 5.3
August .. .. .	73	84	56	3.09	11.4	14.89	1899	0.04	1885	5.33 2/80	0.014 4.9
September .. ..	69	79	49	2.93	12.0	14.05	1879	0.08	1882	5.69 10/79	0.008 3.4
October .. .. .	67	77	47	2.97	12.7	11.14	1916	0.21	1867	6.37 13/02	0.007 3.1
November .. ..	66	79	42	2.89	12.5	9.88	1865	0.07	1915	4.23 19/00	0.004 2.1
December .. ..	67	77	52	2.62	12.9	8.47	1910	0.23	1913	4.75 13/10	0.003 1.5
Year { Totals ..	—	—	—	48.19	158.4	—		—		0.122	43.9
Averages ..	72	—	—	—	—	—		—		—	—
Extremes ..	—	90	42	—	—	24.49	April/61	0.04	Aug./85	8.90	25/2/73

## CLIMATOLOGICAL DATA FOR MELBOURNE, VICTORIA.

LAT. 37° 49' S., LONG. 144° 53' E. HEIGHT ABOVE M.S.L. 115 FT.

BAROMETER, WIND, EVAPORATION, LIGHTNING, CLOUDS, AND CLEAR DAYS.

Month.	Bar. corrected to 32° F. Mm. Sea Level and Stan- dard Gravity from 9 a.m. 3 & 9 p.m. readings.	Wind.				Mean Amount of Evaporation (inches.)	No. of Days Lightning.	Mean Amount of Clouds, 9 a.m. 3 p.m. & 9 p.m.	No. of Clear Days.
		Greatest Number of Miles in One Day.	Mean Hourly Pres- sure. (lbs.)	Total Miles.	Prevailing Direction.				
No. of yrs. over which observation extends	62	48	48	48	48	47	12	62	12
January ..	29.913	583 10/97	0.29	7,301	S W, S E	6.404	1.9	5.0	8.1
February ..	29.961	566 8/63	0.27	6,347	S W, S E	5.019	2.4	5.0	7.2
March ..	30.032	677 9/81	0.22	6,313	S W, S E	3.936	1.9	5.5	5.0
April ..	30.103	597 7/68	0.19	5,697	S W, N W	2.346	0.8	5.3	4.2
May ..	30.106	693 12/65	0.19	5,894	N W, N E	1.67	0.5	6.5	3.0
June ..	30.077	761 13/76	0.24	6,387	N W, N E	1.103	1.1	6.7	2.0
July ..	30.096	755 8/74	0.22	6,350	N W, N E	1.058	0.8	6.3	3.0
August ..	30.066	637 14/75	0.25	6,813	N W, N E	1.476	0.8	6.3	2.6
September ..	29.997	617 11/72	0.28	6,993	N W, S W	2.307	2.1	6.1	3.5
October ..	29.967	899 5/66	0.29	7,277	S W, N W	3.334	2.1	6.0	4.4
November ..	29.950	734 13/66	0.28	7,000	S W, S E	4.536	2.3	5.9	3.6
December ..	29.898	655 1/75	0.30	7,439	S W, S E	5.757	2.0	5.5	4.7
Year { Totals ..	—	—	—	—	—	38.743	18.7	—	51.3
Averages ..	30.014	—	0.25	6,651	S W, N W	—	—	5.9	—
Extremes ..	—	899 5/10/66	—	—	—	—	—	—	—

## TEMPERATURE AND SUNSHINE.

Month.	Mean Tempera- ture (Fahr.)			Extreme Shade Temperature (Fahr.).		Extreme Range.	Extreme Temperature (Fahr.).		Mean Hours of Sunshine.
	Mean Max.	Mean Min.	Mean.	Highest.	Lowest.		Highest in Sun.	Lowest on Grass.	
No. of yrs. over which observation extends	64	64	64	64	64	64	60	60	38
January ..	78.2	56.7	67.5	111.2 14/62	42.0 28/85	69.2	178.5 14/62	30.2 28/85	246.0
February ..	77.9	57.0	67.4	109.5 7/01	40.3 9/65	69.2	167.5 15/70	30.9 6/91	206.6
March ..	74.4	54.7	64.5	105.5 2/93	37.1 17/84	68.4	164.5 1/68	28.9 *	171.3
April ..	68.4	50.7	59.5	94.0 6/65	34.8 24/88	59.2	152.0 8/61	25.0 23/97	135.5
May ..	61.5	46.7	54.1	83.7 7/05	29.9 29/16	53.8	142.6 2/59	21.1 26/16	107.7
June ..	56.8	44.0	50.4	72.2 1/07	28.0 11/66	44.2	129.0 11/61	20.4 17/95	83.3
July ..	55.5	41.7	48.6	68.4 24/78	27.0 21/69	41.4	125.8 27/80	20.5 12/03	98.9
August ..	58.8	43.4	51.1	77.0 20/85	28.3 11/63	48.7	137.4 29/69	21.3 14/02	123.8
September ..	62.6	45.6	54.1	85.0 19/19	31.1 16/08	53.9	142.1 20/67	22.8 8/18	145.1
October ..	67.0	48.1	57.6	98.4 24/14	32.1 3/71	66.3	154.3 28/68	24.8 22/18	175.7
November ..	71.4	51.2	61.3	105.7 27/94	36.5 2/96	69.2	159.6 29/65	24.6 2/96	207.3
December ..	75.4	54.1	64.8	110.7 15/76	40.0 4/70	70.7	170.3 20/69	33.2 1/04	232.1
Year { Averages ..	67.3	49.5	58.4	—	—	—	—	—	193.3†
Extremes ..	—	—	—	111.2 14/1/62	27.0 21/7/69	84.2	178.5 14/1/62	20.4 17/6/95	—

\* 17/1884 and 20/1897.

† Total for year.

## HUMIDITY, RAINFALL, AND DEW.

Month.	Rel. Hum. (%)			Rainfall (inches).					Dew (inches).	
	Mean 9 a.m.	Highest Mean.	Lowest Mean.	Mean Monthly.	Mean No. of Days Rain.	Greatest Monthly.	Least Monthly.	Greatest in One Day.	Mean Amount of Dew.	Mean No. Days Dew.
No. of yrs. over which observation extends	12	12	12	64	64	64	64	61	—	12
January ..	57	65	50	1.85	7	5.68	1904	0.04	1878	2.97 9/97
February ..	61	69	53	1.72	7	6.24	1904	0.03	1870	3.37 18/19
March ..	65	71	57	2.26	9	7.50	1911	0.18	1859	3.55 5/19
April ..	71	78	66	2.25	11	6.71	1901	0.33	1908	2.28 22/01
May ..	78	84	73	2.13	13	4.31	1862	0.45	1901	1.85 7/91
June ..	83	87	77	2.09	14	4.51	1859	0.73	1877	1.74 21/04
July ..	82	86	76	1.83	14	7.02	1891	0.57	1902	2.71 12/91
August ..	76	82	70	1.81	14	3.59	1909	0.48	1903	1.87 17/81
September ..	63	73	60	2.41	14	7.93	1916	0.52	1907	2.62 12/30
October ..	62	65	56	2.59	13	7.61	1869	0.29	1914	3.00 17/89
November ..	59	69	52	2.22	11	6.71	1916	0.25	1895	2.57 16/76
December ..	57	69	51	2.34	9	7.18	1863	0.11	1904	2.62 28/07
Year { Totals ..	—	—	—	25.55	136	—	—	—	—	78.1
Averages ..	68	—	—	—	—	7.93	9/16	0.03	2/70	3.55 5/3/19
Extremes ..	—	87	50	—	—	—	—	—	—	—

## CLIMATOLOGICAL DATA FOR HOBART, TASMANIA.

LAT. 42° 53' S., LONG. 147° 20' E. HEIGHT ABOVE M.S.L. 177 Ft.

BAROMETER, WIND, EVAPORATION, LIGHTNING, CLOUDS, AND CLEAR DAYS.

Month.	Bar. corrected to 32° F. Mm. Sea Level and Standard Gravity from 9 a.m. and 3 p.m. readings.	Wind.				Mean Amount of Evaporation (inches).	No. of Days Lightning.	Mean Amount of Clouds 9 a.m. 3 p.m., & 9 p.m.	No. of Clear Days.
		Greatest Number of Miles in one day.	Mean Hourly Pressure. (lbs.)	Total Miles.	Prevailing Direction.				
No. of yrs. over which observation extends	35	9	9	9	15	9	12	57	13
January ..	29.828	500 30/16	0.20	5,984	NW & SE	5.54	0.6	5.9	3.1
February ..	29.924	393 19/13	0.12	4,365	SE & N	3.90	1.3	5.9	2.7
March ..	29.938	406 8/15	0.12	4,780	N & SE	3.02	1.3	5.9	1.9
April ..	29.956	432 7/17	0.13	4,750	NW & SE	1.08	0.9	6.0	1.7
May ..	29.990	411 3/16	0.12	4,677	N & NW	1.34	0.6	6.0	1.8
June ..	29.948	415 17/12	0.12	4,632	N & NW	0.83	0.8	6.0	1.6
July ..	29.932	396 17/11	0.12	4,628	N & NW	0.87	0.4	5.7	2.6
August ..	29.930	459 30/11	0.13	4,905	N & NW	1.22	0.8	5.9	2.1
September ..	29.812	516 26/15	0.19	5,768	N & NW	2.01	1.0	6.1	1.9
October ..	29.838	461 8/12	0.19	5,847	NW & SE	3.10	0.9	6.3	1.5
November ..	29.801	508 18/15	0.19	5,745	NW & SE	3.92	0.9	6.3	1.8
December ..	29.809	375 21/16	0.19	5,738	NW & SE	4.64	1.5	6.2	1.3
Year { Totals ..	—	—	—	61,827	—	32.37	11.0	—	24.0
Year { Averages ..	29.895	—	0.15	—	N	—	—	6.0	—
Year { Extremes ..	—	516 26/9/15	—	—	—	—	—	—	—

## TEMPERATURE AND SUNSHINE.

Month.	Mean Temperature (Fahr.).			Extreme Shade Temperature (Fahr.).		Extreme Range.	Extreme Temperature (Fahr.).		Mean Hours of Sunshine.
	Mean Max.	Mean Min.	Mean.	Highest.	Lowest.		Highest in Sun.	Lowest on Grass.	
No. of yrs. over which observation extends	49	49	49	73	73	73	32	52	25
January .. ..	71.5	53.0	62.2	105.0 1/00	40.3 *	64.7	160.0 †	30.6 19/97	209.6
February .. .	71.5	53.2	62.4	104.4 12/99	39.0 20/87	65.4	165.0 24/98	28.3 -/87	177.1
March .. .. .	68.0	50.8	59.4	98.8 5/46	36.0 31/05	62.8	150.0 3/05	27.5 30/02	166.3
April .. .. .	62.6	47.6	55.1	90.0 2/56	30.0 25/56	60.0	142.0 18/93	25.0 -/86	135.3
May .. .. .	57.3	43.6	50.4	77.5 1/41	29.2 20/02	48.3	128.0 ‡	20.0 19/02	127.2
June .. .. .	52.7	40.9	46.8	75.0 7/74	28.0 22/79	47.0	122.0 12/94	21.0 6/87	98.6
July .. .. .	51.8	39.1	45.4	72.0 22/77	27.0 18/86	45.0	118.7 19/86	18.7 16/86	121.1
August .. ..	54.9	41.0	48.0	77.0 3/76	30.0 10/73	47.0	129.0 -/87	20.1 7/09	139.2
September ..	58.7	43.0	50.8	80.0 9/72	30.0 12/41	50.0	138.0 23/93	22.7 -/86	139.8
October .. ..	62.7	43.0	54.0	92.0 24/14	32.0 12/89	60.0	156.0 9/93	23.8 §	163.2
November ..	66.2	48.2	57.2	98.0 20/88	35.2 5/13	62.8	156.0 16/19	26.0 1/08	191.8
December ..	69.5	51.2	60.4	105.2 30/97	38.0 13/06	67.2	157.0 30/18	27.2 -/86	189.9
Year { Averages ..	62.3	46.4	54.3	—	—	—	—	—	1,859.5
Year { Extremes ..	—	—	—	105.2 30/12/97	27.0 18/7/66	78.2	165.0 24/2/98	18.7 16/7/86	—

\* 3/72 and 2/06. † 5/86 and 13/05. ‡ -/88 and -/92. § 1/86 and -/99. || Total for year.

## HUMIDITY, RAINFALL, AND DEW.

Month.	Rel. Hum. (%)			Rainfall (inches).					Dew (inches).	
	Mean 9 a.m.	Highest Mean.	Lowest Mean.	Mean Monthly.	Mean No. of Days Rain.	Greatest Monthly.	Least Monthly.	Greatest in One Day.	Mean Amount of Dew.	Mean No. days Dew.
No. of yrs. over which observation extends	39	39	39	77	76	77	77	53	—	10
January ..	64	75	51	1.79	9	5.91 1893	0.03 1841	2.96 30/16	—	1.1
February ..	65	76	51	1.45	8	9.15 1854	0.07 1847	4.50* 25/54	—	2.5
March ..	70	76	59	1.70	10	7.60 1854	0.02 1843	2.79 5/19	—	4.5
April ..	74	85	60	1.89	11	6.50 1909	0.07 1904	5.02 20/09	—	10.2
May ..	79	90	68	1.86	13	6.37 1905	0.10 1843	3.22 14/58	—	13.2
June ..	83	94	73	2.20	14	8.15 1889	0.22 1852	4.11 14/89	—	7.3
July ..	81	97	74	2.14	14	5.98 1849	0.30 1850	2.00 27/78	—	8.4
August ..	78	92	64	1.84	14	10.16 1858	0.23 1854	4.35 12/58	—	7.6
September ..	72	87	60	2.13	14	7.14 1844	0.39 1847	3.50 29/44	—	4.0
October ..	67	75	51	2.26	15	6.67 1906	0.26 1850	2.58 4/06	—	3.3
November ..	64	73	51	2.52	14	8.92 1849	0.16 1868	3.97 6/49	—	1.5
December ..	62	73	49	1.96	11	9.00 1875	0.11 1842	2.48 13/16	—	1.1
Year { Totals ..	—	—	—	23.74	147	—	—	—	—	64.7
Year { Averages ..	72	—	—	—	—	—	—	—	—	—
Year { Extremes ..	1	97	49	—	—	10.16 8/1858	0.02 3/1843	5.02 20/4/09	—	—

\* 4.18, 26/54 also.

## SECTION IV. POPULATION.

### § 1. Commonwealth Population—Its Distribution and Fluctuation.

1. **Present Population.**—The estimated population of the several States of the Commonwealth at the end of each of the five years 1915–19 is shewn in the following table :—

POPULATION OF COMMONWEALTH, ON 31st DECEMBER, 1915-19.

Year.	States.						Territories.		Commonwealth.
	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.	North-ern.	Federal.	
MALES.									
1915	953,160	693,650	359,541	212,080	171,304	101,761	3,687	957	2,496,140
1916	923,603	666,036	344,557	201,998	159,998	99,839	3,839	1,194	2,401,064
1917	935,384	671,382	345,615	201,433	158,701	101,520	3,886	1,080	2,419,001
1918	957,723	684,906	353,091	205,823	161,464	105,434	3,677	1,179	2,473,297
1919	1,011,481	740,884	378,904	224,631	176,902	112,448	3,578	1,008	2,649,836
FEMALES.									
1915	917,259	725,526	319,134	226,205	146,712	99,264	876	872	2,435,848
1916	934,941	732,848	324,910	230,711	148,808	100,086	928	1,029	2,474,261
1917	955,270	739,622	332,212	234,781	150,722	101,657	1,022	1,024	2,516,310
1918	972,517	745,852	341,349	239,885	151,983	103,439	1,104	1,053	2,557,182
1919	991,150	755,054	346,316	243,563	154,758	104,303	1,128	911	2,597,183
TOTAL.									
1915	1,870,419	1,419,176	678,675	438,285	318,016	201,025	4,563	1,829	4,931,988
1916	1,858,544	1,398,884	669,467	432,709	308,806	199,925	4,767	2,223	4,875,325
1917	1,890,654	1,411,004	677,827	436,214	309,423	203,177	4,908	2,104	4,935,311
1918	1,930,240	1,430,758	694,440	445,708	313,447	208,873	4,781	2,232	5,030,479
1919	2,002,631	1,495,938	725,220	468,194	331,660	216,751	4,706	1,919	5,217,019

2. **Growth of Population.**—(i) *1788 to 1824.* From 1788, when settlement first took place in Australia, until December, 1825, when Van Diemen's Land (now Tasmania) became a separate colony, the whole of the British Possessions in Australia were regarded as one colony, viz., that of New South Wales. The population during this period increased very slowly, and at the end of 1824 had reached only 48,072.

## 82 COMMONWEALTH POPULATION—ITS DISTRIBUTION AND FLUCTUATION.

The population with which settlement in Australia was inaugurated, and that at the end of each year until 1824, are as follows :—

### POPULATION OF COMMONWEALTH ON 31st DECEMBER, 1788 TO 1824.

Year.	Males.	Females.	Total.	Year.	Males.	Females.	Total.
1788 <sup>a</sup>	..	..	1,024	1806	5,389	2,521	7,910
1788	..	..	859	1807	5,939	2,855	8,794
1789	..	..	645	1808	6,822	3,441	10,263
1790	..	..	2,056	1809	7,618	3,942	11,560
1791	..	..	2,873	1810	7,585	3,981	11,566
1792	..	..	3,264	1811	7,697	4,178	11,875
1793	..	..	3,514	1812	8,132	4,498	12,630
1794	..	..	3,579	1813	9,102	4,855	13,957
1795	..	..	3,466	1814	9,295	4,791	14,086
1796	2,953	1,147	4,100	1815	9,848	5,215	15,063
1797	3,160	1,184	4,344	1816	11,690	5,863	17,553
1798	3,367	1,221	4,588	1817	14,178	7,014	21,192
1799	3,804	1,284	5,088	1818	17,286	8,573	25,859
1800	3,780	1,437	5,217	1819	21,366	10,106	31,472
1801	4,372	1,573	5,945	1820	23,784	9,759	33,543
1802	5,208	1,806	7,014	1821	26,179	9,313	35,492
1803	5,185	2,053	7,238	1822	27,915	9,449	37,364
1804	5,313	2,285	7,598	1823	30,206	10,426	40,632
1805	5,395	2,312	7,707	1824	36,871	11,201	48,072

<sup>a</sup> On 26th January.

(ii) 1825 to 1858. The period extending from 1825 to 1859 witnessed the birth of the colonies of Tasmania (then known as Van Diemen's Land), Western Australia, South Australia, Victoria, and Queensland. The years in which these came into existence as separate colonies were as follows :—Tasmania, 1825 ; Western Australia, 1829 ; South Australia, 1834 ; Victoria, 1851 ; Queensland, 1859.

The estimated population of the Commonwealth at the end of each year of this transition period is as follows :—

### POPULATION OF COMMONWEALTH ON 31st DECEMBER, 1825 TO 1858.

Year.	Males.	Females.	Total.	Year.	Males.	Females.	Total.
1825	40,288	12,217	52,505	1842	153,758	87,226	240,984
1826	41,289	12,593	53,882	1843	158,846	92,002	250,848
1827	43,053	13,247	56,300	1844	165,034	99,253	264,287
1828	44,778	13,419	58,197	1845	173,159	105,989	279,148
1829	46,946	14,988	61,934	1846	181,342	111,907	293,249
1830	52,885	17,154	70,039	1847	190,265	118,532	308,797
1831	57,037	18,944	75,981	1848	201,612	130,716	332,328
1832	62,254	21,683	83,937	1849	221,978	151,384	373,362
1833	71,669	26,426	98,095	1850	238,683	166,673	405,356
1834	76,259	29,297	105,556	1851	256,975	180,690	437,665
1835	81,929	31,425	113,354	1852	304,126	209,670	513,796
1836	89,417	35,703	125,120	1853	358,203	242,789	600,992
1837	94,881	39,607	134,488	1854	414,337	280,580	694,917
1838	105,271	46,597	151,868	1855	470,118	323,142	793,260
1839	115,480	54,459	169,939	1856	522,144	354,585	876,729
1840	127,306	63,102	190,408	1857	574,800	395,487	970,287
1841	144,114	76,854	220,968	1858	624,380	426,448	1,050,828

(iii) 1859 to 1919. From 1859, the year in which Queensland came into existence as a separate colony, until the beginning of 1901, when the Commonwealth of Australia was inaugurated under the provisions of the Commonwealth Constitution Act, Australia consisted of six States, practically independent of each other in all matters of government. During this period, the population of the Commonwealth increased from 1,050,828 at the end of 1858 to 3,765,339 on the 31st December, 1900. The particulars for this period are given in the table hereunder.

During the nineteen years that have elapsed since the federation of the States was effected the population of the Commonwealth has increased by 1,481,680, from 3,765,339 on 31st December, 1900, to 5,247,019 on 31st December, 1919, as shewn hereunder:—

## POPULATION OF COMMONWEALTH ON 31st DECEMBER, 1859 TO 1918.

Year.	Males.	Females.	Total.	Year.	Males.	Females.	Total.
1859	644,376	452,929	1,097,305	1890	1,692,831	1,458,524	3,151,355
1860	668,560	477,025	1,145,585	1891	1,736,617	1,504,368	3,240,985
1861	669,373	498,776	1,168,149	1892	1,766,772	1,538,981	3,305,753
1862	683,650	523,268	1,206,918	1893	1,791,815	1,570,080	3,361,895
1863	704,259	555,033	1,259,292	1894	1,824,217	1,602,543	3,426,760
1864	740,433	584,750	1,325,183	1895	1,855,539	1,636,082	3,491,621
1865	773,278	616,765	1,390,043	1896	1,887,174	1,665,924	3,553,098
1866	800,648	643,307	1,443,955	1897	1,917,460	1,700,323	3,617,783
1867	819,127	664,721	1,483,848	1898	1,937,629	1,727,086	3,664,715
1868	849,272	690,280	1,539,552	1899	1,959,074	1,756,914	3,715,988
1869	875,139	717,018	1,592,157	1900	1,976,992	1,788,347	3,765,339
1870	902,404	745,262	1,647,756	1901	2,004,836	1,820,077	3,824,913
1871	928,918	771,970	1,700,888	1902	2,028,008	1,847,310	3,875,318
1872	947,422	795,425	1,742,847	1903	2,045,144	1,871,448	3,916,592
1873	972,907	821,613	1,794,520	1904	2,072,783	1,901,367	3,974,150
1874	1,001,096	848,296	1,849,392	1905	2,100,118	1,932,859	4,032,977
1875	1,028,489	869,734	1,898,223	1906	2,126,730	1,964,755	4,091,485
1876	1,061,477	897,202	1,958,679	1907	2,160,213	2,001,509	4,161,722
1877	1,102,340	928,790	2,031,130	1908	2,193,981	2,038,297	4,232,278
1878	1,132,573	959,591	2,092,164	1909	2,242,215	2,081,745	4,323,960
1879	1,168,781	993,562	2,162,343	1910	2,296,308	2,128,775	4,425,083
1880	1,204,514	1,027,017	2,231,531	1911	2,377,920	2,190,787	4,568,707
1881	1,247,059	1,059,677	2,306,736	1912	2,466,968	2,266,391	4,733,359
1882	1,289,892	1,098,190	2,388,082	1913	2,536,530	2,335,529	4,872,059
1883	1,357,423	1,148,313	2,505,736	1914	2,551,431	2,389,521	4,940,952
1884	1,411,996	1,193,729	2,605,725	1915	2,496,140	2,435,848	4,931,988
1885	1,460,394	1,234,124	2,694,518	1916	2,401,064	2,474,261	4,875,325
1886	1,510,954	1,277,096	2,788,050	1917	2,419,091	2,516,310	4,935,311
1887	1,559,118	1,322,244	2,881,362	1918	2,473,297	2,557,182	5,030,479
1888	1,610,548	1,371,129	2,981,677	1919	2,649,836	2,597,183	5,247,019
1889	1,649,094	1,413,383	3,062,477				

It will be seen from the foregoing tables that the population of Australia attained its first million in 1858, seventy years after settlement was first effected; its second million nineteen years later, in 1877; its third million twelve years later, in 1889; its fourth million sixteen years later, in 1905; and its fifth million thirteen years later, in 1918. The fifth million was expected in 1915, but owing to the war and the consequent dispatch of men out of Australia this result was not attained. As a matter of fact, through the retardation of immigration and the departure of troops consequent upon the war, the total population of Australia diminished during 1915 by 8,964 persons. Taking the sexes separately, there was a decrease of 55,291 males and an increase of 46,327 females during that year. In 1916 there was a further decrease of 56,663, the males decreasing by 95,076, and the females increasing by 38,413. In 1917 there was a recovery of 59,986 in the total population, made up of 17,937 males and 42,049 females. In 1918 there was an increase of 95,168 in the total population, made up of 54,296 males and 40,872 females, and the fifth million was attained in September of that year. In 1919 the population increased by 216,540, of whom 176,539 were males and 40,001 were females. The large increase in males was mainly due to the number of returning soldiers.

The growth of the total population of the Commonwealth generally, and of each State therein, is graphically shown on page 105, and of each sex considered separately on pages 106 and 107.

## § 2. Influences affecting Growth and Distribution of Population.

1. **Mineral Discoveries.**—The discovery of gold in Australia in 1851 was undoubtedly one of the most influential factors in bringing about a rapid settlement of the country. Its effect may be gauged by a comparison of the increase during the ten years preceding, with that during the ten years succeeding the discovery. From 31st December, 1840, to 31st December, 1850, the increase was only 214,948 (viz., from 190,408 to 405,356). The rush of people to the newly-discovered goldfields during the succeeding decennium caused an increase of no less than 740,229, the population advancing to 1,145,585 on 31st December, 1860. In 1861, owing to the opening up in that year of the New Zealand goldfields, a rush of population from Australia set in, the result being that the net increase of population of the Commonwealth, which in 1855 amounted to 98,343, and even in 1860 was as much as 48,280, fell in 1861 to 22,564. In fact, during the year 1861 the departures from Australia exceeded the arrivals by 6,283, the gain of 22,564 being due to the births exceeding the deaths by 28,847.

In more recent years the gold discoveries of Western Australia in 1886 and subsequent years led to such extensive migration to that State that its population, which on 31st December, 1885, amounted to only 35,959, increased in 34 years by no less than 295,701, totalling 331,660 on 31st December, 1919. In this case, however, the additions to the population of the western State were largely drawn for some years from those of the eastern States, so that the actual gain of population to the Commonwealth was relatively slight.

2. **Pastoral Development.**—Very early in the colonisation of Australia it was recognised that many portions were well adapted for pastoral pursuits, and pastoral developments have led to a considerable distribution of population in various directions. As the numbers engaged in connection therewith, compared with the value of the interests involved, are relatively small, and as pastoral occupancy tends to segregation rather than aggregation of population, the growth of the pastoral industry is but slightly reflected in the population statistics of the Commonwealth.

3. **Agricultural Expansion.**—At the present time the area annually devoted to crops in the Commonwealth is over  $13\frac{1}{2}$  millions of acres. Although considerable in itself, this area, viewed in relation to the total area of the Commonwealth, is relatively small, and represents considerably less than 1 per cent. of the total area. Per head of population of the Commonwealth the area under crop, however, is about  $2\frac{3}{4}$  acres, a fairly high amount when allowance is made for the recency of Australian settlement. About 80 per cent. of the area under crop in 1918-19 was devoted to the production of wheat and hay, both of which for profitable production in Australia require a considerable area in the one holding. Thus, on the whole, the agricultural districts of Australia are somewhat sparsely populated, though in a less marked degree than is the case in the pastoral areas.

4. **Progress of Manufacturing Industries.**—One direct effect of the development of manufacturing industries is the concentration of population in places offering the greatest facilities for the production of the particular commodities. In Australia, where manufacturing industries are as yet in their infancy, the tendency throughout has been to concentrate the manufacturing establishments in each metropolis. This has accentuated the growth of the capital cities, which growth, when compared with that of the rest of the country, appears somewhat abnormal.

5. **Influence of Droughts.**—The droughts, which at times so seriously affect the agricultural and pastoral prospects of Australia, have a marked influence on the distribution of population. Districts, which in favourable seasons are fairly populous, occasionally in times of drought become more or less depopulated until the return of better conditions. This movement, however, ordinarily affects only the internal distribution of the population and not the total, but severe drought may even make its influence felt in the statistics of the total population of Australia. Thus in the case of the drought of 1902-3, the departures from the Commonwealth exceeded the arrivals for the two years 1903 and 1904 by 12,859. It may be noted also, that for the former of these years, the natural increase of population by excess of births over deaths was

abnormally low, being only 51,150, as compared with 54,698 in the preceding and 60,541 in the succeeding year. As the solution of the problem of dealing with droughts is advanced, their influence will be less marked.

6. *Other Influences.*—(i) *Commercial Crises.* The effect on population of a commercial crisis, such as that which occurred in Australia in the early years of the final decade of the last century, is clearly indicated on comparing the migration statistics of the Commonwealth for the five years 1887-91 with those for the five years 1892-96. During the former period, the arrivals in the Commonwealth exceeded the departures by no less than 146,872. In the latter period, the corresponding excess amounted to only 2,064.

(ii) *War.* The war in South Africa has left its impress on the population statistics of the Commonwealth, the departures during 1899 and 1900 exceeding the arrivals for the same period by 10,546. A similar but much more marked result is being shewn in connexion with the European war. Thus, for the four years 1914, 1915, 1916 and 1917 taken together, the departures exceeded the arrivals by a total of no less than 264,265. In 1918 and 1919, however, the arrivals exceeded the departures by 179,858. In this connexion it may be mentioned that during 1919 the arrivals of members of the Expeditionary Forces exceeded the departures of such members by 162,376.

A reference to the graphs of population on pages 105 to 110 will illustrate the preceding observations.

### § 3. Special Characteristics of Commonwealth Population.

1. *Sex Distribution.*—In respect of the relative proportions of the sexes in its population, Australia has, since the first settlement of the continent in 1788, differed materially from the older countries of the world. In the latter, the populations have, in general, grown by natural increase, and their composition usually reflects that fact, the numbers of males and females being in most countries approximately equal, with a more or less marked tendency, however, for the females to slightly exceed the males. The excess of females arises from a variety of causes, amongst which may be mentioned—(a) higher rate of mortality amongst males; (b) greater propensity on the part of males to travel; (c) the effects of war; (d) employment of males in the army, navy, and mercantile marine; (e) preponderance of males amongst emigrants. On the other hand, the last-mentioned cause has tended naturally to produce an excess of males in Australia, since the majority of those emigrating to Australia have been males. The circumstances under which the colonisation of Australia was first undertaken, and the remoteness of this country from Europe, have combined to accentuate this feature.

There is little doubt that the continent presented few attractions to the explorers who visited its shores, mainly on the west and north, during the sixteenth, seventeenth, and early part of the eighteenth centuries, and it was only when the Declaration of Independence of the United States, in 1776, closed to the British prison authorities the North American plantations, which had previously been used as receptacles for the deportation of convicts, that the overcrowding of the gaols caused them to consider the advisability of converting the great southern continent into a convict settlement. This idea was put into practice in 1787, when the first consignment left England, arriving in Sydney Cove on the 26th January, 1788. Reports concerning the number of persons actually landed are conflicting, but it appears that the total may be set down approximately at 1,024, including the military. Details as to the sexes are not available, but the males must have largely preponderated. Indeed, nearly nine years later, on the 31st December, 1796, in a total population of 4,100, there was an excess of 44 males in every 100 of the population.

The subsequent progress of Australia resulting from extensive mineral discoveries and the development of its great natural resources, pastoral, agricultural, forestal, &c., have tended to attract male rather than female immigrants, particularly in view of the distance from the principal centres of European population. Even at the Census of 3rd April, 1911, after more than 123 years of settlement, there was an excess of 3.84 males in every 100 of the population, and this notwithstanding the equalising tendency due to additions to the population by means of births and to deductions therefrom by the deaths of immigrants.



In the second issue of this publication, on pages 163 to 165, an extended table was published showing the masculinity of the population of each of the States for each year from 1796 to 1907. In the fifth issue, on page 123, the figures in this table for the years 1901-7 were modified to agree with the corrected estimates of the population, consequent on the Census of 3rd April, 1911. The figures given in the tables mentioned represent the number of males to each 100 females.

A more satisfactory representation of masculinity, however, may be obtained by computing the ratio of the excess of males over females to the total population. This ratio expressed as a percentage has now been adopted by the Commonwealth Bureau of Census and Statistics as the "masculinity" of the population, and the ratios so computed are given hereunder for intervals of 5 years from 1800 to 1915 and for the four years 1916, 1917, 1918 and 1919 for the Commonwealth and each of its component States and Territories:—

### MASCULINITY OF THE POPULATION, 1800 TO 1919.

(EXCESS OF MALES OVER FEMALES PER 100 OF POPULATION.)

Year.	States.						Territories.		C'wealth.
	N.S.W.(a)	Victoria.	Q'land.	S.A.(b)	W. Aust.	Tasmania.	North'm'n (c)	Federal. (d)	
1800	44.91	..	..	..	..	..	..	..	44.91
1805	40.00	..	..	..	..	..	..	..	40.00
1810	31.16	..	..	..	..	..	..	..	31.16
1815	30.76	..	..	..	..	..	..	..	30.76
1820	41.81	..	..	..	..	..	..	..	41.81
1825	53.00	..	..	..	..	54.72	..	..	53.46
1830	52.06	..	..	..	49.66	49.17	..	..	51.02
1835	45.71	..	..	..	31.10	43.13	..	..	44.55
1840	34.25	..	..	13.08	24.10	39.31	..	..	33.72
1845	21.05	..	..	14.07	20.07	36.63	..	..	24.06
1850	16.13	..	..	12.72	21.51	28.44	..	..	17.76
1855	11.14	30.41	..	0.31	31.87	10.57	..	..	18.53
1860	13.53	22.74	19.88	2.47	25.07	10.56	..	..	16.72
1865	9.12	12.89	22.62	4.36	26.98	7.59	..	..	11.26
1870	9.29	9.74	20.10	2.84	23.42	6.09	..	..	9.54
1875	8.71	6.74	20.83	3.49	19.55	5.41	..	..	8.36
1880	9.28	4.95	17.53	6.69	14.92	5.53	..	..	7.95
1885	9.89	5.04	18.02	5.02	15.06	5.09	..	..	8.40
1890	8.28	5.06	13.87	4.12	18.98	5.61	..	..	7.43
1895	6.45	2.55	12.34	2.46	11.72	3.92	..	..	6.28
1900	5.28	0.61	11.24	1.98	22.34	3.83	76.57	..	5.01
1905	5.24	-1.17	9.81	0.08	17.13	2.96	66.49	..	4.15
1910	4.41	-0.65	8.69	1.54	14.13	2.03	65.89	..	3.79
1915	1.92	-2.26	5.95	-3.19	7.73	1.24	61.60	4.65	1.22
1916	-0.61	-4.71	2.93	-6.86	3.62	-0.12	61.06	7.42	-1.50
1917	-1.05	-4.84	1.98	-7.64	2.58	-0.07	58.35	2.66	-1.97
1918	-0.77	-4.26	1.69	-7.64	3.02	0.96	53.82	5.65	-1.67
1919	1.02	-0.95	4.49	-4.04	6.68	3.76	52.06	5.05	1.00

(a) Including Federal Territory prior to 1911. (b) Including Northern Territory prior to 1900.  
(c) Included with South Australia prior to 1900. (d) Part of New South Wales prior to 1911.

NOTE.—The sign — denotes excess of females over males per 100 of population.

The influence of the war will be observed in the decline of the masculinity for each of the States and the Commonwealth, and the introduction of negative results in the cases of South Australia, New South Wales, Tasmania and the Commonwealth indicating an excess of females there, as well as in Victoria, where this phenomenon was in evidence as far back as 1905. The effect of the demobilization of soldiers during 1919 has been to restore the excess of males in every State, except Victoria and South Australia.

The curious inequalities of the increases in the number of males and in the number of females for the Commonwealth as a whole, and for the individual States respectively, will be seen by referring to the graphs on pages 106 and 107.

The significance of the rates of masculinity shewn in the above table will perhaps be better understood by a comparison with the corresponding information for other countries. This has been made in the next table, which shews, for some of the principal countries of the world for which such particulars are available, the masculinity of the population according to the most recent statistics :—

#### MASCULINITY OF THE POPULATION OF VARIOUS COUNTRIES.

Country.	Year.	Excess of Males over Females in each 100 of Population.	Country.	Year.	Excess of Males over Females in each 100 of Population.
Canada .. ..	1911	6.07	Russia (European) ..	1914	—1.05
Serbia .. ..	1910	3.27	Prussia .. ..	1910	—1.17
United States of America	1910	2.93	German Empire ..	1910	—1.30
India (Feudatory States)	1911	2.88	Ireland .. ..	1915	—1.36
British India .. ..	1911	2.24	Switzerland .. ..	1910	—1.66
Bulgaria .. ..	1910	1.75	France .. ..	1911	—1.74
New Zealand .. ..	1919	1.15	Italy .. ..	1911	—1.81
Japan .. ..	1917	1.06	Austria .. ..	1912	—1.85
Rumania .. ..	1913	1.05	Sweden .. ..	1917	—2.03
<b>Australia .. ..</b>	<b>1919</b>	<b>1.00</b>	Spain .. ..	1910	—2.84
Greece .. ..	1907	0.68	Scotland .. ..	1917	—3.01
Poland (Russian) .. ..	1914	0.41	Denmark .. ..	1916	—3.07
Netherlands .. ..	1917	—0.53	Norway .. ..	1910	—3.36
Belgium .. ..	1912	—0.76	Portugal .. ..	1911	—5.08
Hungary .. ..	1910	—0.94	England and Wales (a)	1917	—16.43

NOTE.—The sign — denotes excess of females over males in each 100 of population.

(a) Civil population only.

2. **Age Distribution.**—The causes which operated to bring about an excess of males in the population of the Commonwealth were equally effective in rendering the age distribution essentially different for many years from that of older countries. The majority of the immigrants, whether male or female, were in the prime of life, and as the Australian birth-rate in earlier years was a comparatively high one, the effect produced was a population in which the proportion of young and middle-aged persons was somewhat above, and the proportion for advanced ages somewhat below the normal. With the progress of time, however, the age distribution for Australia has fallen more and more into line with that for the older countries, and now, except in shewing a somewhat lower proportion at old age and a slightly higher at young ages, does not differ essentially therefrom.

Thus in the Commonwealth at the Census of 3rd April, 1911, the age distribution of the population was as shewn in the table hereunder; that for England and Wales for the same Census is given also for the sake of comparison :—

#### AGE DISTRIBUTION OF POPULATION.

COMMONWEALTH, AND ENGLAND AND WALES IN 1911.

Age Group.	Population of COMMONWEALTH, 3rd April, 1911.	Percentage on Total Population.	Population of ENGLAND and WALES, 3rd April, 1911.	Percentage on Total Population.
Under 15 .. ..	1,409,823	31.65	11,050,867	30.63
15 and under 65 .. ..	2,854,753	64.08	23,141,109	64.16
65 and upwards .. ..	190,429	4.27	1,878,516	5.21
Total .. ..	4,455,005	100.00	36,070,492	100.00

During the past 50 years, the age distribution of the Australian population has varied considerably, as will be seen from the following table, which gives for each sex the proportion per cent. of the total population in the age groups "under 15," "15 and under 65," and "65 and over." The figures upon which these percentages have been computed are those furnished by the Censuses of the several States and the Commonwealth Census of 1911. Those for 1861 include the results of the Western Australian Census of 1859, while those for 1871 include the results of the Western Australian and Tasmanian Censuses of 1870 :—

AGE DISTRIBUTION OF COMMONWEALTH POPULATION, 1861 TO 1911.

Census Year.	Males.				Females.				Persons.			
	Under 15 Years.	15 and under 65.	65 and over.	Total.	Under 15 Years.	15 and under 65.	65 and over.	Total.	Under 15 Years.	15 and under 65.	65 and over.	Total.
	%.	%	%	%	%	%	%	%	%	%	%	%
1861..	31.41	67.42	1.17	100	43.03	56.20	0.77	100	36.28	62.72	1.00	100
1871..	38.84	59.11	2.05	100	46.02	52.60	1.38	100	42.09	56.17	1.74	100
1881..	36.37	60.85	2.78	100	41.89	56.07	2.04	100	38.91	58.65	2.44	100
1891..	34.77	62.02	3.21	100	39.36	58.08	2.56	100	36.90	60.20	2.90	100
1901..	33.87	61.82	4.31	100	36.50	59.85	3.65	100	35.12	60.88	4.00	100
1911..	30.84	64.82	4.34	100	32.52	63.28	4.20	100	31.65	64.08	4.27	100

The excess of males over females, which existed prior to the war, was found mainly in ages of 21 and upwards. In the total population under the age of 21 there was, at the date of the last Census, an excess of males over females amounting to less than 1.3 in each 100 of population, while in that aged 21 and upwards the excess of males over females was more than 5.8 in each 100 of population.

**3. Race and Nationality.**—(i) *Constitution of Australia's Population.* As regards race, the population of the Commonwealth may be conveniently divided into two main groups, one comprising the aboriginal natives of Australia, and the other the various immigrant races which, since the foundation of settlement in 1788, have made the Commonwealth their home. Under the head of "immigrant races" would, of course, be included not only those residents of Australia who had been born in other countries, but also their descendants born in Australia.

(a) *Aboriginals.* It would appear that the aboriginal population of Australia was never large, and that the life led by them was, in many parts of the country, a most precarious one. With the continued advance of settlement the numbers have shrunk to such an extent that in the more densely populated States they are practically negligible. Thus, at the Census of 1911 the number of full-blood aboriginals who were employed by whites or were living in proximity to settlements of whites was stated to be only 19,939. In some cases, however, more particularly in Queensland, Western Australia, and the Northern Territory, there are, in addition, considerable numbers of natives still in the "savage" state, numerical information concerning whom is of a most unreliable nature, and can be regarded as little more than the result of mere guessing.

Ethnologically interesting as is this remarkable and rapidly-disappearing race, practically all that has been done to increase our knowledge of them, their laws, habits, customs, and languages, has been the result of more or less spasmodic and intermittent effort on the part of enthusiasts either in private life or in the public service. An enumeration of them has never been seriously undertaken in connection with any Australian Census, though a record of the numbers who were in the employ of whites, or living in contiguity to the settlements of whites, has on the occasion of the recent Censuses usually been made. As stated above, various guesses at the number of aboriginal natives at present in Australia have been made, and the general opinion appears to have prevailed that 150,000 might be taken as a rough approximation to the total. More recent estimates, however, have given results considerably below this figure. Thus, in his report of April 30, 1915, the Queensland Chief Protector of Aborigines estimates the total at 61,705, distributed as follows :—New South Wales, 6,580; Victoria,

283; Queensland, 15,000; South Australia, 4,842; Western Australia, 32,000; Northern Territory, 3,000. In his report of April 20, 1917, the Chief Protector of Aborigines in Queensland estimated their number in that State to be 16,600 in 1916. A somewhat similar estimate made at an earlier date by Dr. Roth, formerly Chief Protector of Aborigines in Queensland, gave Queensland at least 18,000; Western Australia at least 24,000, and the Northern Territory from 20,000 to 22,000. In view of these figures it would appear that the number of aboriginal natives in Australia may be said to be less than 80,000. The whole matter, however, is involved in considerable doubt.

The number of aboriginal natives enumerated in the several States and Territories of the Commonwealth at the Census of 1911 was as shewn hereunder, the figures given relating as before stated only to those in a civilised or semi-civilised condition.

#### ABORIGINAL NATIVES ENUMERATED AT CENSUS OF 1911.

Particulars.	N.S.W.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.	Northern Territory.	Federal Territory.	C'wlth.
Males ..	1,152	103	5,145	802	3,433	2	743	5	11,385
Females ..	860	93	3,542	637	2,936	1	480	5	8,554
Total ...	2,012	196	8,687	1,439	6,369	3	1,223	10	19,939
Masculinity (a)	14.51	5.10	18.45	11.47	7.80	33.33	21.50	0.00	14.20

(a) Excess of males over females per 100 of the sexes combined.

These figures, as noted above, refer only to those natives who were, at the date of the Census, in the employ of whites or were living in contiguity to the settlements of whites.

In the Commonwealth Constitution Act provision is made for aboriginal natives to be excluded for all purposes for which statistics of population are made use of under the Act, but the opinion has been given by the Commonwealth Attorney-General that "in reckoning the population of the Commonwealth half-castes are not aboriginal natives within the meaning of section 127 of the Commonwealth of Australia Constitution Act, and should therefore be included." It may be added, however, that as "half-castes," living in the nomadic state, are practically indistinguishable from aboriginals, it has not always been found practicable to make the distinction, and further, that no authoritative definition of "half-caste" has yet been given.<sup>1</sup>

(b) *Immigrant Races.* As regards the immigrant races, it may be said that they consist mainly of natives of the three divisions of the United Kingdom and their descendants. The proportion of Australian-born contained in the population of the Commonwealth has, in recent years, increased rapidly, and at the Census of 3rd April, 1911, out of a total population of 4,424,535 persons whose birthplaces were specified, no fewer than 3,667,670, or 82.90 per cent., were Australian born, while of the remainder, 590,722, or 13.35 per cent., were natives of the United Kingdom, and 31,868, or 0.72 per cent., were natives of New Zealand, that is, 96.97 per cent. of the total population at the date of the Census had been born in either Australasia or the United Kingdom. The other birthplaces most largely represented in the Commonwealth were Germany, 32,990 (0.75 per cent.); China, 20,775 (0.47 per cent.); Scandinavia (comprising Sweden, Norway and Denmark), 14,700 (0.33 per cent.); Polynesia, 3,410 (0.08 per cent.); British India, 6,644 (0.15 per cent.); United States of America, 6,642 (0.15 per cent.); and Italy, 6,719 (0.15 per cent.). The total population of Asiatic birth was 36,442 (0.82 per cent.), of whom 3,474 were born in Japan.

(c) *Non-European Races.* The Census taken on the 3rd April, 1911, was the first occasion on which a systematic attempt had been made to ascertain the number of persons of non-European races in Australia. On former occasions the inquiry did not usually extend further than a request that in all cases in which the person enumerated

1. An article on the Aborigines of Australia, specially written for the Year Book by W. Ramsay Smith, D.Sc., M.B., Ch.M., F.R.S.E., Permanent Head of the Department of Public Health of South Australia, will be found in Year Book No. 3, Section IV., § 12, page 158.

was an Aboriginal or a Chinese, whether of the full blood or of the half-blood, the fact should be specially noted in the column on the Census schedule relating to birthplace. At the last Census the inquiry as to race was made one of the leading items, and all persons of non-European race were required to have their race specified. From the figures so obtained the following table has been compiled :—

**PERSONS OF NON-EUROPEAN RACE IN THE COMMONWEALTH, 3rd APRIL, 1911.**

(EXCLUSIVE OF FULL-BLOOD ABORIGINALS.)

States and Territories.	Aus- tralian.	Asiatic.		African.		American.		Polynesian.		Indefinite.		Total.	
	Half- caste Abori- ginals.	Full- blood.	Half- caste.	Full- blood	Half- caste.	Full- blood	Half- caste.	Full- blood	Half- caste.	Full- blood	Half- caste.	Full- blood.	Half- caste.
States—													
N.S. Wales ..	4,512	10,983	1,390	169	166	10	7	343	70	2	..	11,507	6,145
Victoria ..	447	5,972	1,056	58	63	6	9	12	5	1	2	6,049	1,582
Queensland ..	2,508	9,123	940	53	65	37	5	2,123	142	..	..	11,336	3,660
S. Australia ..	692	1,049	175	18	21	5	1	5	4	2	..	1,079	893
W. Australia ..	1,475	5,578	129	48	15	7	2	25	3	..	..	5,658	1,624
Tasmania ..	227	532	127	4	6	..	..	5	2	..	..	541	362
Territories—													
Northern ..	244	1,594	35	..	..	..	..	11	1	..	..	1,612	280
Federal ..	8	7	..	..	..	..	..	..	..	..	..	7	8
Total ..	10,113	34,838	3,852	357	336	65	24	2,524	227	5	2	37,789	14,554

The proportion of population of non-European race (exclusive of full-blood aboriginals) in each State is shewn in the following table, full-blood and half-caste non-Europeans being shewn separately :—

**PROPORTION OF NON-EUROPEAN RACES IN THE COMMONWEALTH, 3rd APRIL, 1911.**

(EXCLUSIVE OF FULL-BLOOD ABORIGINALS.)

States and Territories.	Total Population.	Non-European Race.					
		Full-blood.		Half-caste.		Total.	
		Number.	Number per 1000 of Total Population.	Number.	Number per 1000 of Total Population.	Number.	Number per 1000 of Total Population.
States—							
N. S. Wales ..	1,646,734	11,507	6.99	6,145	3.73	17,652	10.72
Victoria ..	1,315,551	6,049	4.60	1,582	1.20	7,631	5.80
Queensland ..	605,813	11,336	18.71	3,660	6.04	14,996	24.75
S. Australia ..	408,558	1,079	2.64	893	2.19	1,972	4.83
W. Australia ..	282,114	5,658	20.05	1,624	5.76	7,282	25.81
Tasmania ..	191,211	541	2.83	362	1.89	903	4.72
Territories—							
Northern ..	3,310	1,612	487.01	280	84.59	1,892	571.60
Federal ..	1,714	7	4.08	8	4.67	15	8.75
Total C'wealth..	4,455,005	37,789	8.48	14,554	3.27	52,343	11.75

(ii) *Biological and Sociological Significance.* As regards race and nationality, therefore, the population of Australia is fundamentally British, and thus furnishes an example of the transplanting of a race into conditions greatly differing from those in which it had been developed. The biological and sociological significance of this will ultimately appear in the effects on the physical and moral constitution produced by the complete change of climatic and social environment, for the new conditions are likely to considerably modify both the physical characteristics and the social instincts of the constituents of the population. At present, the characteristics of the Australian population, whether physical, mental, moral, or social, are only in the making, and probably it will not be possible to point to a distinct Australian type until three or four generations more have passed. Even then, it is hardly likely that, with the great extent of territory and varying conditions presented by the Commonwealth there will be but one

type; on the contrary, a variety of types may be expected. The Australian, at present, is little other than a transplanted Briton, with the essential characteristics of his British forbears, the desire for freedom from restraint, however, being perhaps somewhat accentuated. The greater opportunity for an open-air existence, and the absence of the restrictions of older civilisations, may be held to be in the main responsible for this.

4. *Differences among the States and Territories.*—(i) *Sex Distribution.* The varying circumstances under which the settlement of the several States has been effected, and the essentially different conditions experienced in the due development of their respective resources have naturally led to somewhat marked differences in the constitution of their populations. In the matter of sex distribution, the States in which the normal condition of older countries is most nearly represented are those of Victoria, South Australia, and Tasmania, in the first-mentioned of which, the females have, for some years past, with the exception of the year 1913, exceeded the males. This was also the case in South Australia in the years 1914 to 1919. In Western Australia and Queensland, on the other hand, the position of affairs has been somewhat abnormal, the excess of males over females in each 100 of population in 1915 being respectively 7.73 and 5.95. In 1916 and subsequent years, these rates were much reduced, having fallen in 1918 to 3.02 and 1.69 respectively. However, the rates for 1919 have risen to 6.68 and 4.49 respectively, indicating that the pre-war conditions are again in force. In 1916 there was an excess of females over males for the first time in New South Wales to the extent of 0.61 in each 100 of the population, followed in 1917 by an excess of 1.05, and an excess of 0.77 in 1918. In 1919, males again were more numerous than females to the extent of 1.02 in each 100 of population.

In the Northern Territory, owing to lack of settlement, the masculinity has always been large, the figures for 1919 giving an excess of males over females in each 100 of population of slightly over 52.

The variation in the masculinity of the estimated population of the several States and Territories and of the Commonwealth as a whole will be seen in the table on page 86.

(ii) *Age Distribution.* The disparity in sex distribution exhibited by the several States is accompanied by a corresponding inequality in the matter of age distribution. For the purpose of convenient comparison in this respect the several populations may each be divided into three groups, indicative of dependence on the one hand, and ability to support on the other: The usual division for this purpose is into an initial group of "under 15" classed as "dependent age," a second group of "15 and under 65" classed as "supporting age," and a final group of "65 and upwards" classed "old age." From certain points of view the division might be into two classes, the "supporting" and the "dependent," as the majority of those aged "65 and upwards" strictly belong to the dependent class. The number of persons in each State at the Census, 3rd April, 1911, in each of the three groups mentioned, and the proportion of same to the total for each State and the Commonwealth, were as follows:—

**NUMBER AND PROPORTION OF PERSONS IN THE COMMONWEALTH OF  
DEPENDENT, SUPPORTING, AND OLD AGE, ON 3rd APRIL, 1911.**

State or Territory.	Number of Persons of—				Proportion of Population of—		
	Dependent age (under 15).	Supporting age (15 and under 65).	Old age (65 and upwards).	All ages.	Dependent age (under 15).	Supporting age (15 and under 65).	Old age (65 and upwards).
<b>States—</b>					%	%	%
New South Wales	526,625	1,053,400	66,709	1,646,734	31.98	63.97	4.05
Victoria ..	400,260	847,700	67,591	1,315,551	30.42	64.44	5.14
Queensland ..	200,020	383,330	22,463	605,813	33.01	63.28	3.71
South Australia	127,290	262,356	18,912	408,558	31.15	64.22	4.63
Western Australia	87,884	187,574	6,656	282,114	31.15	66.49	2.36
Tasmania ..	66,708	116,604	7,899	191,211	34.89	60.98	4.13
<b>Territories—</b>							
Northern ..	485	2,708	117	3,310	14.65	81.81	3.54
Federal ..	551	1,081	82	1,714	32.15	63.07	4.78
<b>Commonwealth ..</b>	<b>1,409,823</b>	<b>2,854,753</b>	<b>190,429</b>	<b>4,455,005</b>	<b>31.65</b>	<b>64.08</b>	<b>4.27</b>

In Western Australia the proportion of its population of supporting age was larger than in any other State, whilst the corresponding Tasmanian proportion was the lowest for the Commonwealth. On the other hand, in Tasmania the proportion of dependent age was the highest for the Commonwealth, while the Victorian proportion was the lowest. Victoria had the highest and Western Australia the lowest proportion of persons aged 65 years and upwards.

In the Northern Territory the proportions are quite exceptional, the percentage of those of dependent age being much lower, and that for supporting age being much higher, than in any other part of the Commonwealth.

(iii) *Birthplaces.* The following table exhibits, in a very condensed form, the distribution of the population of the several States and Territories according to birthplace :—

### BIRTHPLACES OF POPULATION AT CENSUS OF 3rd APRIL, 1911.

(COMMONWEALTH.)

Birthplace.	Population of Commonwealth at Census.								
	States.						Territories.		C'wealth.
	N.S.W.	Victoria.	Qld.	S. Aust.	W. Aust.	Tas.	North-ern.	Fede-ral.	
Australia ..	1,377,219	1,108,945	446,695	350,261	209,050	172,497	1,505	1,498	3,667,670
New Zealand	13,963	10,067	2,576	986	3,054	1,200	18	4	31,868
United Kingdom	204,394	157,436	120,015	44,431	50,552	13,472	262	160	590,722
Other European Countries	19,771	15,346	20,227	7,989	9,428	1,134	49	5	73,949
Asia ..	11,463	6,676	8,867	1,244	5,996	778	1,413	5	36,442
Africa ..	1,999	1,498	527	357	423	145	9	..	4,958
America ..	4,424	2,983	1,688	764	1,123	279	12	5	11,278
Polynesia	1,204	279	1,728	55	88	44	12	..	3,410
At Sea ..	1,479	1,303	629	422	281	122	2	..	4,238
Unspecified	10,818	11,018	2,861	2,049	2,119	1,540	28	37	30,470
Total ..	1,646,734	1,315,551	605,813	408,558	282,114	191,211	3,310	1,714	4,455,005

The proportions for the several States and Territories for each of the birthplaces shewn in the foregoing table expressed as percentages of the total population, the birthplaces of which were specified, are as follows :—

### PERCENTAGE OF COMMONWEALTH POPULATION ACCORDING TO BIRTHPLACE, 3rd April, 1911.

Birthplace.	Percentage of Total Population.								
	States.						Territories.		C'wealth.
	N.S.W.	Victoria.	Qld.	S. Aust.	W. Aust.	Tas.	North-ern.	Fede-ral.	
	%	%	%	%	%	%	%	%	%
Australia ..	84.19	85.01	74.09	86.16	74.66	90.95	45.86	89.32	82.90
New Zealand	0.86	0.77	0.43	0.24	1.10	0.63	0.55	0.24	0.72
U. Kingdom	12.49	12.07	19.90	10.93	18.05	7.10	7.98	9.54	13.35
Other E'pean Countries	1.21	1.18	3.35	1.97	3.37	0.60	1.49	0.30	1.67
Asia ..	0.70	0.51	1.47	0.31	2.14	0.41	43.05	0.30	0.82
Africa ..	0.12	0.11	0.09	0.09	0.15	0.08	0.27	..	0.11
America ..	0.27	0.23	0.28	0.19	0.40	0.15	0.37	0.30	0.25
Polynesia ..	0.07	0.02	0.29	0.01	0.03	0.02	0.37	..	0.08
At Sea ..	0.09	0.10	0.10	0.10	0.10	0.06	0.06	..	0.10
Total ..	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

As regards distribution in the States according to birthplace, the population of New South Wales is very similar to that of Victoria, the proportions born in the United Kingdom and Asia being slightly higher, and that born in Australia slightly lower, in the case of New South Wales. There is also a rough similarity between the birthplace distributions

of Queensland and Western Australia. In both, the Australian-born represent a much smaller, and those born in the United Kingdom, in "Other European Countries" and in Asia, a much larger proportion than is the case with the remaining States. Polyne- sians were, however, more numerous represented in Queensland at the date of the Census than in any other State. Natives of New Zealand were, proportionately, most numerous in Western Australia. Tasmania had the largest proportion of Australian-born population, viz., 91 per cent., while Queensland, with 74 per cent., had the smallest. On the other hand, nearly 20 per cent. of Queensland's population consisted of natives of the United Kingdom, while only 7 per cent. of the population of Tasmania had been born there. For the Commonwealth as a whole, over 98½ per cent. of the population were from Australasian or European birthplaces.

In the case of the Northern Territory, about 46 per cent. of the population were Australian born, while 43 per cent. were of Asiatic birth.

#### § 4. Elements of Growth of Population.

1. **Natural Increase.**—The two factors which contribute to the growth of a popula- tion are the "natural increase" by excess of births over deaths, and the "net immigration," i.e., the excess of arrivals over departures. While the relative potency of these factors depends upon a variety of causes, it may be said that, in general, in the case of a new country "net immigration" occupies an important position as a source of increase of population, while in an old country "natural increase," modified more or less by "net emigration," or excess of departures over arrivals, is the principal element causing growth of population. The table hereunder gives the total natural increase, as well as that of males and females:—

NATURAL INCREASE (a) OF THE POPULATION  
OF STATES, TERRITORIES, AND COMMONWEALTH, FROM 1861 TO 1919.

Period.	States.						Territories.		C'wealth.
	N.S.W. (b)	Victoria.	Q'land.	S. Aust. (c)	W.Aust.	Tas.	North- ern. (d)	Fede- ral. (e)	
MALES.									
1861 to 1865	22,055	34,286	2,444	9,645	765	3,893	..	..	73,088
1866 to 1870	25,850	34,997	5,739	10,881	754	3,281	..	..	81,502
1871 to 1875	30,067	35,132	6,704	9,979	710	3,077	..	..	85,669
1876 to 1880	34,040	31,985	7,960	13,676	1,023	3,472	..	..	92,156
1881 to 1885	42,658	33,614	7,986	16,969	1,002	5,284	..	..	107,513
1886 to 1890	54,753	39,528	17,872	16,519	1,755	6,093	..	..	136,520
1891 to 1895	56,834	45,606	20,525	15,758	1,436	6,889	..	..	147,048
1896 to 1900	48,692	33,645	17,724	12,562	3,402	6,373	..	..	122,398
1901 to 1905	51,179	34,332	16,628	12,149	8,283	7,955	-223	..	130,303
1906 to 1910	64,127	38,948	21,415	14,500	10,762	8,703	-264	..	158,191
1911 to 1915	77,070	46,160	27,497	18,673	12,730	9,386	-201	78	191,393
1916 to 1919	56,428	31,800	21,181	13,049	7,692	6,820	-108	71	136,933
1861 to 1919	563,753	440,033	173,675	164,360	50,314	71,226	-796	149	1,462,714
FEMALES.									
1861 to 1865	26,343	39,615	3,566	9,987	1,105	4,608	..	..	85,224
1866 to 1870	30,327	40,919	7,571	11,223	1,301	4,451	..	..	95,792
1871 to 1875	35,567	41,472	9,706	10,944	1,255	4,192	..	..	103,136
1876 to 1880	40,276	37,551	12,291	14,608	1,585	4,699	..	..	111,010
1881 to 1885	50,204	39,833	15,262	18,033	1,738	6,364	..	..	131,434
1886 to 1890	62,090	48,131	24,238	17,320	2,609	7,228	..	..	161,616
1891 to 1895	63,930	53,190	25,757	16,792	3,376	7,781	..	..	170,826
1896 to 1900	57,107	40,474	24,037	13,443	7,054	6,718	..	..	148,833
1901 to 1905	59,163	39,831	22,910	12,701	11,468	8,027	28	..	154,128
1906 to 1910	71,297	42,629	26,048	14,754	13,354	8,522	33	..	176,637
1911 to 1915	87,074	50,258	33,463	19,318	16,262	9,604	62	78	216,119
1916 to 1919	64,394	33,093	25,677	13,244	10,519	6,970	118	67	154,082
1861 to 1919	647,772	506,996	230,526	172,367	71,626	79,164	241	145	1,708,837

(a) Excess of births over deaths. (b) Including Federal Territory prior to 1911. (c) Including Northern Territory prior to 1901. (d) Included in South Australia prior to 1901.

(e) Part of New South Wales prior to 1911.

NOTE.—Minus sign (—) denotes excess of deaths over births.



**NATURAL INCREASE (a) OF THE POPULATION  
OF STATES, TERRITORIES, AND COMMONWEALTH, FROM 1861 TO 1919—continued.**

Period.	. States.						Territories.		C'wealth.
	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	North- ern.	Fede- ral.	
	(b)			(c)			(d)	(e)	
PERSONS.									
1861 to 1865	48,398	73,901	6,010	19,632	1,870	8,501	..	..	158,312
1866 to 1870	56,177	75,916	13,310	22,104	2,055	7,732	..	..	177,294
1871 to 1875	65,634	76,604	16,410	20,923	1,965	7,269	..	..	188,805
1876 to 1880	74,316	69,536	20,251	28,284	2,608	8,171	..	..	203,166
1881 to 1885	92,862	73,447	23,248	35,002	2,740	11,648	..	..	238,947
1886 to 1890	116,843	87,659	42,110	33,839	4,364	13,321	..	..	298,136
1891 to 1895	120,764	98,796	46,282	32,550	4,812	14,670	..	..	317,874
1896 to 1900	105,799	74,119	41,761	26,005	10,456	13,091	..	..	271,231
1901 to 1905	110,342	74,163	39,538	24,850	19,751	15,982	—195	..	284,431
1906 to 1910	135,424	81,577	47,463	29,254	24,116	17,225	—231	..	334,828
1911 to 1915	164,144	96,418	60,960	37,991	28,992	18,990	—139	156	407,512
1916 to 1919	120,822	64,893	46,858	26,293	18,211	13,790	10	138	291,015
1861 to 1919	1,211,525	947,029	404,201	336,727	121,940	150,390	—555	294	3,171,551

(a) Excess of births over deaths. (b) Including Federal Territory prior to 1911. (c) Including Northern Territory prior to 1901. (d) Included in South Australia prior to 1901. (e) Part of New South Wales prior to 1911.

NOTE.—Minus sign (—) denotes excess of deaths over births.

With two exceptions, viz., Tasmania for the period 1906 to 1910 and the Federal Territory for the period 1916 to 1919, the natural increase of females exceeded that of males throughout the years referred to in the foregoing table. The quinquennial period in which the largest natural increase of population took place was that of 1911-15 with a total for the Commonwealth of 407,512. For the individual States the quinquennia of maximum natural increase were as follows:—New South Wales, Queensland, South Australia, Western Australia, and Tasmania, 1911-15; and Victoria, 1891-5.

2. **Comparison with other Countries.**—Notwithstanding its comparatively low birth-rate, Australia has a high rate of natural increase, owing to the fact that its death-rate is a very low one. The following table furnishes a comparison between the average rates per annum of natural increase for some of the principal countries of the world for which such information is available, and those for the several States of the Commonwealth and the Dominion of New Zealand:—

**NATURAL INCREASE PER ANNUM PER 1,000 OF MEAN POPULATION.**

(VARIOUS COUNTRIES.)

Country.	Natural Increase per 1,000.	Country.	Natural Increase per 1,000.	Country.	Natural Increase per 1,000.
Australasia (1915-19)—		Europe—continued.		Europe—continued.	
Tasmania ..	17.42	Serbia ..	(b) 14.12	England & Wales (h)	6.19
Queensland ..	17.29	Prussia ..	(c) 13.63	Ireland ..	(h) 4.12
New South Wales	16.25	Denmark ..	(e) 12.87	France ..	(d) 0.43
Western Australia	15.34	Germany ..	(d) 12.30		
South Australia	15.17	Finland ..	(d) 12.25	Asia—	
Commonwealth	14.99	Norway ..	(e) 11.82	Japan ..	(d) 13.42
New Zealand ..	13.85	Hungary ..	(b) 11.77	Ceylon ..	(e) 6.46
Victoria ..	11.80	Austria ..	(b) 10.64		
		Italy ..	(g) 8.11		
		Sweden ..	(g) 8.10	America—	
Europe—		Switzerland ..	(f) 7.89	Jamaica ..	(g) 12.56
Bulgaria ..	(a) 17.73	Belgium ..	(b) 7.83	Canada (Province	
Rumania ..	(d) 17.39	Spain ..	(g) 7.59	of Ontario)	(e) 11.18
Netherlands ..	(g) 14.34	Scotland ..	(h) 7.07	Chile ..	(f) 10.29

(a) 1907-11. (b) 1908-12. (c) 1909-13. (d) 1910-14. (e) 1911-15. (f) 1912-16. (g) 1913-17. (h) 1914-18.

The graphs of natural increase for each of the States, as well as for the Commonwealth, are shewn on page 110.

3. *Net Immigration.*—The other factor of increase in the population, viz., the excess of arrivals over departures, known as “net immigration,” is, from its nature, much more subject to marked and extensive variation than is the factor of “natural increase.” These variations are due to numerous causes, many of which have already been referred to in dealing with the influences which affect the growth of population. An important cause, not yet referred to, is that of assisted immigration. The number of persons so introduced varies considerably in different years.

**NET IMMIGRATION, OR EXCESS OF ARRIVALS OVER DEPARTURES,  
STATES, TERRITORIES, AND COMMONWEALTH, FROM 1861 TO 1919 INCLUSIVE.**

Period.	States.						Territories.		Commonwealth.
	N.S.W.	Victoria.	Q'land.	S. Aust. (a)	W. Aust.	Tas.	North- ern. (b)	Feder- al. (c)	
MALES.									
1861 to 1865	2,984	15,871	34,031	10,270	3,213	2,997	..	..	31,630
1866 to 1870	23,381	13,516	10,190	242	1,182	313	..	..	47,714
1871 to 1875	20,346	8,093	26,236	3,833	80	1,916	..	..	40,326
1876 to 1880	48,378	5,696	13,892	25,056	179	2,418	..	..	83,869
1881 to 1885	70,996	19,925	54,867	1,982	2,701	1,860	..	..	148,367
1886 to 1890	29,345	51,894	18,514	12,895	6,411	2,648	..	..	95,917
1891 to 1895	8,671	33,192	5,088	1,493	39,443	2,857	..	..	15,660
1896 to 1900	854	39,805	8,095	8,239	36,953	2,905	..	..	945
1901 to 1905	15,671	37,971	495	11,031	28,127	1,771	697	..	7,177
1906 to 1910	11,157	9,400	12,291	10,590	711	5,784	366	..	37,999
1911 to 1915	18,878	2,223	6,531	14,365	603	6,491	1,150	90	8,439
1916 to 1919	1,893	15,434	1,818	498	2,094	3,867	1	20	16,763
1861 to 1919	250,846	28,236	188,412	996	116,991	8,431	86	110	518,562
FEMALES.									
1861 to 1865	8,578	21,527	18,824	5,993	952	1,358	..	..	54,516
1866 to 1870	9,928	16,702	4,851	1,207	517	500	..	..	32,705
1871 to 1875	9,395	2,498	11,187	774	18	2,500	..	..	21,336
1876 to 1880	25,081	169	7,792	12,977	130	462	..	..	46,273
1881 to 1885	38,867	7,861	27,526	100	957	562	..	..	75,673
1886 to 1890	23,220	34,337	14,811	11,310	1,768	42	..	..	62,784
1891 to 1895	12,793	13,656	422	1,964	7,758	1,705	..	..	6,732
1896 to 1900	143	23,777	927	7,627	32,043	2,009	..	..	3,432
1901 to 1905	1,566	21,984	2,398	8,448	22,293	726	81	..	9,616
1906 to 1910	9,390	10	7,780	4,403	1,867	4,023	148	..	19,279
1911 to 1915	45,187	20,342	12,168	6,576	11,589	5,277	251	118	90,954
1916 to 1919	9,497	3,565	1,505	4,114	2,473	1,931	134	28	7,253
1861 to 1919	193,359	40,126	104,551	10,523	77,383	15,029	318	90	411,321
PERSONS.									
1861 to 1865	11,562	5,656	52,855	16,263	4,165	4,355	..	..	86,146
1866 to 1870	33,309	30,218	15,041	965	1,699	813	..	..	80,419
1871 to 1875	29,741	5,595	37,423	4,607	98	4,416	..	..	61,662
1876 to 1880	73,459	5,865	21,684	38,033	49	2,880	..	..	130,142
1881 to 1885	109,863	27,786	82,393	2,082	3,658	2,422	..	..	224,040
1886 to 1890	52,565	86,231	33,325	24,205	8,179	2,606	..	..	158,701
1891 to 1895	21,464	46,848	4,666	471	47,201	4,562	..	..	22,392
1896 to 1900	997	63,582	9,022	15,866	68,996	4,914	..	..	2,487
1901 to 1905	17,237	59,955	1,903	19,479	50,420	2,497	616	..	16,793
1906 to 1910	20,547	9,410	20,071	14,993	2,578	9,807	514	..	57,278
1911 to 1915	64,065	22,565	18,699	7,789	12,192	11,768	1,401	28	99,393
1916 to 1919	11,390	11,869	313	3,616	4,567	1,936	133	48	24,016
1861 to 1919	444,205	11,890	292,963	9,527	194,374	23,460	404	20	929,883

NOTE.—The minus sign (—) signifies that the number of departures was in excess of arrivals.

(a) Including Northern Territory up to 1900.

(b) Included in South Australia up to 1900.

(c) Part of New South Wales prior to 1911.

During the period 1861-1919, viz., 59 years, the gain to the Commonwealth population by excess of arrivals over departures was 929,883 persons, while the gain by excess of births over deaths for the same period was 3,171,551. That is, 23 per cent. of the increase for the Commonwealth during the past 59 years has been due to "net immigration" and 77 per cent. to "natural increase." In regard to the contribution by individual States to the total net immigration of 929,883, every State has shewn an increase with the exception of Tasmania, where the loss by emigration has been 23,460.

The quinquennial period in which the greatest net immigration to the Commonwealth occurred was that of 1881-5 with a total of 224,040, whilst in the period 1901-5, the departures exceeded the arrivals by 16,793. The quinquennial periods in which maximum net immigration occurred in the several States were as follows:—New South Wales and Queensland 1881-5, Victoria 1886-90, South Australia 1876-80, Western Australia and Tasmania 1896-1900. In all the States quinquennial periods have occurred in which the departures for the five years have exceeded the arrivals. The periods in which such net emigration from the several States was greatest were as follows:—New South Wales and Victoria 1896-1900, Queensland 1901-5, South Australia 1886-90, Western Australia 1916-1919, and Tasmania 1911-15. In the four years 1916, 1917, 1918 and 1919 a net immigration of 24,016 was experienced, all the States having contributed to that total except Queensland and Western Australia, where there was an excess of emigration. The smallness of the gain by immigration during the period 1916-19 was largely due to the restrictions placed on travelling during the war period.

4. **Total Increase.**—The total increase of the population is found by the combination of the natural increase with the net immigration.

In the following table are set out the figures shewing the total increase in each quinquennium from 1861 to 1915 and for the four years 1916 to 1919:—

**TOTAL INCREASE OF THE POPULATION OF THE STATES, TERRITORIES, AND COMMONWEALTH FROM 1861 TO 1919.**

Period.	States.					Territories.			Commonwealth.
	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	North-ern.	Federal.	
	(a)					(b)		(c)	
MALES.									
1861 to 1865	25,039	18,415	36,475	19,915	3,978	896	..	..	104,718
1866 to 1870	49,231	48,513	15,929	10,639	1,936	2,968	..	..	129,216
1871 to 1875	50,413	27,039	32,940	13,812	630	1,161	..	..	125,995
1876 to 1880	82,418	26,289	21,852	38,732	844	5,890	..	..	176,025
1881 to 1885	113,654	53,539	62,853	14,987	3,703	7,144	..	..	255,880
1886 to 1890	84,098	91,422	36,386	3,624	8,166	8,741	..	..	232,437
1891 to 1895	65,505	12,414	25,613	14,265	40,879	4,032	..	..	162,708
1896 to 1900	47,838	— 6,160	25,819	4,323	40,355	9,278	..	..	121,453
1901 to 1905	66,850	— 3,639	17,123	1,118	36,410	6,184	— 920	..	123,126
1906 to 1910	75,284	48,348	33,706	25,090	11,473	2,919	— 630	..	196,190
1911 to 1915	95,948	47,168	34,028	5,523	13,333	2,895	949	— 12	199,832
1916 to 1919	58,321	47,234	19,363	12,551	5,598	10,687	— 109	51	153,696
1861 to 1919	814,599	410,582	362,087	164,579	167,305	62,795	— 710	39	1,981,276

NOTE.—The minus sign (—) denotes decrease.

(a) Including Northern Territory up to 1900. (b) Included in South Australia up to 1900.  
(c) Part of New South Wales prior to 1911.

TOTAL INCREASE OF THE POPULATION OF THE STATES, TERRITORIES,  
AND COMMONWEALTH FROM 1861 TO 1919—*continued.*

Period.	States.						Territories.		Commonwealth.
	N.S.W.	Victoria.	Q'land.	S. Aust. (a)	W. Aust.	Tas.	North- ern. (b)	Federal. (c)	
FEMALES.									
1861 to 1865	34,921	61,142	22,390	15,980	2,057	3,250	..	..	139,740
1866 to 1870	40,255	57,621	12,422	12,430	1,818	3,951	..	..	128,497
1871 to 1875	44,962	43,970	20,893	11,718	1,237	1,692	..	..	124,472
1876 to 1880	65,357	37,382	20,083	27,585	1,715	5,161	..	..	157,283
1881 to 1885	89,071	47,694	42,788	17,933	2,695	6,926	..	..	207,107
1886 to 1890	85,310	82,468	39,049	6,010	4,377	7,186	..	..	224,400
1891 to 1895	76,723	39,534	25,335	18,756	11,134	6,076	..	..	177,558
1896 to 1900	56,964	16,697	24,964	5,816	39,097	8,727	..	..	152,265
1901 to 1905	60,729	17,847	20,512	4,253	33,761	7,301	109	..	144,512
1906 to 1910	80,687	42,639	33,828	19,157	15,221	4,499	115	..	195,916
1911 to 1915	132,261	70,600	45,631	25,894	27,851	4,327	313	196	307,073
1916 to 1919	73,891	29,528	27,182	17,358	8,046	5,039	252	39	161,335
1861 to 1919	841,131	547,122	335,077	182,890	149,009	64,135	559	235	2,120,158
PERSONS.									
1861 to 1865	59,960	79,557	58,865	35,895	6,035	4,146	..	..	244,458
1866 to 1870	89,486	106,134	28,351	23,069	3,754	6,919	..	..	257,713
1871 to 1875	95,375	71,009	53,833	25,530	1,867	2,853	..	..	250,467
1876 to 1880	147,775	63,671	41,935	66,317	2,559	11,051	..	..	333,308
1881 to 1885	202,725	101,233	105,641	32,920	6,398	14,070	..	..	462,987
1886 to 1890	169,408	173,890	75,435	9,634	12,543	15,927	..	..	456,837
1891 to 1895	142,228	51,948	50,948	33,021	52,013	10,108	..	..	340,266
1896 to 1900	104,802	10,537	50,783	10,139	79,452	18,005	..	..	273,718
1901 to 1905	127,579	14,208	37,635	5,371	70,171	13,485	811	..	267,638
1906 to 1910	155,971	90,987	67,534	44,247	26,694	7,418	745	..	392,106
1911 to 1915	228,209	117,768	79,659	31,417	41,184	7,222	1,262	184	506,905
1916 to 1919	132,212	76,762	46,545	29,909	13,644	15,726	143	90	315,031
1861 to 1919	1,655,730	957,704	697,164	347,469	316,314	126,930	151	274	4,101,434

NOTE.—The minus sign (—) denotes decrease.

(a) Including Northern Territory up to 1900. (b) Included in South Australia up to 1900.

(c) Part of New South Wales prior to 1911.

As regards the Commonwealth as a whole, the greatest increase in any quinquennium up to 1910 was that for the period 1881–5, viz., 462,987. These figures were, however, closely approached by those for the succeeding quinquennium, viz., 456,837. The rate of increase fell off, however, in the three subsequent quinquennia, the increase for the years 1901–5 being 267,638. In the following quinquennium an improvement set in, the increase in that period being 392,106. This was followed by a further improvement in the quinquennium 1911–15, the first three years of which gave increases of 143,624, 164,652, and 138,700 respectively. In the two succeeding years a falling-off was recorded, but this must be taken as having been caused by the war, there having been an excess of departures over arrivals in the two years of 17,370 and 91,053 respectively. In spite of this adverse influence, the increase for the quinquennium 1911–15 was 506,905, the highest quinquennial increase yet recorded for the Commonwealth.

As regards the individual States the maximum increases in any quinquennium are as follows:—New South Wales, 228,209, in 1911–15; Victoria, 173,890, in 1886–90; Queensland, 105,641, in 1881–5; South Australia (including the Northern Territory), 66,317, in 1876–80; Western Australia, 79,452, in 1896–1900; Tasmania, 18,005, in 1896–1900.

As regards the minimum quinquennial increases, it will be seen that they have occurred as under—New South Wales, 59,960, in 1861-5; Victoria, 10,537, in 1896-1900; Queensland, 23,351, in 1866-70; South Australia, 5,371, in 1901-5; Western Australia, 1,867, in 1871-5; Tasmania, 2,853, in 1871-5.

In the three years 1916, 1917 and 1918 the net increase was small, viz., 98,491, but this is mainly due to the net emigration of 136,164 in those years, to which allusion has already been made. In 1919 the net gain was 216,540, the great increase over the total of the three previous years being very largely due to the return of soldiers after the war.

The graphs shewing net increase, both for the Commonwealth as a whole and for each of the States, will be found on pages 108 and 109.

5. Rates of Increase.—(i) *Rates for various Countries.* The table hereunder furnishes particulars concerning rates of increase in population for the Commonwealth, its component States, and other countries:—

#### RATES OF INCREASE IN POPULATION, 1881 TO 1919 (VARIOUS COUNTRIES).

Countries.	Mean Annual Rate of Increase in Population during period—							
	1881 to 1886.	1886 to 1891.	1891 to 1896.	1896 to 1901.	1901 to 1906.	1906 to 1911.	1911 to 1916.	1916 to 1919.
	%	%	%	%	%	%	%	%
<b>AUSTRALASIA—</b>								
Commonwealth ..	3.86	3.06	1.86	1.49	1.38	2.03	1.79	1.56
New South Wales (a) ..	4.83	3.23	1.99	1.57	1.99	2.03	2.36	1.71
Victoria ..	2.60	3.12	0.37	0.52	0.18	2.17	1.31	1.33
Queensland ..	8.42	3.80	2.49	2.25	1.35	2.76	1.98	1.67
South Australia (b) ..	1.41	1.15	1.63	0.77	0.27	2.46	1.11	1.65
Western Australia ..	6.13	5.54	20.81	7.25	6.22	2.43	1.88	1.06
Tasmania ..	2.18	2.87	1.06	1.83	1.33	0.65	0.81	1.90
New Zealand ..	3.31	1.47	2.41	1.98	2.86	2.56	1.61	1.31
<b>EUROPE—</b>								
England and Wales ..	1.11	1.11	1.15	1.15	1.04	1.04	-0.95	..
Scotland ..	0.75	0.75	1.06	1.06	0.55	0.56	0.31	..
Ireland ..	-0.95	-0.94	-0.60	-0.43	-0.22	-0.06	-0.21	..
Austria ..	0.73	0.83	0.79	1.05	0.87	0.80	(c) 0.80	..
Belgium ..	1.13	0.75	1.15	0.92	1.26	0.69	(d) 0.99	..
Denmark ..	1.05	0.87	0.99	1.32	1.12	1.26	(f) 1.16	..
Finland ..	1.42	1.51	1.20	1.41	1.36	1.43	(e) 1.22	..
France ..	0.34	0.06	0.09	0.24	0.15	0.16	(d) 0.12	..
Germany ..	0.74	1.09	1.17	1.51	1.46	1.36	(e) 1.24	..
Hungary ..	1.09	1.01	0.92	1.03	0.77	0.84	(c) 0.84	..
Italy ..	0.66	0.71	0.68	0.61	0.52	0.80	(f) 1.18	..
Netherlands ..	1.32	1.03	1.28	1.30	1.53	1.22	1.72	..
Norway ..	0.36	0.54	0.96	1.31	0.52	0.66	(f) 0.98	..
Prussia ..	0.79	1.15	1.29	1.59	1.57	1.48	(d) 1.29	..
Rumania ..	1.77	1.34	1.15	1.41	1.46	1.48	(e) 2.80	..
Serbia ..	2.30	2.08	1.37	1.57	1.52	1.55	(c) 1.72	..
Spain ..	0.54	0.48	0.45	0.45	0.52	0.87	0.66	..
Sweden ..	0.57	0.40	0.61	0.86	0.61	0.84	(f) 0.69	..
Switzerland ..	0.38	0.40	1.22	1.10	1.28	1.17	(f) 0.65	..
<b>ASIA—</b>								
Ceylon ..	0.54	1.35	1.41	2.03	1.62	1.20	1.71	..
Japan ..	0.96	1.12	0.96	1.25	1.29	1.08	1.42	(g) 1.60
<b>AMERICA</b>								
Canada ..	1.10	1.08	0.97	1.19	2.99	2.99	(e) 3.87	..
Chile ..	2.97	0.72	2.66	0.90	1.53	1.56	1.66	..
Jamaica ..	0.77	1.37	1.66	1.72	1.63	0.28	1.36	..
United States ..	2.27	2.15	1.93	2.02	2.00	1.82	1.67	..

NOTE.—The minus sign (—) denotes decrease.

(a) Including Federal Territory. (b) Including Northern Territory. (c) 1911 to 1912.  
(d) 1911 to 1913. (e) 1911 to 1914. (f) 1911 to 1915. (g) 1916 to 1917.

(ii) *Variations in the Commonwealth Rate.* During the twenty-five years 1881-1906 the annual rate of increase in the population of the Commonwealth exhibited a marked decline, falling from an average of 3.86 per cent. for the five years 1881-6 to an average of 1.38 for 1901-6. During the succeeding quinquennium, however, an improvement took place, the rate of increase being 2.03. In the following quinquennium there was a decline owing to the war. As regards the separate States of the Commonwealth, it will be seen that though the rates of increase for the quinquennium 1911-16 were in all cases lower than those for the quinquennia 1881-6 and 1886-91, it is only in the case of Western Australia that the 1911-16 rate represents the minimum for the seven quinquennia under review.

(iii) *Comparison of Rates of Increase.* It may be noted that the highest rates of increase for the period 1906-11 are those for Canada, New Zealand, and the Commonwealth of Australia in the order named. The United States, Chile and Serbia rank next in order.

6. *Density of Population.*—From one aspect population may be less significant in respect of its absolute amount than in respect of the density of its distribution. The Commonwealth of Australia, with an area of 2,974,581 square miles, and a population on 31st December, 1919, of 5,347,019, including aborigines, has a density of only 1.80 persons to the square mile, and is therefore the most sparsely populated of the civilised countries of the world. For the other continents the densities are approximately as follows:—Europe, 123; Asia, 54; Africa, 11; North and Central America, 17; and South America, 8. The population of the Commonwealth has thus about 22 per cent. of the density of that of South America; about 16 per cent. of that of Africa; about 10½ per cent. of that of North and Central America; about 3½ per cent. of that of Asia; and about 1½ per cent. of that of Europe.

Particulars concerning the number and density of the population of the various countries of the world for the latest dates for which such information is available are given in the following table. These figures have in the main been derived from the 1919 issue of the "Statesman's Year Book," and in some instances, more particularly in the case of Africa, must be considered as rough approximations only, complete data not being obtainable. As already mentioned on page 49 *ante* the areas dealt with in the following table are those which prevailed as at the outbreak of war:—

#### NUMBER AND DENSITY OF THE POPULATION OF THE VARIOUS COUNTRIES OF THE WORLD.

Country.	Population.		Country.	Population.	
	Number.	Density. (a)		Number.	Density (a)
<b>Continents—</b>			<b>EUROPE—continued.</b>		
Europe .. ..	474,949,204	122.98	Rumania .. ..	7,508,009	140.37
Asia .. ..	911,562,998	54.45	Netherlands .. ..	6,724,663	534.47
Africa .. ..	139,921,966	11.36	Portugal .. ..	5,957,985	167.88
North & Central America and the West Indies	144,234,982	16.87	Sweden .. ..	5,800,947	33.52
South America ..	60,371,071	8.21	Bulgaria & E. Roumelia	5,517,700	115.55
Australasia & Polynesia	8,436,034	2.38	Greece (including Crete)	4,821,300	114.98
Total .. ..	1,739,476,255	33.27	Serbia .. ..	4,615,567	136.19
<b>Europe—</b>			Switzerland .. ..	3,937,000	246.43
Russia (including Poland Ciscaucasia & Finland)	153,041,100	72.09	Denmark (incl. Iceland)	3,032,979	54.85
Germany .. ..	67,812,000	324.80	Norway .. ..	2,632,010	21.12
Austria-Hungary (incl. Bosnia & Herzegovina)	52,290,566	200.15	Turkey .. ..	1,891,000	173.77
United Kingdom ..	42,698,000	351.04	Albania .. ..	850,000	73.91
France .. ..	39,700,000	191.74	Montenegro .. ..	436,789	77.96
Italy .. ..	36,740,000	332.09	Luxemburg .. ..	259,891	260.41
Spain (incl. Canary and Balearic Islands) ..	20,818,998	106.88	Malta .. ..	224,323	1,901.04
Belgium .. ..	7,571,377	665.73	Monaco .. ..	22,956	2,869.50
			Gibraltar .. ..	16,549	8,274.50
			San Marino .. ..	11,648	306.53
			Liechtenstein .. ..	10,716	164.86
			Andorra .. ..	5,231	27.39
			Total .. ..	474,949,204	122.98

(a) Number of persons per square mile.

NUMBER AND DENSITY OF THE POPULATION OF THE VARIOUS  
COUNTRIES OF THE WORLD—*continued.*

Country.	Population.		Country.	Population.	
	Number.	Density. (a)		Number.	Density. (a)
<b>Asia—</b>			<b>AFRICA—<i>continued.</i></b>		
China & Dependencies ..	340,653,000	87.04	Ivory Coast ..	1,559,251	12.47
British India ..	244,267,542	223.47	Gold Coast and Protect.	1,503,386	18.79
Japan & Dep. (incl. Korea)	77,894,540	298.13	Sierra Leone and Protect.	1,403,132	45.26
Fedutory Indian States ..	70,888,854	99.91	Senegal ..	1,247,979	16.86
Dutch East Indies ..	46,800,000	80.25	Nyassaland Protectorate	1,141,122	28.84
Russia in Asia ..	29,141,320	4.39	Togoland ..	1,032,088	30.63
Turkey in Asia ..	19,082,900	27.72	Portuguese Guinea ..	1,000,000	40.00
Arabia (Independent) ..	12,000,000	12.00	Dahomey ..	900,000	23.07
Persia ..	9,500,000	15.13	Military Territory of the		
Philippine Islands ..	9,000,000	78.67	Niger (French) ..	850,094	1.69
Siam ..	8,827,000	45.27	French Sahara ..	800,000	0.52
Afghanistan ..	6,380,500	26.04	Rio de Oro & Adrar ..	800,000	7.33
Tonking ..	6,119,720	132.40	Tripoli and Benghazi ..	528,176	1.30
Nepal ..	5,600,000	103.70	Eritrea ..	450,000	9.83
Annam ..	5,200,000	84.25	Italian Somaliland ..	450,000	3.23
Ceylon ..	4,632,400	181.80	Basutoland ..	405,903	34.65
Cochin China ..	3,050,785	138.75	Mauritius and Depend.	384,951	475.84
Cambodia ..	1,634,252	24.13	British Somaliland ..	300,000	4.41
Bokhara ..	1,250,000	15.06	Mauretania ..	256,164	0.74
Kiauchau, Neutral Zone ..	1,200,000	480.00	French Somali Coast, &c.	208,061	4.52
Federated Malay States ..	1,036,999	37.70	Gambia & Protectorate	208,000	46.13
Malay Protectorate ..	926,951	39.47	Rio Muni & C. San Juan	200,000	21.12
Straits Settlements ..	820,871	513.04	Zanzibar ..	196,733	192.88
Borneo and Sarawak ..	808,183	11.06	Réunion ..	173,822	179.20
Khiva ..	646,000	26.92	German S. W. Africa ..	164,830	0.51
Laos ..	640,877	5.73	Cape Verde Islands ..	149,793	101.21
Hong Kong & Territory	535,100	1,368.54	Bechuanaland Protect.	125,350	0.46
Goa ..	515,772	351.10	Swaziland ..	99,959	14.97
Oman ..	500,000	6.10	Comoro Islands ..	84,117	129.41
Timor, &c. ..	377,815	51.54	Spanish N. & W. Africa	70,778	813.54
Cyprus ..	298,775	83.36	St. Thomas & Prince Is.	42,103	92.74
French India ..	266,917	1,361.82	Seychelles ..	24,528	157.23
Bhutan ..	250,000	12.50	Fernando Po, &c. ..	23,844	29.29
Kiauchau (German) ..	192,000	960.00	Mayotte ..	13,500	96.43
Kwang Chau Wan ..	168,000	884.21	St. Helena ..	3,634	77.32
Wei-hai-wei ..	147,177	516.41	Ascension ..	196	5.76
Bahrein Islands ..	103,000	412.00			
Macao, &c. ..	74,866	18,716.50	Total ..	139,921,966	11.36
Aden & Dependencies ..	46,165	5.13			
Damao and Diu ..	32,700	193.49			
Brunei ..	30,000	7.50			
Socotra & Kuria Muria Is.	12,000	8.68			
Tientsin ..	10,017	50,085.00			
Total ..	911,562,998	54.45			
<b>Africa—</b>			<b>North &amp; Central America &amp; West Indies—</b>		
Northern and Southern			United States ..	105,233,300	35.39
Nigeria Protectorate ..	16,500,000	49.11	Mexico ..	15,501,684	20.21
Belgian Congo ..	15,000,000	16.49	Canada ..	8,593,000	2.30
Egypt ..	12,710,120	36.31	Cuba ..	2,627,536	59.49
French Equat. Africa ..	9,000,000	13.45	Haiti ..	2,500,000	245.00
Abyssinia ..	8,000,000	20.00	Guatemala ..	2,003,579	41.49
German East Africa ..	7,665,234	19.85	Salvador ..	1,287,722	97.73
Union of South Africa ..	6,121,842	12.94	Porto Rico ..	1,184,489	328.48
Morocco ..	6,000,000	25.92	Jamaica ..	893,884	212.41
Upper Senegal and Niger	5,646,409	9.93	Nicaragua ..	800,000	16.26
Algeria ..	5,563,828	16.20	San Domingo ..	708,000	39.24
Angola ..	5,000,000	9.67	Honduras ..	613,758	13.86
Madagascar & adjacent			Costa Rica ..	454,995	19.78
islands ..	3,545,264	15.55	Trinidad and Tobago ..	377,021	190.99
Sudan ..	3,400,000	3.35	Newfoundl'd & Labrador	256,495	1.58
Uganda Protectorate ..	3,361,117	30.80	Guadeloupe and Depend.	212,430	308.76
Portuguese East Africa ..	3,011,600	7.03	Martinique ..	193,087	501.52
British East Africa Prot.	2,807,000	11.37	Barbados ..	186,656	1,124.43
Kamerun ..	2,540,000	13.29	Windward Islands ..	178,093	337.94
Tunis ..	1,953,000	39.06	Leeward Islands ..	127,193	177.89
French Guinea ..	1,808,893	19.04	Bahamas ..	59,928	13.61
Liberia ..	1,800,000	45.00	Curaçao ..	57,619	142.97
Rhodesia ..	1,686,165	3.83	Alaska ..	45,000	0.08
			British Honduras ..	42,732	4.97
			Virgin Island of U.S.A. (b)	26,951	197.36
			Bermudas ..	21,029	1,138.37
			Greenland ..	13,449	0.29

(a) Number of persons per square mile.

(b) Late Danish West Indies.

NUMBER AND DENSITY OF THE POPULATION OF THE VARIOUS COUNTRIES OF THE WORLD—*continued.*

Country.	Population.		Country.	Population.	
	Number.	Density. (a)		Number.	Density. (a)
NORTH & CENTRAL AMERICA & WEST INDIES— <i>contd.</i>			Australasia & Polynesia—		
Turks & Caicos Islands	5,600	25.00	C'wealth of Australia ..	(b)5,347,019	1.80
Cayman Islands ..	5,400	60.67	New Zealand ..	(c)1,226,931	11.71
St. Pierre & Miquelon ..	4,652	50.02	Kaiser Wilhelm Land ..	601,427	6.63
Total ..	144,234,982	16.87	Bismarck Archipelago ..		
			Caroline & Pelau Islands ..		
			Marianne Islands ..		
South America—			Solomon Islands ..	250,627	38.86
Brazil (incl. Acre) ..	27,473,579	8.39	Marshall Islands ..		
Argentine Republic ..	8,284,266	7.18	Hawaii ..	201,274	2.22
Colombia (excl. Panama)	5,071,101	11.50	Papua ..	200,000	1.32
Peru ..	4,620,201	6.40	Dutch New Guinea ..	165,991	23.43
Chile ..	3,870,002	13.35	Fiji ..	150,660	10.34
Bolivia ..	2,839,970	5.62	Solomon Islands (British)		
Venezuela ..	2,844,618	7.24	New Caledonia and	72,008	8.42
Ecuador ..	2,000,000	17.24	Dependencies ..	70,000	13.73
Uruguay ..	1,407,247	19.50	New Hebrides ..	41,128	41.13
Paraguay ..	1,050,000	6.36	Samoa (German) ..		
Panama ..	401,554	12.40	French Establishments		
British Guiana ..	313,999	3.51	in Oceania ..	31,477	20.71
Dutch Guiana ..	92,284	2.00	Gilbert & Ellice Islands	31,018	149.13
French Guiana ..	49,009	1.53	Tonga ..	23,766	95.06
Falkland Islands and			Guam ..	14,344	63.75
South Georgia ..	3,241	0.43	Samoa (American) ..	7,550	74.02
Total ..	60,371,071	8.21	Norfolk Island ..	764	76.40
			Total ..	8,436,034	2.38

(a) Number of persons per square mile. (b) Inclusive of an allowance of 100,000 for Aboriginal Natives. (c) Inclusive of Maoris and population of Cook and other Pacific Islands.

## § 5. Seasonal Variations of Population.

1. **Natural Increase.**—For the Commonwealth as a whole the natural increase of the population is greatest in the quarter ending 30th September, and least in that ending 31st December. The birth rate is usually at its highest, and the death rate at its lowest, in the September quarter, and *vice versa* in the March quarter. The average natural increase in population of the several States for each of the quarters, based upon the experience of the ten years 1910 to 1919, is given in the following table, from which it will be seen that the quarter in which the rate of natural increase was highest is that ended 31st March in New South Wales, 30th June for Queensland, that ended 30th September for South Australia and Western Australia, and that ended 31st December for Victoria and Tasmania. The quarters shewing lowest rate of natural increase were that ended 30th June in New South Wales and Tasmania, that ended 30th September in Victoria, and that ended 31st December, in the three remaining States.

## AVERAGE QUARTERLY NATURAL INCREASE, STATES AND COMMONWEALTH, 1910 TO 1919.

State.	(a) Average Natural Increase for Quarter ended on last day of—								Average Natural Increase per Annum, 1910-19.	
	March.		June.		September.		December.			
	Persons.	%	Persons.	%	Persons.	%	Persons.	%		
New S. Wales (b)	8,083	4.50	7,615	4.21	7,896	4.34	7,861	4.29	31,455	17.48
Victoria ..	4,451	3.23	4,453	3.21	4,378	3.15	4,519	3.24	17,801	12.90
Queensland ..	2,934	4.52	3,046	4.66	3,010	4.54	2,834	4.25	11,824	18.21
S. Australia (c)	1,745	4.04	1,817	4.20	1,829	4.22	1,673	3.83	7,064	16.34
W. Australia ..	1,302	4.29	1,312	4.30	1,375	4.46	1,216	3.92	5,205	17.14
Tasmania ..	879	4.41	871	4.40	908	4.62	966	4.90	3,624	18.18
Commonwealth	19,394	4.07	19,114	3.99	19,396	4.03	19,069	3.94	76,973	16.16

(a) The symbol % denotes "per thousand." (b) Including Federal Territory.  
(c) Including Northern Territory.



2. **Net Immigration.**—For the Commonwealth as a whole for the decennium 1910–19, arrivals exceeded departures in the March, June and September quarters, while departures were in excess in the December quarters. New South Wales, Victoria, Queensland, and Western Australia experienced excesses of arrivals in three of the four quarters, South Australia in two, and Tasmania in one only. Particulars concerning the average net immigration of the several States are as follows :—

**AVERAGE QUARTERLY NET IMMIGRATION, STATES AND COMMONWEALTH,  
1910 TO 1919.**

State,	Quarter ended on last day of—								Average Net Immigration per annum, 1910-19.	
	March.		June.		September.		December.			
	Persons.	%	Persons.	%	Persons.	%	Persons.	%	Persons.	%
N.S.W.(a)	3,544	1.97	1,420	0.78	3,321	1.83	— 675	—0.37	7,610	4.23
Victoria	1,249	0.91	—1,685	—1.22	1,848	1.33	2,678	1.92	4,090	2.96
Q'land	1,976	3.04	5,726	8.75	1,573	2.37	—6,362	—9.53	2,913	4.49
S.Aust.(b)	—1,255	—2.90	—1,018	—2.35	930	2.14	1,929	4.42	586	1.36
W. Aust.	344	1.13	1,352	4.43	1,089	3.54	—1,391	—4.48	1,394	4.59
Tas. . .	—2,270	—11.39	—2,167	—10.95	— 485	—2.46	3,661	18.58	—1,261	—6.33
C'wealth	3,588	0.75	3,628	0.76	8,276	1.72	— 160	—0.03	15,332	3.22

NOTE.—The minus sign (—) denotes that the departures were in excess of arrivals, and ‰ denotes “per thousand” of population.

(a) Including Federal Territory. (b) Including Northern Territory.

### § 6. Urban Population.

1. **The Metropolitan Towns.**—A feature of the distribution of population in Australia is the tendency to accumulate in the capital cities. To such an extent is this metropolitan aggregation carried, that in every State the population of the capital far outnumbers that of any other town therein, and ranges between 20 and 55 per cent. of the entire population of the State. The estimated populations of the several capitals on 31st December, 1919, and the percentages of such populations on the totals for the respective States, are shewn in the table hereunder. As might be expected, the proportion of males resident within the metropolitan areas of the Commonwealth is less than that for females. Of the total male population of the Commonwealth 39.19 per cent. live in the capital cities, while the corresponding figure for females is 44.93 per cent. That this metropolitan concentration is phenomenal may be readily seen by comparing the percentage on the total population with the similar figures for the principal countries of Europe, also given in the table hereunder :—

#### METROPOLITAN POPULATION.

(VARIOUS COUNTRIES.)

State or Country.	Metropolis.	Year.	Population.	Percentage on total of State or Country.
New South Wales ..	Sydney ..	31st Dec., 1919	828,700	% 41.38
Victoria ..	Melbourne ..		743,000	49.67
Queensland..	Brisbane ..		189,576	26.14
South Australia ..	Adelaide ..		256,660	54.82
Western Australia ..	Perth ..		142,000	42.81
Tasmania ..	Hobart ..		45,390	20.94
Commonwealth ..	(6 Cities) ..	1919	2,205,326	42.03
New Zealand ..	Wellington ..		100,898	8.67
Denmark ..	Copenhagen ..	1916	605,772	20.02
England ..	London (a) ..	1914	4,518,021	12.22
Saxony ..	Dresden ..	1914	551,697	11.07
Norway ..	Christiania ..	1918	259,445	9.86

(a) Population of Greater London in 1914 was 7,419,704.

**METROPOLITAN POPULATION.**  
(VARIOUS COUNTRIES)—*continued.*

State or Country.	Metropolis.	Year.	Population.	Percentage on total of State or Country.
				%
Netherlands ..	Amsterdam ..	1917	640,993	9.54
Ireland .. ..	Dublin .. ..	1911	403,030	9.18
Belgium .. ..	Brussels .. ..	1912	663,647	8.77
Bavaria .. ..	Munich .. ..	1910	596,467	8.66
Portugal .. ..	Lisbon .. ..	1911	435,359	7.31
France .. ..	Paris .. ..	1911	2,888,110	7.29
Sweden .. ..	Stockholm .. ..	1918	413,163	7.12
Austria .. ..	Vienna .. ..	1910	2,031,498	7.11
Scotland .. ..	Edinburgh .. ..	1918	333,883	6.83
Greece .. ..	Athens .. ..	1907	167,479	6.36
Prussia .. ..	Berlin .. ..	1916	1,779,107	4.33
Hungary .. ..	Budapest .. ..	1910	880,371	4.22
Spain .. ..	Madrid .. ..	1917	648,760	3.11
Switzerland ..	Berne .. ..	1915	96,900	2.50
Russia (European) ..	Petrograd .. ..	1915	2,318,645	1.76
Italy .. ..	Rome .. ..	1915	590,960	1.64

2. **Urban Population Generally.**—In connection with the particulars shewing the tendency in Australia to concentrate population in the metropolis, it should be borne in mind that in most of the European States the capital is but one of many populous cities, and in some instances is by no means the most populous. In Australia, on the other hand, the metropolis is in every instance the most populous city, and, in some of the States, is also the only town of considerable magnitude.

In the following table will be found particulars of all localities in the Commonwealth returned at the date of the Census, on 3rd April, 1911, as having a population of over 3,000. From this it will be seen that there were, in all, 29 localities in the Commonwealth returned as having a population upwards of 20,000. Of these 11 were in New South Wales, 13 in Victoria, 1 in Queensland, 1 in South Australia, 1 in Western Australia, and 2 in Tasmania.

The figures given in this table relate to the localities specified as defined by the residents therein. It must be understood that no clearly defined boundaries exist in these cases, and the population given for any locality represents the number of persons who returned themselves as belonging to that locality. For the population within the boundaries of the principal Local Government Areas in the States, reference should be made to paragraph 3 following.

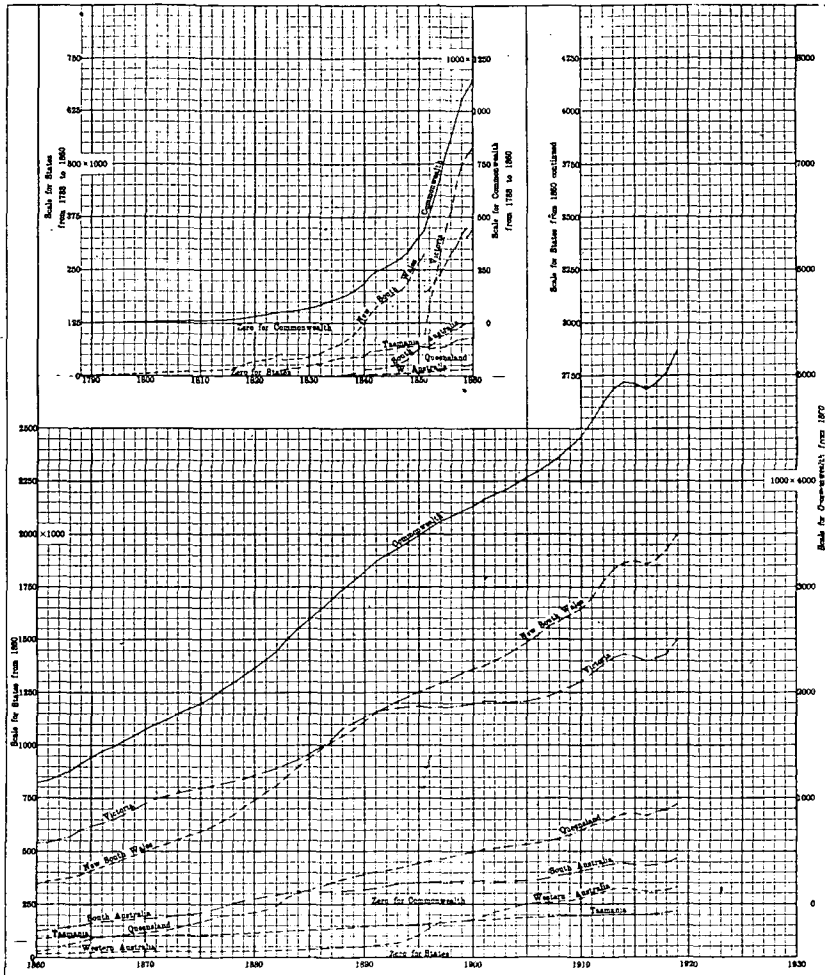
**POPULATION OF PRINCIPAL TOWNS IN THE COMMONWEALTH,**  
**3rd APRIL, 1911.**

Town.	State in which Situated.	Approx. Population.	Town.	State in which Situated.	Approx. Population.
<b>100,000 and over—</b>			<b>20,000 and under 100,000—</b>		
Sydney .. ..	N.S.W.	107,133	<i>continued.</i>		
			Hobart .. ..	Tas.	27,505
<b>20,000 and under 100,000—</b>			Launceston .. ..	"	20,937
Adelaide .. ..	S.A.	32,981	Leichhardt .. ..	N.S.W.	24,139
Ballarat .. ..	Vic.	38,686	Marrickville .. ..	"	25,993
Balmain .. ..	N.S.W.	31,961	Melbourne .. ..	Vic.	38,293
Brisbane South ..	Qld.	21,332	Melbourne South ..	"	46,016
Broken Hill .. ..	N.S.W.	30,953	Newtown .. ..	N.S.W.	26,427
Brunswick .. ..	Vic.	32,201	Paddington .. ..	"	24,150
Carlton .. ..	"	27,476	Perth .. ..	W.A.	31,300
Collingwood .. ..	"	20,254	Petersham .. ..	N.S.W.	20,407
Fitzroy .. ..	"	34,141	Prahran .. ..	Vic.	25,489
Footscray .. ..	"	21,933	Redfern .. ..	N.S.W.	24,275
Geelong .. ..	"	21,630	Richmond .. ..	Vic.	38,559
Glebe .. ..	N.S.W.	21,444	St. Kilda .. ..	"	25,449
Hawthorn .. ..	Vic.	24,353	Sydney North .. ..	N.S.W.	32,764

POPULATION OF PRINCIPAL TOWNS IN THE COMMONWEALTH,  
3RD APRIL, 1911—continued.

Town.	State in which Situated.	Approx. Population.	Town.	State in which Situated.	Approx. Population.
<b>10,000 and under 20,000—</b>			<b>5,000 and under 10,000—cont.</b>		
Annandale .. ..	N.S.W.	11,250	Mount Morgan .. ..	Qld.	9,772
Ashfield .. ..	.. ..	12,096	New Farm .. ..	.. ..	5,394
Bendigo .. ..	Vic.	17,883	Newtown .. ..	Vic.	5,863
Botany .. ..	N.S.W.	10,228	Norwood .. ..	S.A.	9,454
Boulder .. ..	W.A.	12,833	Orange .. ..	N.S.W.	5,283
Brighton .. ..	Vic.	11,096	Paddington .. ..	Qld.	5,273
Brisbane .. ..	Qld.	17,715	Parkside .. ..	S.A.	7,774
Charters Towers .. ..	.. ..	15,037	Port Pirie .. ..	.. ..	7,968
Essendon .. ..	Vic.	10,087	Preston .. ..	Vic.	5,025
Goulburn .. ..	N.S.W.	10,187	Rockdale .. ..	N.S.W.	7,453
Gympie .. ..	Qld.	11,718	Rookwood .. ..	.. ..	5,374
Ipswich .. ..	.. ..	10,445	St. Peters .. ..	.. ..	7,037
Kalgoorlie .. ..	W.A.	13,488	Subiaco .. ..	W.A.	8,701
Kew .. ..	Vic.	11,143	Tamworth .. ..	N.S.W.	7,607
Malvern .. ..	.. ..	15,319	Toowoong .. ..	.. ..	5,645
Manly .. ..	N.S.W.	10,687	Wagga Wagga .. ..	N.S.W.	7,446
Melbourne North .. ..	Vic.	17,750	Walleroo .. ..	S.A.	5,282
Mosman .. ..	N.S.W.	13,189	Warrnambool .. ..	Vic.	7,543
Newcastle .. ..	.. ..	12,816	Warwick .. ..	Qld.	5,562
Northcote .. ..	Vic.	17,491	Waterloo .. ..	N.S.W.	9,471
Parramatta .. ..	N.S.W.	12,520	Woolloongabba .. ..	Qld.	8,326
Port Melbourne .. ..	Vic.	13,471			
Randwick .. ..	N.S.W.	15,793			
Rockhampton .. ..	Qld.	15,451	<b>3,000 and under 5,000—</b>		
South Yarra .. ..	Vic.	10,060	Albany .. ..	W.A.	3,699
Toowoomba .. ..	Qld.	16,160	Armada .. ..	Vic.	4,298
Townsville .. ..	.. ..	13,678	Bairnsdale .. ..	.. ..	3,412
Waverley .. ..	N.S.W.	18,961	Beechworth .. ..	.. ..	3,409
Williamstown .. ..	Vic.	12,114	Benalla .. ..	.. ..	3,172
Woolahra .. ..	N.S.W.	12,816	Bunbury .. ..	W.A.	3,920
			Camperdown .. ..	N.S.W.	4,768
<b>5,000 and under 10,000—</b>				Vic.	3,473
Abbotsford .. ..	Vic.	9,308	Campsie .. ..	N.S.W.	3,957
Adelaide North .. ..	S.A.	9,300	Canterbury .. ..	.. ..	4,190
Albury .. ..	N.S.W.	5,862	Casino .. ..	.. ..	3,635
Alexandria .. ..	.. ..	9,491	Cessnock .. ..	.. ..	3,957
Ararat .. ..	Vic.	5,402	Clifton Hill .. ..	Vic.	4,023
Armidale .. ..	N.S.W.	6,530	Cobar .. ..	N.S.W.	4,619
Arncliffe .. ..	.. ..	5,034	Colac .. ..	Vic.	3,992
Ascot Vale .. ..	Vic.	5,655	Concord .. ..	N.S.W.	3,799
Auburn .. ..	N.S.W.	5,602	Coonamble .. ..	.. ..	3,280
Bathurst .. ..	.. ..	9,219	Cootamundra .. ..	.. ..	3,352
Bexley .. ..	.. ..	6,241	Cowra .. ..	.. ..	3,981
Bundaberg .. ..	Qld.	8,727	Darlington .. ..	.. ..	3,815
Burwood .. ..	N.S.W.	8,281	Daylesford .. ..	Vic.	3,928
Cairns .. ..	Qld.	5,193	Devonport .. ..	Tas.	3,620
Camberwell .. ..	Vic.	8,547	Dulwich Hill .. ..	N.S.W.	3,578
Castlemaine .. ..	.. ..	5,219	Echuca .. ..	Vic.	4,137
Caulfield .. ..	.. ..	7,669	Enfield .. ..	N.S.W.	3,475
Chatswood .. ..	N.S.W.	5,482	Forbes .. ..	.. ..	4,654
Claremont .. ..	W.A.	6,252	Fremantle East .. ..	W.A.	3,856
Coburg .. ..	Vic.	9,454	North .. ..	.. ..	3,315
Cottesloe .. ..	W.A.	5,142	Gawler .. ..	S.A.	4,037
Drummoyne .. ..	N.S.W.	5,947	Geraldton .. ..	W.A.	3,494
Dubbo .. ..	.. ..	5,368	Glen Innes .. ..	N.S.W.	4,030
Eaglehawk .. ..	Vic.	6,998	Goodwood .. ..	S.A.	3,443
Elsternwick .. ..	.. ..	6,790	Grenfell .. ..	N.S.W.	3,007
Erskineville .. ..	N.S.W.	7,234	Guildford .. ..	W.A.	3,224
Flemington .. ..	Vic.	6,109	Gunnedah .. ..	N.S.W.	4,100
Fortitude Valley .. ..	Qld.	7,090	Hamilton .. ..	Qld.	3,229
Fremantle .. ..	W.A.	6,406	Hindmarsh .. ..	S.A.	3,556
Fremantle South .. ..	.. ..	6,253	Horsham .. ..	Vic.	3,554
Glenelg .. ..	S.A.	5,003	Ithaca .. ..	Qld.	3,378
Grafton and Grafton South .. ..	N.S.W.	6,123	June .. ..	N.S.W.	3,606
Granville .. ..	.. ..	6,938	Kangaroo Point .. ..	Qld.	4,417
Hamilton .. ..	.. ..	6,944	Katoomba .. ..	N.S.W.	3,950
	Vic.	5,551	Kensington .. ..	S.A.	4,175
Hurstville .. ..	N.S.W.	5,112	Kurri-Kurri .. ..	N.S.W.	4,154
Inverell .. ..	.. ..	5,131	Kyneton .. ..	Vic.	3,174
Kensington .. ..	Vic.	7,341	Liverpool .. ..	N.S.W.	3,081
Kogarah .. ..	N.S.W.	6,300	Maldon .. ..	Vic.	3,077
Leederville .. ..	W.A.	5,499	Merewether .. ..	N.S.W.	4,135
Lismore .. ..	N.S.W.	7,609	Midland Junction .. ..	W.A.	3,881
Lithgow .. ..	.. ..	6,991	Mildura .. ..	Vic.	4,608
Mackay .. ..	Qld.	6,135	Moonta .. ..	S.A.	3,772
Maitland West .. ..	N.S.W.	7,395	Moree .. ..	N.S.W.	3,161
Maryborough .. ..	Qld.	9,410	Mount Gambier .. ..	S.A.	4,531
	Vic.	5,804	Mudgee .. ..	N.S.W.	3,621
Moonee Ponds .. ..	.. ..	8,065	Narrabri .. ..	.. ..	4,686

GRAPHS OF TOTAL POPULATION OF THE COMMONWEALTH OF AUSTRALIA  
AND EACH STATE THEREIN, 1788-1919.



(See Tables pages 81 to 82.)

EXPLANATION OF GRAPHS, 1788-1860.—The base of each small square represents two years' interval for both States and Commonwealth, and the vertical height for the States 25,000 persons, and for the Commonwealth 50,000 persons.

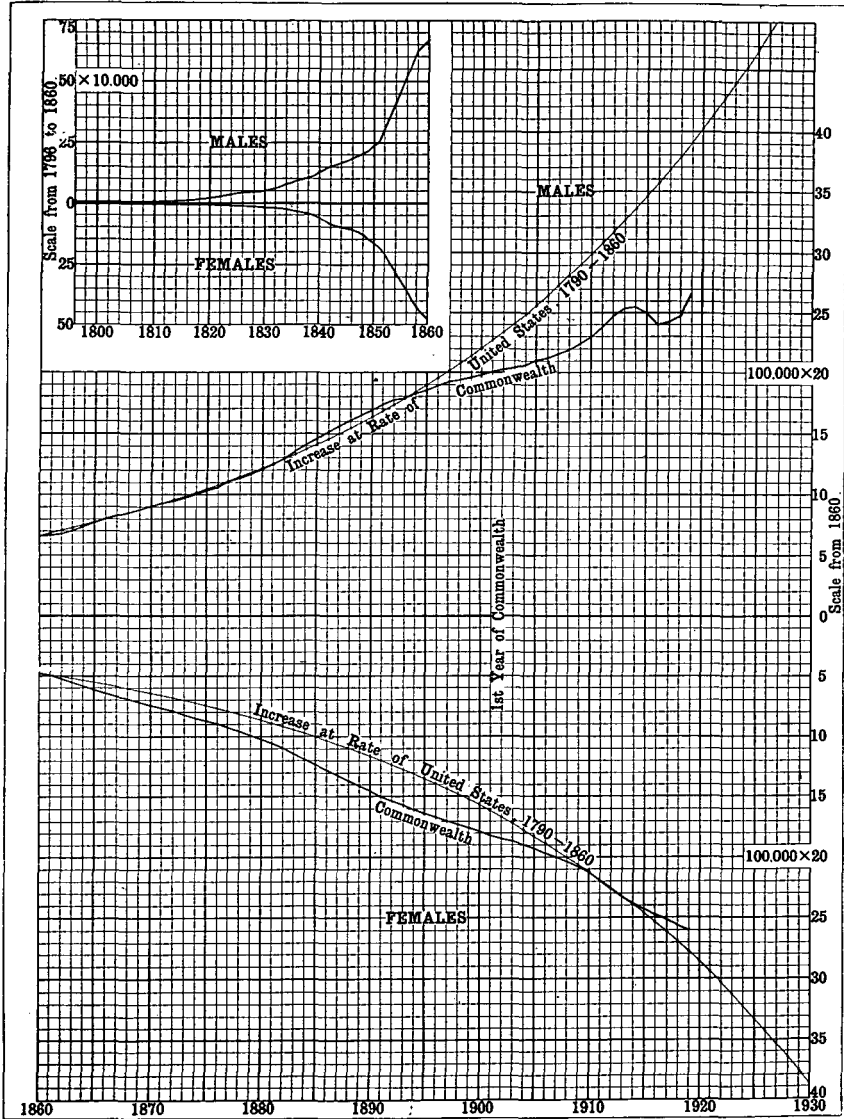
1860 onward.—The base of each small square represents one year's interval for both States and Commonwealth, and the vertical height for the States 50,000 persons, and for the Commonwealth 100,000 persons.

In both graphs the zero line for the States is the bottom line; for the Commonwealth it is the line marked "Zero for Commonwealth." The scales on the right above the Commonwealth zero line relate to the Commonwealth, and those on the left relate to the States.

Where the population falls suddenly the fall denotes the creation of a new colony, e.g., New South Wales 1825, loses the whole population of Tasmania, then erected into a separate colony.

The curves are as follows:—Commonwealth, an unbroken line; New South Wales, — — —; Victoria, — — — —; Queensland, — — — —; South Australia, — — — —; Western Australia, — — — —; Tasmania, — — — —; the names on the curves also shew which State each represents.

GRAPHS OF MALE AND FEMALE POPULATIONS, COMMONWEALTH OF  
AUSTRALIA, 1796-1919.



(See Tables pages 81 to 83.)

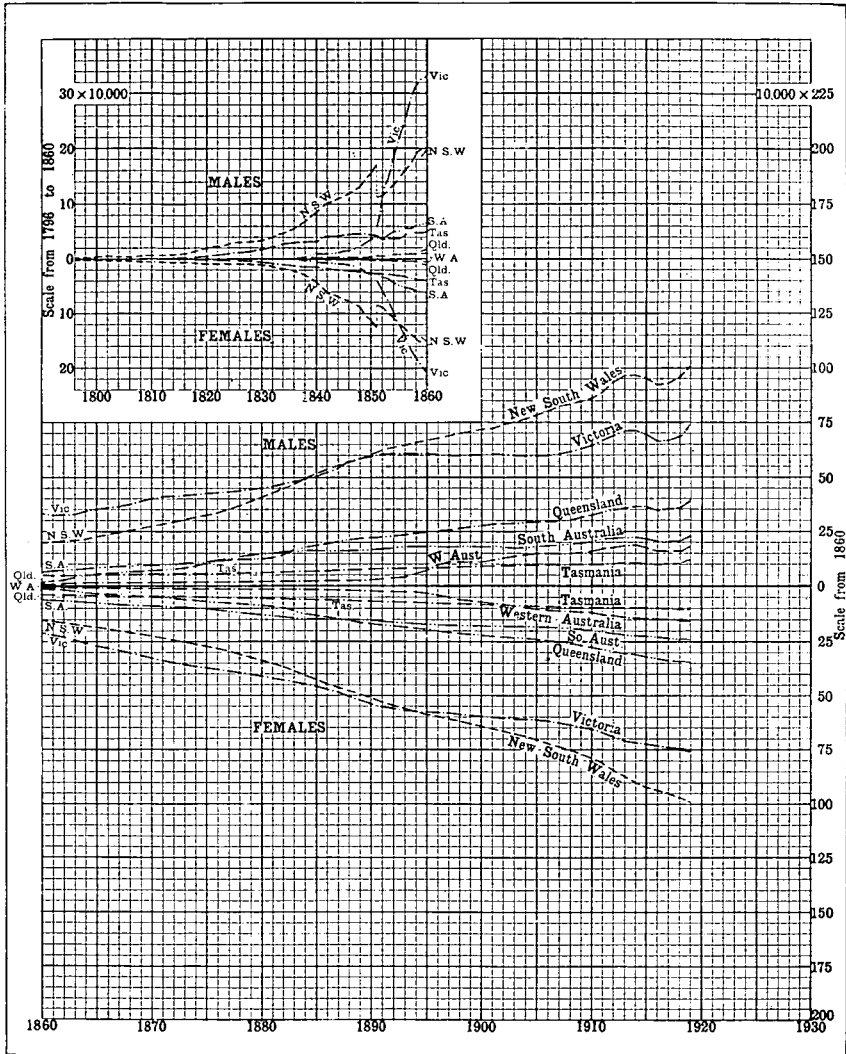
**EXPLANATION OF GRAPHS.—1796-1860.** The base of each small square represents two years' interval, and the vertical height 50,000 persons. The distances upward from the zero line denote the number of males, and downward the number of females.

**1860 onward.**—The base of each small square represents one year's interval, and the vertical height 100,000 persons.

From 1860 onward is shewn, for purposes of comparison, the manner in which the numbers of each sex in the Commonwealth would have grown from 1860, if, during that period, there had been in operation the rate of increase actually experienced in the United States from 1790 to 1860.

The asymmetry of the two series of graphs reveals the want of uniformity in the increase of the two sexes.

GRAPHS OF MALE AND FEMALE POPULATION OF THE STATES OF  
AUSTRALIA, 1796-1919.



(See Table page 81.)

EXPLANATION OF GRAPHS.—1796-1860. The base of each small square represents two years' interval, and the vertical height 20,000 persons. The distances upward from the zero line represent the number of males, and downward the number of females.

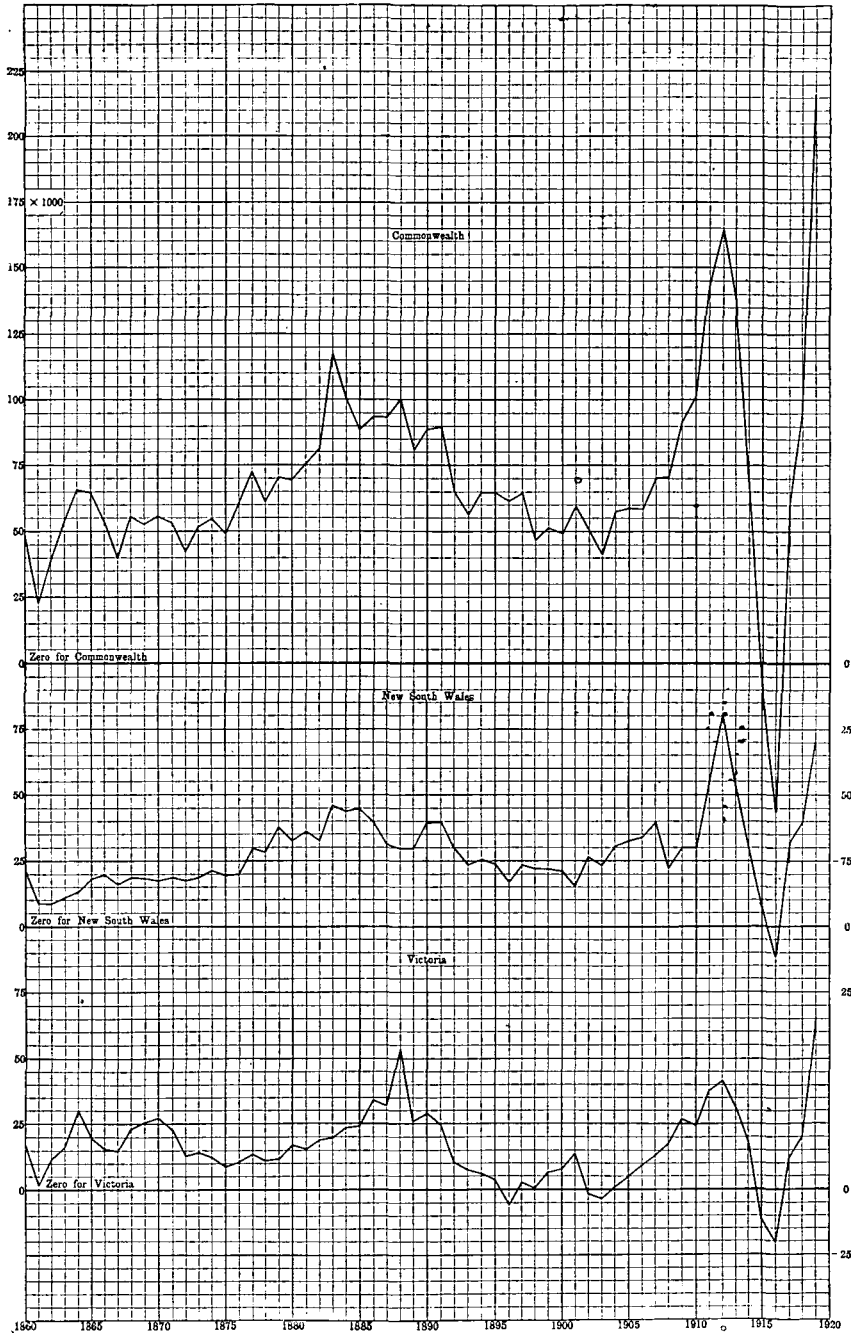
The sudden falls denote the creation of new colonies.

1860 onward.—The base of each small square represents one year's interval, and the vertical height 50,000 persons.

The names on the curves denote the States to which they refer, and the curves are as follows :—  
New South Wales. ————; Victoria. ————; Queensland. ————; South Australia, ————; Western Australia, ————; Tasmania, ————.

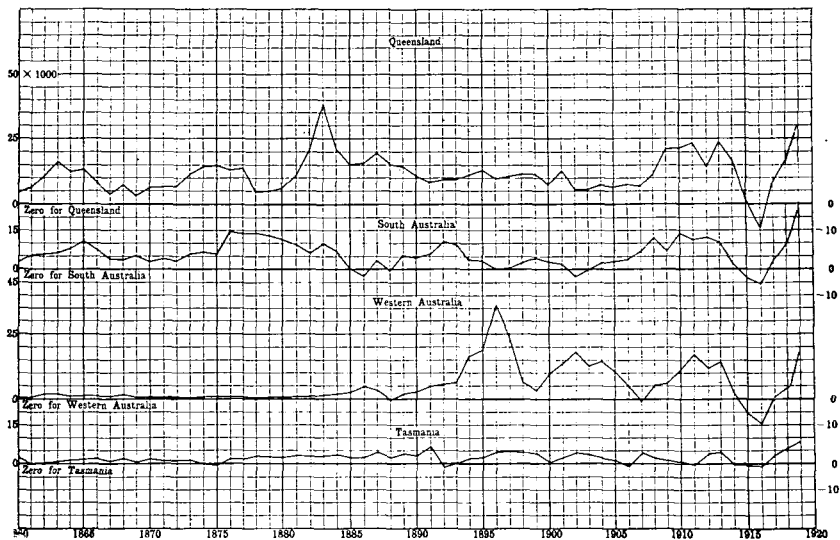
The asymmetry of the two series of graphs reveals the want of uniformity in the increase of the two sexes.

GRAPHS SHEWING TOTAL INCREASE OF POPULATION OF THE COMMONWEALTH OF AUSTRALIA AND THE STATES OF NEW SOUTH WALES AND VICTORIA, 1860-1919.



(For explanation see foot of next page.)

GRAPHS SHEWING TOTAL INCREASE OF POPULATION OF THE STATES OF QUEENSLAND,  
SOUTH AUSTRALIA, WESTERN AUSTRALIA, AND TASMANIA, 1860-1919.



EXPLANATION OF GRAPHS SHEWING TOTAL INCREASE.—The base of each small square represents an interval of a year for both States and Commonwealth; the vertical height represents 5,000 for the Commonwealth and the States. In the first graph (on page 105) three zero lines are taken (i) for the Commonwealth, (ii) for New South Wales, and (iii) for Victoria. In the second graph four zero lines are taken (i) for Queensland, (ii) for South Australia, (iii) for Western Australia, and (iv) for Tasmania.

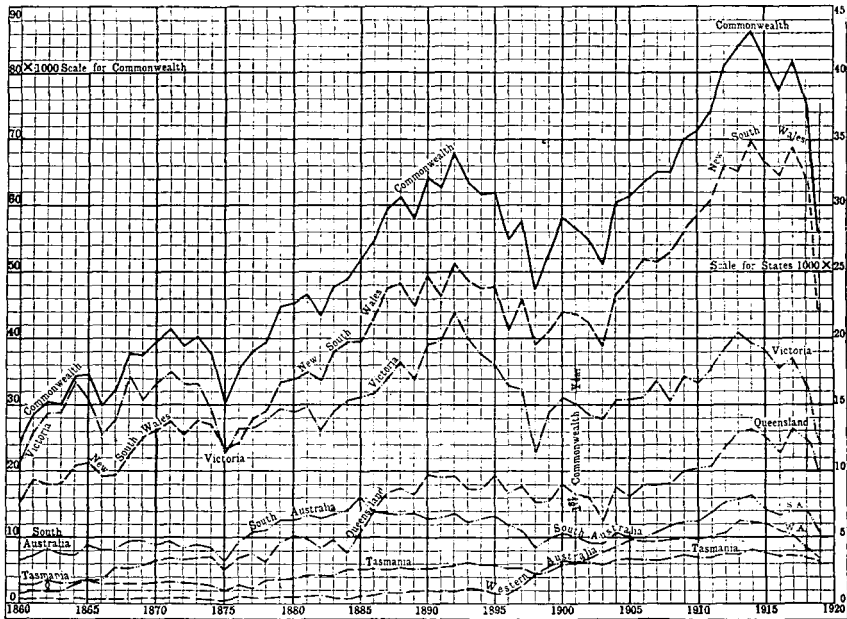
DECREASES in population are shown by carrying the graph in such cases below the zero line, the distance of the graph below the zero line indicating the extent of the decrease. The scales in these instances are on the right hand of the graph.

The names above the curves denote the States to which they belong.

(See Table page 97.)



GRAPHS OF NATURAL INCREASE OF THE POPULATION OF THE COMMONWEALTH  
AND STATES OF AUSTRALIA, 1860-1919.

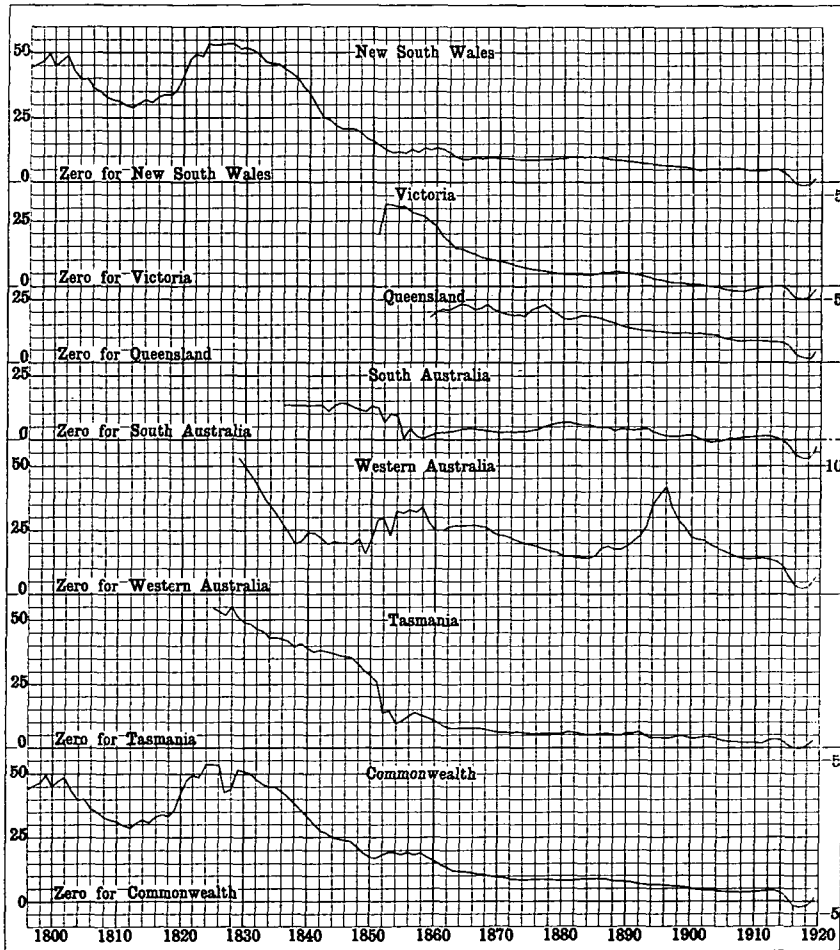


EXPLANATION OF GRAPHS.—The base of each small square represents one year for both States and Commonwealth, and the vertical height 1,000 persons for the States and 2,000 persons for the Commonwealth.

The distances upward from the zero line, marked 0 for both Commonwealth and States, denote the excess of births over deaths. The scale on the left relates to the Commonwealth, and that on the right to the States. The names shew the States to which the curves refer, they are as follows:—Commonwealth ———; New South Wales, ———; Victoria, ———; Queensland, ———; South Australia, ———; Western Australia, ———; Tasmania, ———; New Zealand, ———.

(See Table page 94.)

GRAPHS SHEWING MASCULINITY OF THE POPULATION OF THE COMMONWEALTH  
AND STATES OF AUSTRALIA, 1796-1919.

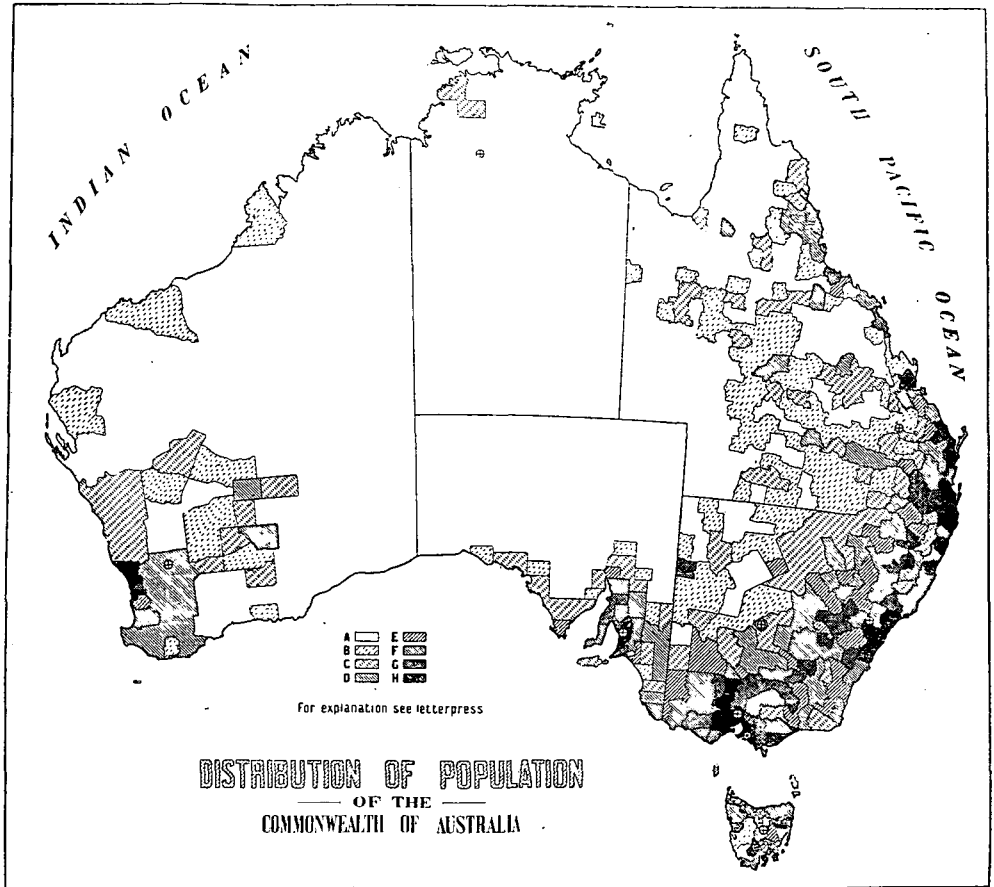


(See Table page 86.)

EXPLANATION OF GRAPHS.—The base of each small square represents an interval of two years and the vertical height an excess of five males per 100 of population. The basic lines (shewn thickened) for Commonwealth and all the States are at zero, equivalent to a numerical equality of the sexes.

It will be noticed that in the case of New South Wales, and the Commonwealth in the years 1916, 1917, and 1918, Victoria in the years 1903 to 1912 and 1914 to 1919, South Australia in the years 1902 to 1904 and 1914 to 1919, and Tasmania for the years 1916 and 1917, the curves are below the zero line, thus shewing an excess of females over males.

DISTRIBUTION OF POPULATION THROUGHOUT THE COMMONWEALTH OF  
AUSTRALIA, ACCORDING TO CENSUS OF 1911.



The above map furnishes a graphic representation of the distribution of the population of the Commonwealth at the date of the census of 1911. For this purpose the density of the population has been computed for the counties of each State, and the areas representing these counties have been shaded in accordance with the following scale of density:—

A—	Less than 1 inhabitant in 16 sq. miles	
B—	From 1 inhabitant in 16 sq. miles to less than 1 in 4 sq. miles	
C—	1 " " 4 " "	1 in 1 sq. mile
D—	1 " " 1 sq. mile	2 in 1 " "
E—	2 inhabitants in 1 " "	4 in 1 " "
F—	4 " " 1 " "	8 in 1 " "
G—	8 " " 1 " "	16 in 1 " "
H—	16 inhabitants and upwards in 1 sq. mile	

The cross within the concentric circles, the centre of which is practically on the longitude of Melbourne and the latitude of Sydney, represents the "centre of gravity" of the population of the Commonwealth, and the cross within the single circle in each State represents the "centre of gravity" of the population of such State.

POPULATION OF PRINCIPAL TOWNS IN THE COMMONWEALTH,  
3RD APRIL, 1911—*continued.*

Town.	State in which Situated.	Approx. Population.	Town.	State in which Situated.	Approx. Population.
3,000 and under 5,000— <i>cont.</i>			3,000 and under 5,000— <i>cont.</i>		
Newtown .. ..	Tas.	3,382	Stawell .. ..	Vic.	4,843
Northam .. ..	W.A.	4,205	Strathfield .. ..	N.S.W.	3,093
Oakleigh .. ..	Vic.	3,341	Summer Hill .. ..	"	3,854
Parkes .. ..	N.S.W.	3,411	Temora .. ..	"	3,561
Perth North .. ..	W.A.	4,895	Toorak .. ..	Vic.	3,630
Perth West .. ..	"	3,291	Unley .. ..	S.A.	4,397
Port Adelaide .. ..	S.A.	3,386	Wangaratta .. ..	Vic.	4,136
Prospect .. ..	"	3,998	Waratah .. ..	N.S.W.	3,597
Queenstown .. ..	Tas.	3,659	Wellington .. ..	"	4,409
Koma .. ..	Qld.	3,157	Willoughby .. ..	"	4,693
Ryde .. ..	N.S.W.	3,247	Windsor .. ..	Vic.	3,953
St. Arnaud .. ..	Vic.	4,096	Wollongong .. ..	N.S.W.	4,725
Sale .. ..	"	3,491	Wonthaggi .. ..	Vic.	3,223
Semaphore .. ..	S.A.	3,495	Wyalong .. ..	N.S.W.	3,301
Shepparton .. ..	Vic.	4,049	Young .. ..	"	3,619
Singleton .. ..	N.S.W.	3,655	Zeehan .. ..	Tas.	3,951

Many of the towns contained in the foregoing table are credited with population which is not really urban in character, owing to the fact that in the compilation of this table all persons stating that they resided in a given town were classed as part of its population, although certain of them may have dwelt a considerable distance from its business centre. For the purpose of providing a more satisfactory comparison of the urban populations of the several States, the following table has been compiled from the 1911 Census data, shewing the area and population of incorporated districts of an urban character. The incorporated areas included consist solely of those of the type of boroughs having a population of 2,500 and upwards. In all the States except Tasmania, the local government areas, although variously designated, are divided into two types—(a) boroughs (mainly urban), (b) shires (almost entirely rural). In the case of Tasmania, Hobart and Launceston correspond to the "borough" type, but several of the other "municipalities" contain towns which, under the scheme in force in the other States, would be classed as boroughs, and are certainly urban in character. Six of these, viz.—Beaconsfield, Burnie, Devonport, Newtown, Queenstown and Zeehan, have consequently been included at the figures shewn for them as localities, and an area of four square miles (2,560 acres) has been arbitrarily adopted for each. In all other cases the areas are those of the incorporated districts concerned.

## URBAN POPULATION OF AUSTRALIA, 3rd APRIL, 1911.

State.	Urban Area.	Population of Urban Area.		
		Number.	Average per Acre.	Percentage on Total Population.
	Acres.			%
New South Wales .. ..	571,215	903,254	1.58	54.85
Victoria .. ..	153,880	710,418	4.62	54.00
Queensland .. ..	112,928	215,602	1.91	35.59
South Australia .. ..	29,322	153,927	5.25	37.68
Western Australia .. ..	30,061	119,591	3.98	42.39
Tasmania .. ..	23,744	68,434	2.88	35.79
Commonwealth .. ..	921,150	2,171,226	2.36	48.74

3. Municipal Population.—In the following table the population of the Local Government Areas in the several States will be found set out. It includes only those areas having a population over 5,000.



POPULATION OF PRINCIPAL LOCAL GOVERNMENT AREAS IN THE  
COMMONWEALTH, 3RD APRIL, 1911—*continued.*

Local Government Area.	State in which Situated.	Approx. Population.	Local Government Area.	State in which Situated.	Approx. Population.
5,000 and under 10,000— <i>cont.</i>			5,000 and under 10,000— <i>cont.</i>		
Heidelberg .. ..	Vic.	8,610	Perth (Road District) ..	W.A.	5,066
Highfields .. ..	Qld.	5,656	Phillip Island & Woolamai ..	Vic.	7,067
Hornsby .. ..	N.S.W.	8,901	Pioneer .. ..	Qld.	9,752
Hunter's Hill .. ..	"	5,013	Poowong and Jeetho .. ..	Vic.	7,449
Hurstville .. ..	"	6,533	Port Germcin .. ..	S.A.	5,210
Illawarra, Central .. ..	"	5,000	Portland (Shire) .. ..	Vic.	5,291
Illawarra, North .. ..	"	5,157	Port Pirie .. ..	S.A.	9,385
Imlay .. ..	"	5,564	Preston .. ..	Vic.	5,049
Ipswich .. ..	Qld.	9,523	Prospect .. ..	S.A.	6,813
Jondaryan .. ..	"	7,469	Rodney .. ..	Vic.	6,718
Kadina (District Council) ..	S.A.	8,096	Rookwood .. ..	N.S.W.	5,418
Kalgoorlie (Municipality) ..	W.A.	8,781	Rosalie .. ..	Qld.	7,982
Karkaroc .. ..	Vic.	5,743	Ryde .. ..	N.S.W.	5,281
Kentish .. ..	Tas.	5,571	St. Peters .. ..	"	8,410
Kerang .. ..	Vic.	8,969	" .. ..	S.A.	9,073
Kogarah .. ..	N.S.W.	6,953	Severn .. ..	N.S.W.	6,885
Korong .. ..	Vic.	5,517	Shepparton .. ..	Vic.	6,099
Ku-ring-gai .. ..	N.S.W.	9,458	Stephens .. ..	Qld.	5,415
Kyneton .. ..	Vic.	6,904	Stroud .. ..	N.S.W.	5,117
Leederville .. ..	W.A.	5,457	Subiaco .. ..	W.A.	8,926
Leven .. ..	Tas.	5,450	Swan Hill .. ..	Vic.	6,795
Lilydale .. ..	Vic.	6,329	Tamworth .. ..	N.S.W.	7,145
Lismore .. ..	N.S.W.	7,381	Tarampa .. ..	Qld.	6,690
Lithgow .. ..	"	8,196	Tarro .. ..	N.S.W.	6,492
Liverpool Plains .. ..	"	5,651	Tenterfield (Shire) .. ..	"	5,153
Livingstone .. ..	Qld.	5,656	Terania .. ..	"	5,621
Lyndhurst .. ..	N.S.W.	6,740	Thebarton .. ..	S.A.	8,720
Mackay .. ..	Qld.	5,141	Thuringowa .. ..	Qld.	5,095
Macleay .. ..	N.S.W.	6,679	Tintenbar .. ..	N.S.W.	5,865
Maitland, West .. ..	"	8,210	Toombul .. ..	Qld.	6,791
Marong .. ..	Vic.	6,646	Toowong .. ..	"	6,286
Maroochy .. ..	Qld.	5,288	Towong .. ..	Vic.	6,418
Maryborough .. ..	Vic.	5,675	Tungamah .. ..	"	5,376
" .. ..	Qld.	9,673	Twoel .. ..	N.S.W.	7,308
Mildura .. ..	Vic.	6,119	Wagga Wagga .. ..	"	6,419
Mitcham .. ..	S.A.	5,035	Wallarobba .. ..	"	5,619
Mount Morgan .. ..	Qld.	8,504	Wambo .. ..	Qld.	6,749
Mulwarce .. ..	N.S.W.	7,009	Waranga .. ..	Vic.	5,291
Namoi .. ..	"	8,092	Warrnambool (Shire) .. ..	"	8,653
Nanango .. ..	Qld.	6,433	Warrnambool (Town) .. ..	"	7,010
Narracan .. ..	Vic.	5,408	Warwick .. ..	Qld.	5,248
New Norfolk .. ..	Tas.	6,124	Waugoola .. ..	N.S.W.	5,262
Newtown and Chilwell .. ..	Vic.	5,831	Wickham .. ..	"	8,434
Numurkah .. ..	"	6,844	Windsor .. ..	Qld.	8,970
Nunawading .. ..	"	7,120	Woodville .. ..	S.A.	7,787
Patrick's Plains .. ..	N.S.W.	6,894	Zeehan .. ..	Tas.	5,726

§ 7. Assisted Immigration.

In the earlier days of settlement in Australia, State-assisted immigration played an important part. Such assistance ceased for the time being in Victoria in 1873, in South Australia in 1886, and in Tasmania in 1891. In New South Wales, general State-aided immigration was discontinued in the year 1887, but those who arrived under that system and were still residing in New South Wales might, under special regulations, send for their wives and families. A certain amount of passage money, graduated according to the age of the immigrant, was required to be paid in each case. Under the provisions of these regulations, immigrants to the number of 1994 received State assistance during the years 1888 to 1899 inclusive. From 1900 to 1905 no assistance of any kind was given, but from 1906 onwards assistance has again been afforded. In Queensland and Western Australia, such assistance, although varying considerably in volume from year to year, has been accorded for many years past. Assistance to immigrants, which in the case of Victoria had practically ceased in 1873, has recently been again afforded. In South Australia the principle of State assistance was again introduced in 1911, and in Tasmania in 1912.

The number of assisted immigrants for the years 1914 to 1919, and the total from the earliest times up to the end of 1919, are given in the following table:—

# ASSISTED IMMIGRANTS DURING THE YEARS 1914 TO 1919, AND UP TO THE END OF 1919.

## STATES AND COMMONWEALTH.

State .. .. .	N.S.W.	Victoria.	Qld.	S. Aust.	W.A.	Tas.	C'wlth.
No. Assisted during 1914	6,655	7,496	4,096	644	1,729	185	20,805
" " " 1915	1,695	1,724	1,599	79	635	64	5,796
" " " 1916	649	327	300	..	103	18	1,397
" " " 1917	239	146	91	..	26	2	504
" " " 1918	199	101	100	..	26	..	426
" " " 1919	67	139	39	..	..	..	245
Total to end of 1919 ..	272,001	186,894	214,186	102,707	41,821	22,183	839,792

## § 8. Enumerations and Estimates.

1. **Musters.**—Actual enumerations of Australia's population, of varying accuracy, have been made from the earliest times onward. These were originally known as "Musters," and were first undertaken with a view to estimating the food and other requirements of the settlements. They appear to have been very unreliable, and to have been carried out at least annually from 1788 to 1825, when they were discontinued.

2. **Census-taking.**—The first regular Census in Australia was that of New South Wales, in November, 1828. The dates on which Censuses have been taken in the several States, and the populations enumerated thereat, are shewn in the table on the next page.

3. **The Census of 1901.**—A conference of the Government Statisticians of Australia and New Zealand was held in Sydney in February and March, 1900, with the object of securing uniformity in the collection and compilation of the Census of 1901. The householder's schedule which it drafted made provision for the collection of information in all the States under the following heads, viz. :—Name, Sex, Age, Conjugal Condition, Relation to Head of Household, Occupation, Sickness and Infirmary, Birthplace, Length of Residence in Colony, Religion, Education, Materials of Houses and Number of Rooms. In addition to these, it was agreed that States so desiring might include further inquiries relating to Land, Live Stock, Crops, and certain other matters.

Provision was made for uniformity in the classification and compilation of the data by formulating rules for dealing with cases in which differences of opinion as to methods of treatment might exist. Thus, although conducted by six different States, the Census of the Commonwealth, as taken in 1901, was carried out on a fairly uniform plan, and consequently furnished data in many ways suitable for purposes of aggregation or comparison. A detailed examination of the results, however, gives many indications of departure from a common line of action, which, in the absence of a central authority, can hardly be avoided in an undertaking of this nature.

4. **The Census of 1911.**—Under Section 51, sub-section (xi.) of the Constitution Act, power is given to the Parliament of the Commonwealth to make laws with respect to "Census and Statistics." This power was brought into requisition in 1905, when the Census and Statistics Act of 1905 became law, being assented to on 8th December, 1905. Under this Act provision is made for the appointment of a Commonwealth Statistician, and amongst other duties that officer is charged with the taking of a Census in the year 1911 and in every tenth year thereafter.

The particulars which the Act requires to be included in the Census schedule are almost identical with those which were contained in the 1901 schedule, the principal alterations being that "Length of Residence in Australia" is specified instead of "Length of Residence in the Colony of Enumeration," that "Duration of Marriage" has to be asked in all cases, and that nationality has to be ascertained in addition to birthplace. The Census was taken as at 3rd April, 1911.

In each State a Census supervisor was appointed to control the collection within that State under the direction of the Commonwealth Statistician. Each State was then divided into Census districts, each of which was placed in the charge of an enumerator, and each Census district was further subdivided into collectors' districts, one collector for each district.

It should be noted, in connexion with the Census of 1911, that a slight change in defining the date of reference has been made in order to accord with the English practice. In previous Australian Censuses the date of the Census has been taken to be that of the

day preceding the midnight which is adopted as the determining point. Thus, at the Census of 1901, where the figures given relate approximately to midnight between the 31st March and the 1st April, the Australian Census was stated to be that of the 31st March, while in a precisely similar case in England it was stated to be that of 1st April. At the Census of 1911, taken as at midnight between the 2nd and 3rd April, the date of the Census has, in accordance with the English practice, been stated to be the 3rd April, and that day was gazetted as the day of the Census.

5. **The Census of 1921.**—The third Australian Census since the commencement of the century will be taken as at midnight between the 3rd and 4th April, 1921, under the Census and Statistics Act. On this occasion it is intended to utilize the Federal Electoral organization for collecting purposes, and to tabulate the results, as far as possible, by machinery. The questions to be asked will not differ greatly from those at the Census of 1911.

The total populations enumerated at the several Australian Censuses are shewn in the following table:—

**AUSTRALIAN CENSUSES.**

Census Year.	Population Enumerated (exclusive of Aborigines).						
	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.	Commonwealth (Total).
1828	(Nov.) 36,598	..	..	..	..	..	..
1833	(2nd Sept.) 60,794	..	..	..	..	..	..
1836	(2nd Sept.) 77,096	..	..	..	..	..	..
1841	(2nd March) 130,856	..	..	..	..	(27th Sept.) 50,216	..
1844	..	..	..	(26th Feb.) 17,366	..	..	..
1846	(2nd March) 189,609	..	..	(26th Feb.) 22,390	..	..	..
1847	..	..	..	..	..	(31st Dec.) 70,164	..
1848	..	..	..	..	(10th Oct.) 4,622	..	..
1851	(1st Mar.) (a) 268,344	..	..	(1st Jan.) 63,700	..	(1st Mar.) 70,130	..
1854	..	(26th Apr.) (b) 231,298	..	..	(30th Sept.) 11,743	..	..
1855	..	..	..	(31st Mar.) 85,821	..	..	..
1856	(1st March) 269,722	..	..	..	..	..	..
1857	..	(29th Mar.) 408,998	..	..	..	(31st Mar.) 81,492	..
1859	..	..	..	..	(31st Dec.) 14,837	..	..
1861	(7th April) 350,860	(7th April) 538,628	(7th April) (b) 30,059	(7th April) 126,830	..	(7th April) 89,977	..
1864	..	..	(1st Jan.) 61,467	..	..	..	..
1866	..	..	..	(26th Mar.) 163,452	..	..	..
1868	..	..	(2nd Mar.) 99,901	..	..	..	..
1870	..	..	..	..	(31st Mar.) 24,785	(7th Feb.) 99,328	..
1871	(2nd April) 502,998	(2nd April) 730,198	(1st Sept.) 120,104	(2nd April) 185,626	..	..	..
1876	..	..	(1st May) 173,283	(26th Mar.) 213,271	..	..	..
1881 (c)	749,825	861,566	213,525	279,865	29,708	115,705	2,250,194
1886	..	..	(1st May) 322,853	..	..	..	..
1891 (d)	1,123,954	1,159,840	393,718	320,431	49,782	146,667	3,174,392
1901 (e)	1,354,846	1,201,070	498,129	363,157	184,124	172,475	3,773,801
1911 (f)	1,646,734	1,315,551	605,813	408,558	282,114	191,211	4,455,005
	(a) 1,714	..	..	(h) 3,310	..	..	..

(a) Including Port Phillip District, which afterwards became the Colony of Victoria. (b) Previously included with New South Wales. (c) 3rd April. (d) 5th April. (e) 21st March. (f) 3rd April. (g) Federal Territory, previously included with New South Wales. (h) Northern Territory, previously included with South Australia.



6. **Estimates of Population.**—In the absence of an annual enumeration of the population, it becomes necessary to adopt some method of estimating it for intercensal periods, basing such estimates on the results of the most recent Censuses. The manner in which this is effected varies, however, in different parts of the world. In England, for example, the assumption usually made is that the rate of increase of the preceding intercensal period will continue unchanged during the current period. Again, in the United States, it has been assumed, in certain cases, that the numerical increase per annum ascertained for the preceding intercensal period will hold good for the current period. From the earliest times in Australia, "statistics of fluctuation" have been obtained from the records of births, deaths, arrivals and departures. With reasonable thoroughness in the collection of such statistics, the deduced estimates possess much greater weight than those based on the mere assumption of a continuation of the increase experienced in the preceding period. In most cases, however, estimates of population, based on statistics of fluctuation, are found to be in excess at the Census, thus furnishing evidence of a uniform tendency to over-estimation, and indicating the necessity for a correction. In the population figures given in the earlier portion of the present section, the estimates of the population of the several States have been carefully revised, the results of the various Censuses being taken in conjunction with the records of births, deaths, arrivals and departures. It is believed that by this means the population of the Commonwealth from the date of settlement onwards has been obtained with a high degree of accuracy, and that the figures supplied represent a reasonably close approximation to the actual numbers. A detailed account of the adjustment for the decennium 1901–10 will be found on pp. 112–118 of Year Book No. 6. Particulars for the several States from the date of settlement onwards are given in the following tables, and are shewn by graphs on pages 105 to 107 :—

## COMMONWEALTH POPULATION FROM EARLIEST DATE.

Year.	Estimated Population at end of Year.							Common- wealth.
	States.						Territories.	
	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Northern Federal.	

## MALES.

(a) 1800	3,780	..	..	..	..	..	..	..	3,780
1805	5,395	..	..	..	..	..	..	..	5,395
1810	7,585	..	..	..	..	..	..	..	7,585
1815	9,848	..	..	..	..	..	..	..	9,848
1820	23,784	..	..	..	..	..	..	..	23,784
1825	29,309	..	..	..	..	..	..	..	40,288
1830	33,900	..	..	..	877	18,108	..	..	52,885
1835	51,949	..	..	..	1,231	28,749	..	..	81,929
1840	85,560	..	..	8,272	1,434	32,040	..	..	127,306
1845	113,739	..	..	12,810	2,680	43,921	..	..	173,159
1850	154,976	..	..	35,902	3,576	44,229	..	..	238,683
1855	147,822	(b) 226,462	..	48,843	8,311	38,680	..	..	470,118
1860	197,851	330,302	(b) 16,817	64,340	9,597	49,653	..	..	668,560
1865	222,890	348,717	53,292	84,255	13,575	50,549	..	..	773,278
1870	272,121	397,230	69,221	94,894	15,511	53,517	..	..	902,494
1875	322,534	424,269	102,161	108,706	16,141	54,678	..	..	1,028,489
1880	404,952	450,558	124,013	147,432	16,985	64,568	..	..	1,204,514
1885	518,606	504,097	186,866	162,425	20,688	67,712	..	..	1,460,394
1890	602,704	595,519	223,252	166,049	28,854	76,453	..	..	1,692,831
1895	668,209	607,933	248,865	180,314	69,733	80,485	..	..	1,855,539
1900	716,047	601,773	274,684	180,349	110,088	89,763	(c) 4,288	..	1,976,992
1905	782,897	593,134	291,807	181,467	146,498	95,947	3,368	..	2,100,118
1910	858,181	646,482	325,513	206,557	157,971	98,866	2,738	..	2,296,308
1915	953,160	693,650	359,541	212,080	171,304	101,761	3,687	(b) 957	2,496,140
1916	923,603	666,036	344,557	201,998	159,998	90,830	3,839	1,194	2,401,064
1917	935,384	671,382	345,615	201,433	158,701	101,520	3,886	1,080	2,419,004
1918	957,723	684,906	353,091	205,823	161,464	105,434	3,677	1,179	2,473,297
1919	1,011,481	740,884	378,904	224,631	176,902	112,448	3,578	1,008	2,649,836

(a) Details as to sex not available for earlier quinquennial dates.

(b) Previously included with

New South Wales.

(c) Previously included with South Australia.

COMMONWEALTH POPULATION FROM EARLIEST DATE—*continued.*

Estimated Population at end of Year.									
Year.	States.						Territories.		Commonwealth.
	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Northern	Federal.	
(a) 1800	1,437	..	..	..	..	..	..	..	1,437
1805	2,312	..	..	..	..	..	..	..	2,312
1810	3,981	..	..	..	..	..	..	..	3,981
1815	5,215	..	..	..	..	..	..	..	5,215
1820	9,759	..	..	..	..	..	..	..	9,759
1825	9,004	..	..	..	..	(b) 3,213	..	..	12,217
1830	10,688	..	..	..	295	6,171	..	..	17,154
1835	19,355	..	..	..	647	11,423	..	..	31,425
1840	41,908	..	..	6,358	877	13,959	..	..	63,102
1845	74,179	..	..	9,650	1,790	20,370	..	..	105,989
1850	111,924	..	..	27,798	2,310	24,641	..	..	166,673
1855	118,179	(b) 120,343	..	48,544	4,294	31,282	..	..	323,142
1860	150,695	207,932	(b) 11,239	61,212	5,749	40,168	..	..	477,025
1865	185,616	269,074	33,629	77,222	7,806	43,418	..	..	616,765
1870	225,871	326,695	46,051	89,652	9,624	47,369	..	..	745,262
1875	270,833	370,665	66,914	101,370	10,861	49,061	..	..	869,734
1880	336,190	408,047	87,027	128,955	12,576	54,222	..	..	1,027,017
1885	425,261	455,711	129,815	146,888	15,271	61,148	..	..	1,234,124
1890	510,571	538,209	168,864	152,898	19,648	68,334	..	..	1,458,524
1895	587,294	577,743	194,199	171,654	30,782	74,410	..	..	1,636,082
1900	644,258	594,440	219,163	176,901	69,879	83,137	(c) 569	..	1,788,347
1905	704,987	612,287	239,675	181,154	103,640	90,438	678	..	1,932,859
1910	785,674	654,926	273,503	200,311	118,861	94,937	563	..	2,128,775
1915	917,259	725,526	319,134	226,205	146,712	99,264	876	(b) 872	2,435,818
1916	931,941	732,818	321,910	230,711	148,808	100,086	928	1,029	2,474,261
1917	955,270	739,622	332,212	231,781	150,722	101,657	1,022	1,024	2,516,310
1918	972,517	745,852	341,349	239,885	151,983	103,439	1,104	1,053	2,557,182
1919	991,150	755,054	346,316	243,563	154,758	104,303	1,128	911	2,597,183

PERSONS.

1788	859	..	..	..	..	..	..	..	859
1790	2,056	..	..	..	..	..	..	..	2,056
1795	3,466	..	..	..	..	..	..	..	3,466
1800	5,217	..	..	..	..	..	..	..	5,217
1805	7,707	..	..	..	..	..	..	..	7,707
1810	11,566	..	..	..	..	..	..	..	11,566
1815	15,063	..	..	..	..	..	..	..	15,063
1820	33,543	..	..	..	..	..	..	..	33,543
1825	38,313	..	..	..	..	..	..	..	52,505
1830	44,588	..	..	..	1,172	24,279	..	..	70,039
1835	71,304	..	..	..	1,878	40,172	..	..	113,354
1840	127,468	..	..	14,630	2,311	45,999	..	..	190,408
1845	187,918	..	..	22,460	4,479	64,291	..	..	279,148
1850	266,900	..	..	63,700	5,886	68,870	..	..	405,356
1855	266,001	(b) 347,305	..	97,387	12,605	69,962	..	..	793,280
1860	348,544	538,234	(b) 28,056	125,582	15,346	89,821	..	..	1,145,585
1865	408,508	617,791	86,921	161,477	21,381	93,967	..	..	1,390,043
1870	497,992	723,925	115,272	181,516	25,135	100,886	..	..	1,647,756
1875	593,367	794,934	169,105	210,076	27,002	103,739	..	..	1,898,223
1880	741,142	858,605	211,040	276,399	29,561	114,790	..	..	2,231,531
1885	943,867	959,838	316,681	309,313	35,959	128,860	..	..	2,694,518
1890	1,113,728	1,133,728	392,116	315,917	48,502	144,757	..	..	3,151,355
1895	1,255,503	1,185,676	443,064	351,968	100,515	154,895	..	..	3,491,621
1900	1,360,305	1,106,213	493,817	357,250	179,067	172,990	(c) 4,837	..	2,765,339
1905	1,437,381	1,210,421	531,482	362,821	250,138	186,385	4,046	..	4,032,977
1910	1,613,855	1,301,408	599,016	406,868	276,832	193,803	3,301	..	4,425,083
1915	1,870,419	1,419,176	678,675	438,285	318,016	201,025	4,563	(b) 1,829	4,931,988
1916	1,858,544	1,398,884	669,467	432,709	308,806	199,925	4,767	2,223	4,875,325
1917	1,890,654	1,411,004	677,827	436,214	309,423	203,177	4,908	2,104	4,935,311
1918	1,930,240	1,430,758	694,440	445,708	313,447	208,873	4,781	2,232	5,030,479
1919	2,002,631	1,495,938	725,220	463,194	331,660	216,751	4,706	1,919	5,247,019

(a) Details as to sex not available for earlier quinquennial dates. (b) Previously included with New South Wales. (c) Previously included with South Australia.

The tables on this and the preceding page, shewing the quinquennial and other figures for the male, female, and total population of each State and the Commonwealth, give sufficient indication, for general purposes, of its progress. A reference to the diagrams

given hereinbefore (pp. 105 to 107), on which the graphs shew the particulars for each year, is also desirable. The characteristics of the fluctuations of each element, or of the totals, will be more readily perceived by reference to the graphs than they possibly can by reference to these numerical tables. The earliest date for which particulars as to sex were available is 1796. The figures from 1788 to 1825 inclusive, as already mentioned, are based upon the results of the musters taken in those years; those for subsequent years are founded upon estimates made on the basis of the Census results and the annual returns of births and deaths and immigration and emigration.

The following table furnishes particulars relative to the increase of population of the Commonwealth during each decade, and the percentage of such increase on the population at the commencement of the decade:—

#### INCREASE OF COMMONWEALTH POPULATION.

Decade ended 31st December.	Increase during Decade—					
	Numerical.			Percentage.		
	Males.	Females.	Persons.	Males.	Females.	Persons.
1790 .. ..	(a)	(a)	2,056	%	%	%
1800 .. ..	(a)	(a)	3,161	(a)	(a)	153.75
1810 .. ..	3,805	2,544	6,349	100.66	177.04	121.70
1820 .. ..	16,199	5,778	21,977	213.57	145.14	190.01
1830 .. ..	29,101	7,395	36,496	122.36	75.78	108.80
1840 .. ..	74,421	45,948	120,369	140.72	267.86	171.86
1850 .. ..	111,377	103,571	214,948	87.49	164.13	112.89
1860 .. ..	429,877	310,352	740,229	180.10	186.20	182.61
1870 .. ..	233,934	268,237	502,171	34.99	56.23	43.84
1880 .. ..	302,020	281,755	583,775	33.47	37.81	35.43
1890 .. ..	488,317	431,507	919,824	40.54	42.02	41.22
1900 .. ..	284,161	329,823	613,984	16.79	22.61	19.48
1910 .. ..	319,316	340,428	659,744	16.15	19.04	17.52

(a) Not available.

#### § 9. Census of 3rd April, 1911.

1. **Numbers Enumerated.**—As already mentioned, the Census for the whole of the Australian Commonwealth was taken as for the night between the 2nd and the 3rd of April, 1911, and was the first Census under the provisions of the Commonwealth Census and Statistics Act 1905, which provides for the enumeration of the whole of Australia being dealt with from one centre, instead of each State being responsible for its own count as on previous occasions. The numbers recorded in the several States and Territories of the Commonwealth were as follows:—

#### POPULATION OF THE COMMONWEALTH, 3rd APRIL, 1911.

(EXCLUSIVE OF FULL-BLOOD ABORIGINALS.)

States and Territories.	Males.	Females.	Persons.
<b>States—</b>			
New South Wales .. ..	857,698	789,036	1,646,734
Victoria .. ..	655,591	659,960	1,315,551
Queensland .. ..	329,506	276,307	605,813
South Australia .. ..	207,358	201,200	408,558
Western Australia .. ..	161,565	120,549	282,114
Tasmania .. ..	97,591	93,620	191,211
<b>Territories—</b>			
Northern .. ..	2,734	576	3,310
Federal .. ..	992	722	1,714
<b>Total Commonwealth ..</b>	<b>2,313,035</b>	<b>2,141,970</b>	<b>4,455,005</b>

2. **Growth during last Three Decennia.**—The total increase of population of the Commonwealth between the Census of 31st March, 1901, and that of 3rd April, 1911, was 681,204, of which 335,107 were males and 346,097 were females, as compared with a total increase of 599,409, comprising 273,889 males and 325,520 females, for the preceding ten years. The population of each sex enumerated at the Censuses of 3rd April, 1881, 5th April, 1891, 31st March, 1901, and 3rd April, 1911, was as follows :—

**POPULATION OF COMMONWEALTH AT LAST FOUR CENSUSES.**

(EXCLUSIVE OF FULL-BLOOD ABORIGINALS.)

Date of Census.	Males.	Females.	Persons.	(a) Masculinity.
3rd April, 1881 .. ..	1,214,913	1,035,281	2,250,194	7.98
5th April, 1891 .. ..	1,704,039	1,470,353	3,174,392	7.36
31st March, 1901 .. ..	1,977,928	1,795,873	3,773,801	4.83
3rd April, 1911 .. ..	2,313,035	2,141,970	4,455,005	3.84

(a) Excess of males over females per 100 of population.

The increases in the populations of the several States during the past three intercensal periods have been as follow :—

**INTERCENSAL INCREASES IN THE TOTAL POPULATION.**

State and Territory.	1881-1891.		1891-1901.		1901-1911.	
	Numerical.	Per cent.	Numerical.	Per cent.	Numerical.	Per cent.
N. S. Wales (a) ..	374,129	49.90	230,892	20.54	293,602	21.67
Victoria ..	278,274	32.30	61,230	5.37	114,481	9.53
Queensland ..	180,193	84.39	104,411	26.52	107,684	21.62
South Australia ..	39,119	14.15	42,813	13.57	50,212	14.01
West Australia ..	20,074	67.57	134,342	269.86	97,990	53.22
Tasmania ..	30,962	26.76	25,808	17.60	18,736	10.86
N. Territory ..	1,447	41.93	(b) - 87	(b) - 1.78	(b) - 1,501	(b) - 31.20
Commonwealth ..	924,198	41.07	599,409	18.88	681,204	18.05

(a) Including Federal Territory. (b) Decrease.

For the Commonwealth as a whole, the increase in population during the period 1901-11 was greater by 81,795 than that for the period 1891-1901. The rate of increase per cent. was, however, not so great, being 18.05 per cent. for 1901-11, as against 18.88 for 1891-1901. The former corresponds to an increase of 1.67 per cent. per annum, the latter to an increase of 1.74 per cent. per annum.

As regards the separate States, the numerical increases in the case of New South Wales, Victoria, Queensland, and South Australia were greater for 1901-11 than for 1891-1901. On the other hand, Western Australia and Tasmania experienced greater numerical increases in the earlier than in the later decennium, while the Northern Territory, which exhibited an actual loss of population in both decennia, experienced a much heavier loss in 1901-11 than in 1891-1901. In the matter of rates of increase per cent. New South Wales, Victoria, and South Australia were higher in 1901-11 than in 1891-1901, while Queensland, Western Australia, and Tasmania were lower, and the rate of decrease in the Northern Territory was much heavier.

## § 10. Principal Results of Census of 1911.

1. **Census Results.**—In the first issue of the Official Year Book tables are given shewing in some detail particulars concerning the Census of 1901 for the several States under the headings of Ages, Birthplaces, Occupations, Religions, and Conjugal Condition. (See Year Book No. 1, pp. 164 to 179.) In the Official Year Book No. 6, pp. 143 to 171, similar and a few additional particulars appeared as to the Census of 3rd April, 1911. In the following tables this information is given in a condensed form.

2. **Ages.**—The numbers of persons of each sex at each age enumerated in the several States of the Commonwealth at the Census of 3rd April, 1911, are as follows :—

**AUSTRALIAN POPULATION AT 3rd APRIL, 1911, CLASSIFIED ACCORDING TO AGE.**

(EXCLUSIVE OF FULL-BLOOD ABORIGINALS.)

Age Group.	States.					Territories.			Total C'wealth.
	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Nrth'n.	Federal.	
MALES.									
0-4	102,003	73,061	37,724	24,109	17,709	12,636	84	85	267,411
5-9	85,137	65,615	32,068	20,470	14,807	11,307	93	89	229,586
10-14	79,136	63,586	31,454	19,589	11,789	10,086	65	99	215,804
15-19	82,981	67,801	32,618	21,524	11,787	9,913	79	95	226,831
20-24	87,314	61,895	33,600	21,564	14,713	8,843	146	104	228,179
25-29	76,430	51,955	29,053	19,020	15,487	7,731	156	90	199,922
30-34	64,228	44,928	24,445	15,057	15,641	6,570	175	75	171,119
35-39	55,121	41,308	21,411	12,287	15,551	5,911	213	70	151,872
40-44	50,940	42,512	20,086	11,468	13,923	5,555	340	43	144,867
45-49	46,638	41,015	18,769	10,300	10,758	5,157	334	58	133,079
50-54	39,345	31,866	15,202	9,543	7,345	4,368	415	48	108,132
55-59	27,544	19,486	10,271	7,253	4,199	3,019	238	48	72,058
60-64	20,023	13,834	7,474	4,071	2,788	2,115	184	27	51,416
65-69	15,370	11,432	5,889	4,006	1,869	1,581	54	26	40,227
70-74	10,611	9,415	4,260	2,555	1,124	1,041	39	18	29,063
75-79	6,658	7,275	2,103	1,529	576	678	7	5	18,831
80-84	2,719	3,903	768	818	254	341	2	3	8,808
85-89	771	1,133	236	289	64	144	..	1	2,688
90-94	185	267	52	68	25	43	..	..	640
95-99	35	34	9	19	3	16	..	..	116
100 and upwards	19	8	2	1	1	4	..	..	35
Unspecified	4,490	3,259	1,982	918	1,152	532	60	8	12,401
Total	857,698	635,591	329,506	207,358	161,565	97,591	2,734	992	2,313,035
FEMALES.									
0-4	98,863	70,417	35,980	23,421	17,215	12,144	87	95	258,222
5-9	83,120	63,904	31,418	19,850	14,887	10,802	88	91	223,660
10-14	77,998	62,523	30,995	19,412	11,627	9,653	60	89	212,357
15-19	81,015	67,719	30,888	21,350	10,806	9,765	70	92	221,705
20-24	82,850	65,217	29,407	20,636	10,584	9,293	45	59	218,091
25-29	72,390	55,651	23,508	18,517	10,429	7,872	46	41	188,454
30-34	59,896	48,694	19,289	14,707	10,582	6,579	50	44	159,841
35-39	50,708	44,549	16,738	12,213	9,917	5,361	35	39	139,560
40-44	43,455	42,480	14,607	11,204	7,924	4,890	38	44	124,651
45-49	37,583	38,477	12,246	10,042	5,648	4,488	24	29	108,587
50-54	29,964	29,420	9,519	8,348	3,745	3,755	11	25	84,787
55-59	20,905	18,457	6,356	6,190	2,427	2,558	9	21	56,923
60-64	16,352	14,316	4,918	4,626	1,818	1,928	3	13	43,974
65-69	13,014	12,603	4,160	3,734	1,320	1,614	4	15	36,464
70-74	8,585	9,972	2,792	2,717	813	1,119	1	8	26,007
75-79	5,242	6,934	1,411	1,815	376	719	1	3	16,501
80-84	2,228	3,387	596	971	139	369	..	4	7,689
85-89	783	1,129	232	373	59	128	..	2	2,706
90-94	241	265	50	99	10	37	..	..	702
95-99	34	56	10	19	3	7	..	..	127
100 and upwards	12	10	3	2	2	..	..	..	29
Unspecified	3,803	3,780	1,184	954	720	530	4	8	10,983
Total	789,036	659,960	276,307	201,200	120,549	93,620	576	722	2,141,970

AUSTRALIAN POPULATION AT 3RD APRIL, 1911, CLASSIFIED ACCORDING TO AGE.

(EXCLUSIVE OF FULL-BLOOD ABORIGINALS)—*continued.*

Age Group.	States.						Territories.		Total C'wealth.
	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Nrth'n.	Federal.	
PERSONS.									
0-4 ..	200,866	143,478	73,704	47,530	34,924	24,780	171	180	525,633
5-9 ..	168,257	129,519	63,486	40,320	29,194	22,109	181	180	453,246
10-14 ..	157,134	126,109	62,449	39,001	23,416	19,739	125	188	428,161
15-19 ..	163,996	135,523	63,536	42,874	22,593	19,678	149	187	448,556
20-24 ..	170,164	127,112	63,007	42,200	25,297	18,136	191	163	446,270
25-29 ..	148,820	107,606	52,561	37,537	25,916	15,603	202	131	388,376
30-34 ..	124,124	93,622	43,734	29,764	26,223	13,149	225	119	330,960
35-39 ..	105,829	85,857	38,149	24,500	25,468	11,272	248	109	291,432
40-44 ..	94,395	84,992	34,693	22,672	21,847	10,454	378	87	269,518
45-49 ..	84,221	79,492	31,015	20,342	16,406	9,645	408	87	241,616
50-54 ..	69,309	61,286	24,721	17,891	11,090	8,123	426	73	192,910
55-59 ..	48,449	37,943	16,627	13,443	6,626	5,577	247	69	128,981
60-64 ..	36,375	28,150	12,392	9,597	4,606	4,043	187	40	95,390
65-69 ..	28,384	24,035	10,049	7,740	3,189	3,195	58	41	76,691
70-74 ..	19,196	19,387	7,052	5,272	1,937	2,160	40	26	55,070
75-79 ..	11,900	14,209	3,514	3,344	952	1,397	8	8	35,332
80-84 ..	4,942	7,290	1,364	1,789	393	710	2	7	16,497
85-89 ..	1,554	2,262	468	662	123	272	..	3	5,344
90-94 ..	426	532	102	167	35	80	..	..	1,342
95-99 ..	69	90	19	38	4	23	..	..	243
100 and upwards ..	31	18	5	3	3	4	..	..	64
Unspecified ..	8,293	7,039	3,166	1,872	1,872	1,062	64	16	23,384
Total ..	1,616,734	1,315,551	605,813	403,558	282,114	191,211	3,310	1,714	4,455,005

3. Birthplaces.—In the next table particulars are given of the populations of the several States of the Commonwealth on 3rd April, 1911, classified according to sex and birthplace, the birthplaces being grouped under the five continental divisions of the globe, with two additional headings for those born in Polynesia, and those born at sea. Of the total population of 4,455,005, those of unspecified birthplace numbered 30,470, or slightly less than 7 per thousand :—

AUSTRALIAN POPULATION AT 3RD APRIL, 1911, CLASSIFIED ACCORDING TO BIRTHPLACE.

(EXCLUSIVE OF FULL-BLOOD ABORIGINALS.)

Birthplace.	States.						Territories.		Total C'wealth.
	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	North- ern.	Federal.	
MALES.									
Australia ..	691,736	541,659	232,757	173,811	111,269	86,948	1,029	844	1,840,053
New Zealand ..	7,296	4,968	1,632	554	1,819	574	17	2	16,862
United Kingdom ..	121,046	82,927	68,406	24,283	32,191	7,577	224	113	336,767
Other European Countries ..	15,507	11,501	12,997	5,636	8,080	776	45	4	54,546
Asia ..	10,386	5,939	8,378	1,033	5,605	579	1,359	5	33,284
Africa ..	1,087	747	332	193	244	70	9	..	2,682
America ..	3,111	1,874	1,218	523	813	183	12	4	7,738
Polynesia ..	676	121	1,567	23	57	21	11	..	2,476
At Sea ..	817	630	342	211	146	62	1	..	2,209
Unspecified ..	6,036	5,225	1,877	1,091	1,341	801	27	20	16,418
Total ..	857,698	655,591	329,506	207,358	161,565	97,591	2,734	992	2,313,035

## AUSTRALIAN POPULATION AT 3RD APRIL, 1911, CLASSIFIED ACCORDING TO BIRTHPLACE.

(EXCLUSIVE OF FULL-BLOOD ABORIGINALS)—*continued.*

Birthplace.	States.						Territories.		Total C'wealth.
	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	North- ern.	Federal.	
FEMALES.									
Australia ..	685,483	567,286	213,938	176,450	97,781	85,549	476	654	1,827,617
New Zealand ..	6,667	5,099	944	432	1,235	626	1	2	15,006
United Kingdom ..	83,348	74,509	51,609	20,148	18,361	5,895	38	47	253,955
Other European Countries ..	4,264	3,815	7,230	2,353	1,348	358	4	1	19,403
Asia ..	1,077	737	489	211	391	199	54	..	3,158
Africa ..	912	751	195	164	179	75	..	..	2,276
America ..	1,313	1,109	470	241	310	96	..	1	3,540
Polynesia ..	528	158	161	32	31	23	1	..	934
At Sea ..	662	673	287	211	135	60	1	..	2,029
Unspecified ..	4,782	5,793	984	958	778	739	1	17	14,052
Total ..	789,036	659,960	276,307	201,200	120,549	93,620	576	722	2,141,970

## PERSONS.

Australia ..	1,377,219	1,108,945	446,695	350,261	209,050	172,497	1,505	1,498	3,667,670
New Zealand ..	13,963	10,067	2,576	986	3,054	1,200	18	4	31,868
United Kingdom ..	204,394	157,436	120,015	44,431	50,552	13,472	262	160	590,722
Other European Countries ..	19,771	15,346	20,227	7,989	9,428	1,134	49	5	73,949
Asia ..	11,463	6,676	8,867	1,244	5,996	778	1,413	5	36,442
Africa ..	1,999	1,498	527	357	423	145	9	..	4,958
America ..	4,424	2,983	1,688	764	1,123	279	12	5	11,278
Polynesia ..	1,204	279	1,728	55	86	44	12	..	3,410
At Sea ..	1,479	1,303	629	422	281	122	2	..	4,238
Unspecified ..	10,818	11,018	2,861	2,049	2,119	1,540	28	37	30,470
Total ..	1,646,734	1,315,551	605,813	408,558	282,114	191,211	3,310	1,714	4,455,005

4. *Occupations.*—In the compilation of the results of the Census of 3rd April, 1911, the populations of the several States and Territories were tabulated according to occupation in the following classes:—

(i) *Professional.* Embracing all persons not otherwise classed, mainly engaged in the government and defence of the country, and in satisfying the moral, intellectual, and social wants of its inhabitants.

(ii) *Domestic.* Embracing all persons engaged in the supply of board and lodging, and in rendering personal services for which remuneration is usually paid.

(iii) *Commercial.* Embracing all persons directly connected with the hire, sale, transfer, distribution, storage, and security of property and materials.

(iv) *Transport and Communication.* Embracing all persons engaged in the transport of persons or goods, or in effecting communication.

(v) *Industrial.* Embracing all persons not otherwise classed who are principally engaged in various works of utility, or in specialities connected with the manufacture, construction, modification, or alteration of materials so as to render them more available for the various uses of man, but excluding, as far as possible, all who are mainly or solely engaged in the service of commercial interchange.

(vi) *Agricultural, Pastoral, Mineral, and other Primary Producers.* Embracing all persons mainly engaged in the cultivation or acquisition of food products, and in obtaining other raw materials from natural sources.

(vii) *Independent.* Embracing all persons of independent means having no specific occupation.

(viii) *Dependents.* Embracing all persons dependent upon relatives or natural guardians, including wives, children, and others, not otherwise engaged in pursuits for which remuneration is paid, and all persons depending upon private charity, or whose support is a burthen on the public revenue.

Particulars concerning the number contained in each of these classes are given in the table hereunder :—

### AUSTRALIAN POPULATION AT 3rd APRIL, 1911, CLASSIFIED ACCORDING TO OCCUPATION.

(EXCLUSIVE OF FULL-BLOOD ABORIGINALS.)

Occupation.	States.						Territories.		Total C'wealth.
	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	North-ern.	Fede-ral.	

#### MALES.

Class									
I. Professional ..	36,763	26,607	11,403	6,644	6,746	3,350	73	52	91,638
II. Domestic ..	18,898	13,619	6,354	3,418	4,319	1,489	127	11	48,235
III. Commercial ..	88,208	74,448	28,905	22,304	15,378	7,041	196	19	236,499
IV. Transport and Communication ..	60,367	37,629	22,521	15,523	11,900	4,407	194	13	152,554
V. Industrial ..	171,921	141,317	56,949	44,385	24,043	14,710	208	210	453,743
VI. Primary Producers ..	199,143	139,221	98,721	47,642	53,059	30,413	1,673	396	570,268
VII. Independent ..	5,507	4,546	2,027	931	478	436	9	5	13,939
VIII. Dependents ..	265,731	202,357	98,359	62,275	43,913	33,630	236	272	706,773
Unspecified ..	11,160	15,847	4,267	4,236	1,729	2,115	18	14	39,386
Total ..	857,698	655,591	329,506	207,358	161,565	97,591	2,734	992	2,313,035

#### FEMALES.

Class									
I. Professional ..	19,377	17,212	6,250	4,529	3,453	2,131	13	8	52,973
II. Domestic ..	54,483	48,556	20,216	14,060	9,303	6,375	74	64	153,131
III. Commercial ..	18,112	17,163	5,659	4,674	2,906	1,671	..	3	50,188
IV. Transport and Communication ..	1,597	1,609	621	347	326	331	..	6	4,837
V. Industrial ..	36,093	46,456	11,313	8,181	3,985	2,558	4	4	108,594
VI. Primary Producers ..	4,950	5,163	3,183	1,406	528	614	12	24	15,880
VII. Independent ..	3,401	3,507	731	761	272	443	..	1	9,116
VIII. Dependents ..	650,480	518,780	227,711	166,432	99,554	79,171	473	612	1,743,213
Unspecified ..	543	1,514	623	810	222	326	..	..	4,038
Total ..	789,036	659,960	276,307	201,200	120,549	93,620	576	722	2,141,970

#### PERSONS.

Class									
I. Professional ..	56,140	43,819	17,653	11,173	10,199	5,481	86	60	144,611
II. Domestic ..	73,381	62,175	26,570	17,478	13,622	7,864	201	75	201,366
III. Commercial ..	106,320	91,611	34,564	26,978	18,284	8,712	196	22	286,687
IV. Transport and Communication ..	61,964	39,238	23,142	15,870	12,226	4,738	194	19	157,391
V. Industrial ..	208,014	187,773	68,262	52,566	28,028	17,268	212	214	562,337
VI. Primary Producers ..	204,093	144,384	101,904	49,048	53,587	31,027	1,685	420	586,148
VII. Independent ..	8,908	8,053	2,758	1,692	750	879	9	6	23,055
VIII. Dependents ..	916,211	721,137	326,070	228,707	143,467	112,801	709	884	2,449,086
Unspecified ..	11,703	17,361	4,890	5,046	1,951	2,441	18	14	43,424
Total ..	1,646,734	1,315,551	605,813	408,558	282,114	191,211	3,310	1,714	4,455,005



5. Religions.—In the Act under which the Census of 1911 was taken in the several States, persons enumerated were required under penalty to furnish replies to all the inquiries contained in the schedule, with the exception of that relating to religion. In this case, any person objecting to give such particulars was allowed to insert the words "Object to state" in the space provided for religion. Of the total population of 4,455,005 there were 83,003, or 1.86 per cent., who availed themselves of this option. There were also 36,114, or 0.81 per cent., concerning whom no particulars as to religion were obtained.

Of the remainder, 4,274,414, or 95.95 per cent., were members of the various Christian denominations, 36,785 were members of non-Christian religions, 14,673 were of indefinite religious belief, and 10,016 stated that they were of no religion.

Amongst the Christian denominations, that most numerously represented was the Church of England, with 1,710,443 adherents, the next in order being the Roman Catholic (921,425), the Presbyterian (558,336), the Methodist (547,806), the Baptist (97,074), the Congregational (74,046), the Lutheran (72,395), the Church of Christ (38,748), and the Salvation Army (26,665).

The principal non-Christian religions represented in Australia were the Hebrew, Confucian, Mohammedan and Buddhist, the members of the Hebrew congregation totalling 17,287.

Those included under the head of "Indefinite" in the attached table consist mainly of persons who stated that they were "Freethinkers" or "Agnostics," or returned themselves as being of "No Denomination," while under the head of "No Religion" are given those who were so returned on the schedules as well as a small number who stated that they were "Atheists."

### AUSTRALIAN POPULATION AT 3rd APRIL, 1911, CLASSIFIED ACCORDING TO RELIGION.

(EXCLUSIVE OF FULL-BLOOD ABORIGINALS.)

Religion.	States.						Territories.		Total C'wealth.
	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	North- ern.	Federal.	
MALES.									
Christian ..	820,484	623,789	305,929	192,825	147,116	92,902	1,050	961	2,185,056
Non-Christian ..	8,965	5,618	5,627	989	4,913	265	1,256	1	27,634
Indefinite ..	3,068	3,347	1,662	791	1,223	284	20	3	10,398
No Religion ..	2,471	2,110	1,595	787	1,074	169	31	2	8,239
Object to state ..	14,989	14,212	8,981	9,930	4,547	3,008	86	13	55,766
Unspecified ..	7,721	6,515	5,712	2,036	2,692	963	291	12	25,942
Total ..	857,698	655,591	329,506	207,358	161,565	97,591	2,734	992	2,313,035

### FEMALES.

Christian ..	773,845	643,264	269,895	193,718	116,644	90,938	349	705	2,089,358
Non-Christian ..	3,808	3,224	563	442	937	71	106	..	9,151
Indefinite ..	1,143	1,877	435	344	332	142	2	..	4,275
No Religion ..	481	531	311	221	186	41	6	..	1,777
Object to state ..	6,997	7,758	3,611	5,331	1,598	1,921	12	9	27,237
Unspecified ..	2,762	3,306	1,492	1,144	852	507	101	8	10,172
Total ..	789,036	659,960	276,307	201,200	120,549	93,620	576	722	2,141,970

### PERSONS.

Christian ..	1,594,329	1,267,053	575,824	386,543	263,760	183,840	1,399	1,666	4,274,414
Non-Christian ..	12,773	8,842	6,190	1,431	5,850	336	1,362	1	36,785
Indefinite ..	4,211	5,224	2,097	1,135	1,555	426	22	3	14,673
No Religion ..	2,952	2,641	1,906	1,008	1,260	210	37	2	10,016
Object to state ..	21,986	21,970	12,592	15,261	6,145	4,929	98	22	83,003
Unspecified ..	10,483	9,821	7,204	3,180	3,544	1,470	392	20	36,114
Total ..	1,646,734	1,315,551	605,813	408,558	282,114	191,211	3,310	1,714	4,455,005

The accompanying table furnishes for the Censuses of 1891, 1901, and 1911, a comparison of the numbers recorded in the principal denominations and religions. An unsatisfactory feature of the table is the large number who stated their religion simply as "Protestant" or "Catholic." Presumably, the majority of the latter were "Roman Catholic," but an appropriate allocation of the undefined Protestants could not readily be made. The returns for 1911 included no fewer than 109,861 Protestants (undefined) and 75,379 Catholics (undefined).

POPULATION OF THE COMMONWEALTH AT THE CENSUSES OF 1891, 1901, AND 1911,  
CLASSIFIED ACCORDING TO RELIGION AND SEX.

(EXCLUSIVE OF FULL-BLOOD ABORIGINALS.)

RELIGION.	MALES.			FEMALES.			PERSONS.		
	Census of 5th April, 1891.	Census of 31st Mch., 1901.	Census of 3rd April, 1911.	Census of 5th April, 1891.	Census of 31st Mch., 1901.	Census of 3rd April, 1911.	Census of 5th April, 1891.	Census of 31st Mch., 1901.	Census of 3rd April, 1911.
<b>I. CHRISTIAN—</b>									
Church of England ..	660,126	783,413	884,634	574,087	714,163	825,809	1,234,213	1,497,576	1,710,443
Presbyterian ..	187,328	221,001	229,501	164,592	204,504	268,745	351,920	426,105	558,336
Methodist ..	199,597	251,611	269,641	197,769	252,490	278,165	397,366	504,101	547,806
Baptist ..	35,129	42,662	45,661	37,149	46,678	51,413	72,278	89,338	97,074
Congregational ..	36,289	35,603	35,367	36,426	37,958	38,079	72,715	73,561	74,046
Lutheran ..	41,795	43,329	40,993	29,031	31,692	31,402	70,826	75,021	72,395
Church of Christ ..	7,128	11,265	17,382	7,714	12,927	21,366	14,842	24,192	38,748
Salvation Army ..	16,806	14,802	12,322	16,625	16,298	14,343	33,431	31,100	26,665
Seventh Day Advnt's.	336	1,411	2,536	377	1,921	3,559	713	3,332	6,095
Unitarian ..	2,501	1,620	1,307	1,388	1,009	868	3,889	2,629	2,175
Protestant (undefined)	17,416	11,485	63,079	12,449	9,073	46,782	29,865	20,558	109,861
Roman Catholic ..	363,780	433,504	465,803	341,627	417,116	455,622	705,407	850,620	921,425
Greek Catholic ..	559	1,075	2,172	63	239	474	622	1,314	2,646
Catholic (undefined)	4,351	2,748	38,772	4,089	2,431	36,607	8,440	5,179	75,379
Others ..	10,252	10,944	15,796	9,150	10,879	15,524	19,402	21,823	31,320
<b>TOTAL ..</b>	<b>1,583,393</b>	<b>1,867,078</b>	<b>2,185,056</b>	<b>1,432,536</b>	<b>1,759,376</b>	<b>2,089,358</b>	<b>3,015,929</b>	<b>3,626,499</b>	<b>4,274,414</b>
<b>II. NON-CHRISTIAN—</b>									
Hebrew ..	7,634	8,137	9,165	6,171	7,102	8,122	13,805	15,239	17,287
Confucian ..			5,036			158			5,194
Mohammedan ..			3,706			202			3,908
Buddhist ..	41,427	34,712	3,110	1,339	954	159	42,766	35,666	3,269
Pagan ..			1,422			25			1,447
Others ..	303	1,784	5,195	69	682	485	372	2,466	5,650
<b>TOTAL ..</b>	<b>49,364</b>	<b>44,633</b>	<b>27,634</b>	<b>7,579</b>	<b>8,738</b>	<b>9,151</b>	<b>56,943</b>	<b>53,371</b>	<b>36,785</b>
<b>III. INDEFINITE—</b>									
Freethinker ..	12,551	7,863	2,753	2,934	1,319	501	15,485	9,182	3,254
Agnostic ..	728	834	2,546	134	137	538	802	971	3,084
No Denomination ..	9,408	13,620	1,568	3,824	6,137	1,120	13,232	19,757	2,688
Others ..	1,078	638	3,531	653	463	2,116	1,731	1,101	5,647
<b>TOTAL ..</b>	<b>23,765</b>	<b>22,955</b>	<b>10,398</b>	<b>7,545</b>	<b>8,056</b>	<b>4,275</b>	<b>31,310</b>	<b>31,011</b>	<b>14,673</b>
<b>IV. NO RELIGION—</b>									
No Religion ..	5,648	5,149	7,559	1,421	1,333	1,692	7,069	6,462	9,251
Atheist ..	574	245	516	213	29	63	787	274	579
Others ..	169	19	164	59	4	22	228	23	186
<b>TOTAL ..</b>	<b>6,391</b>	<b>5,413</b>	<b>8,239</b>	<b>1,693</b>	<b>1,366</b>	<b>1,777</b>	<b>8,084</b>	<b>6,779</b>	<b>10,016</b>
<b>V. OBJECT TO STATE</b>	<b>26,307</b>	<b>28,443</b>	<b>55,766</b>	<b>13,093</b>	<b>13,688</b>	<b>27,237</b>	<b>39,400</b>	<b>42,131</b>	<b>83,003</b>
<b>VI. UNSPECIFIED ..</b>	<b>14,819</b>	<b>9,411</b>	<b>25,942</b>	<b>7,907</b>	<b>4,649</b>	<b>10,172</b>	<b>22,726</b>	<b>14,060</b>	<b>36,114</b>
<b>GRAND TOTAL ..</b>	<b>1,704,039</b>	<b>1,977,928</b>	<b>2,313,035</b>	<b>1,470,353</b>	<b>1,795,873</b>	<b>2,141,970</b>	<b>3,174,392</b>	<b>3,773,801</b>	<b>4,455,005</b>

6. **Conjugal Condition.**—In the following tables particulars are given concerning the population of the several States and Territories on 3rd April, 1911, classified according to conjugal condition and age :—

**AUSTRALIAN POPULATION AT 3rd APRIL, 1911, CLASSIFIED ACCORDING TO CONJUGAL CONDITION AND AGE.**

(EXCLUSIVE OF FULL-BLOOD ABORIGINALS.)

**MALES.**

Age Group.	States.						Territories.		Total C'wealth.
	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	North- ern.	Fede- ral.	
NEVER MARRIED.									
Under 15 ..	266,274	202,261	101,246	64,168	44,305	34,029	242	273	712,798
15 & under 21	99,446	80,655	39,270	25,648	14,432	11,630	106	119	271,306
21 „ 45	153,938	113,648	65,276	36,380	38,446	14,707	733	225	423,353
45 „ 65	27,381	18,713	13,684	4,749	7,294	2,158	862	52	74,893
65 & upwards	7,222	5,527	2,954	938	942	413	63	10	18,069
Unspecified ..	2,089	1,800	1,148	459	641	263	54	4	6,458
Total ..	556,350	422,604	223,578	132,342	106,060	63,200	2,060	683	1,506,877

**MARRIED.**

Under 15 ..	2	1	..	..	..	..	..	..	3
15 & under 21	1,097	566	260	210	99	114	1	..	2,347
21 „ 45	157,224	111,942	54,549	37,708	32,725	17,488	236	125	411,997
45 „ 65	95,496	79,536	34,056	24,987	15,630	11,291	304	114	261,414
65 & upwards	20,086	18,594	7,159	5,879	1,997	2,389	32	33	56,169
Unspecified ..	1,523	1,111	522	318	251	188	2	4	3,919
Total ..	275,428	211,750	96,546	69,102	50,702	31,470	575	276	735,849

**WIDOWED.**

Under 15 ..	..	..	..	..	..	..	..	..	..
15 & under 21	8	2	2	2	1	..	..	..	15
21 „ 45	3,951	2,956	1,540	865	1,153	402	12	6	10,885
45 „ 65	9,855	7,496	3,740	2,268	2,029	1,102	46	15	26,551
65 & upwards	8,903	9,220	3,169	2,457	962	1,021	6	9	25,747
Unspecified ..	170	146	62	35	35	28	1	..	477
Total ..	22,887	19,820	8,513	5,627	4,180	2,553	65	30	63,675

**DIVORCED.**

Under 15 ..	..	..	..	..	..	..	..	..	..
15 & under 21	..	..	..	1	1	..	..	..	2
21 „ 45	569	258	115	45	99	24	..	..	1,110
45 „ 65	566	267	81	39	77	31	1	..	1,062
65 & upwards	81	41	9	7	6	3	..	1	148
Unspecified ..	14	9	9	1	4	1	..	..	38
Total ..	1,230	575	214	93	187	59	1	1	2,360

AUSTRALIAN POPULATION AT 3RD APRIL, 1911—continued.

MALES—continued.

Age Group.	States.						Territories.		Total C'wealth.
	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	North-ern.	Fede-ral.	
NOT STATED.									
Under 15 ..	..	..	..	..	..	..	..	..	..
15 & under 21 ..	..	..	..	..	..	..	..	..	..
21 „ 45	781	375	231	61	146	158	21	2	1,775
45 „ 65	252	189	155	24	60	77	8	..	765
65 & upwards	76	85	28	4	9	22	1	..	225
Unspecified ..	694	193	241	105	221	52	3	..	1,509
Total ..	1,803	842	655	194	436	309	33	2	4,274

FEMALES.

NEVER MARRIED.									
Under 15 ..	259,975	196,838	98,389	62,681	43,229	32,598	235	275	694,220
15 & under 21	90,844	78,170	34,851	24,409	11,969	10,919	63	104	251,329
21 „ 45	103,042	101,293	32,510	28,098	12,199	11,209	43	66	288,460
45 „ 65	10,689	15,274	2,030	3,288	1,048	1,563	2	1	33,895
65 & upwards	1,868	2,027	322	543	110	330	..	1	5,201
Unspecified ..	1,185	1,255	377	311	252	174	3	4	3,561
Total ..	467,603	394,857	168,479	119,330	68,807	56,793	346	451	1,276,666

MARRIED.

Under 15 ..	6	6	4	2	..	1	..	..	19
15 & under 21	6,977	3,303	2,280	1,166	988	818	18	2	15,552
21 „ 45	181,426	134,801	62,181	43,392	33,554	20,063	147	141	475,705
45 „ 65	74,473	65,795	24,769	20,798	9,945	9,048	39	70	204,937
65 & upwards	11,245	10,748	3,998	3,521	917	1,338	2	16	31,785
Unspecified ..	2,089	1,812	682	506	376	305	1	4	5,775
Total ..	276,216	216,465	93,914	69,385	45,780	31,573	207	233	733,773

WIDOWED.

Under 15 ..	..	..	..	..	..	..	..	..	..
15 & under 21	29	25	9	6	7	5	..	..	81
21 „ 45	6,936	6,143	2,487	1,469	1,407	666	9	5	19,122
45 „ 65	19,234	19,329	6,200	5,090	2,617	2,060	6	17	54,553
65 & upwards	16,959	21,515	4,924	5,657	1,692	2,306	4	15	53,072
Unspecified ..	413	504	100	112	62	49	..	..	1,240
Total ..	43,571	47,516	13,720	12,334	5,785	5,086	19	37	128,068

DIVORCED.

Under 15 ..	..	..	..	..	..	..	..	..	..
15 & under 21	4	4	..	..	..	..	..	..	8
21 „ 45	774	396	57	34	76	21	..	1	1,359
45 „ 65	360	231	24	24	26	12	..	..	677
65 & upwards	36	27	4	3	..	1	..	..	71
Unspecified ..	16	7	..	1	1	..	..	..	25
Total ..	1,190	665	85	62	103	34	..	1	2,140

## PRINCIPAL RESULTS OF CENSUS OF 1911.

## AUSTRALIAN POPULATION AT 3RD APRIL, 1911—continued.

## FEMALES—continued.

Age Group.	States.						Territories.		Total C'wealth.
	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	North- ern.	Fede- ral.	
NOT STATED.									
Under 15 ..	..	..	..	..	..	..	..	..	..
15 & under 21 ..	96	62	20	24	10	9	2	..	223
21 .. 45	186	113	42	29	32	59	2	..	463
45 .. 65	48	41	16	6	2	46	..	..	159
65 & upwards	26	39	6	6	1	18	..	..	96
Unspecified ..	100	202	25	24	29	2	..	..	382
Total ..	456	457	109	89	74	134	4	..	1,323

## SUMMARY OF PERSONS RECORDED IN EACH STATE AND TERRITORY OF THE COMMONWEALTH AT THE CENSUS OF 3RD APRIL, 1911, CLASSIFIED ACCORDING TO CONJUGAL CONDITION AND SEX.

## (EXCLUSIVE OF FULL-BLOOD ABORIGINALS.)

Conjugal Condition.	States.						Territories.		Total C'wealth.
	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	North- ern.	Fede- ral.	
MALES.									
Never married	556,350	422,604	223,578	132,342	106,060	63,200	2,060	683	1,506,877
Married ..	275,428	211,750	96,546	69,102	50,702	31,470	575	276	735,849
Widowed ..	22,887	19,820	8,513	5,627	4,180	2,553	65	30	63,670
Divorced ..	1,230	575	214	93	187	59	1	1	2,365
Not stated ..	1,803	842	655	194	436	309	33	2	4,274
Total ..	857,698	655,591	329,506	207,358	161,565	97,591	2,734	992	2,313,035

## FEMALES.

Never married	467,603	394,857	168,479	119,330	68,807	56,793	346	451	1,276,666
Married ..	276,216	216,465	93,914	69,385	45,780	31,573	207	233	733,773
Widowed ..	43,571	47,516	13,720	12,334	5,785	5,086	19	37	128,068
Divorced ..	1,190	665	85	62	103	34	..	1	2,140
Not stated ..	456	457	109	89	74	134	4	..	1,323
Total ..	789,036	659,960	276,307	201,200	120,549	93,620	576	722	2,141,970

## PERSONS.

Never married	1,023,953	817,461	392,057	251,672	174,867	119,993	2,406	1,134	2,783,543
Married ..	551,644	428,215	190,460	138,487	96,482	63,043	782	509	1,469,622
Widowed ..	66,458	67,336	22,233	17,961	9,965	7,639	84	67	191,743
Divorced ..	2,420	1,240	299	155	290	93	1	2	4,500
Not stated ..	2,259	1,299	764	283	510	443	37	2	5,597
Total ..	1,646,734	1,315,551	605,813	408,558	282,114	191,211	3,310	1,714	4,455,005

7. Education.—In the following table are contained particulars of the education of the population of the States and Territories of the Commonwealth as at the date of the Census of 3rd April, 1911. Of the total population of 4,455,005, there were 3,650,030, or 81.93 per cent., who were able to read and write in the English language, and 26,210, or

0.59 per cent., who were able to read and write in a foreign language, though unable to read or write English. Of the remainder no fewer than 525,633 were recorded as being under five years of age, all of whom were classed at the Census under the head of "Cannot read."

EDUCATION OF THE POPULATION OF THE STATES AND TERRITORIES OF THE COMMONWEALTH OF AUSTRALIA AT THE CENSUS OF 3rd APRIL, 1911.

(EXCLUSIVE OF FULL-BLOOD ABORIGINALS.)

States and Territories.	English Language.		Foreign Language only.		Cannot Read.	Not Stated.	Total.
	Read and Write.	Read only.	Read and Write.	Read only.			
MALES.							
STATES—							
New South Wales ..	696,258	2,565	5,889	497	134,215	18,274	857,698
Victoria ..	547,753	1,271	3,572	532	88,995	13,468	655,591
Queensland ..	265,896	1,136	6,185	678	49,406	6,205	329,506
South Australia ..	169,508	556	1,156	102	31,891	4,145	207,358
Western Australia ..	128,648	311	4,371	303	22,524	5,408	161,565
Tasmania ..	76,247	456	181	20	18,244	2,443	97,591
TERRITORIES—							
Northern.. ..	1,126	4	852	29	642	81	2,734
Federal .. ..	820	9	2	..	140	21	992
Total Commonwealth	1,886,256	6,308	22,208	2,161	346,057	50,045	2,313,035
FEMALES.							
STATES—							
New South Wales ..	645,022	3,140	650	61	123,808	16,355	789,036
Victoria ..	555,675	2,626	665	66	84,449	16,479	659,960
Queensland ..	225,086	1,272	1,772	252	43,787	4,138	276,307
South Australia ..	165,634	993	531	88	29,987	3,967	201,200
Western Australia ..	96,702	256	317	15	20,724	2,535	120,549
Tasmania ..	74,795	409	30	4	16,235	2,147	93,620
TERRITORIES—							
Northern.. ..	292	..	37	..	203	44	576
Federal .. ..	568	5	..	..	132	17	722
Total Commonwealth	1,763,774	8,701	4,002	486	319,325	45,682	2,141,970
PERSONS.							
STATES—							
New South Wales ..	1,341,280	5,705	6,539	558	258,023	34,629	1,646,734
Victoria ..	1,103,428	3,897	4,237	598	173,444	29,947	1,315,551
Queensland ..	490,982	2,408	7,957	930	93,193	10,343	605,813
South Australia ..	335,142	1,549	1,687	190	61,878	8,112	408,558
Western Australia ..	225,350	567	4,688	318	43,248	7,943	282,114
Tasmania ..	151,042	865	211	24	34,479	4,590	191,211
TERRITORIES—							
Northern.. ..	1,418	4	889	29	845	125	3,310
Federal .. ..	1,388	14	2	..	272	38	1,714
Total Commonwealth	3,650,030	15,009	26,210	2,647	665,382	95,727	4,455,005

From the following table, which gives for the Commonwealth as a whole particulars of education in conjunction with age, it will be seen that the major portion of those who were unable to read were under the age of 9. Of persons aged 20 and upwards only about 2½ per cent. were unable to read.

**POPULATION OF THE COMMONWEALTH OF AUSTRALIA AT THE CENSUS OF  
3rd APRIL, 1911, CLASSIFIED ACCORDING TO EDUCATION AND AGE.**

(EXCLUSIVE OF FULL-BLOOD ABORIGINALS.)

Age.	English Language.		Foreign Language only.		Cannot Read.	Not Stated.	Total.
	Read and Write.	Read only.	Read and Write.	Read only.			

MALES.

0-4 .. ..	..	..	..	..	267,411	..	267,411
5-9 .. ..	177,463	1,131	53	24	39,764	11,151	229,586
10-14 .. ..	212,935	89	146	9	1,444	1,181	215,804
15-19 .. ..	221,279	109	800	46	1,813	2,784	226,831
20 and upwards ..	1,266,625	4,911	20,813	2,062	34,307	32,284	1,361,002
Unspecified..	7,954	68	396	20	1,318	2,645	12,401
Total .. ..	1,886,256	6,308	22,208	2,161	346,057	50,045	2,313,035

FEMALES.

0-4 .. ..	..	..	..	..	258,222	..	258,222
5-9 .. ..	173,567	1,116	46	8	36,536	12,387	223,660
10-14 .. ..	209,904	75	95	6	1,062	1,215	212,357
15-19 .. ..	218,273	50	101	5	847	2,429	221,705
20 and upwards ..	1,153,611	7,375	3,735	462	21,819	28,041	1,215,043
Unspecified..	8,419	85	25	5	839	1,610	10,983
Total .. ..	1,763,774	8,701	4,002	486	319,325	45,682	2,141,970

PERSONS.

0-4 .. ..	..	..	..	..	525,633	..	525,633
5-9 .. ..	351,030	2,247	99	32	76,300	23,538	453,246
10-14 .. ..	422,839	164	241	15	2,506	2,396	428,161
15-19 .. ..	439,552	159	901	51	2,660	5,213	448,536
20 and upwards ..	2,420,236	12,286	24,548	2,524	56,126	60,325	2,576,045
Unspecified..	16,373	153	421	25	2,157	4,255	23,384
Total .. ..	3,650,030	15,009	26,210	2,647	665,382	95,727	4,455,005

8. School Attendances.—In the following table are set out particulars of school attendances of children aged last birthday from 6 to 13 years at the Census of 3rd April, 1911 :—

**SCHOOL ATTENDANCES OF CHILDREN AGED LAST BIRTHDAY FROM 6 TO 13 YEARS IN THE STATES AND TERRITORIES OF THE COMMONWEALTH OF AUSTRALIA AT THE CENSUS OF 3rd APRIL, 1911.**

(EXCLUSIVE OF FULL-BLOOD ABORIGINALS.)

NOTE.—In this table the term "State School" comprises all schools, whether primary or secondary, which are under the direct control of the State.

States and Territories.	Number being educated at—			Number recorded as "scholar," but class of school not stated.	Number not indicated as receiving instruction.	Total.
	State School.	Private School.	Home.			
MALES.						
STATES—						
New South Wales ..	91,979	19,107	3,436	3,809	11,574	129,905
Victoria ..	78,185	15,367	1,198	1,826	6,031	102,607
Queensland ..	38,167	5,184	1,517	904	5,089	50,861
South Australia ..	22,817	3,548	521	380	4,409	31,675
Western Australia ..	15,289	3,239	558	508	1,653	21,247
Tasmania ..	11,042	2,113	459	485	2,832	16,931
TERRITORIES—						
Northern ..	32	25	9	1	56	123
Federal ..	98	..	22	4	25	149
Total Commonwealth..	257,609	48,583	7,720	7,917	31,669	353,498
FEMALES.						
STATES—						
New South Wales ..	84,129	23,329	4,191	3,279	12,802	127,730
Victoria ..	73,136	17,447	1,602	1,832	6,493	100,510
Queensland ..	35,656	6,765	1,713	1,032	4,759	49,925
South Australia ..	21,343	4,005	631	762	4,293	31,034
Western Australia ..	13,906	4,015	681	404	1,813	20,819
Tasmania ..	10,267	2,496	594	477	2,501	16,335
TERRITORIES—						
Northern ..	32	20	6	..	69	127
Federal ..	85	3	13	5	27	133
Total Commonwealth..	238,554	58,080	9,431	7,791	32,757	346,613
PERSONS.						
STATES—						
New South Wales ..	176,108	42,436	7,627	7,088	24,376	257,635
Victoria ..	151,321	32,814	2,800	3,658	12,524	203,117
Queensland ..	73,823	11,949	3,230	1,936	9,848	100,786
South Australia ..	44,160	7,553	1,152	1,142	8,702	62,709
Western Australia ..	29,195	7,254	1,239	912	3,466	42,066
Tasmania ..	21,309	4,609	1,053	962	5,333	33,266
TERRITORIES—						
Northern ..	64	45	15	1	125	250
Federal ..	183	3	35	9	52	282
Total Commonwealth..	496,163	106,663	17,151	15,708	64,426	700,111



9. **Blind Persons and Deaf Mutes.**—The following table contains particulars of the number of blind persons and deaf mutes as recorded at the date of the Census of 3rd April, 1911 :—

**NUMBER OF BLIND PERSONS AND DEAF MUTES IN THE SEVERAL STATES OF THE COMMONWEALTH AT THE CENSUS OF 3rd APRIL, 1911.**

(EXCLUSIVE OF FULL-BLOOD ABORIGINALS.)

States.	Blind.			Deaf and Dumb.		
	Males.	Females.	Persons.	Males.	Females.	Persons.
New South Wales ..	591	420	1,011	330	310	640
Victoria ..	595	507	1,102	280	255	535
Queensland ..	213	170	383	160	97	257
South Australia ..	192	166	358	134	112	246
Western Australia ..	85	57	142	40	36	76
Tasmania ..	78	68	146	54	44	98
Total Commonwealth ..	1,754	1,388	3,142 (a)	998	854	1,852 (a)

(a) Including 21 blind deaf mutes.

### § 11. Naturalization.

1. **The Commonwealth Act.**—The Commonwealth Constitution empowers the Commonwealth Parliament to make laws with respect to "Naturalization and Aliens," a power which was exercised when the "Naturalization Act of 1903" was passed. This Act was assented to on 13th October of that year, and came into force on 1st January, 1904, in accordance with a proclamation by *Gazette* of 14th November, 1903.

In 1917 it was considered advisable to make more stringent the provisions of the Act, notably with reference to the question of dual nationality, circumstances arising out of the war having clearly demonstrated that while many naturalized persons of enemy birth were enjoying the rights, privileges, and protection guaranteed to Australian citizens, they were still pledged to allegiance to their Mother Country. As a result the "Naturalization Act 1917," containing a number of new and important provisions, was passed by Parliament and was assented to on 20th September of the same year.

Prior to the passing of the original Act the issue of certificates of naturalization had been a function of the State Governments, carried out under Acts of the several State Legislatures, which, however, did not differ materially from each other, and furnished the basis on which the Commonwealth Act was drafted. From 1st January, 1904, when the Commonwealth Act of 1903 became operative, the right to issue certificates of naturalization in the Commonwealth has been vested exclusively in the Federal Government, but all certificates or letters of naturalization issued under the several State Acts prior to that date entitle the recipients to be deemed to be naturalized under the Commonwealth Act.

The grant of a certificate of naturalization entitles the recipient within the limits of the Commonwealth to all the rights and privileges, and renders him subject to all the obligations of a natural-born British subject, with the exception that where, by any Commonwealth or State Constitution or Act, a distinction is made between natural-born British subjects and naturalized persons, such distinction shall hold good in the case of all persons naturalized under the Commonwealth Act.

The "Naturalization Act 1903-1917" (i.e., the "Naturalization Act 1903" as amended by the "Naturalization Act 1917") provides that applications for certificate of naturalization must be made to the Governor-General, the qualifications required in an applicant being:—

- (i) That he is not a British subject.
- (ii) That he is not an aboriginal native of Asia, Africa, or the Islands of the Pacific, excepting New Zealand.
- (iii) That he intends to settle in the Commonwealth.
- (iv) (a) That he has resided in Australia continuously for two years immediately preceding his application for naturalization; or
- (b) That he has obtained in the United Kingdom a certificate or letters of naturalization.

An applicant who has already obtained a certificate or letters of naturalization in the United Kingdom is required to furnish, in support of his application—

- (i) His certificate or letters of naturalization.
- (ii) His statutory declaration—
  - (a) That he is the person named in the certificate or letters.
  - (b) That he obtained the certificate or letters without fraud or intentional false statement.
  - (c) That the signature and seal thereto are, to the best of his knowledge and belief, genuine.
  - (d) That he intends to settle in the Commonwealth.

If the applicant is not already naturalized in the United Kingdom the particulars which he is required to furnish in support of his application are as follows:—

His own statutory declaration stating—

- (a) Name; (b) Age; (c) Birthplace; (d) Occupation; (e) Residence; (f) Length of residence in Australia; (g) Intention to settle in the Commonwealth; (h) Such other particulars as are prescribed.

An applicant, whether naturalized in the United Kingdom or not so naturalized, must furnish—

- (i) Newspapers containing copies of an advertisement, as prescribed, of his intention to seek naturalization.
- (ii) Certificates of character from three natural-born British subjects, two of whom must be householders, and the third a Justice of the Peace, Postmaster, State School Teacher, or Police Officer.
- (iii) Satisfactory evidence that he is able to read and write English.

Any person may make representation by statutory declaration with regard to an applicant for naturalization, the contents of such declaration not to be disclosed other than with the consent of the person making the declaration, except for the purpose of a prosecution for perjury.

The Governor-General in Council is authorised to grant or withhold a certificate of naturalization, with or without assigning any reason, as he thinks most conducive to the public good; but the issue of a certificate of naturalization is not admissible until the applicant furnishes a certificate signed by a Justice of the High Court of Australia, a State Judge, or a Magistrate, certifying that he has renounced allegiance to the country of which he was a subject at the time of his application for naturalization, or at the time of his naturalization in the United Kingdom, and that he has taken an oath or affirmation of allegiance to the Crown in accordance with the Constitution. The grant of a certificate is made free of charge.

In addition to naturalization by grant of certificate, the Act makes provision for—

- (i) Naturalization by marriage.
- (ii) Naturalization by residence with naturalized parent.

The former relates to the case of a woman who is not herself a British subject, but is married to a British subject; the latter to that of a person who is not a natural-born British subject, but who has resided at any time during infancy in Australia with a father or mother who at the time was a naturalized British subject. In each instance the person concerned is deemed to be naturalized under the Commonwealth Act.

The Governor-General may revoke any certificate of naturalization where—

- (a) it is proved to have been obtained by any untrue statement of fact or intention; or
- (b) the Governor-General is satisfied that it is desirable for any reason that a certificate should be revoked.

Where a wife and any minor children have acquired British nationality under the certificate issued to the husband and father and such certificate is subsequently revoked, the wife and children remain British subjects unless the Governor-General otherwise declares, or unless they themselves elect to make a declaration of alienage.

In accordance with the Act, a list of persons naturalized, with their addresses, is published in the *Commonwealth Gazette* from time to time.

The administration of the Act is carried out by the Home and Territories Department, and the Governor-General is authorised to make such regulations as are necessary or convenient for giving effect to the Act.

2. **Statistics of Naturalization.**—Particulars relative to the nationalities of the recipients of certificates of naturalization issued under the Act during each of the five years 1915 to 1919, and to the countries from which such recipients had come, are shewn in the following table:—

#### COMMONWEALTH NATURALIZATION CERTIFICATES GRANTED, 1915 TO 1919.

Nationalities of Recipients.	No. of Certificates Granted.					Countries from which Recipients of Commonwealth Certificates had come.	No. of Certificates Granted.				
	1915.	1916.	1917.	1918.	1919.		1915.	1916.	1917.	1918.	1919.
Italian ..	251	42	35	8	34	Great Britain ..	275	184	102	82	66
Swedish ..	247	152	57	38	32	Italy ..	229	34	30	9	29
Danish ..	193	174	65	52	50	Germany ..	149	72	36	13	13
Russian ..	187	58	50	30	20	America (North)	134	85	42	12	28
German ..	179	106	48	15	11	Sweden ..	111	69	21	12	8
Norwegian ..	140	95	54	36	17	Denmark ..	103	99	32	19	18
Greek ..	90	3	7	21	49	Norway ..	72	48	25	22	10
American (North)	79	65	24	..	11	Greece ..	51	3	5	13	35
Dutch ..	72	42	33	21	10	France ..	49	17	15	10	8
Swiss ..	45	36	24	12	14	Egypt ..	38	..	4	1	10
French ..	44	30	27	11	8	America (South)	36	24	5	5	..
Spanish ..	18	11	11	3	6	Holland ..	34	20	18	5	..
Belgian ..	17	6	4	5	4	Russia ..	32	8	7	4	..
Bulgarian ..	15	..	..	..	..	South Africa ..	29	23	7	5	9
Rumanian ..	10	4	..	2	1	Belgium ..	28	9	7	7	6
Portuguese ..	3	..	4	2	1	New Zealand ..	26	18	6	6	6
American (South)	3	6	..	..	..	Switzerland ..	26	20	15	3	6
Austrian ..	2	5	1	1	2	Spain ..	15	4	6	2	..
Mexican ..	2	1	..	..	1	Austria ..	2	2	..	..	..
Chilian ..	1	..	..	..	..	India ..	7	3	..	..	..
Luxemburger ..	1	..	..	..	..	New Caledonia ..	5	7	8	1	..
Chinese ..	1	3	..	..	1	Turkey ..	3	..	..	..	..
Serbian ..	1	2	1	4	..	China ..	3	..	..	..	..
Icelandic ..	1	..	..	..	..	Argentina ..	..	9	3	1	6
Montenegrin ..	..	..	..	..	..	Canada ..	..	5	7	2	..
Peruvian ..	..	..	..	..	..	Finland ..	..	3	4	..	..
Turkish ..	..	..	..	..	..	Other Countries	145	76	40	27	37
Japanese ..	..	..	..	..	..						
Syrian ..	..	1	..	..	1						
Polish ..	..	..	..	..	6						
Finnish ..	..	..	..	..	16						
Total ..	1,602	842	445	261	295	Total ..	1,602	842	445	261	295

The following table furnishes particulars concerning the States in which the recipients of Commonwealth certificates of naturalization during the years 1909 to 1919 were resident :—

**NATURALIZATION CERTIFICATES GRANTED BY COMMONWEALTH, 1909 TO 1919.**

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Northern Territory.	C'wealth.
1909 ..	644	507	378	600	221	81	..	2,431
1910 ..	665	329	333	299	187	36	..	1,849
1911 ..	565	491	469	282	248	22	..	2,077
1912 ..	565	295	464	343	243	35	..	1,945
1913 ..	603	434	525	355	342	30	2	2,291
1914 ..	1,327	1,202	625	552	520	43	3	4,272
1915 ..	411	378	345	260	191	16	1	1,602
1916 ..	260	211	152	82	115	20	2	842
1917 ..	131	131	84	45	46	7	1	445
1918 ..	85	70	59	19	25	3	..	261
1919 ..	103	70	67	21	29	5	..	295

3. **Census Particulars.**—On the Personal Card used at the Census of 3rd April, 1911, an inquiry as to naturalization was made, all persons who were British subjects by naturalization being required to indicate the fact by inserting the letter N in the place provided for the purpose on the card. In addition, in checking the cards in the Census Bureau, instructions were given that cases of women naturalized by marriage to British subjects, and of children naturalized by residence with parents who have become British subjects, should be duly taken into account by the insertion of the letter N if originally omitted. The results of the tabulation will be found in the following table :—

**NUMBER OF NATURALIZED BRITISH SUBJECTS RECORDED AT THE AUSTRALIAN CENSUS OF 3rd APRIL, 1911.**

Particulars.	States.						Territories.		C'wealth.
	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	North-ern.	Federal.	
Males ..	11,333	8,445	11,025	4,141	3,544	734	457	4	39,683
Females ..	2,808	2,182	5,562	1,763	646	293	13	1	13,268
Persons ..	14,141	10,627	16,587	5,904	4,190	1,027	470	5	52,951

**§ 12. Graphical Representation of Growth of Population.**

1. **General.**—The nature of the fluctuations of the numbers representing (a) total population, or those representing (b) births and deaths from year to year, or (c) the natural increase, i.e., the difference of births and deaths, or (d) the net immigration, all of which taken together make up the element of increase of total population, cannot be readily discerned from mere numerical tables. It has been deemed desirable, therefore, to furnish a series of graphical representations, shewing in some cases the characteristics of these elements from 1788 to 1919, and in others from 1860 to 1919. The graphs furnish at a glance a clear indication of the changes taking place, and of their significance from year to year. The great importance of such representations is that only by their means can the most recent changes be justly apprehended, either in their relation to the past, or their meaning for the future.

2. **Graphs of Total Population** (page 105).—These graphs furnish interesting evidence of the comparatively slow rate of growth of the several States and of the Commonwealth as a whole, during the period from the foundation of settlement in 1788 until 1832. From that year onwards to 1851, a moderately increased rate of progress was experienced. In 1851 gold was discovered in Australia, and the effect of this discovery on the population of the Commonwealth is shewn by the steepness of the curves for New South Wales and Victoria, and for the Commonwealth, from this point onwards for a series of years. The sudden breaks in the continuity of the curves for New South Wales indicate the creation of new colonies, and their separation from the mother colony. Thus, Tasmania came into existence in 1825, Victoria in 1851, and Queensland in 1859. Owing to the extensive gold discoveries in Victoria, its population increased so rapidly that in 1854 its total passed that of New South Wales, and remained in excess until 1892, when the mother State again assumed the lead, which it has since maintained. The rate of increase in New South Wales is large, but the State is still only sparsely populated. A feature of the New South Wales curve is its comparative regularity as compared with that of Victoria, the population of which State increased with great rapidity from 1851 to 1860, less rapidly from 1861 to 1878, with a further period of increased rapidity from 1878 to 1891, and a period of very slow and fluctuating growth from the latter year to 1914. In 1915 and 1916 the population decreased, but in 1917, 1918, and 1919 increases were again recorded. Victoria, however, has a population density more than double that of Tasmania, and nearly three times that of New South Wales.

In the case of Queensland, the curve indicates a rate of growth which, though varying somewhat, has on the whole been satisfactory, and at times very rapid. Periods of particularly rapid increase occurred from 1862 to 1865, from 1873 to 1877, and from 1881 to 1889. With the exception of the year 1916 the population of this State has always increased each year up to 1919. The population of Queensland passed that of Tasmania in 1867, and that of South Australia in 1835. The population density of Queensland is about one-sixteenth of that of Victoria.

The curve for South Australia indicates that with fluctuations more or less marked, the population increased at a moderate rate from the date of the effective settlement of the colony in 1836 until 1884, and that from that point onwards, a diminished rate of increase was experienced, with slight decreases in 1886, 1888, 1900, 1902, 1915, and 1916. In 1917, 1918, and 1919 increases were again recorded. The population of South Australia passed that of Tasmania in 1852. Its density is nearly one and one-fifth of that of Queensland, about one-fifth of that of New South Wales, and about one-fourteenth of that of Victoria.

The curve for Western Australia indicates that the population increased regularly but very slowly until 1886, when the discovery of gold in the Kimberley division caused an influx of population. The effects of the further rich discoveries of gold in the Murchison and Coolgardie districts in 1891 and 1892, are clearly shewn in the rapid increase of population in those and subsequent years to 1897. Two years of retarded progress then occurred, followed by a satisfactorily rapid rate of increase from 1899 to 1906, a slight decline in 1907, and a further advance in 1908 and subsequent years to 1914. Decreases occurred in 1915 and 1916, with increases in 1917, 1918, and 1919. The population of Western Australia became greater than that of Tasmania in 1899. Its density is little more than one-fourth of that of South Australia, one-third of that of Queensland, one-nineteenth of that of New South Wales, and about one-fiftieth of that of Victoria.

The Tasmanian population curve indicates a comparatively slow rate of growth throughout. Its most noticeable feature is a retardation in increase in 1852 and subsequent years, brought about by the discovery of gold on the mainland. The population density of Tasmania is about 30 per cent. greater than that of New South Wales, and a little less than half of that of Victoria.

3. **Graphs for Commonwealth of Male and Female Population** (page 106).—These curves shew the relative growth of male and female population of the Commonwealth, and it will be seen that the former are far more liable to marked fluctuations than the latter. The curves representing an increase of population on the basis of the United States rate for 1790 to 1860, indicate that on the whole the female rate of increase in the Commonwealth has been a fairly satisfactory one, and that from 1860 to 1893 the same might be said of the male population. From 1893 onwards, however, the male population of the Commonwealth has fallen considerably below this rate.

Although the rate of increase of the female population from 1860 onwards is on the whole very satisfactory, it should be noted that the total number at the beginning of this period was relatively very small, and that from 1894 onwards there is a falling-off in the rate of increase, similar to that experienced in the case of males.

4. **Graphs for each State of Male and Female Population** (page 107).—These graphs, shewing the relative progress in male and female population for each of the States, disclose the fact that in all cases the female population is much less liable to marked fluctuations than the male, and further, that in cases where rapid increases have taken place in the latter, a similar, but much more gradual, increase is in evidence in the former, commencing usually, however, somewhat later than in the case of the males. A comparison of the graphs of each of the States with that of the Commonwealth shews that the fluctuations in the latter case are smaller than in the former. This is largely due to internal migrations of the male element of the population, brought about by various causes, amongst which mining developments figure prominently.

5. **Graphs for Natural Increase of Population, Commonwealth and States** (page 110).—The graphs indicate that, with the exception of certain marked variations, the natural increase of the population of the Commonwealth, i.e., the excess of births over deaths, advanced with fair rapidity from 1860 to 1892, in which year it attained its maximum, and then fell rapidly till 1898. A subsequent rise to 1900 was followed by a continuous fall for the three years succeeding, viz., to 1903. The recovery shews a fairly rapid rise to 1909, during which year the natural increase was 16.35 per 1,000 of mean population. In succeeding years a correspondingly high rate was maintained with minor fluctuations until 1914, when a record of 17.54 was obtained. In 1915 and 1916 the rate declined to 16.59 and 15.74 respectively, but improved to 16.71 in 1917. In 1918 it declined to 15.16, and in 1919 a further heavy decline to 10.96 was experienced. In 1912 a rate of 17.42 was obtained; this was, however, an over-statement of the true natural increase for the year, owing to the fact that the introduction of "Maternity Allowances" in 1912 resulted in expediting the registration of births. The years in which the natural increase of the Commonwealth was at its highest were 1865, 1871, 1881, 1892, 1900, and 1914, and the years of extraordinarily low rates of natural increase were 1866, 1875, 1882, 1898, 1903, and 1919. The low rate of 1898 was due in large measure to a phenomenally high death rate experienced in practically all the States in that year, when an epidemic of measles was prevalent throughout the Commonwealth. The low rate of 1903 was brought about by the low birth rates and the high death rates which accompanied the drought of 1902-3, while the advance in the rate of natural increase since 1903 has been collateral with the marked improvement in material conditions experienced throughout the Commonwealth during that period. The very low rate for 1919 was due to a low birth rate and a very high death rate, caused by an epidemic of influenza.

6. **Graphs shewing Total Increase of Population** (pages 108 and 109).—The graphs disclose the fact that the most notable years of large total increases of population of the Commonwealth as a whole were 1864, 1877, 1883, 1888, 1909, 1910, 1911, 1912, and 1919. The total increase for 1910 was higher than for any year since 1883, while that for 1919 was the highest on record. The years in which low total increases were noticeable were 1861, 1867, 1872, 1878, 1889, 1893, 1898, and 1903. The decreases in the years 1915 and 1916 are a direct effect of the war. The great increase in 1919 was due very largely to the return of soldiers after the cessation of hostilities in Europe.

The graph for New South Wales indicates a high total increase of population between 1876 and 1894, advancing to a maximum in 1883, and then declining to 1901. From the latter year onwards to 1907 an advance in the total increase was in evidence, followed by a decline in 1908, and a recovery in 1909, which was maintained in subsequent years to 1912. In 1913, 1914, and 1915 the figures fell continuously, followed in 1916 by a decrease, and a rapid increase since 1917.

Some features of the graph shewing the Victorian total increase are the height attained in 1864, 1870, 1888, 1901, and 1912, the smallness of the increase for the years 1861 and 1875, and the decreases for 1896, 1902, and 1903. The increase fell off in 1913 and 1914 and a decrease was experienced in 1915 and 1916, followed by an increase in 1917, 1918, and 1919.

For Queensland it will be seen that the years of high total increases were 1863, 1875, 1883, 1895, 1901, 1909, 1910, 1911, 1913, and 1919 while the years in which these were at very low level were 1869, 1878, 1891, and 1903. In 1914, 1915, and 1916 there was a progressive decline, followed by an increase in 1917, 1918, and 1919.

In South Australia the total increases were exceptionally high in 1865, 1876, 1877, 1878, 1883, 1892, 1908, 1910, 1911, 1912, and 1919, and correspondingly low in 1870, 1885, 1896, and 1903, while actual decreases took place in 1886, 1888, and 1902. In 1913 there was a slight decline in the total increase, followed by decreases in the years 1914, 1915, and 1916, and increases in 1917, 1918, and 1919.

In Western Australia the total increase graph indicates no very marked advance until about 1884, from which it rises somewhat rapidly to 1886, and then declines to 1888. This is followed by an exceedingly rapid rise to 1896, and a subsequent fall to 1899, succeeded by a further rise to 1902, and a fall thereafter to 1907, followed by a rise to 1911, a further fall in 1912, and a rise in 1913. Decreases took place in 1888, 1907, 1914, 1915, and 1916.

In the case of the Tasmanian graph, indications of a very varied total increase are in evidence, the principal high points being those for the years 1887, 1891, 1897, 1902, 1907, 1912, 1913, and 1919 while actual decreases were experienced in 1874, 1875, 1892, 1906, 1911, 1914, 1915, and 1916.

**7. Graphs shewing Masculinity of Population, Commonwealth and States** (page 111).—These graphs furnish information concerning the variations which have taken place in the relative numbers of males and females in the populations of the Commonwealth and the several States during the years 1796 to 1919, and incidentally serve to indicate special features of growth in the respective populations. In general it will be noted that in recent years there has been a marked tendency towards a masculinity of zero, that is, to a condition in which the numbers of males and females in the population were equal, but that with the exception of Victoria and South Australia the masculinity had never fallen below zero prior to the outbreak of war. In 1916 and 1917, however, it fell below zero in all the States except Queensland and Western Australia, and in the Commonwealth as a whole. In 1918 the rates were below zero in the Commonwealth as a whole, and in the States of New South Wales, Victoria, and South Australia. During the year 1919, the Commonwealth as a whole, and all the States except Victoria and South Australia, had an excess of males. The early experience of the Commonwealth exhibits a fairly rapid decline in masculinity to 1812, followed by an even more rapid rise to 1828 and a subsequent fall with a more gentle slope to 1850. From 1850 onwards the decline in masculinity has been fairly continuous though subject to fluctuations. It should be noted that the great variations of the earlier as compared with the later years have been due to a considerable extent to the fact that, owing to the smallness of the population, any considerable influx of male immigrants had a marked effect in increasing the masculinity of the population, while an influx of female immigrants tended to considerably reduce it. Two points of special interest in the graphs of the separate States are the maxima attained in 1852 in Victoria and 1896 in Western Australia, as the result of extensive male immigration consequent on the gold discoveries in the respective States.

## SECTION V.

### VITAL STATISTICS.

**NOTE.**—The rates quoted throughout this Section for the years 1913 to 1919 have been calculated in accordance with the corrected populations as determined by the results of the Census of 1911.

#### § 1. Births.

1. Male and Female Births, 1913 to 1919.—The total number of male and female births registered in the Commonwealth during the years 1913 to 1919 is shewn in the two tables hereunder :—

**TOTAL MALE BIRTHS, COMMONWEALTH, 1913 TO 1919.**

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	North. Terr.	Federal Territory.	Common- wealth.
1913 ..	26,624	18,434	10,041	6,505	4,710	3,071	27	22	69,434
1914 ..	27,452	18,545	10,120	6,668	4,663	3,094	31	31	70,604
1915 ..	27,085	17,820	10,444	6,076	4,578	2,991	33	22	69,049
1916 ..	26,615	17,623	9,673	6,200	4,439	2,873	44	38	67,505
1917 ..	27,002	17,220	10,058	5,762	4,058	2,720	42	21	66,883
1918 ..	26,002	16,172	10,080	5,787	3,615	2,717	59	26	64,458
1919 ..	24,924	16,225	9,746	5,776	3,477	2,718	55	10	62,931

**TOTAL FEMALE BIRTHS, COMMONWEALTH, 1913 TO 1919.**

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	North. Terr.	Federal Territory.	Common- wealth.
1913 ..	25,562	17,536	9,690	6,122	4,508	2,815	25	22	66,280
1914 ..	26,189	17,677	9,762	6,236	4,541	2,923	27	24	67,379
1915 ..	25,846	17,189	9,719	5,722	4,439	2,854	28	25	65,822
1916 ..	25,465	16,612	9,239	5,657	4,124	2,769	30	25	63,921
1917 ..	25,446	15,813	9,729	5,564	3,824	2,656	27	23	63,082
1918 ..	24,707	15,425	9,456	5,570	3,491	2,563	46	23	61,281
1919 ..	23,608	15,394	8,953	5,284	3,460	2,592	51	17	59,359

2. Total Births, 1913 to 1919.—The total number of births for the Commonwealth was higher in 1914 than in any of the preceding years, but the figures for the last five years shew a falling off for the Commonwealth as compared with those for 1913 and 1914, the births recorded for 1919 being the lowest for any year since 1911.



## TOTAL BIRTHS, COMMONWEALTH, 1913 TO 1919.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	North. Terr.	Federal Terr.	C'wealth.
1913 ..	52,186	35,970	19,731	12,627	9,218	5,886	52	44	135,714
1914 ..	53,641	36,222	19,882	12,904	9,204	6,017	58	55	137,983
1915 ..	52,931	35,009	20,163	11,798	9,017	5,845	61	47	134,871
1916 ..	52,080	34,235	18,912	11,857	8,563	5,642	74	63	131,426
1917 ..	52,448	33,033	19,787	11,326	7,882	5,376	69	44	129,965
1918 ..	50,709	31,597	19,536	11,357	7,106	5,280	105	49	125,739
1919 ..	48,532	31,619	18,699	11,060	6,937	5,310	106	27	122,290

3. *Birth Rates, 1913 to 1919.*—(i) *Crude Birth Rate.* The most notable feature of the table shewing the crude birth rate is the continual fall since 1913. This feature, which is doubtless due to the war, is exhibited in all the States. The rates in the Territories shew considerable fluctuation, but the numbers are too small to allow of any deductions therefrom.

## CRUDE BIRTH RATE (a), COMMONWEALTH, 1913 TO 1919.

Year.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	North. Terr.	Federal Territory.	C'with.
1913 .. ..	28.86	25.82	30.24	29.12	29.36	30.03	14.21	17.97	28.25
1914 .. ..	28.96	25.45	29.46	29.33	28.45	30.33	15.46	20.79	28.05
1915 .. ..	28.33	24.55	29.35	26.84	27.97	29.32	13.85	19.05	27.25
1916 .. ..	27.89	24.29	27.91	27.39	27.21	28.47	15.26	24.11	26.78
1917 .. ..	28.06	23.50	29.09	26.21	25.54	27.03	13.92	17.65	26.51
1918 .. ..	26.53	22.29	28.37	25.80	22.84	25.91	21.03	20.19	25.25
1919 .. ..	24.68	21.56	26.23	24.27	21.44	25.12	22.05	11.68	23.78
Density (b) (No. per square mile) ..	6.47	17.02	1.08	1.23	0.34	8.27	0.009	2.04	1.76

(a) Number of births per 1,000 of the mean annual population. (b) On 31st December, 1919.

The population density of each State and of the Commonwealth has been given for the purpose of considering the influence, if any, of concentration of population on birth rate, in connection with the disparities of the rate in different parts of Australia.

(ii) *Objections to Crude Birth Rate.* The figures just given represent the "crude birth rate," i.e., the number of births per thousand of mean annual population. The number of births per thousand of the female population of child-bearing ages, i.e., from 15 to 45, furnishes, however, a more significant rate. This calculation has been made for the four last Census periods, and covers in each case the Census year, together with the year immediately preceding and the year immediately following. The following results have been obtained for the four Census periods :—Total births per 1,000 women (married and unmarried) of ages 15 to 45 :—Years 1880–82, 169.69; years 1890–92, 158.81; years 1900–02, 117.26; years 1910–12, 117.22. Nuptial births per 1,000 married women of ages 15 to 45 :—Years 1880–82, 320.96; years 1890–92, 332.03; years 1900–02, 235.84; years 1910–12, 236.06.

4. **Birth Rates of Various Countries.**—A comparison with other countries shews that the Australian States occupy a rather low position, which is, however, fortunately counterbalanced by a still lower position in regard to their death rates, as will be seen from the table hereinafter in the section dealing with "Deaths." It will be noticed that, owing to the difficulty of procuring statistics in regard to the belligerent countries in the late war, many of the rates quoted for continental countries are for rather remote years. Consequently it is not suggested that the comparison instituted in the attached table is exact. This does not however affect the general proposition that Australia takes a low position amongst the countries of the world both as regards crude birth rate and crude death rate.

**CRUDE BIRTH RATE (a) OF VARIOUS COUNTRIES.**

Country.	Year.	Rate.	Country.	Year.	Rate.
Russia, European ..	1909	44.0	New South Wales ..	1919	24.7
Rumania ..	1914	42.5	South Australia ..	1919	24.3
Bulgaria ..	1911	40.2	Netherlands ..	1919	24.2
Ceylon ..	1918	39.2	Denmark ..	1915	24.2
Serbia ..	1912	38.0	<b>Australia ..</b>	<b>1919</b>	<b>23.8</b>
Chile ..	1914	37.0	Norway ..	1915	23.8
Hungary ..	1912	36.3	New Zealand ..	1918	23.4
Jamaica ..	1915	34.6	Ontario (Canada) ..	1917	22.6
Japan ..	1913	33.3	Belgium ..	1912	22.6
Austria ..	1912	31.3	Victoria ..	1919	21.6
Italy ..	1914	31.1	Sweden ..	1915	21.6
Spain ..	1914	29.8	Western Australia ..	1919	21.4
Prussia ..	1913	28.2	Scotland ..	1917	20.1
German Empire ..	1913	27.5	Ireland ..	1917	19.9
Finland ..	1914	26.9	Switzerland ..	1915	19.5
Queensland ..	1919	26.2	France ..	1913	19.0
United States ..	1910 (b)	25.4	United Kingdom ..	1917	18.2
Tasmania ..	1919	25.1	England and Wales	1917	17.8

(a) Number of births per 1,000 of the mean population. (b) Figures for "provisional birth-registration area," which includes about 31 per cent. of the population.

The wide discrepancies among the crude birth rates of the various countries are, to some extent, due to differences in sex and age constitution and in conjugal condition. If the birth rates be calculated per 1,000 women of child-bearing ages, the comparison shews very different results. The report for 1908 of the Registrar-General for England and Wales contains a table shewing the nuptial births per 1,000 married women of ages 15 to 45 in a number of countries, and the information here given in regard to the period 1900-1902 is taken therefrom.

**NUPTIAL BIRTHS PER 1,000 MARRIED WOMEN, AGED 15-45 YEARS, 1900-1902.**

Country.	Rate.	Country.	Rate.
Netherlands ..	314.6	Switzerland ..	265.9
Norway ..	302.8	Denmark ..	259.1
Prussia ..	290.4	Spain ..	258.7
Ireland ..	289.4	Belgium ..	250.7
German Empire ..	284.2	New Zealand ..	243.2
Austria ..	283.7	<b>Australia ..</b>	<b>235.8</b>
Scotland ..	271.8	England and Wales	235.5
Italy ..	269.4	France ..	157.5
Sweden ..	269.0		

5. **Masculinity at Birth.**—The masculinity of births, i.e., the excess of males over females per 100 births, registered during the last seven years in the several States of the Commonwealth has, apart from the Northern Territory and the Federal Territory, the figures for which are useless for comparative purposes on account of the smallness of the returns on which they are based, varied from 0.25 in Western Australia in 1919 to 4.58 in South Australia in 1916. The following table, which gives the values for the States and Commonwealth for 1913 to 1919, shews that for the Commonwealth there was a steady increase of masculinity from 1913 to 1917, with a sharp fall in 1918, and a recovery in 1919.

**MASCULINITY (a) OF BIRTHS REGISTERED, COMMONWEALTH, 1913 TO 1919.**

Year.	N.S.W.	Vict.	Q'land.	S. Aust.	W. Aust.	Tas.	Northern Territory.	Federal Territory.	C'wealth.
1913 ..	2.04	2.50	1.78	3.03	2.19	4.35	3.85	0.00	2.32
1914 ..	2.35	2.40	1.80	3.35	1.33	2.84	6.90	12.73	2.34
1915 ..	2.34	1.80	3.60	3.00	1.54	2.34	8.20	—6.38	2.39
1916 ..	2.21	2.95	2.29	4.58	3.68	1.84	18.92	20.63	2.73
1917 ..	2.97	4.26	1.66	1.75	2.97	1.19	21.74	—4.55	2.92
1918 ..	2.55	2.36	3.19	1.91	1.75	2.92	12.38	6.12	2.53
1919 ..	2.71	2.63	4.24	4.45	0.25	2.37	3.77	—25.93	2.92

(a) Excess of males over females per 100 total births.

There is ordinarily a very small difference between the masculinity of nuptial and ex-nuptial births. Thus, according to Bodio, whose figures are quoted in the following table, for the period about 1887–1891, the masculinity ranged from 3.98 to 1.77, and from 3.80 to 0.79 for total and ex-nuptial births respectively.

**MASCULINITY OF BIRTHS IN VARIOUS COUNTRIES.**

Country.	Masculinity of Births.(a)		Country.	Masculinity of Births.(a)	
	All Live Births.	Ex-nuptial Live Births.		All Live Births.	Ex-nuptial Live Births.
Spain ..	3.98	3.80	German Empire ..	2.53	2.29
Rumania ..	3.71	1.67	Finland ..	2.44	2.53
Portugal ..	3.61	3.10	Hungary ..	2.44	1.43
Austria ..	2.82	2.68	Sweden ..	2.44	2.10
Italy ..	2.82	2.15	Denmark ..	2.34	2.44
Norway ..	2.82	2.87	Serbia ..	2.30	1.72
Ireland ..	2.68	2.34	France ..	2.25	1.43
Netherlands ..	2.68	2.29	Belgium ..	2.20	1.08
Scotland ..	2.68	2.87	Switzerland ..	2.20	0.79
Russia, European ..	2.63	2.20	England ..	1.77	2.15

(a) Excess of males over females per 100 total births.

The masculinity of ex-nuptial births in the Commonwealth was as follows :—

**MASCULINITY (a) OF EX-NUPTIAL BIRTHS REGISTERED, COMMONWEALTH,  
1913 TO 1919.**

Year	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	Northern Territory.	Federal Territory.	C'with.
1913 ..	0.75	2.81	3.09	4.92	4.93	18.69	14.29	0.00	3.01
1914 ..	4.44	3.92	2.26	5.20	3.61	0.85	14.29	..	3.73
1915 ..	-0.72	1.09	-0.37	0.85	0.26	0.32	-17.65	..	0.00
1916 ..	1.67	4.71	6.83	5.68	0.31	-5.26	-6.67	33.33	3.22
1917 ..	2.21	3.61	3.43	0.00	-7.65	5.63	25.00	-100.00	2.34
1918 ..	1.33	-1.68	5.07	-6.14	-5.59	-0.36	14.29	..	0.24
1919 ..	4.93	0.22	8.91	4.84	-2.74	7.98	0.00	-100.00	4.03

(a) Excess of males over females per 100 total births.

It is curious to note that while, so far as the total births are concerned, there has always been an excess of male births over female births in the period under review, this has not been the case in regard to ex-nuptial births, since in Tasmania, South Australia and Western Australia a large negative masculinity has been experienced. Little weight, however, can be attached to those results on account of the small totals on which they are based, and for the same reason the figures for the Northern Territory and Federal Territory are not taken into consideration.

6. *Ex-nuptiality of Births.*—The number of ex-nuptial births reached its maximum in 1913. From that year there was a sharp fall till 1916, with a subsequent slight recovery.

It is, of course, possible that the number of ex-nuptial births is somewhat understated, owing to diffidence in proclaiming the fact of ex-nuptiality, and it is not unlikely that the majority of unregistered births are ex-nuptial.

**TOTAL EX-NUPTIAL BIRTHS REGISTERED IN THE COMMONWEALTH,  
1913 TO 1919.**

Year.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	Northern Territory.	Federal Territory.	C'wealth.
1913 ..	2,793	2,169	1,228	528	406	305	7	2	7,438
1914 ..	2,836	2,015	1,148	500	388	355	21	..	7,263
1915 ..	2,633	2,012	1,082	472	383	311	17	..	6,910
1916 ..	2,461	1,763	966	458	321	285	15	3	6,272
1917 ..	2,485	1,826	992	448	327	284	16	1	6,379
1918 ..	2,625	1,849	1,066	456	286	279	21	..	6,582
1919 ..	2,495	1,826	1,078	433	292	326	26	1	6,477

(i) *Rate of Ex-nuptiality, 1913 to 1919.* The rate of ex-nuptiality, i.e., the percentage on ex-nuptial to total births, has been fairly stationary during the last seven years on the whole, although the middle period shewed a decline.

**PERCENTAGE OF EX-NUPTIAL ON TOTAL BIRTHS, COMMONWEALTH,  
1913 TO 1919.**

Year.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	Northern Territory.	Federal Territory.	C'wealth.
	%	%	%	%	%	%	%	%	%
1913 ..	5.35	6.03	6.22	4.18	4.40	5.18	13.46	4.55	5.48
1914 ..	5.29	5.56	5.77	3.87	4.22	5.90	36.21	..	5.26
1915 ..	4.97	5.74	5.36	4.00	4.24	5.32	27.87	..	5.12
1916 ..	4.73	5.15	5.11	3.80	3.75	5.05	20.27	4.76	4.77
1917 ..	4.74	5.53	5.01	3.96	4.15	5.28	23.19	2.27	4.91
1918 ..	5.18	5.85	5.46	4.02	4.02	5.28	20.00	..	5.23
1919 ..	5.14	5.77	5.76	3.92	4.21	6.14	24.53	3.70	5.30

A comparison of greater significance is obtained by calculating the number of ex-nuptial births per thousand of the single and widowed female population between the ages of 15 and 45. The calculation has been made for the last four Census periods, and covers in each case the Census year, together with the year immediately preceding and the year immediately following. The number of ex-nuptial births per 1,000 unmarried women of ages 15 to 45 has been found to be as follows:—Years 1880–82, 14.49; years 1890–92, 15.93; years 1900–02, 13.30; years 1910–12, 12.53. Corresponding figures for the countries the nuptial birth rates of which were shewn in a preceding paragraph are here given for the sake of comparison:—

**EX-NUPTIAL BIRTHS PER 1,000 UNMARRIED WOMEN AGED 15-45 YEARS,  
1900 TO 1902.**

Country.	Rate.	Country.	Rate.
Austria .. ..	40.1	Spain .. ..	15.5
German Empire .. ..	27.4	Scotland .. ..	13.4
Sweden .. ..	24.3	<b>Australia .. ..</b>	<b>13.3</b>
Denmark .. ..	24.2	Switzerland .. ..	9.8
Prussia .. ..	23.7	New Zealand .. ..	8.9
Italy .. ..	19.4	England and Wales .. ..	8.5
France .. ..	19.1	Netherlands .. ..	6.8
Belgium .. ..	17.8	Ireland .. ..	3.8
Norway .. ..	17.2		

(ii) *Comparison of rates.* Since the rate of ex-nuptiality might appear to increase by the mere decrease in the general birth rate, the following table has been prepared:—

**CRUDE EX-NUPTIAL, NUPTIAL, AND TOTAL BIRTH RATES (a),  
COMMONWEALTH, 1913 TO 1919.**

Rates.	1913.	1914.	1915.	1916.	1917.	1918.	1919.
Ex-nuptial .. ..	1.55	1.48	1.40	1.28	1.30	1.32	1.26
Nuptial .. ..	26.70	26.57	25.85	25.50	25.21	23.93	22.52
Total .. ..	28.25	28.05	27.25	26.78	26.51	25.25	23.78

(a) Number of births per 1,000 of mean population.

**7. Multiple Births.**—Among the total number of 122,290 births registered in the Commonwealth in 1919 there were 119,629 single births, 2,612 twins, 45 triplets, and 4 quadruplets. The number of cases of twins was 1,311, there being 10 still births, the

number of cases of triplets 15, and of quadruplets 1. The total number of mothers was, therefore, 120,956, the proportion of mothers of twins being one in every 92, and of mothers of triplets one in every 8,064 of total mothers. The proportion of multiple births is a fairly constant one. In 1914 they numbered 1,401, or one in 97; in 1915, 1,417, or one in 94; in 1916, 1,383, or one in 95; in 1917, 1,477, or one in 86; in 1918, 1,370, or one in 91; and in 1919, 1,327, or one in 91. The number of cases of triplets is so small that a slight alteration in the total will completely change the proportion. Thus, they were one in 12,415 in 1914; one in 13,444 in 1915; one in 10,952 in 1916; one in 7,558 in 1917; one in 15,545 in 1918; and one in 8,064 in 1919. A case of quadruplets occurred in 1917, and another in 1919.

8. Ages of Parents.—The relative ages of the parents of children registered in 1919 have been tabulated separately for male and female births, twins and triplets being distinguished from single births, and are shewn for single ages and for every State in "Bulletin of Population and Vital Statistics, No. 37; Commonwealth Demography, 1919 and previous years." In the present work the exigencies of space allow only the insertion of corresponding tables shewing the relative ages of parents in groups of five years. It will be seen from the tables that the largest number of single births occurred where the ages of both father and mother were between 25 and 29. The largest number of mothers was also found at ages 25 to 29.

#### AGES OF PARENTS IN CASES OF SINGLE BIRTHS, COMMONWEALTH, 1919.

Ages of Fathers.		Total Children.	Ages of Mothers.								
			Under 15.	15 to 19.	20 to 24.	25 to 29.	30 to 34.	35 to 39.	40 to 44.	45 and upwards.	Un-specified.
Under 20	Males ..	253	..	101	54	8	..	..	..	..	..
	Females ..	252	..	162	84	6	..	..	..	..	..
	Total ..	505	..	353	138	14	..	..	..	..	..
20 to 24	Males ..	4,915	2	955	3,136	722	86	13	1	..	..
	Females ..	4,683	1	889	2,994	697	81	20	1	..	..
	Total ..	9,598	3	1,844	6,130	1,419	167	33	2	..	..
25 to 29	Males ..	14,181	1	519	5,355	6,792	1,327	169	18	..	..
	Females ..	13,473	1	535	5,042	6,427	1,282	172	13	1	..
	Total ..	27,654	2	1,054	10,397	13,219	2,609	341	31	1	..
30 to 34	Males ..	15,528	..	171	2,194	6,212	5,886	988	75	2	..
	Females ..	14,494	..	141	2,051	5,902	5,378	930	83	..	..
	Total ..	30,022	..	312	4,245	12,114	11,264	1,927	158	2	..
35 to 39	Males ..	11,476	..	50	652	2,522	4,460	3,392	388	10	2
	Females ..	10,775	..	46	622	2,377	4,130	3,265	326	9	..
	Total ..	22,251	..	96	1,274	4,899	8,590	6,657	714	19	2
40 to 44	Males ..	6,536	1	12	180	703	1,897	2,555	1,142	44	2
	Females ..	6,239	..	11	210	709	1,720	2,446	1,102	39	2
	Total ..	12,775	1	23	390	1,412	3,617	5,001	2,244	83	4
45 to 49	Males ..	3,522	..	10	62	290	715	1,339	970	135	1
	Females ..	3,349	..	4	83	296	629	1,304	907	126	..
	Total ..	6,871	..	14	145	586	1,344	2,643	1,877	261	1
50 to 54	Males ..	1,311	..	1	35	92	252	423	425	82	1
	Females ..	1,178	..	4	21	93	209	381	388	82	..
	Total ..	2,489	..	5	56	185	461	804	813	164	1
55 to 59	Males ..	387	..	..	9	35	77	118	102	46	..
	Females ..	381	..	..	6	26	77	122	110	31	..
	Total ..	768	..	..	15	61	154	240	221	77	..
60 to 64	Males ..	119	..	..	..	9	22	41	41	5	1
	Females ..	113	..	..	3	7	18	39	41	5	..
	Total ..	232	..	..	3	16	40	80	82	10	1
65 and upwards	Males ..	47	..	..	2	3	13	13	10	6	..
	Females ..	38	..	..	2	4	5	12	11	4	..
	Total ..	85	..	..	4	7	18	25	21	10	..
Not stated	Males ..	8	..	..	1	1	3	1	..	..	2
	Females ..	4	..	..	..	1	2	..	1	..	..
	Total ..	12	..	..	1	2	5	1	1	..	2
Nuptial children	Males ..	58,283	4	1,909	11,680	17,389	14,738	9,052	3,172	330	9
	Females ..	54,979	2	1,792	11,118	16,545	13,531	8,700	2,992	297	2
	Total ..	113,262	6	3,701	22,798	33,934	28,269	17,752	6,164	627	11
Ex-nuptial children	Males ..	3,317	14	820	1,250	625	326	199	64	9	10
	Females ..	3,050	8	750	1,157	584	303	179	56	7	6
	Total ..	6,367	22	1,570	2,407	1,209	629	378	120	16	16
Total children	Males ..	61,600	18	2,729	12,930	18,014	15,064	9,251	3,236	339	19
	Females ..	58,029	10	2,542	12,275	17,129	13,834	8,879	3,048	304	8
	Total ..	119,629	28	5,271	25,205	35,143	28,898	18,130	6,284	643	27

## AGES OF PARENTS OF TWINS, COMMONWEALTH, 1919.

Ages of Fathers.			Total Children.	Ages of Mothers.						
				Under 20.	20 to 24.	25 to 29.	30 to 34.	35 to 39.	40 to 44.	45 and upwards.
20 to 24	Males ..	..	78	9	54	9	6	..	..	..
	Females ..	..	63	13	45	3	2	..	..	..
	Total ..	..	141	22	99	12	8	..	..	..
25 to 29	Males ..	..	252	2	77	129	39	..	..	..
	Females ..	..	239	6	95	106	21	11	..	..
	Total ..	..	491	8	172	235	60	16	..	..
30 to 34	Males ..	..	331	..	38	103	151	36	3	..
	Females ..	..	320	..	48	104	137	24	3	..
	Total ..	..	651	4	86	207	288	60	6	..
35 to 39	Males ..	..	299	..	10	53	118	101	17	..
	Females ..	..	318	..	12	47	120	126	13	..
	Total ..	..	617	..	22	100	238	227	30	..
40 to 44	Males ..	..	184	..	1	18	53	80	32	..
	Females ..	..	169	..	1	12	29	105	22	..
	Total ..	..	353	..	2	30	82	185	54	..
45 to 49	Males ..	..	79	..	1	4	9	31	33	1
	Females ..	..	82	..	3	12	3	31	30	3
	Total ..	..	161	..	4	16	12	62	63	4
50 to 54	Males ..	..	23	..	..	2	4	11	4	2
	Females ..	..	31	..	..	4	4	11	8	4
	Total ..	..	54	..	..	6	8	22	12	6
55 to 59	Males ..	..	14	..	..	2	4	3	5	..
	Females ..	..	16	..	..	2	2	3	9	..
	Total ..	..	30	..	..	4	6	6	14	..
60 and over	Males ..	..	5	..	..	1	2	2	..	..
	Females ..	..	3	..	..	1	..	..	2	..
	Total ..	..	8	..	..	2	2	2	2	..
Nuptial children	Males ..	..	1,265	11	181	321	386	269	94	3
	Females ..	..	1,241	23	204	291	318	311	87	7
	Total ..	..	2,506	34	385	612	704	580	181	10
Ex-nuptial children	Males ..	..	48	8	20	9	9	2	..	..
	Females ..	..	58	4	20	19	9	6	..	..
	Total ..	..	106	12	40	28	18	8	..	..
Total children	Males ..	..	1,313	19	201	330	395	271	94	3
	Females ..	..	1,299	27	224	310	327	317	87	7
	Total ..	..	2,612	46	425	640	722	588	181	10

## AGES OF PARENTS OF TRIPLETS, COMMONWEALTH, 1919.

Ages of Fathers.			Total Children.	Ages of Mothers.				
				20 to 24.	25 to 29.	30 to 34.	35 to 39.	40 to 44.
25 to 29	Males ..	..	..	..	3	6	..	..
	Females ..	..	..	0	3	6	..	..
	Total ..	..	..	0	6	12	..	..
30 to 34	Males ..	..	..	..	..	4	7	..
	Females ..	..	..	..	..	6	5	..
	Total ..	..	..	18	..	12	..	..
35 to 39	Males ..	..	..	4	1	2	1	..
	Females ..	..	..	8	2	4	2	..
	Total ..	..	..	12	3	6	3	..
40 to 44	Males ..	..	..	1	..	..	..	1
	Females ..	..	..	2	..	..	..	2
	Total ..	..	..	3	..	..	..	3
45 to 49	Males ..	..	..	..	..	..	..	..
	Females ..	..	..	3	..	..	..	3
	Total ..	..	..	3	..	..	..	3
Nuptial children	Males ..	..	..	14	1	2	9	1
	Females ..	..	..	31	5	10	9	5
	Total ..	..	..	45	6	12	18	6
Total children	Males ..	..	..	14	1	2	9	1
	Females ..	..	..	31	5	10	9	5
	Total ..	..	..	45	6	12	18	6

No conclusions can, of course, be drawn from one year's figures as to variations in the masculinity of the births at different ages of the parents, but so far as the figures go they indicate a few conclusions which may be mentioned, viz. : In cases where the father is older than the mother the masculinity has a tendency to be above the average, while in cases where both parents belong to the same age group, or where the father is younger than the mother, the masculinity is rather below the average. It is also below the average in cases where the father, or both father and mother, are under 25 ; and it is above the average where the mother alone is under 25.

9. **Birthplaces of Parents.**—The relative birthplaces of the parents of children whose births were registered during the year 1919 will be found tabulated in the Bulletin before-mentioned. A summary of the results of the tabulation is here given :—

**BIRTHPLACES OF PARENTS OF CHILDREN, COMMONWEALTH, 1919.**

[illegible]



BIRTHPLACES OF PARENTS OF CHILDREN—*continued.*

Birthplaces.	Fathers.			Mothers of Nuptial Children.			Mothers of Ex-nuptial Children.		
	Single Births.	Twins.	Trip-lets.	Single Births.	Twins.	Trip-lets.	Single Births.	Twins.	Quad-ruplet.
<b>ASIA—<i>continued.</i></b>									
Arabia .. ..	2	..	..	1	..	..	..	..	..
China .. ..	111	..	..	24	..	..	1	..	..
Japan .. ..	20	..	..	10	..	..	..	..	..
Java .. ..	6	..	..	3	..	..	..	..	..
Philippine Islands..	3	..	..	2	..	..	..	..	..
Syria .. ..	68	..	..	47	..	..	..	..	..
Other Asiatic Coun-tries ..	12	..	..	10	..	..	1	..	..
<b>AFRICA—</b>									
Mauritius .. ..	10	..	..	3	..	..	..	..	..
S. Africa, Union of	83	..	..	87	..	..	4	..	..
Egypt .. ..	8	..	..	10	..	..	1	..	..
Other African Brit-ish Possessions ..	..	..	..	..	..	..	..	..	..
Other African Coun-tries ..	5	..	..	6	..	..	1	..	..
<b>AMERICA—</b>									
Canada .. ..	98	..	..	21	..	..	2	..	..
Jamaica .. ..	1	..	..	1	..	..	..	..	..
Newfoundland ..	2	..	..	1	..	..	..	..	..
Other American Brit-ish Possessions ..	8	..	..	3	..	..	..	..	..
Argentine Republic	2	..	..	1	..	..	..	..	..
Brazil .. ..	3	..	..	..	..	..	..	..	..
Chile .. ..	2	..	..	3	..	..	1	..	..
Mexico .. ..	4	..	..	1	..	..	..	..	..
Peru .. ..	1	..	..	..	..	..	..	..	..
United States of America ..	159	2	..	72	..	..	1	..	..
Other American Countries ..	36	..	..	18	..	..	..	..	..
<b>POLYNESIA—</b>									
Fiji .. ..	25	..	..	20	..	..	6	..	..
Friendly Islands ..	3	..	..	1	..	..	..	..	..
Papua .. ..	2	..	..	2	..	..	..	..	..
Other Polynesian British Possessions	6	..	..	1	..	..	..	..	..
New Caledonia ..	7	..	..	7	..	..	..	..	..
New Hebrides ..	3	..	..	1	..	..	..	..	..
Samoa .. ..	2	..	..	..	..	..	..	..	..
Other Polynesian Islands ..	3	..	..	..	..	..	..	..	..
South Sea Islands (so described) ..	17	..	..	..	..	..	..	..	..
At Sea .. ..	69	1	..	40	1	..	1	..	..
Unspecified ..	46	..	..	40	..	..	19	..	..
<b>Total ..</b>	<b>113,262</b>	<b>1,258</b>	<b>15</b>	<b>113,262</b>	<b>1,258</b>	<b>15</b>	<b>6,367</b>	<b>53</b>	<b>1</b>

10. **Occupations of Fathers.**—A summary of the occupations of the fathers of all nuptial children, whose births were registered in 1919, will be found in the following table. The figures include all the States and Territories of the Commonwealth.

## OCCUPATIONS OF FATHERS OF ALL NUPTIAL CHILDREN, COMMONWEALTH, 1919.

Occupations.	Number of Fathers.	Occupations.	Number of Fathers.
<b>CLASS I.—PROFESSIONAL.</b>		<b>CLASS III.—COMMERCIAL—<i>contd.</i></b>	
General Government .. ..	549	Stone, Clay and Glass .. ..	34
Local Government .. ..	103	Gold, Silver, and Precious Stones ..	1
Defence .. ..	987	Ironmongery .. ..	167
Law and Order .. ..	1,106	Merchants, Importers .. ..	392
Religion .. ..	379	Shopkeepers and Assistants .. ..	1,085
Charities .. ..	3	Dealers and Hawkers .. ..	340
Health .. ..	982	Agents and Brokers .. ..	524
Literature .. ..	114	Clerks, Bookkeepers, &c. .. ..	4,161
Science .. ..	85	Commercial Travellers, Salesmen ..	1,416
Civil Engineering, Architecture, and Surveying .. ..	343	Others engaged in Commercial Pursuits .. ..	1,305
Education .. ..	709	Speculators on Chance Events ..	51
Fine Arts .. ..	123	Storage .. ..	11
Music .. ..	122	Total Commercial .. ..	16,501
Amusements .. ..	458		
Total Professional .. ..	6,063	<b>CLASS IV.—TRANSPORT AND COMMUNICATION.</b>	
<b>CLASS II.—DOMESTIC.</b>		Railway Traffic .. ..	4,754
Hotelkeepers and Assistants ..	825	Tramway Traffic .. ..	993
Others engaged in providing board and lodging .. ..	158	Road Traffic .. ..	5,269
House Servants .. ..	13	Sea and River Traffic .. ..	1,578
Coachmen and Grooms .. ..	106	Postal Service .. ..	598
Hairdressers .. ..	516	Telegraph and Telephone Service ..	525
Laundrymen .. ..	42	Messengers, &c. .. ..	18
Others engaged in domestic occupations .. ..	225	Total Transport & Communication ..	13,735
Total Domestic .. ..	1,885		
<b>CLASS III.—COMMERCIAL.</b>		<b>CLASS V.—INDUSTRIAL.</b>	
Banking and Finance .. ..	478	Books and Publications .. ..	739
Insurance and Valuation .. ..	531	Musical Instruments .. ..	66
Landed and House Property ..	155	Prints, Pictures and Art Materials ..	56
Property Rights n.e.i. .. ..	3	Ornaments and Small Wares .. ..	144
Books, Publications, Advertising ..	144	Equipment for Sports and Games ..	4
Musical Instruments .. ..	9	Medals, Type, and Dies .. ..	36
Prints, Pictures and Art Materials ..	1	Watches, Clocks, and Scientific Instruments .. ..	135
Ornaments and Small Wares .. ..	5	Surgical Instruments .. ..	17
Watches, Clocks, Jewellery .. ..	59	Arms and Ammunition .. ..	34
Surgical Instruments .. ..	2	Engines, Machines, Tools, and Implements .. ..	1,541
Arms and Ammunition .. ..	1	Carriages and Vehicles .. ..	1,093
Machinery .. ..	27	Harness, Saddlery & Leatherware ..	401
Carriages and Vehicles .. ..	41	Ships, Boats, &c. .. ..	145
Harness, Saddlery & Leatherware ..	..	Furniture .. ..	645
Ships and Boats .. ..	14	Building Materials .. ..	832
Building Materials .. ..	16	Chemicals and By-products .. ..	51
Furniture .. ..	51	Textile Fabrics .. ..	175
Chemicals and By-products .. ..	9	Dress .. ..	1,838
Paper and Stationery .. ..	48	Fibrous Materials .. ..	51
Textile Fabrics .. ..	495	Animal Food .. ..	356
Dress .. ..	173	Vegetable Food .. ..	1,454
Fibrous Materials .. ..	6	Groceries, Drinks, Narcotics, and Stimulants .. ..	339
Animal Food .. ..	2,199	Animal Matter not elsewhere clsd. ..	303
Vegetable Food .. ..	589	Workers in wood not elsewhere clsd ..	163
Groceries, Drinks, Narcotics, and Stimulants .. ..	1,245	Vegetable Produce for Fodder .. ..	8
Living Animals .. ..	171	Paper .. ..	10
Leather, Raw Materials .. ..	35	Stone, Clay, Glass, &c. .. ..	486
Wool and Tallow .. ..	62	Jewellery and Precious Stones .. ..	153
Hay, Corn, &c. .. ..	188	Metals, other than Gold & Silver ..	2,704
Other Vegetable Matter, n.e.i. ..	98	Gas, Electric Lighting, &c. .. ..	910
Wood and Coal .. ..	159		

OCCUPATIONS OF FATHERS OF ALL NUPTIAL CHILDREN—*continued.*

Occupations.	Number of Fathers.	Occupations.	Number of Fathers.
<b>CLASS V.—INDUSTRIAL—<i>contd.</i></b>		<b>CLASS VI.—AGRICULTURAL, PASTORAL, MINING, ETC.</b>	
Building—		Agricultural .. ..	19,134
Builders .. ..	479	Pastoral .. ..	3,849
Stonemasons .. ..	183	Dairy Farming .. ..	1,093
Bricklayers .. ..	480	Bees, Fisheries, and Wild Animals	441
Carpenters .. ..	2,520	Forestry .. ..	775
Slaters .. ..	62	Water Conservation and Supply	111
Plasterers .. ..	258	Mines and Quarries .. ..	4,188
Painters .. ..	1,008	Total Primary Producers	29,591
Plumbers .. ..	678		
Signwriters .. ..	71	<b>CLASS VII.—INDEFINITE.</b>	
Others .. ..	6	Independent Means, having no specific occupation .. ..	54
Roads, Railways, Earthworks ..	183	Occupation not stated .. ..	48
Disposal of the Dead .. ..	34	Total Indefinite .. ..	102
Disposal of Refuse .. ..	106		
Other Industrial Workers—		<b>CLASS VIII.—DEPENDENTS.</b>	
Manufacturers, etc. .. ..	491	Dependent Relatives .. ..	1
Engineers, Firemen .. ..	2,858	Dependent on State .. ..	21
Contractors .. ..	1,112	Total Dependents .. ..	22
Labourers, undefined .. ..	20,887	Total all Occupations .. ..	114,535
Others .. ..	331		
Total Industrial .. ..	46,636		

11. *Mother's Age, Duration of Marriage, and Issue.*—A tabulation has been made shewing, in age-groups, the duration of marriage and issue of mothers. The total number of nuptial confinements in 1919 was 114,535, viz., 113,262 single births, 1,258 cases of twins, and 15 cases of triplets. Account has been taken in the number of births of only 2,506 twins (not 2,516), 10 cases of still births having been excluded. From this number 79 mothers must be deducted, in whose case the necessary particulars either as to date of marriage or as to previous issue were not stated. The tables refer, therefore, to a total of 114,456 mothers. They exclude children by former marriages and still-born children, but include ex-nuptial children, previous issue by the same father. The tables cannot be given *in extenso*, but the following are their most salient features. The complete tabulations are shewn in "Commonwealth Bulletin of Population and Vital Statistics, No. 37; Commonwealth Demography, 1919, and previous years."

DURATION OF MARRIAGE AND ISSUE OF MOTHERS OF ALL AGES,  
COMMONWEALTH, 1919.

Duration of Marriage.	Total Mothers.	Total Issue.	Average Number of Children.	Duration of Marriage.	Total Mothers.	Total Issue.	Average Number of Children.
Years.				Years.			
0-1 ..	15,958	16,199	1.01	18-19 ..	1,391	10,446	7.51
1-2 ..	7,762	8,660	1.12	19-20 ..	1,293	10,051	7.77
2-3 ..	7,509	12,996	1.73	20-21 ..	918	7,601	8.28
3-4 ..	9,526	19,172	2.01	21-22 ..	672	5,745	8.55
4-5 ..	9,367	22,606	2.41	22-23 ..	479	4,298	8.97
5-6 ..	8,903	25,025	2.81	23-24 ..	342	3,251	9.51
6-7 ..	7,527	23,885	3.17	24-25 ..	242	2,335	9.65
7-8 ..	7,035	24,812	3.53	25-26 ..	193	1,941	10.06
8-9 ..	5,948	22,909	3.85	26-27 ..	113	1,166	10.32
9-10 ..	5,361	22,908	4.27	27-28 ..	78	817	10.47
10-11 ..	4,504	20,873	4.63	28-29 ..	46	492	10.70
11-12 ..	4,020	20,041	4.99	29-30 ..	36	417	11.58
12-13 ..	3,662	19,450	5.31	30-31 ..	12	116	9.67
13-14 ..	3,074	17,476	5.69	31-32 ..	4	55	13.75
14-15 ..	2,646	16,126	6.09	32-33 ..	3	39	13.00
15-16 ..	2,276	14,546	6.39	35-36 ..	2	23	11.50
16-17 ..	1,784	11,805	6.62				
17-18 ..	1,770	12,457	7.04	Total ..	114,456	380,739	3.33

## AGES AND ISSUE OF MOTHERS, COMMONWEALTH, 1919.

Ages of Mothers.	Total Mothers.	Total Issue.	Average Number of Children.	Ages of Mothers.	Total Mothers.	Total Issue.	Average Number of Children.
Under 20 years	3,723	4,440	1.19	40-44 years ..	6,254	40,849	6.53
20-24 years ..	22,968	40,883	1.78	45 yrs. and over	632	5,069	8.02
25-29 " ..	34,233	91,202	2.65				
30-34 " ..	28,611	107,541	3.76				
35-39 " ..	18,035	90,755	5.03	All ages ..	114,456	380,739	3.33

## PREVIOUS ISSUE OF MOTHERS OF VARIOUS AGES, COMMONWEALTH, 1919.

Previous Issue.	Mothers' Ages.							
	Under 20 Years.	20-24 Years.	25-29 Years.	30-34 Years.	35-39 Years.	40-44 Years.	45 Years and Over.	Total.
0	3,085	11,584	8,802	3,619	1,341	318	18	28,767
1	580	6,724	9,266	5,136	1,970	347	20	24,043
2	55	3,317	7,384	5,769	2,494	495	29	19,543
3	2	1,070	4,766	4,817	2,584	601	44	13,884
4	1	221	2,476	3,767	2,439	696	51	9,651
5	..	45	1,004	2,645	2,171	673	65	6,603
6	..	7	388	1,603	1,799	762	55	4,614
7	..	..	113	773	1,354	693	71	3,004
8	..	..	26	304	906	573	59	1,868
9	..	..	5	123	507	427	59	1,121
10	..	..	3	30	290	308	52	683
11	..	..	..	17	103	190	35	345
12	..	..	..	6	44	87	31	168
13	..	..	..	2	17	48	21	88
14	..	..	..	..	5	22	17	44
15	..	..	..	..	6	10	5	21
16	..	..	..	..	3	2	..	5
17	..	..	..	..	2	1	..	3
18	..	..	..	..	..	1	..	1
Total Mothers	3,723	22,968	34,233	28,611	18,035	6,254	632	114,456

The tables shew a fairly regular increase in the number of children up to the period where the marriage has lasted twenty years, and it appears that the average interval between successive confinements up to that period was rather more than two years and eight months. The average number of children of all marriages was 3.33, the corresponding figures for 1918 having been 3.34; for 1917, 3.29; for 1916, 3.29; for 1915, 3.26; for 1914, 3.22; and for 1913, 3.21.

A similar table has been prepared shewing the previous issue of mothers of twins and triplets, from which it appears that 255 mothers had twins at their first confinement; 232 at their second; 215 at their third; 167 at their fourth; 138 at their fifth; 82 at their sixth; 59 at their seventh; 40 at their eighth; 33 at their ninth; 14 at their tenth; 12 at their eleventh; 4 at their twelfth; 5 at their thirteenth; 2 at their fourteenth; and 1 at the seventeenth.

Of the 15 cases of triplets, 1 occurred at the first confinement; 3 at the second; 4 at the third; 1 at the fourth; 2 at the fifth; and one each at the sixth, seventh, ninth, and twelfth.

12. **Interval between Marriage and First Birth.**—The following table shows the interval between marriage and first birth. Twins and triplets are included, the eldest born only being enumerated :—

**INTERVAL BETWEEN MARRIAGE AND FIRST BIRTH, COMMONWEALTH, 1919.**

Interval.	Number of First Children.	Interval.	Number of First Children.	Interval.	Number of First Children.	Interval.	Number of First Children.
Under 1 mth.	421	13 mths.	928	3 years	1,450	15 years	8
1 month ..	447	14 "	825	4 "	789	16 "	10
2 months ..	607	15 "	757	5 "	403	17 "	3
3 " ..	809	16 "	637	6 "	264	18 "	6
4 " ..	984	17 "	516	7 "	187	19 "	4
5 " ..	1,299	18 "	499	8 "	137	20 "	4
6 " ..	1,678	19 "	413	9 "	82	21 "	2
7 " ..	1,643	20 "	394	10 "	51	22 "	3
8 " ..	1,214	21 "	291	11 "	44	23 "	1
9 " ..	2,805	22 "	256	12 "	23	26 "	2
10 " ..	2,276	23 "	162	13 "	16		
11 " ..	1,703	2 years	2,369	14 "	16	Total	28,767
12 " ..	1,299						

Of these 28,767 children, 14,786 were males and 13,981 were females; the masculinity of first births was therefore 2.80 as compared with 2.92 for total births.

The previous issue of mothers of ex-nuptial children is not recorded, but for the purposes of the following table all ex-nuptial births have been assumed to be first births. The table shows the ages of mothers of ex-nuptial births, of nuptial births occurring less than nine months after marriage, and of nuptial births occurring nine months or more after marriage. A comparison of the combined total of the first two columns with the total of nuptial children born nine months or more after marriage reveals the fact that for all ages the ratio of the two was about as 4 is to 5. At all ages up to and including 21, however, there was a great preponderance of ex-nuptial births and of births following on ante-nuptial conception. It must, of course, be understood that a certain number of premature births are necessarily included among the births which occurred less than nine months after marriage, but there is no means of arriving at the proportion of those births.

**AGES OF MOTHERS AND INTERVAL BETWEEN MARRIAGE AND FIRST BIRTH, ETC., COMMONWEALTH, 1919.**

Age of Mother at Birth of Child.	Ex-nuptial Births.	Nuptial Births less than nine months after Marriage.	Total of two preceding columns.	Nuptial Births nine months after Marriage and later.	Total Nuptial First Births.	Nuptial First Births and Ex-nuptial Births.
13 years ..	5	..	5	..	..	5
14 " ..	17	6	23	..	6	23
15 " ..	62	11	73	2	13	75
16 " ..	156	76	232	7	83	239
17 " ..	301	327	628	78	405	706
18 " ..	481	718	1,199	274	992	1,473
19 " ..	570	1,049	1,619	537	1,586	2,156
20 " ..	578	995	1,573	775	1,770	2,348
21 " ..	537	1,120	1,657	1,146	2,266	2,803
22 " ..	491	973	1,464	1,593	2,566	3,057
23 " ..	418	838	1,256	1,721	2,559	2,977
24 " ..	383	619	1,002	1,804	2,423	2,806
25 " ..	314	515	829	1,704	2,219	2,533
26 " ..	285	430	715	1,617	2,047	2,332
27 " ..	192	302	494	1,389	1,691	1,883
28 " ..	237	254	491	1,283	1,537	1,774
29 " ..	181	195	376	1,113	1,308	1,489

**BIRTH**—*continued.*

Age of Mother at Birth of Child.	Ex-nuptial Births.	Nuptial Births less than nine months after Marriage.	Total of two preceding columns.	Nuptial Births nine months after Marriage and later.	Total Nuptial First Births.	Nuptial First Births and Ex-nuptial Births.
30 years ..	169	155	324	929	1,084	1,253
31 " ..	130	110	240	691	801	931
32 " ..	131	91	222	639	730	861
33 " ..	107	62	169	481	543	650
34 " ..	92	65	157	396	461	553
35 " ..	91	48	139	357	405	496
36 " ..	77	30	107	268	298	375
37 " ..	72	31	103	205	236	308
38 " ..	73	17	90	226	243	316
39 " ..	65	16	81	143	159	224
40 " ..	46	17	63	104	121	167
41 " ..	21	8	29	59	67	88
42 " ..	25	10	35	62	72	97
43 " ..	23	3	26	31	34	57
44 " ..	5	4	9	20	24	29
45 " ..	10	2	12	6	8	18
46 " ..	5	3	8	2	5	10
47 " ..	..	1	1	3	4	4
48 " ..	..	1	1	..	1	1
49 " ..	..	..	..	..	..	..
50 " ..	..	..	..	..	..	..
51 " ..	..	..	..	..	..	..
52 " ..	1	..	1	..	..	1
53 " ..	..	..	..	..	..	..
Not stated ..	16	..	16	..	..	16
Total ..	6,367	9,102	15,469	19,665	28,767	35,134

These results have sometimes been wrongly interpreted. In order to make their true significance clearer, it may be pointed out that during the seven years 1908 to 1914 inclusive there was, in an average female population between the ages 12 to 54 inclusive of about 1,377,108, an annual average of 114,832 nuptial and 6,935 ex-nuptial confinements. Of the former, about 31,431 were first births, of which 10,952 occurred within 9 months of marriage (and 19,105 within 12 months), leaving 90,336 which were either not first confinements, or were ex-nuptial confinements. The female population between 12 and 54 inclusive was characterised as follows :—

"Never married" ..	690,845	"Married" ..	639,570
"Widowed" ..	44,764	"Divorced" ..	1,929

Thus the female population between the age limits mentioned, not living in the state of marriage, was 737,538 or 53.56 per cent., the married being 46.44 per cent. In the course of the period mentioned, the proportion of married women giving birth during the interval of 0 to 9 months from marriage was 0.34843 of the total nuptial first confinements, or 0.09537 of the total nuptial confinements. During the same period 269,452 marriages were consummated, the brides aged 12 to 54 inclusive being 267,852 in number. Thus the relative numbers can be set out as follow, the basis being 1,000,000 females of the ages of 12 to 54 inclusive.

## CHARACTERISTICS OF FERTILITY IN AUSTRALIA, 1908-1914.

1,000,000 Females, ages 12 to 54 inclusive.					Confinements, Average for 1 Year.						Marriages, Ages 12-54 inclusive.	
					First Confinements.			All Confinements.				
Married.	Never Married.	Widowed.	Divorced.	Total.	After 9 Months.	Within 9 Months.	Total.	Nuptial.	Ex-nuptial.	Total.	Marriages.	First Confinements.
464,430	501,663	32,506	1,401	1,000,000	14,871	7,953	22,824	83,387	5,035	88,422	194,503	159,769
		535,570		1,000,000	(6,516)	(3,484)	(10,000)	(34,306)	(5,694)	(40,000)	(100,000)	(82,142)
464,430								17,955				
100,000		1,000,000							9,401			

If the total ex-nuptial cases in the 7 years (48,546) be added to the total nuptial cases born within 9 months of marriage (76,662), the grand total is 125,208, which is equivalent for 7 years to 90,921 for the 1,000,000 females of ages 12 to 54 inclusive. The ratio of the sum of the ex-nuptial children and those born within 9 months of marriage in one year to the total unmarried (*i.e.*, never married, widowed, and divorced) is consequently 0.02425, or about one-fortieth, while the ratio of the births within 9 months of marriage to the total unmarried females is 0.01485, or about one-seventieth. The matter may be put another way. In a female population of 1,000,000 of ages 12 to 54, there are on the average per diem 62.48 first births, the ex-nuptial births are 13.79 per diem; and the nuptial births, occurring within 9 months of marriage, are 21.77 per diem, the total births being 242.06 per diem, of which 228.27 are nuptial.

13. **Interval between Birth and Registration of Birth.**—Information was obtained during 1919 as to the period elapsing between birth and registration. The law relating to maternity allowances has tended to accelerate the registration of births; and during the year under review it was found that 36 per cent. approximately were registered in the first week.

#### INTERVAL BETWEEN BIRTH AND REGISTRATION, COMMONWEALTH, 1919.

Interval.	Nuptial Births.	Ex-nuptial Births.	Total Births.	Interval.	Nuptial Births.	Ex-nuptial Births.	Total Births.
Under 1 day	1,403	104	1,507	39 days ..	485	20	505
1 day ..	5,114	493	5,607	40 .. ..	522	15	537
2 days ..	6,968	620	7,588	41 .. ..	495	20	515
3 .. ..	7,492	515	8,007	42 .. ..	430	18	448
4 .. ..	7,333	330	7,663	43 .. ..	321	17	338
5 .. ..	6,710	273	6,983	44 .. ..	321	7	328
6 .. ..	6,342	227	6,569	45 .. ..	305	9	314
7 .. ..	5,803	188	5,991	46 .. ..	272	10	282
8 .. ..	5,210	194	5,404	47 .. ..	236	9	245
9 .. ..	4,665	180	4,845	48 .. ..	244	12	256
10 .. ..	4,364	203	4,567	49 .. ..	248	11	259
11 .. ..	4,404	267	4,671	50 .. ..	205	13	218
12 .. ..	4,171	300	4,471	51 .. ..	209	7	216
13 .. ..	4,183	309	4,492	52 .. ..	193	14	207
14 .. ..	3,682	260	3,942	53 .. ..	164	4	168
15 .. ..	3,125	232	3,357	54 .. ..	163	14	177
16 .. ..	2,723	196	2,919	55 .. ..	165	16	181
17 .. ..	2,369	157	2,526	56 .. ..	166	5	171
18 .. ..	2,236	114	2,350	57 .. ..	166	11	177
19 .. ..	1,987	105	2,092	58 .. ..	180	18	198
20 .. ..	1,880	96	1,976	59 .. ..	180	14	194
21 .. ..	1,748	88	1,836	60 .. ..	109	13	122
22 .. ..	1,501	74	1,575	61 to 69 days	267	21	288
23 .. ..	1,442	73	1,515	70 .. 79 ..	122	14	136
24 .. ..	1,272	63	1,335	80 .. 89 ..	77	12	89
25 .. ..	1,199	51	1,250	90 .. 99 ..	28	8	36
26 .. ..	1,135	46	1,181	100 .. 109 ..	25	5	30
27 .. ..	1,095	39	1,134	110 .. 119 ..	15	4	19
28 .. ..	979	45	1,024	120 .. 129 ..	9	9	18
29 .. ..	943	49	992	130 .. 139 ..	15	7	22
30 .. ..	857	32	889	140 .. 149 ..	5	3	8
31 .. ..	795	28	823	150 .. 159 ..	7	1	8
32 .. ..	737	33	770	160 .. 169 ..	9	3	12
33 .. ..	696	22	718	170 .. 179 ..	5	6	11
34 .. ..	632	24	656	180 .. 365 ..	22	4	26
35 .. ..	603	18	621	1 to 2 years	..	..	..
36 .. ..	582	20	602	2 years and over	2	1	3
37 .. ..	548	20	568				
38 .. ..	498	14	512	Total Births	115,813	6,477	122,290

The weighted average interval between the dates of birth and registration has been found to be about 13 days both for nuptial and ex-nuptial children since the granting of the maternity allowance.

## 2. Marriages.

1. **Marriages, 1913 to 1919.**—The number of marriages registered in the Commonwealth in 1915 was 45,224, the highest number ever recorded. In 1914 the number of marriages and the marriage rate increased in all the States with the exception of South Australia and Tasmania, and in 1915 there were further increases both in the actual number of marriages and in the marriage rate in all States, with the exception of South Australia and Western Australia. A considerable decrease, however, took place in 1916, and a still further fall in 1917 and 1918, the actual number of marriages in the latter years being about the same as in 1909. In 1919 there was a substantial recovery to the figures of 1916. The number of marriages in each State since 1913 is shewn below :—

### TOTAL MARRIAGES, COMMONWEALTH, 1913 TO 1919.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	North. Terr.	Federal Terr.	Commonwealth.
1913 ..	16,307	11,324	5,655	4,094	2,572	1,620	16	6	41,594
1914 ..	17,357	11,829	5,894	4,010	2,660	1,543	17	1	43,311
1915 ..	18,095	12,832	6,135	3,965	2,581	1,600	12	4	45,224
1916 ..	16,316	11,342	5,208	3,602	2,365	1,433	19	4	40,289
1917 ..	13,246	9,505	4,868	3,252	1,621	1,138	34	2	33,666
1918 ..	13,194	9,156	4,815	3,190	1,612	1,131	39	4	33,141
1919 ..	15,809	11,706	5,429	3,855	2,194	1,513	25	9	40,540

2. **Marriage Rates, 1913 to 1919.**—The number of marriages registered per thousand of mean population is shewn in the following table for the same period :—

### CRUDE MARRIAGE RATE (a), COMMONWEALTH, 1913 TO 1919.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	North. Terr.	Federal Terr.	Commonwealth.
1913 ..	9.02	8.13	8.67	9.44	8.19	8.27	4.37	2.45	8.66
1914 ..	9.37	8.31	8.73	9.11	8.22	7.78	4.53	0.38	8.80
1915 ..	9.68	9.00	8.93	9.01	8.01	8.03	2.73	1.62	9.14
1916 ..	8.74	8.05	7.69	8.32	7.51	7.23	3.92	1.53	8.21
1917 ..	7.09	6.76	7.16	7.52	5.25	5.72	6.86	0.80	6.87
1918 ..	6.90	6.46	6.99	7.25	5.18	5.55	7.81	1.65	6.65
1919 ..	8.04	7.98	7.62	8.46	6.78	7.16	5.20	3.89	7.88

(a) Number of marriages (not persons married) per 1,000 of mean annual population.

As in some international tabulations the marriage rates are calculated per 1,000 of the unmarried population of 15 years and over, the corresponding rates have been worked out for the Commonwealth for the four last Census periods. The figures comprise in each case the Census year with the year immediately preceding and the year immediately following, and are as follows :—Years 1880–82, 48.98; years 1890–92, 45.74; years 1900–02, 42.14; years 1910–12, 50.10. These rates refer, of course, to persons married and not to marriages, as is the case in the preceding table.

3. **Marriage Rates in Various Countries.**—A comparison of the Australian marriage rate with that of European countries shews that until 1915 it was once or twice surpassed by the rate for Ontario, and equalled by the rate of some of the countries of the East of Europe, and that it was higher than the rate of the countries of Central and Western Europe, and especially than the rate of countries of the North of Europe. Since 1915 it has fallen considerably, as might be expected, but figures for European countries not being available for the last few years, a strict comparison cannot at present be made.



## CRUDE MARRIAGE RATES.—VARIOUS COUNTRIES.

Country.	Year.	Crude Marriage Rate.	Country.	Year.	Crude Marriage Rate.
Serbia .. ..	1911	10.3	Italy .. ..	1914	7.1
Bulgaria .. ..	1911	9.4	England and Wales ..	1917	6.9
Hungary .. ..	1912	8.6	Denmark .. ..	1915	6.9
Rumania .. ..	1914	8.5	Western Australia ..	1919	6.8
South Australia ..	1919	8.5	Netherlands .. ..	1915	6.6
Japan .. ..	1913	8.1	United Kingdom .. ..	1917	6.6
Belgium .. ..	1912	8.0	Norway .. ..	1915	6.5
Prussia .. ..	1912	8.0	Spain .. ..	1914	6.5
New South Wales ..	1919	8.0	Scotland .. ..	1917	6.3
Victoria .. ..	1919	8.0	Sweden .. ..	1915	5.8
Australia .. ..	1919	7.9	Finland .. ..	1914	5.7
Russia (European) ..	1909	7.9	New Zealand .. ..	1918	5.6
Ontario (Canada) ..	1917	7.7	Chile .. ..	1914	5.2
German Empire .. ..	1913	7.7	Ceylon .. ..	1918	5.1
Queensland .. ..	1919	7.6	Switzerland .. ..	1915	5.0
France .. ..	1913	7.5	Ireland .. ..	1917	4.9
Austria .. ..	1912	7.4	Jamaica .. ..	1915	3.0
Tasmania .. ..	1919	7.2			

4. Age at Marriage.—(a) The age at marriage of bridegrooms and brides will be found in the following table, the previous conjugal condition of the contracting parties being distinguished. It will be seen that no less than 1,614 males who were less than twenty-one years of age were married during 1919. The corresponding number of females was 6,983. At the other extreme there were 191 men of sixty-five years and upwards, who described themselves as bachelors, and 44 spinsters of corresponding age.

AGES AND CONJUGAL CONDITION OF PERSONS MARRIED,  
COMMONWEALTH, 1919.

Age at Marriage.	Bridegrooms.				Brides.			
	Bachelors.	Widowers.	Divorced.	Total.	Spinsters.	Widows.	Divorced.	Total.
14 years ..	..	..	..	..	14	..	..	14
15 " ..	..	..	..	..	48	..	..	48
16 " ..	6	..	..	6	248	..	..	248
17 " ..	57	..	..	57	744	..	..	744
18 " ..	229	..	..	229	1,538	3	..	1,541
19 " ..	484	..	..	484	2,074	2	1	2,077
20 " ..	837	1	..	838	2,306	4	1	2,311
21 " ..	2,040	2	..	2,042	4,212	23	2	4,237
22 " ..	2,214	3	..	2,217	3,429	38	4	3,471
23 " ..	2,564	7	..	2,571	3,413	58	6	3,477
24 " ..	2,833	8	5	2,846	3,222	43	10	3,280
25 " ..	3,099	14	5	3,118	2,799	81	8	2,888
26 " ..	3,066	20	6	3,092	2,534	77	16	2,627
27 " ..	2,835	31	7	2,873	2,072	83	16	2,171
28 " ..	2,721	48	13	2,782	1,800	98	24	1,922

AGES AND CONJUGAL CONDITION OF PERSONS MARRIED,  
COMMONWEALTH, 1919—*continued.*

Age at Marriage.	Bridegrooms.				Brides.			
	Bachelors.	Widowers.	Divorced.	Total.	Spinsters.	Widows.	Divorced.	Total.
29 years ..	2,332	70	14	2,416	1,420	86	15	1,521
30 " ..	1,973	58	14	2,045	1,080	113	26	1,219
31 " ..	1,563	60	19	1,642	764	88	22	874
32 " ..	1,380	68	21	1,469	665	100	31	796
33 " ..	1,043	92	21	1,156	552	84	17	653
34 " ..	974	76	19	1,069	470	85	24	579
35 " ..	793	90	16	899	352	69	18	439
36 " ..	661	74	15	750	320	88	17	425
37 " ..	539	86	22	647	257	66	22	345
38 " ..	541	87	14	642	229	101	16	346
39 " ..	463	102	16	581	203	78	14	295
40 " ..	352	88	14	454	177	82	19	278
41 " ..	246	81	9	336	107	43	6	156
42 " ..	226	91	13	330	114	71	18	203
43 " ..	176	64	11	251	94	68	7	169
44 " ..	162	67	12	241	68	53	5	126
45 " ..	177	96	5	278	78	54	6	138
46 " ..	117	76	7	200	67	64	6	137
47 " ..	128	69	8	205	40	48	5	93
48 " ..	115	78	8	201	47	50	5	102
49 " ..	127	77	11	215	32	37	6	75
50 " ..	78	61	7	146	33	37	2	72
51 " ..	49	53	3	105	19	27	3	49
52 " ..	53	63	4	120	22	31	2	55
53 " ..	46	61	3	110	12	25	1	38
54 " ..	27	65	5	97	11	29	3	43
55 " ..	40	62	2	104	9	19	1	29
56 " ..	19	58	2	79	9	16	3	28
57 " ..	23	55	4	82	5	9	1	15
58 " ..	25	36	2	63	6	20	..	26
59 " ..	17	38	4	59	7	14	..	21
60 " ..	13	35	2	50	3	15	1	19
61 " ..	8	34	2	44	2	14	..	16
62 " ..	9	26	2	37	5	15	..	20
63 " ..	4	31	1	36	3	7	..	10
64 " ..	3	25	..	28	1	12	..	13
65 " ..	8	22	..	30	1	10	..	11
66 " ..	5	25	..	30	1	8	..	9
67 " ..	6	18	..	24	1	4	..	5
68 " ..	2	18	..	20	..	4	..	4
69 " ..	2	15	..	17	..	4	..	4
70 " ..	1	12	..	13	..	2	..	2
71 " ..	1	6	..	7	..	2	..	2
72 " ..	..	3	..	3	..	2	..	2
73 " ..	..	7	..	7	..	1	..	1
74 " ..	2	7	..	9	..	1	..	1
75 " ..	..	7	..	7	..	2	..	2
76 " ..	..	4	..	4	..	..	..	..
77 " ..	1	10	1	12	..	..	..	..
78 " ..	..	3	..	3	..	..	..	..
81 " ..	..	2	..	2	..	..	..	..
83 " ..	..	..	..	..	..	1	..	1
84 " ..	..	1	..	1	..	..	..	..
91 " ..	..	1	..	1	..	..	..	..
94 " ..	..	1	..	1	..	..	..	..
Not stated	6	1	..	7	17	..	..	17
Total	37,521	2,650	369	40,540	37,756	2,374	410	40,540

(b) The relative ages of bridegrooms and brides are shewn for single years in "Bulletin of Population and Vital Statistics, No. 37"; a condensation into age-groups of five years is here given :—

### RELATIVE AGES OF PERSONS MARRIED, COMMONWEALTH, 1919.

Ages.	Total Bride- grooms.	Ages of Brides..								
		Under 15.	15 to 19.	20 to 24.	25 to 29.	30 to 34.	35 to 39.	40 to 44.	45 and upwards.	Not stated.
Ages of Bridegrooms.	Under 20 ..	776	1	532	225	16	1	..	1	..
	20 to 24 ..	10,514	6	2,470	6,629	1,254	125	18	9	1
	25 to 29 ..	14,281	3	1,166	6,649	5,343	921	153	33	10
	30 to 34 ..	7,381	2	325	2,256	2,810	1,514	379	64	27
	35 to 39 ..	3,519	1	111	708	1,033	828	570	146	70
	40 to 44 ..	1,612	1	30	196	361	396	305	212	111
	45 to 49 ..	1,099	..	18	75	168	198	246	212	182
	50 to 54 ..	578	..	3	23	56	89	106	113	188
	55 to 59 ..	387	..	2	10	24	32	41	90	188
	60 to 64 ..	195	..	..	4	8	8	19	30	125
	65 and upwards ..	191	..	1	1	5	9	13	21	141
	Not stated ..	7	..	..	..	1	..	..	1	..
Total Brides ..		40,540	14	4,658	16,776	11,129	4,121	1,850	932	1,043
										17

5. **Previous Conjugal Condition.**—In a previous table the total number of bachelors and spinsters, widowed and divorced persons, who were married during the year 1919, was shewn. In the following table the relative conjugal condition of the contracting parties is given :—

### RELATIVE CONJUGAL CONDITION OF PERSONS MARRIED, COMMONWEALTH, 1919.

Conjugal Condition.		Total Bridegrooms.	Brides.		
			Spinsters.	Widows.	Divorced.
Bridegrooms	Bachelors ..	37,521	35,637	1,576	308
	Widowers ..	2,650	1,831	742	77
	Divorced ..	369	288	56	25
Total Brides ..		40,540	37,756	2,374	410

6. **Birthplaces of Persons Married.**—Information as to the birthplaces of persons who were married in 1919 was not obtained in the State of Western Australia; the following figures refer, therefore, only to New South Wales, Victoria, Queensland, South Australia, Tasmania, the Northern Territory and Federal Territory. As might

be expected, there were more brides than bridegrooms who were natives of the Commonwealth. In "Bulletin No. 37, Commonwealth Demography," the relative birthplaces of bridegrooms and brides will be found tabulated.

### BIRTHPLACES OF PERSONS MARRIED, COMMONWEALTH (a), 1919.

Birthplaces.	Bridegrooms.	Brides.	Birthplaces.	Bridegrooms.	Brides.
<b>AUSTRALASIA—</b>			<b>ASIA—continued.</b>		
New South Wales ..	12,127	13,668	Philippine Islands ..	5	..
Victoria ..	10,669	11,108	Syria ..	12	10
Queensland ..	4,041	4,682	Other Asiatic		
South Australia ..	3,521	3,667	Countries ..	1	..
Western Australia ..	100	123			
Tasmania ..	1,702	1,802	<b>AFRICA—</b>		
Northern Territory ..	10	14	Union of South Africa	47	27
Federal Territory ..	1	..	Mauritius ..	1	1
New Zealand ..	391	249	Other African British Possessions ..	..	..
<b>EUROPE—</b>			Egypt ..	4	2
England ..	3,452	1,920	Other African Countries ..	1	1
Wales ..	93	45			
Scotland ..	775	459	<b>AMERICA—</b>		
Ireland ..	416	273	Canada ..	53	5
Isle of Man ..	9	4	Jamaica ..	1	..
Other European			Newfoundland ..	3	..
British Possessions	20	12	Other American British Possessions ..	5	1
Austria-Hungary ..	13	3	Argentine Republic ..	1	1
Belgium ..	9	3	Brazil ..	1	..
Denmark ..	51	11	Chile ..	..	3
France ..	28	15	Mexico ..	..	..
Germany ..	138	51	United States ..	106	18
Greece ..	62	17	Other American Countries ..	8	3
Italy ..	56	17			
Netherlands ..	33	7	<b>POLYNESIA —</b>		
Norway ..	44	3	Fiji ..	11	12
Portugal ..	1	..	Friendly Islands ..	2	..
Russia ..	100	27	Other Polynesian British Possessions	2	..
Spain ..	13	3	New Caledonia ..	3	8
Sweden ..	54	4	New Hebrides ..	1	1
Switzerland ..	17	1	Samoa ..	..	1
Other European Countries ..	15	4	Other Polynesian Islands ..	1	..
<b>ASIA—</b>			South Sea Islands (so described) ..	3	1
British India ..	35	18			
Ceylon ..	3	2	At sea ..	19	14
Straits Settlements ..	..	1	Not stated ..	10	17
Other Asiatic British Possessions ..	7	..			
Afghanistan ..	..	..			
Arabia ..	..	..			
China ..	31	7			
Japan ..	4	..			
Java ..	4	..			
			<b>Total</b> ..	<b>38,346</b>	<b>38,346</b>

(a) Exclusive of Western Australia.

7. Occupations and Ages of Bridegrooms.—A tabulation has been made of the occupations and ages of all males married in the Commonwealth in the years 1913 to 1919. In "Bulletin No. 37" the 1919 tabulation is shewn for orders of occupations; here it is repeated for classes only, with a subdivision of the Industrial class and of the class of Primary Producers. The average ages of the persons falling under those twelve subdivisions were determined, and it appears that, apart from the Indefinite class, which consists chiefly of persons who have retired from business and who are living on their own means, and where a high average age may naturally be expected, the average age ranges from 28.16 in the Transport and Communication class to 30.82 years in the Domestic class. The results obtained are shewn in the following table:—

## OCCUPATIONS AND AGES OF BRIDEGROOMS, COMMONWEALTH, 1919.

Ages at Marriage.	Industrial.						Primary Producers.					
	Professional.	Domestic.	Mercantile.	Transport and Communication.	Manufacturing.	Building and Construction.	Indefinite Industrial Workers.	Agricultural.	Pastoral.	Mines and Quarries.	Other Primary Producers.	Indefinite.
16 years	1	..	..	1	2	..	1	1	..	..	..	..
17 "	..	2	13	6	10	..	16	8	1	..	..	..
18 "	7	12	20	32	58	8	57	18	3	9	5	1
19 "	18	13	64	58	91	22	135	47	7	25	4	..
20 "	38	18	116	113	163	37	201	90	13	36	12	1
21 "	129	25	308	291	421	71	468	214	29	68	17	1
22 "	142	35	357	300	477	110	436	238	40	53	25	4
23 "	189	31	418	285	552	146	496	298	50	74	28	4
24 "	254	38	461	355	576	162	494	357	56	61	29	3
25 "	283	49	584	355	633	145	517	373	72	70	33	4
26 "	280	40	550	361	617	154	470	433	76	70	38	2
27 "	305	52	558	306	543	138	409	407	62	65	20	8
28 "	275	45	494	292	530	138	412	428	86	54	26	2
29 "	255	44	425	263	437	111	364	379	60	49	27	2
30 "	213	41	371	209	356	111	286	329	71	34	21	3
31 "	172	41	305	152	296	89	222	253	65	33	13	2
32 "	148	33	250	149	250	75	238	221	59	30	12	3
33 "	109	14	226	121	182	57	172	187	50	21	17	1
34 "	91	21	186	110	179	52	156	184	48	28	12	..
35 to 39 years	360	77	587	335	599	156	532	603	156	70	42	4
40 " 44 "	146	42	283	152	254	62	236	288	70	54	14	9
45 " 49 "	82	32	197	87	169	44	160	193	70	41	15	11
50 years and upwards	107	40	217	122	216	62	187	200	88	43	12	57
Not stated	..	..	..	..	..	..	1	3	..	1	1	1
Total	3,604	735	6,999	4,455	7,611	1,950	6,666	5,752	1,232	990	423	123
Average age—year 1919	29.69	30.82	29.33	28.16	28.35	29.04	28.41	30.17	30.40	29.36	29.17	40.41

The average age at marriage of brides has remained fairly stationary during the period at an average of nearly 26 years. The figures for the seven years are:—1913, 25.78 years; 1914, 25.78 years; 1915, 25.75 years; 1916, 26.07 years; 1917, 26.22 years; 1918, 26.11 years; and 25.77 years in 1919. For the five years 1907–11 the average age was 25.70 years, compared with an average of 25.92 years for the five years 1912–16, and 25.77 years for 1919. As the average age of all bridegrooms during 1919 was 29.10 years, it follows that brides are on an average rather less than three years and one-half younger than bridegrooms.

8. *Fertility of Marriages.*—The quotient obtained by division of the nuptial births registered, say during the five years 1915 to 1919, by the number of marriages registered during the five years 1910 to 1914, i.e., the period antecedent by five years to the period of the births, has been called the "fertility of marriages." This works out at 3.01, or in other words, the number of children to be expected from every marriage in the Commonwealth is about three. This method, while not professing any claim to accuracy, generally furnishes results which agree fairly well with those found by more elaborate and careful investigation. For the period 1907–11 the result was 3.43; for the year 1913, 3.94; for the year 1914, 3.87; for the year 1915, 3.50; for the year 1916, 3.17; for the year 1917, 2.93; for the year 1918, 3.02; and for the year 1919, 2.86.

9. *Registration of Marriages.*—In all the States of the Commonwealth marriages may be celebrated either by ministers of religion whose names are registered for that purpose with the Registrar-General, or by certain civil officers—in most cases district registrars. The great majority of marriages in every State are celebrated by ministers of religion. The figures for the individual States in 1919 were: New South Wales, 95.42 per cent.; Victoria, 96.68 per cent.; Queensland, 96.70 per cent.; South Australia, 96.24 per cent.; Western Australia, 81.81 per cent.; and Tasmania, 98.29 per cent., the percentage for the Commonwealth being 95.35. The registered ministers in 1919 belonged to more than forty different denominations, some of which, however, can hardly be regarded as having any valid existence. A number of these have been omitted from the tabulation, and are bracketed under the heading "Other Christians." The figures for 1919 are shown in the following table:—

## MARRIAGES IN EACH DENOMINATION, COMMONWEALTH, 1919.

Denomination.	N.S.W.	Vic.	Qld.	S.A.	W.A.	Tas.	N. Ter.	Fed. Ter.	Com'-wealth.
Church of England ..	6,930	3,369	1,603	947	794	608	6	7	14,264
Roman Catholic Church..	3,189	1,966	1,187	484	334	222	6	2	7,390
Presbyterian Church of Australia ..	2,065	2,180	800	191	179	155	..	..	5,570
Methodist Church ..	1,891	1,804	886	1,199	314	220	7	..	6,321
Congregational Church ..	360	871	137	189	86	55	..	..	1,698
Baptist Church ..	244	549	166	269	38	76	..	..	1,342
Church of Christ ..	162	288	37	189	14	13	..	..	703
Lutheran Church ..	20	56	107	170	1	..	2	..	356
Greek Orthodox Church..	12	5	1	1	5	..	..	..	24
Unitarian Church ..	14	..	..	1	..	..	..	..	15
Salvation Army ..	73	62	42	39	12	6	..	..	234
Seventh-Day Adventists..	28	8	6	9	4	3	..	..	58
Other Christians ..	37	118	238	21	2	117	..	..	533
Hebrew ..	42	41	6	1	12	2	..	..	104
Registrar's Office ..	715	389	199	145	399	36	4	..	1,887
Unspecified ..	27	..	14	..	..	..	..	..	41
Total ..	15,809	11,706	5,429	3,855	2,194	1,513	25	9	40,540

10. *Mark Signatures.*—The marriage registers afford some clue, even if an imperfect one, to the illiteracy of the adult population, since a small and constantly diminishing percentage of bridegrooms and brides sign the registers with marks.

(i) *Males and Females, 1913 to 1919.* The percentage of mark signatures by males and females during the last six years have been very even, with a slight preponderance in the case of males :—

## PERCENTAGE OF MARK SIGNATURES AT MARRIAGE, COMMONWEALTH, 1913 TO 1919.

Year.	1913.	1914.	1915.	1916.	1917.	1918.	1919.
Male .. ..	0.36	0.41	0.27	0.37	0.37	0.33	0.27
Female .. ..	0.38	0.38	0.27	0.32	0.31	0.29	0.27

(ii) *Mark Signatures in Commonwealth States, 1913 to 1919.* The following table shews that while the Tasmanian percentage has been the highest, and the Victorian percentage up to 1917, the lowest, there has been a marked decrease in almost every State :—

## PERCENTAGE OF MARK SIGNATURES AT MARRIAGE, COMMONWEALTH, 1913 TO 1919.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	North. Terr.	Federal Terr.	C'wealth.
1913 ..	0.33	0.17	0.45	0.34	0.78	1.20	8.33	..	0.37
1914 ..	0.36	0.19	0.59	0.45	0.53	1.00	1.47	..	0.39
1915 ..	0.25	0.11	0.26	0.32	0.43	1.47	..	..	0.27
1916 ..	0.41	0.18	0.32	0.35	0.32	0.98	10.53	..	0.35
1917 ..	0.41	0.16	0.32	0.25	0.49	1.14	7.35	..	0.34
1918 ..	0.37	0.13	0.12	0.34	0.43	1.41	5.13	..	0.31
1919 ..	0.29	0.18	0.17	0.25	0.32	0.89	16.00	..	0.27

A complete disappearance of mark signatures is hardly to be expected, for the available information tends to show that about two-thirds of those who sign with marks are natives of their respective States, who apparently have not made use of the advantages offered to them by the State schools.

## § 3. Deaths.

1. **Male and Female Deaths, 1913 to 1919.**—The total number of deaths registered in the Commonwealth from 1913 to 1919 inclusive, gives an annual average of 30,742 males and 22,786 females, the details being as follow :—

## MALE DEATHS, COMMONWEALTH, 1913 TO 1919.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	North. Terr.	Federal Terr.	C'wealth.
1913 ..	11,508	8,495	4,195	2,563	1,852	1,189	53	4	29,859
1914 ..	10,984	9,017	4,132	2,621	1,942	1,063	69	7	29,835
1915 ..	11,439	8,860	4,695	2,587	1,887	1,083	89	14	30,654
1916 ..	11,500	8,901	4,653	2,721	1,981	1,148	108	6	31,018
1917 ..	10,445	7,952	4,027	2,398	1,802	926	52	7	27,609
1918 ..	10,914	8,079	4,359	2,430	1,774	959	66	4	28,585
1919 ..	15,256	10,508	5,337	2,927	2,340	1,175	82	7	37,632
Rate (a), 1919	15.47	14.69	14.54	13.61	13.77	10.83	22.23	5.54	14.66

(a) Number of deaths per 1,000 of mean population.

## FEMALE DEATHS, COMMONWEALTH, 1913 TO 1919.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	North. Terr.	Federal Terr.	C'wealth.
1913 ..	8,191	6,979	2,588	2,130	1,082	942	11	7	21,930
1914 ..	7,736	7,486	2,599	2,092	1,101	855	12	4	21,885
1915 ..	8,146	6,963	2,864	2,107	1,105	932	8	3	22,128
1916 ..	8,346	7,588	2,861	2,356	1,104	908	14	2	23,179
1917 ..	7,496	6,603	2,528	1,967	967	842	11	6	20,420
1918 ..	7,902	7,098	2,792	1,960	1,059	843	8	2	21,664
1919 ..	11,088	8,862	3,519	2,548	1,250	1,017	3	11	28,298
Rate (a), 1919	11.31	11.80	10.18	10.58	8.14	9.83	2.68	10.51	10.98

(a) Number of deaths per 1,000 of mean population.

2. **Male and Female Death Rates, 1919.**—The crude male and female death rates for 1919 only are given in the last line of the preceding tables. New South Wales has the highest rate for males, and Victoria for females, while Tasmania has the lowest male, and Western Australia the lowest female death rate. The rates for the two Territories are based on very small numbers, and comparisons with the States would be misleading.

Owing to differences in the age constitution of the six States, the crude rates are not, however, strictly comparable, but for the purpose of calculating the "Index of Mortality" (see page 176) a distribution into five age-groups has been made, and the death rates are shewn for males and females in each State in five-year age groups for the three years 1910-1912, that is, for the census year and for the year immediately preceding and following, on page 171.

3. **Death Rates of Various Countries.**—A comparison with foreign States is, for the same reason, apt to shew the Commonwealth in too favourable a light, but even if an allowance for the different age constitution were made, it would still be found occupying a very enviable position. The following table gives particulars of the crude death rates of various countries for the latest available years :—

## DEATH RATES(a) OF VARIOUS COUNTRIES.

Country.	Year.	Crude Death Rate.	Country.	Year.	Crude Death Rate.
Tasmania ..	1919	10.4	Prussia ..	1913	14.9
Western Australia ..	1919	11.1	German Empire ..	1913	15.0
South Australia ..	1919	12.0	Finland ..	1914	15.6
Queensland ..	1919	12.4	Ireland ..	1917	16.8
<b>Australia ..</b>	<b>1919</b>	<b>12.8</b>	France ..	1913	17.7
Denmark ..	1915	12.8	Italy ..	1914	17.9
Victoria ..	1919	13.2	Japan ..	1913	19.5
Netherlands ..	1919	13.2	Austria ..	1912	20.5
Norway ..	1915	13.3	Serbia ..	1912	21.1
Switzerland ..	1915	13.3	Bulgaria ..	1911	21.5
New South Wales ..	1919	13.4	Jamaica ..	1915	21.6
United States (registration area) ..	1915	13.5	Spain ..	1914	22.1
Scotland ..	1917	14.3	Hungary ..	1912	23.3
England and Wales ..	1917	14.4	Rumania ..	1914	23.8
Sweden ..	1915	14.6	Chile ..	1914	27.8
United Kingdom ..	1917	14.7	Russia, European ..	1909	28.9
Belgium ..	1912	14.8	Ceylon ..	1918	31.9

(a) Number of deaths per 1,000 of mean population.

4. **Total Deaths, 1913 to 1919.**—The total number of deaths in each of the Commonwealth States during the seven years 1913 to 1919 is shown below:—

## TOTAL DEATHS, COMMONWEALTH, 1913 TO 1919.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	North Terr.	Federal Terr.	C'wealth.
1913	19,689	15,474	6,783	4,693	2,934	2,131	64	11	51,789
1914	18,720	16,503	6,731	4,713	3,043	1,918	81	11	51,720
1915	19,585	15,823	7,559	4,694	2,992	2,015	97	17	52,782
1916	19,846	16,489	7,514	5,077	3,085	2,056	122	8	54,197
1917	17,941	14,555	6,555	4,365	2,769	1,768	63	13	48,029
1918	18,816	15,177	7,151	4,390	2,833	1,802	74	6	50,249
1919	26,344	19,370	8,856	5,475	3,590	2,192	85	18	65,930

5. **Crude Death Rates, 1913 to 1919.**—The death rate for the Commonwealth during the period under review reached its maximum in 1919 owing to the outbreak of influenza. Further reference is made to this hereinafter.

## CRUDE DEATH RATE (a), COMMONWEALTH, 1913 TO 1919.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	North Terr.	Federal Terr.	C'wealth.
1913 ..	10.89	11.11	10.39	10.82	9.34	10.87	17.49	4.49	10.78
1914 ..	10.11	11.59	9.97	10.71	9.41	9.67	21.59	4.16	10.51
1915 ..	10.48	11.09	11.00	10.68	9.28	10.11	22.03	6.89	10.66
1916 ..	10.63	11.70	11.09	11.73	9.80	10.38	25.16	3.06	11.04
1917 ..	9.56	10.36	9.73	10.10	8.97	8.89	12.71	5.21	9.80
1918 ..	9.84	10.70	10.39	9.97	9.11	8.84	14.82	2.47	10.09
1919 ..	13.40	13.21	12.42	12.01	11.10	10.37	17.68	7.79	12.82

(a) Number of deaths per 1,000 of mean population for year.

6. **Male and Female Death Rates, 1913 to 1919.**—The large death rate in 1919 was due, as already stated, to an exceptional cause. The rates in the period 1913–18 were remarkably steady, averaging about 12 per 1,000 for males, and 9 per 1,000 for females.



## MALE AND FEMALE DEATH RATES (a), COMMONWEALTH, 1913 TO 1919.

Year.	1913.	1914.	1915.	1916.	1917.	1918.	1919.
Male rate ..	11.93	11.67	12.08	12.65	11.47	11.70	14.66
Female rate ..	9.53	9.27	9.16	9.44	8.18	8.54	10.98
Crude total rate ..	10.78	10.51	10.66	11.04	9.80	10.09	12.82

(a) Number of deaths per 1,000 of mean population.

7. **Infantile Death Rate.**—(i) *Deaths and Death Rates of Male and Female Infants, 1913 to 1919.* Steady improvement in the infantile death rate was shewn during the period under review until 1919, when the rate suddenly rose to a figure almost as great as in 1913. In the following table, which shews both the total number of deaths of children under one year and the rate per thousand births since 1913, males and females are distinguished. The universal experience that during the first few years of life the excess of male births tends to disappear as a consequence of the higher death rate of male infants, is confirmed by the fact that out of 470,864 male infants born from 1913 to 1919, 34,579 died during their first year of life, while of 447,124 female infants the number who died was only 26,526 :—

## NUMBER OF INFANTILE DEATHS AND RATES OF INFANTILE MORTALITY, COMMONWEALTH, 1913 TO 1919.

Year.	Registered Deaths under one year.			Rate of Infantile Mortality (a).		
	Males.	Females.	Total.	Males.	Females.	Total.
1913 ..	5,472	4,328	9,800	78.81	65.30	72.21
1914 ..	5,582	4,279	9,861	79.06	63.51	71.47
1915 ..	5,127	3,980	9,107	74.25	60.47	67.52
1916 ..	5,186	4,057	9,243	76.82	63.47	70.33
1917 ..	4,232	3,034	7,266	63.27	48.10	55.91
1918 ..	4,178	3,186	7,364	64.82	51.99	58.57
1919 ..	4,802	3,662	8,464	76.31	61.69	69.21

(a) Number of deaths under 1 year per 1,000 births registered.

(ii) *Infantile Mortality, 1913 to 1919.* Divided among the States and Territories, the rates of infantile mortality during the last seven years were as follows :—

## RATES (a) OF INFANTILE MORTALITY, COMMONWEALTH, 1913 TO 1919.

Year.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	North. Terr.	Federal Territory.	Com'-wealth.
1913 ..	77.78	70.53	63.35	69.93	70.30	70.68	115.38	76.92	72.21
1914 ..	69.29	78.27	63.93	75.79	68.12	71.46	51.72	22.73	71.47
1915 ..	67.67	68.78	64.33	67.04	66.54	72.37	65.57	42.55	67.52
1916 ..	67.15	74.63	70.27	73.21	66.22	74.97	40.54	15.87	70.33
1917 ..	56.93	56.82	53.87	53.06	57.09	52.27	43.48	45.45	55.91
1918 ..	59.02	61.75	56.66	51.25	57.13	60.80	28.57	20.41	58.57
1919 ..	71.83	67.90	71.88	64.01	61.12	64.97	66.04	111.11	69.21

(a) Number of deaths under 1 year per 1,000 births registered.

The movement has been a fairly regular one, except in 1919, shewing slight increases in the rates during 1913, 1916, and 1918. In 1914 the rates increased in every State except New South Wales and Western Australia, the increases in Victoria and South Australia being particularly noticeable. In 1915 the rate decreased in New South Wales, Victoria, South Australia, and Western Australia, and increased slightly in Queensland and Tasmania, while in 1916 it increased in every State with the exception of New South Wales and Western Australia.

A considerable decrease is shewn by every State during 1917, and the rates for that year are the lowest on record in every State and in the Commonwealth as a whole, whilst only a very slight increase was registered in 1918. In 1919 increases occurred in every State, especially in New South Wales.

The total number of births, and of deaths of children under one year of age, and the average rate of infantile mortality for the seven years 1913 to 1919 are shewn in the following table for each of the fifty-nine districts for which the vital statistics of the Commonwealth have been tabulated during that period. To afford a better idea of the geographical position of the districts, the name of a town situated in a fairly central part of each district has been added. The figures for the Federal Territory and for Lord Howe Island are included for the sake of completeness, but are too small to be used in comparison with others.

### INFANTILE MORTALITY FOR THE SEVEN YEARS 1913 TO 1919.

States and Territories.	Districts.	Towns.	Total Births, 1913-19.	Total Deaths of Children under one year, 1913-19.	Average Infantile Mortality per 1,000 Births, 1913-19.
New South Wales ..	Metropolitan ..	Sydney ..	144,462	10,063	69.66
" ..	North Coast ..	Grafton ..	29,522	1,508	51.08
" ..	Lower Hunter ..	Newcastle ..	37,676	2,702	71.72
" ..	Cumberland ..	Parramatta ..	18,136	1,111	61.26
" ..	South Coast ..	Nowra ..	14,779	857	57.99
" ..	Northern Tableland ..	Armidale ..	19,608	1,214	61.91
" ..	Central Tableland ..	Bathurst ..	24,522	1,784	72.75
" ..	Southern Tableland ..	Goulburn ..	19,165	1,204	62.82
" ..	North-Western Slope ..	Moree ..	7,988	546	68.35
" ..	Central-Western Slope ..	Dubbo ..	13,143	884	67.26
" ..	South-Western Slope ..	Temora ..	14,368	779	54.22
" ..	Riverina ..	Hay ..	7,815	449	57.45
" ..	Plains East of Darling ..	Cobar ..	3,221	285	88.48
" ..	Trans-Darling Plains ..	Broken Hill ..	8,113	933	117.47
" ..	Lord Howe Island ..	— ..	9	1	111.11
Victoria ..	Metropolitan ..	Melbourne ..	120,829	9,359	77.46
" ..	Central ..	Geelong ..	22,280	1,410	63.28
" ..	North-Central ..	Kyneton ..	9,967	596	59.86
" ..	Western ..	Hamilton ..	25,437	1,542	60.62
" ..	Wimmera ..	Horsham ..	10,131	591	58.34
" ..	Mallee ..	Ultima ..	6,907	408	59.07
" ..	Northern ..	Rochester ..	23,329	1,443	61.85
" ..	North-Eastern ..	Beechworth ..	7,484	385	51.44
" ..	Gippsland ..	Sale ..	11,331	576	50.83
Queensland ..	Metropolitan ..	Brisbane ..	38,733	2,909	75.10
" ..	Moreton ..	Ipswich ..	17,040	898	52.70
" ..	Wide Bay ..	Maryborough ..	17,002	899	52.88
" ..	Port Curtis ..	Rockhampton ..	11,293	761	67.39
" ..	Edgewood ..	Townsville ..	13,785	760	55.57
" ..	Rockingham ..	Cairns ..	6,822	378	55.40
" ..	York Peninsula ..	Cooktown ..	1,054	65	61.67
" ..	Carpentaria ..	Croydon ..	2,499	207	82.83
" ..	Central-Western ..	Winton ..	743	69	92.87
" ..	South-Western ..	Charleville ..	1,772	155	87.47
" ..	Central ..	Blackall ..	4,136	252	60.83
" ..	Maranoa ..	Roma ..	2,735	173	62.89
" ..	Downs ..	Toowoomba ..	19,096	1,133	59.33
South Australia ..	Metropolitan ..	Adelaide ..	40,991	2,959	72.19
" ..	Central ..	Gawler ..	17,145	852	49.69
" ..	Lower North ..	Redruth ..	12,975	986	75.99
" ..	Upper North ..	Port Augusta ..	4,122	256	62.11
" ..	South-Eastern ..	Mount Gambier ..	4,380	208	47.49
" ..	Western ..	Port Lincoln ..	3,316	150	45.24
Western Australia ..	Metropolitan ..	Perth ..	27,071	1,945	71.85
" ..	Northern Agricultural ..	Geraldton ..	8,343	482	57.77
" ..	South-Western ..	Katanning ..	13,216	931	47.75
" ..	Eastern Goldfields ..	Kalgoorlie ..	7,335	523	71.30
" ..	Northern Goldfields ..	Pilbara ..	1,493	114	76.36
" ..	North-Western ..	Roebourne ..	272	12	44.12
" ..	Northern ..	Broome ..	197	15	76.14
Tasmania ..	Hobart ..	Hobart ..	9,497	777	81.82
" ..	Launceston ..	Launceston ..	5,988	445	74.32
" ..	North-Eastern ..	Scottsdale ..	4,386	256	58.37
" ..	North-Western ..	Stanley ..	9,777	573	58.61
" ..	Midland ..	Zeehan ..	4,517	290	64.20
" ..	South-Eastern ..	Sorell ..	4,043	229	56.64
" ..	South-Western ..	Franklin ..	1,148	69	60.10
Northern Territory ..	..	Darwin ..	525	29	55.24
Federal Territory ..	..	Canberra ..	329	10	31.25
(1911-18)	..	..	..	..	..

(iii) *Infantile Mortality in Various Countries and Cities.* Compared with European and American countries, the cities and States of the Commonwealth occupy a very favourable position. It may be pointed out also in connexion with the rates hereunder that a high birth rate is often, though not invariably, accompanied by a high infantile death rate. The figures in the subjoined tables relate to the latest years for which returns are available :—

**RATE (a) OF INFANTILE MORTALITY IN VARIOUS COUNTRIES.**

Country.	Year.	Rate of Infantile Mortality. (a)	Crude Birth Rate. (b)	Country.	Year.	Rate of Infantile Mortality. (a)	Crude Birth Rate. (b)
New Zealand ..	1918	48	23.4	Finland ..	1915	104	26.9
Western Australia	1919	61	21.4	Scotland ..	1917	107	20.1
South Australia	1919	64	24.3	Belgium ..	1912	120	22.6
Tasmania ..	1919	65	25.1	Italy ..	1913	137	31.7
Victoria ..	1919	68	21.6	Prussia ..	1912	146	28.9
Norway ..	1914	68	25.2	Serbia ..	1911	146	36.2
<b>Australia</b> ..	<b>1919</b>	<b>69</b>	<b>23.8</b>	Japan ..	1913	150	33.3
Sweden ..	1913	70	23.2	German Empire ..	1913	151	27.5
New South Wales	1919	72	24.7	Bulgaria ..	1911	156	40.2
Queensland ..	1919	72	26.2	Spain ..	1907	158	33.6
France ..	1912	78	19.0	Jamaica ..	1915	175	34.6
Ireland ..	1916	83	21.1	Austria ..	1912	180	31.3
Netherlands ..	1915	87	26.2	Hungary ..	1912	186	36.3
United Kingdom	1916	91	21.1	Rumania ..	1914	187	42.5
Switzerland ..	1914	91	22.5	Ceylon ..	1918	188	39.2
Ontario (Canada)	1917	92	22.6	Russia, European	1909	248	44.0
Denmark ..	1915	95	24.2	Chile ..	1914	286	37.0
England and Wales	1917	96	17.8				

(a) Number of deaths under 1 year per 1,000 births registered. (b) Number of births per 1,000 of mean population.

**RATE (a) OF INFANTILE MORTALITY IN VARIOUS CITIES.**

City.	Year.	Rate of Infantile Mortality. (a)	City.	Year.	Rate of Infantile Mortality. (a)
Zürich ..	1916	55	Birmingham ..	1915	118
Rome ..	1915	56	Milan ..	1916	124
Amsterdam ..	1916	58	Paris ..	1915	125
Rotterdam ..	1916	65	Genoa ..	1916	126
Adelaide ..	1919	66	Belfast ..	1912	129
Perth ..	1919	66	Manchester ..	1915	129
Hobart ..	1919	69	Hamburg ..	1912	130
Geneva ..	1916	73	Leipzig ..	1912	133
Melbourne ..	1919	78	Munich ..	1912	134
Sydney ..	1919	79	Antwerp ..	1912	140
Stockholm ..	1916	80	Budapest ..	1912	141
Copenhagen ..	1915	92	Berlin ..	1912	142
Toronto ..	1917	92	Chicago ..	1916	145
Brisbane ..	1919	94	Dublin ..	1916	147
Buenos Aires	1916	94	Vienna ..	1912	149
Edinburgh ..	1916	100	Marseilles ..	1916	157
New York ..	1915	102	Brussels ..	1912	166
Washington ..	1916	106	Rio de Janeiro	1912	174
Christiania ..	1912	108	Madrid ..	1915	177
London ..	1915	110	Bucharest ..	1912	185
Glasgow ..	1916	111	Florence ..	1916	192
Monte Video	1916	111	Montreal ..	1911	242
Aberdeen ..	1916	112	Petrograd ..	1912	249
Lyons ..	1916	115	Moscow ..	1915	317
Liverpool ..	1916	117	Bombay ..	1915	329

(a) Number of deaths under 1 year per 1,000 births registered.

8. Deaths in Age-Groups, 1913 to 1919.—A distribution into age-groups has been made of the 374,696 deaths which occurred in the Commonwealth from 1913 to 1919, and the results have been tabulated for each State. It is, however, sufficient here to shew the results for the Commonwealth as a whole, which are as follows:—

## DEATHS IN AGE-GROUPS, COMMONWEALTH, 1913 TO 1919.

Ages.	Males.	Females.	Total.	Percentage of Total Males.	Percentage of Total Females.	Percentage of Total.
Under 1 year ..	34,579	26,526	61,105	16.07	16.63	16.31
1 year and under 5 ..	11,954	10,434	22,388	5.55	6.54	5.98
5 years and under 20 ..	11,145	9,322	20,467	5.18	5.84	5.46
20 years and under 40 ..	29,785	25,792	55,577	13.84	16.17	14.83
40 years and under 60 ..	48,474	28,939	77,413	22.53	18.14	20.66
60 years and under 65 ..	14,898	8,545	23,443	6.92	5.36	6.26
65 years and over ..	63,996	49,887	113,883	29.74	31.28	30.39
Age not stated ..	361	59	420	0.17	0.04	0.11
Total ..	215,192	159,504	374,696	100.00	100.00	100.00

9. Deaths at Single Ages and in Age-Groups, 1919.—The 65,930 deaths which were registered in the Commonwealth in the year 1919 will be found tabulated under single years, and in groups of five years for each State and Territory, in "Bulletin No. 37, Commonwealth Demography, 1919." It has been thought advisable to tabulate the deaths during the first two years of life in greater detail. The first month has, therefore, been shewn in weeks, and the twenty-three months up to the end of the second year in months. This tabulation shews that a great number of children died during the first week, the number gradually diminishing towards the end of the second year. The particulars relating to the Commonwealth are given in the following table:—

## DEATHS AT SINGLE AGES AND IN AGE-GROUPS, COMMONWEALTH, 1919.

Ages.	Males.	Females.	Total.	Ages.	Males.	Females.	Total.
Under 1 week ..	1,765	1,286	3,051	16 months and under 17 ..	80	63	143
1 week and under 2 ..	298	229	527	17 " " " " 18 ..	51	40	91
2 weeks " " 3 ..	190	150	340	18 " " " " 19 ..	81	61	142
3 " " " 4 ..	148	104	252	19 " " " " 20 ..	58	34	92
Total under 1 month ..	2,401	1,769	4,170	20 " " " " 21 ..	47	55	102
1 month and under 2 ..	368	304	672	21 " " " " 22 ..	48	47	95
2 months " " 3 ..	303	230	533	22 " " " " 23 ..	45	35	80
3 " " " 4 ..	303	206	509	23 " " " " 24 ..	37	25	62
4 " " " 5 ..	247	203	450	Total under 2 years ..	5,757	4,415	10,172
5 " " " 6 ..	197	168	365	2 years ..	415	366	781
6 " " " 7 ..	197	171	368	3 " " " " ..	255	220	475
7 " " " 8 ..	178	125	303	4 " " " " ..	200	205	405
8 " " " 9 ..	158	144	302	Total under 5 years ..	6,627	5,206	11,833
9 " " " 10 ..	183	125	308	5 years ..	152	148	300
10 " " " 11 ..	139	106	245	6 " " " " ..	146	122	268
11 " " " 12 ..	128	111	239	7 " " " " ..	109	107	216
Total under 1 year ..	4,802	3,662	8,464	8 " " " " ..	118	96	214
12 months and under 13 ..	236	181	417	9 " " " " ..	97	74	171
13 " " " 14 ..	84	60	144	Total 5 years and under 10 ..	622	547	1,169
14 " " " 15 ..	101	84	185				
15 " " " 16 ..	87	68	155				

DEATHS AT SINGLE AGES AND IN AGE-GROUPS, 1919—*continued*.

Ages.				Ages.			
	Males.	Females.	Total.		Males.	Females.	Total.
10 years .. ..	92	59	151	60 years .. ..	621	374	995
11 " .. ..	96	73	169	61 " .. ..	420	291	711
12 " .. ..	97	75	172	62 " .. ..	526	349	875
13 " .. ..	102	88	190	63 " .. ..	557	360	917
14 " .. ..	101	94	195	64 " .. ..	509	338	847
Total 10 years and under 15	488	389	877	Total 60 years and under 65	2,633	1,712	4,345
15 years .. ..	110	86	196	65 years .. ..	586	372	958
16 " .. ..	153	129	282	66 " .. ..	451	282	733
17 " .. ..	162	125	287	67 " .. ..	484	314	798
18 " .. ..	164	123	287	68 " .. ..	449	304	753
19 " .. ..	218	180	398	69 " .. ..	487	304	791
Total 15 years and under 20	807	643	1,450	Total 65 years and under 70	2,457	1,666	4,123
20 years .. ..	174	161	335	70 years .. ..	549	380	929
21 " .. ..	231	210	441	71 " .. ..	352	279	631
22 " .. ..	221	236	457	72 " .. ..	408	299	707
23 " .. ..	254	269	523	73 " .. ..	451	348	799
24 " .. ..	288	297	585	74 " .. ..	462	386	848
Total 20 years and under 25	1,168	1,173	2,341	Total 70 years and under 75	2,222	1,692	3,914
25 years .. ..	333	276	609	75 years .. ..	489	417	906
26 " .. ..	368	335	703	76 " .. ..	440	361	801
27 " .. ..	379	343	722	77 " .. ..	435	369	804
28 " .. ..	453	386	839	78 " .. ..	413	366	779
29 " .. ..	436	331	767	79 " .. ..	412	324	736
Total 25 years and under 30	1,960	1,671	3,640	Total 75 years and under 80	2,189	1,837	4,026
30 years .. ..	454	370	824	80 years .. ..	417	353	770
31 " .. ..	386	327	713	81 " .. ..	235	244	479
32 " .. ..	504	330	834	82 " .. ..	344	313	657
33 " .. ..	466	347	813	83 " .. ..	279	283	562
34 " .. ..	453	283	736	84 " .. ..	283	316	599
Total 30 years and under 35	2,263	1,657	3,920	Total 80 years and under 85	1,558	1,509	3,067
35 years .. ..	488	327	815	85 years .. ..	284	239	523
36 " .. ..	385	312	697	86 " .. ..	227	234	461
37 " .. ..	377	276	653	87 " .. ..	177	177	354
38 " .. ..	448	304	752	88 " .. ..	156	144	300
39 " .. ..	474	311	785	89 " .. ..	147	137	284
Total 35 years and under 40	2,172	1,530	3,702	Total 85 years and under 90	991	931	1,922
40 years .. ..	464	331	795	90 years .. ..	115	96	211
41 " .. ..	346	207	553	91 " .. ..	44	61	105
42 " .. ..	394	301	695	92 " .. ..	54	54	108
43 " .. ..	395	224	619	93 " .. ..	42	52	94
44 " .. ..	370	234	604	94 " .. ..	35	49	84
Total 40 years and under 45	1,969	1,207	3,266	Total 90 years and under 95	290	312	602
45 years .. ..	509	267	776	95 years .. ..	22	31	53
46 " .. ..	403	241	644	96 " .. ..	17	14	31
47 " .. ..	398	266	664	97 " .. ..	6	11	17
48 " .. ..	433	295	728	98 " .. ..	9	12	21
49 " .. ..	449	276	725	99 " .. ..	4	8	12
Total 45 years and under 50	2,192	1,345	3,537	Total 95 yrs. and under 100	58	76	134
50 years .. ..	573	319	892	100 years .. ..	4	2	6
51 " .. ..	359	243	602	101 " .. ..	1	3	4
52 " .. ..	483	296	779	102 " .. ..	..	2	2
53 " .. ..	454	281	735	103 " .. ..	3	1	4
54 " .. ..	479	337	816	104 " .. ..	2	1	3
Total 50 years and under 55	2,348	1,476	3,824	105 " .. ..	1	..	1
55 years .. ..	469	298	767	108 " .. ..	1	1	2
56 " .. ..	537	320	857	111 " .. ..	..	1	1
57 " .. ..	462	287	749	112 " .. ..	..	1	1
58 " .. ..	518	368	886	Total 100 years and over	12	12	24
59 " .. ..	525	331	856	Age not stated..	86	13	99
Total 55 years and under 60	2,511	1,604	4,115	Total all ages ..	37,632	28,298	65,930

The following tables shew the death rate per 1,000 living at each age for the three years 1910, 1911 and 1912, viz., the Census year 1911, and the years immediately preceding and following. The Northern Territory is included with South Australia, and the Federal Territory with New South Wales :—

**AVERAGE ANNUAL DEATH RATES PER 1,000 LIVING IN VARIOUS  
AGE-GROUPS, 1910 TO 1912.**

Age Group.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
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**MALES.**

0 to 4 years	..	25.40	24.71	23.30	21.30	28.44	24.65	24.71
5 „ 9	..	2.11	2.39	2.39	1.85	2.61	2.53	2.26
10 „ 14	..	1.75	1.69	1.74	1.40	2.16	1.70	1.72
15 „ 19	..	2.42	2.41	2.92	2.43	2.86	2.59	2.52
20 „ 24	..	3.37	3.27	4.83	3.00	5.17	3.57	3.65
25 „ 29	..	3.91	4.13	5.57	3.57	5.86	4.49	4.35
30 „ 34	..	4.90	4.83	5.96	5.40	6.75	3.77	5.20
35 „ 39	..	6.08	6.31	7.54	7.15	8.41	6.28	6.68
40 „ 44	..	8.25	8.26	9.65	8.31	10.37	6.17	8.58
45 „ 49	..	10.91	11.05	13.83	10.27	14.96	9.25	11.58
50 „ 54	..	14.78	15.33	17.77	13.02	17.66	14.08	15.36
55 „ 59	..	21.93	21.41	23.01	19.99	24.65	16.24	21.67
60 „ 64	..	30.99	31.52	31.25	31.94	35.06	28.39	31.38
65 „ 69	..	45.80	50.53	51.53	45.94	45.96	38.29	47.69
70 „ 74	..	71.49	74.28	70.94	58.38	78.74	58.79	70.88
75 „ 79	..	117.05	115.68	112.40	99.49	110.54	108.60	114.04
80 „ 84	..	181.34	174.56	190.89	165.68	185.23	148.67	176.32
85 „ 89	..	252.58	270.76	202.56	225.42	328.21	313.87	257.73
90 and over	..	375.35	365.88	272.73	279.57	321.43	465.61	357.11

**FEMALES.**

0 to 4 years	..	20.96	19.79	20.07	16.96	21.76	21.27	20.22
5 „ 9	..	1.78	2.27	2.29	1.71	2.58	1.88	2.04
10 „ 14	..	1.41	1.81	1.45	1.25	1.77	2.51	1.59
15 „ 19	..	1.96	2.42	2.20	2.19	2.01	3.47	2.22
20 „ 24	..	3.22	3.74	3.76	3.44	3.82	4.09	3.53
25 „ 29	..	4.02	4.31	4.68	4.79	4.42	4.66	4.31
30 „ 34	..	4.51	4.98	4.46	4.92	4.88	4.93	4.73
35 „ 39	..	5.84	6.02	5.79	5.71	6.15	7.68	5.97
40 „ 44	..	6.24	6.63	7.11	5.80	6.73	5.67	6.44
45 „ 49	..	7.63	8.05	9.07	7.91	8.40	7.02	7.98
50 „ 54	..	11.22	11.30	11.73	9.72	11.82	8.76	11.07
55 „ 59	..	14.38	15.55	14.13	12.63	14.18	15.80	14.60
60 „ 64	..	21.69	22.27	21.64	20.54	20.44	19.50	21.60
65 „ 69	..	37.81	36.48	34.69	35.01	34.59	35.09	36.47
70 „ 74	..	55.75	58.36	57.82	48.28	54.52	55.11	56.13
75 „ 79	..	97.62	98.27	86.11	91.32	92.45	93.30	95.91
80 „ 84	..	154.31	157.19	138.33	137.87	144.14	150.77	151.89
85 „ 89	..	184.60	225.65	200.82	202.17	186.67	254.45	208.59
90 and over	..	307.43	361.44	351.52	328.17	358.97	317.88	334.87

**AVERAGE ANNUAL DEATH RATES PER 1,000 LIVING, IN VARIOUS AGE-GROUPS, 1910 TO 1912—continued.**

Age-Group.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
<b>PERSONS.</b>							
0 to 4 years ..	23.21	22.29	21.72	19.16	25.15	23.00	22.50
5 „ 9 „ ..	1.95	2.33	2.34	1.78	2.60	2.21	2.15
10 „ 14 „ ..	1.58	1.75	1.60	1.33	1.97	2.10	1.66
15 „ 19 „ ..	2.19	2.42	2.57	2.31	2.45	3.03	2.37
20 „ 24 „ ..	3.30	3.51	4.33	3.22	4.60	3.84	3.59
25 „ 29 „ ..	3.96	4.22	5.17	4.17	5.29	4.58	4.33
30 „ 34 „ ..	4.71	4.92	5.29	5.16	6.00	4.34	4.97
35 „ 39 „ ..	5.97	6.16	6.78	6.44	7.51	6.94	6.34
40 „ 44 „ ..	7.31	7.44	8.58	7.09	9.06	5.94	7.59
45 „ 49 „ ..	9.45	9.59	11.95	9.14	12.73	8.20	9.96
50 „ 54 „ ..	13.25	13.40	15.48	11.49	15.64	11.63	13.48
55 „ 59 „ ..	18.63	18.52	19.59	16.67	20.87	16.04	18.52
60 „ 64 „ ..	26.79	26.86	27.44	26.48	29.25	24.08	26.87
65 „ 69 „ ..	42.18	43.26	44.44	40.58	41.22	36.66	42.37
70 „ 74 „ ..	64.41	65.98	65.87	53.36	68.67	56.91	63.91
75 „ 79 „ ..	108.56	107.11	101.89	95.17	103.30	100.66	105.58
80 „ 84 „ ..	169.10	171.29	166.15	150.82	170.12	149.75	164.97
85 „ 89 „ ..	217.51	248.40	201.72	211.72	266.67	284.83	232.64
90 and over ..	337.70	363.94	308.54	307.81	333.33	404.98	345.44

The tables shew a high death rate for children under five years of age, which rapidly diminishes until, at ages 10 to 14, a rate of 1.66 per 1,000 is shewn, which is the lowest at any age. The rate then gradually rises with increasing age until, at the ages 90 and over, more than one-third die every year.

10. **Deaths of Centenarians, 1919.**—Particulars as to the twenty-four persons who died in 1919, aged 100 years and upwards, are given in the following table. It must, of course, be understood that while the Registrars-General of the various States take the greatest care to have statements as to abnormally high ages verified as far as possible, no absolute reliance can be placed on the accuracy of the ages shewn, owing to the well-known tendency of very old people to overstate their ages. No attempt has been made by the Commonwealth Bureau of Census and Statistics to verify the truth of the statements made. The fact must not be disregarded in connexion with this question, that while parish registers in the United Kingdom often date very far back, compulsory registration of births dates practically only from 1874, the Act passed in 1836 having left many loop-holes open for those unwilling to register the births of their children :—

**DEATHS OF CENTENARIANS, COMMONWEALTH, 1919.**

Age.	Locality where Death occurred.	State.	Cause of Death.	Occupation.	Birth-place.	Length of Residence in Commonwealth.
<b>MALES.</b>						
Yrs.						
108	Granville ..	N.S.W. ..	Senility ..	Labourer..	Scotland	75 years
105	Maclean ..	„ ..	Cerebral hæmorrhage ..	Farmer ..	Ireland	58 „
104	Sydney ..	„ ..	Senility ..	Tailor ..	England	50 „
104	Perth ..	W. Australia ..	„ ..	Sailor ..	Scotland	57 „
103	Gunnedah ..	N.S.W. ..	„ ..	Unspecified	N.S.W.	Native
103	Burnett ..	Queensland ..	„ ..	None ..	Ireland	70 years
103	Liverpool ..	N.S.W. ..	„ ..	Mariner ..	England	64 „
101	Clifton Hill ..	Victoria ..	Pneumonia ..	Labourer..	Ireland	Unspecified
100	Hill End ..	N.S.W. ..	Senility ..	None ..	„	80 years
100	Randwick ..	„ ..	„ ..	Blacksmith	„	Unspecified
100	Geelong ..	Victoria ..	„ ..	Labourer..	„	„
100	Portland ..	„ ..	„ ..	None ..	England	65 years

DEATHS OF CENTENARIANS, COMMONWEALTH, 1919—*continued.*

Age.	Locality where Death occurred.	State.	Cause of Death.	Occupation.	Birth- place.	Length of Residence in Common- wealth.
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## FEMALES.

Yrs.	Locality	State.	Cause of Death.	Occupation.	Birth- place.	Length of Residence in Common- wealth.
112	Manilla ..	N.S.W. ..	Pneumonia ..	..	N.S.W.	Native
111	Broken Hill ..	" ..	Senility ..	..	"	71 "
108	Auburn ..	" ..	" ..	..	Ireland	59 "
104	Albury ..	" ..	" ..	..	England	33 "
103	Enoggera ..	Queensland ..	" ..	..	Ireland	83 "
102	Goulburn ..	N.S.W. ..	Bronchitis ..	..	Scotland	65 "
102	Launceston ..	Tasmania ..	Senility ..	..	England	30 "
101	Cooma ..	N.S.W. ..	" ..	..	"	62 "
101	Hawthorn ..	Victoria ..	" ..	..	Scotland	30 "
101	Warwick ..	Queensland ..	" ..	..	Ireland	Native
100	Petersham ..	N.S.W. ..	" ..	..	N.S.W.	65 years
100	Boort ..	Victoria ..	Bronchitis ..	..	Ireland	

11. Length of Residence in the Commonwealth of Persons who Died in 1919.—The length of residence in the Commonwealth of all persons whose deaths were registered in the year 1919 has been tabulated for all the States, and a summary of the results is shewn below :—

LENGTH OF RESIDENCE IN COMMONWEALTH OF PERSONS WHO DIED  
IN 1919.

Length of Residence.	Male Deaths.	Female Deaths.	Total Deaths.	Length of Residence.	Male Deaths.	Female Deaths.	Total Deaths.
Born in the C'wealth ..	23,960	19,857	43,817	Resident 25 to 29 years ..	455	219	674
Resident under 1 year ..	123	33	156	" 30 to 34 ..	1,267	627	1,894
" 1 year ..	54	28	82	" 35 to 39 ..	1,090	692	1,781
" 2 years ..	55	18	73	" 40 to 44 ..	1,076	551	1,629
" 3 ..	56	27	83	" 45 to 49 ..	587	384	970
" 4 ..	94	49	143	" 50 to 54 ..	940	703	1,641
" 5 ..	155	86	241	" 55 to 59 ..	811	700	1,513
" 6 ..	222	145	367	" 60 to 64 ..	1,205	1,244	2,447
" 7 ..	242	132	374	" 65 yrs. and over ..	1,431	1,499	2,932
" 8 ..	188	122	310	Length of residence not stated ..	2,404	695	3,099
" 9 ..	144	60	204				
" 10 to 14 years ..	400	154	554				
" 15 to 19 ..	263	116	379				
" 20 to 24 ..	410	157	567	Total ..	37,632	23,298	65,930



12. Birthplaces of Persons who Died in 1919.—In the following table are shewn the birthplaces of persons whose deaths were registered in 1919 :—

**BIRTHPLACES OF PERSONS WHO DIED IN 1919, COMMONWEALTH.**

Birthplace.	Males.	Females.	Total.	Birthplace.	Males.	Females.	Total.
<b>AUSTRALASIA—</b>				<b>ASIA—continued.</b>			
Commonwealth of				Philippine Islands	10	..	10
Australia—				Syria ..	19	4	23
New South Wales	9,612	8,003	17,615	Other Asiatic			
Victoria ..	7,515	6,105	13,620	Countries ..	15	1	16
Queensland ..	2,612	2,110	4,722				
South Australia	2,247	1,974	4,221				
Western Australia	675	502	1,177				
Tasmania ..	1,276	1,156	2,432				
Northern Territory	23	7	30				
New Zealand ..	239	157	396	<b>AFRICA—</b>			
				Union of Sth. Africa	29	19	48
				Mauritius ..	5	7	12
				Other African Brit.			
				Possessions ..	..	1	1
				Egypt ..	2	..	2
				Other African	..	1	1
				Countries ..			
<b>EUROPE—</b>							
England ..	5,718	3,738	9,456				
Wales ..	225	108	333				
Scotland ..	1,526	1,091	2,617				
Ireland ..	2,511	2,377	4,888	<b>AMERICA—</b>			
Isle of Man ..	13	6	19	Canada ..	54	16	70
Other European				Jamaica ..	2	1	3
Brit. Possessions	46	22	68	Newfoundland ..	3	1	4
Austria-Hungary	70	9	79	Other American			
Belgium ..	10	1	11	Brit. Possessions	12	4	16
Denmark ..	107	29	136	Argentine Republic	2	..	2
France ..	78	31	109	Brazil ..	1	1	2
Germany ..	603	278	881	Chile ..	2	1	3
Greece ..	53	5	58	United States of			
Italy ..	130	18	148	America ..	104	42	146
Netherlands ..	21	4	25	Other American			
Norway ..	64	9	73	Countries ..	37	8	45
Portugal ..	8	..	8				
Russia ..	117	35	152				
Spain ..	16	1	17				
Sweden ..	126	16	142				
Switzerland ..	36	9	45				
Other European							
Countries ..	17	4	21				
				<b>POLYNESIA—</b>			
<b>ASIA—</b>				Fiji ..	13	1	14
British India ..	86	27	113	Papua ..	5	..	5
Ceylon ..	19	..	19	Other Polynesian			
Straits Settlements	5	6	11	Brit. Possessions	9	1	10
Other Asiatic Brit.				New Caledonia ..	9	3	12
Possessions ..	4	1	5	New Hebrides ..	3	..	3
Afghanistan ..	2	..	2	Samoa ..	..	2	2
China ..	381	7	388	Other Polynesian			
Japan ..	37	1	38	Islands ..	5	2	7
Java ..	6	..	6	South Sea Islands			
				(so described)	51	9	60
				At Sea ..	59	63	122
				Not stated ..	947	263	1,210
				Total Deaths ..	37,632	28,298	65,930

13. Occupations of Male Persons who Died in 1919.—Information as to the occupations of the 37,632 males who died in the Commonwealth in 1919 is contained in the following statement :—

## OCCUPATIONS OF MALES WHO DIED IN 1919, COMMONWEALTH.

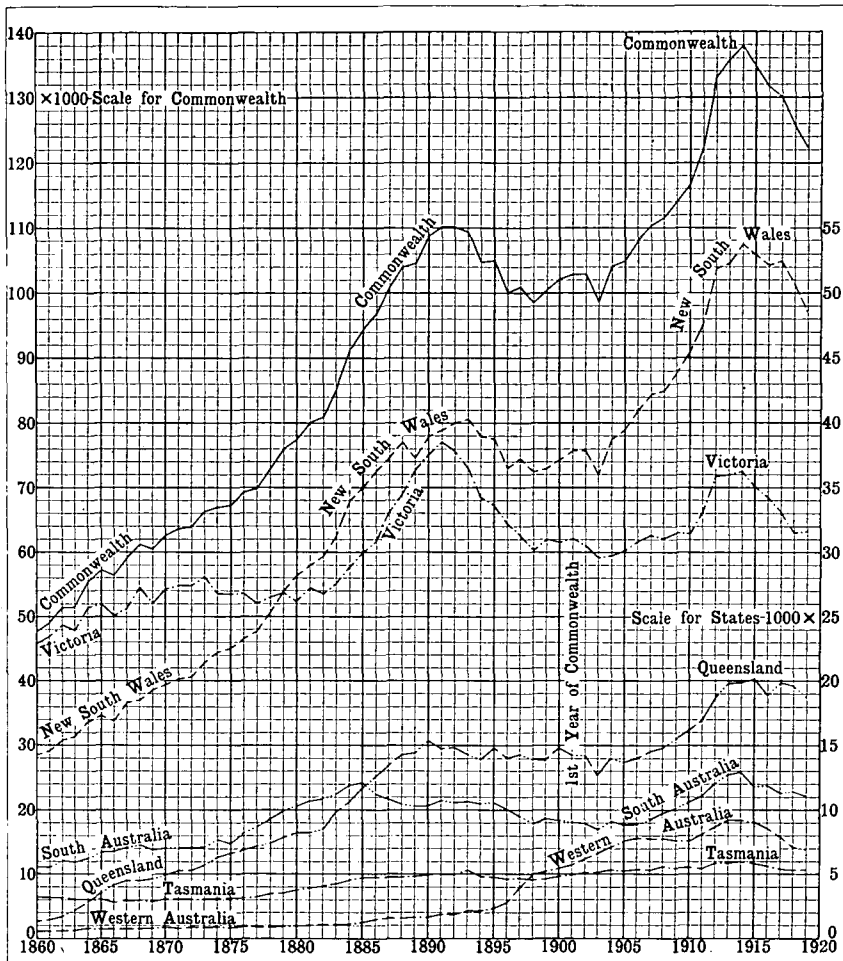
Occupation.	No. of Deaths.	Occupation.	No. of Deaths.
CLASS I.—PROFESSIONAL.		CLASS III.—COMMERCIAL—cont.	
General Government .. ..	170	Dress .. ..	54
Local Government .. ..	32	Fibrous materials .. ..	1
Defence .. ..	408	Animal food .. ..	378
Law and order .. ..	285	Vegetable food .. ..	137
Religion .. ..	138	Groceries and stimulants .. ..	210
Charity .. ..	2	Living animals .. ..	48
Health .. ..	262	Leather, raw material .. ..	8
Literature .. ..	61	Wool and tallow .. ..	19
Science .. ..	20	Hay, corn, &c. .. ..	41
Civil and mechanical engineering, architecture and surveying .. ..	114	Other vegetable matter .. ..	19
Education .. ..	149	Wood and coal .. ..	26
Fine arts .. ..	49	Stone, clay, glass .. ..	6
Music .. ..	54	Ironmongery .. ..	40
Amusements .. ..	140	Merchants .. ..	119
Total Professional .. ..	1,944	Shopkeepers and assistants .. ..	258
CLASS II.—DOMESTIC.		Dealers and hawkers .. ..	195
Hotelkeepers and assistants .. ..	582	Agents and brokers .. ..	170
Others engaged in providing board and lodging .. ..	68	Clerks, bookkeepers, &c. .. ..	910
House servants .. ..	4	Commercial travellers and salesmen .. ..	296
Coachmen and grooms .. ..	71	Others engaged in commercial pursuits .. ..	248
Hairdressers .. ..	97	Speculators on chance events .. ..	28
Laundrymen .. ..	23	Total Commercial .. ..	3,694
Others engaged in domestic occupations .. ..	214	CLASS IV.—TRANSPORT AND COMMUNICATION.	
Total Domestic .. ..	1,059	Railway traffic .. ..	690
CLASS III.—COMMERCIAL.		Tramway traffic .. ..	121
Banking and finance .. ..	138	Road traffic .. ..	867
Insurance and valuation .. ..	91	Sea and river traffic .. ..	797
Land and household property .. ..	59	Postal service .. ..	140
Property rights, n.e.i. .. ..	..	Telegraph and telephone service .. ..	75
Books, publications and advertising .. ..	42	Messengers, &c. .. ..	16
Musical instruments .. ..	2	Total Transport and Communication .. ..	2,706
Ornaments, small wares .. ..	1	CLASS V.—INDUSTRIAL.	
Storage .. ..	2	Books and publications .. ..	203
Gold, silver and precious stones .. ..	3	Musical instruments .. ..	14
Machines, tools and implements .. ..	7	Prints, pictures and art materials .. ..	7
Carriages and vehicles .. ..	7	Ornaments and small wares .. ..	37
Harness and saddlery .. ..	3	Designs, medals, type and dies .. ..	10
Ships and boats .. ..	1	Watches and clocks .. ..	47
Building materials .. ..	6	Arms and ammunition .. ..	16
Furniture .. ..	10	Engines, machines, tools, &c. .. ..	278
Paper and Stationery .. ..	21	Carriages and vehicles .. ..	194
Textile fabrics .. ..	90	Harness, saddlery and leatherware .. ..	101

OCCUPATIONS OF MALES WHO DIED IN 1919, COMMONWEALTH—*continued.*

Occupation.	No. of Deaths.	Occupation.	No. of Deaths.
CLASS V.—INDUSTRIAL— <i>continued.</i>		CLASS VI.—AGRICULTURAL, PASTORAL, MINING PURSUITS, ETC.	
Ships, boats and equipments ..	66	Agricultural .. ..	3,633
Furniture .. ..	126	Pastoral .. ..	1,049
Building materials .. ..	106	Dairy farming .. ..	114
Chemicals and by-products ..	6	Bees, fisheries and wild animals ..	133
Textile fabrics .. ..	26	Forestry .. ..	103
Dress .. ..	546	Water conservation and supply ..	26
Fibrous materials .. ..	12	Mines and quarries .. ..	1,908
Animal food .. ..	48	Total Primary Producers ..	6,966
Vegetable food .. ..	258		
Groceries and stimulants ..	87		
Animal matter .. ..	98		
Workers in wood not elsewhere classed .. ..	60		
Vegetable produce for fodder ..	1		
Stone, clay, glass .. ..	114		
Jewellery and precious stones ..	54		
Metals, other than gold and silver	615		
Gas, electric lighting, &c. ..	135		
Buildings—			
Builders .. ..	146	CLASS VII.—INDEFINITE.	
Stonemasons .. ..	86	Independent means, having no specific occupation .. ..	365
Bricklayers .. ..	103	Occupation unspecified .. ..	1,164
Slaters .. ..	8	Total Indefinite .. ..	1,529
Carpenters .. ..	599		
Plasterers .. ..	72		
Painters and glaziers .. ..	280		
Plumbers .. ..	149		
Signwriters .. ..	16		
Others .. ..	10		
Roads, railways and earthworks	47	CLASS VIII.—DEPENDENTS.	
Disposal of the dead .. ..	18	Dependent relatives (including persons under 20 years of age with no specified occupation) ..	8,078
Disposal of refuse .. ..	29	Supported by voluntary and State contributions .. ..	259
Other industrial workers—		Total Dependents .. ..	8,337
Manufacturers .. ..	50		
Engineers, firemen .. ..	515		
Contractors .. ..	224		
Labourers, undefined .. ..	5,713		
Others .. ..	67		
Total Industrial .. ..	11,397	Total Male Deaths .. ..	37,632

14. *Index of Mortality.*—The death rates, those for age-groups on page 171 excepted, so far shewn are crude rates, i.e., they simply shew the number of deaths per thousand of mean population, without taking the age constitution of that population into consideration. It is, however, a well-known fact that the death rate and age constitution of a people are intimately related; thus, other conditions being equal, the death rate of a country will be lower if it contain a large percentage of young people (not infants). In order to have a comparison of the mortality of various countries on a uniform basis, so far as age constitution is concerned, the International Statistical Institute in its 1895 session recommended the universal adoption of the population of Sweden in five age-groups, as ascertained at the Census of 1890, as the standard population by which this "Index of Mortality," as distinguished from the crude death rate,

GRAPHS SHEWING TOTAL ANNUAL BIRTHS IN THE COMMONWEALTH AND STATES OF AUSTRALIA, 1860-1919.



(See Table page 141.)

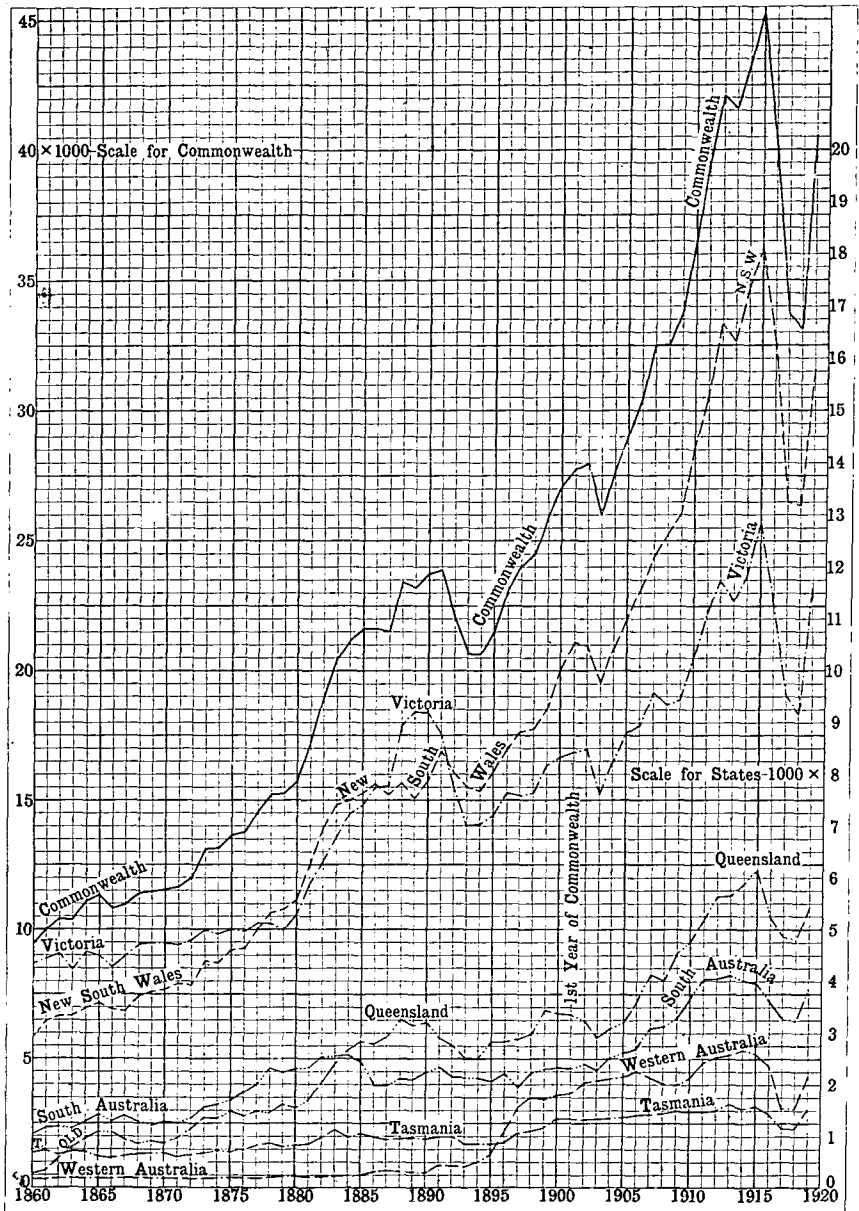
EXPLANATION OF GRAPHS.—The base of each small square represents an interval of one year, for both Commonwealth and States, and the vertical height represents 2,000 persons for the Commonwealth and 1,000 for the States.

The scale on the left relates to the Commonwealth, and that on the right to the States.

The distances upward from the common zero lines of the States and Commonwealth, marked 0, denote the total annual number of births in the States and Commonwealth, the scale of the latter being reduced one-half.

The names of the States to which the graphs refer are written thereon, and the characters of the lines used are as follows:—Commonwealth, —————; New South Wales, ————; Victoria, ————; Queensland, ————; South Australia, ————; Western Australia, ————; Tasmania, ————.

GRAPHS SHEWING TOTAL ANNUAL MARRIAGES IN THE COMMONWEALTH AND STATES OF AUSTRALIA, 1860-1919.



(See Table page 157.)

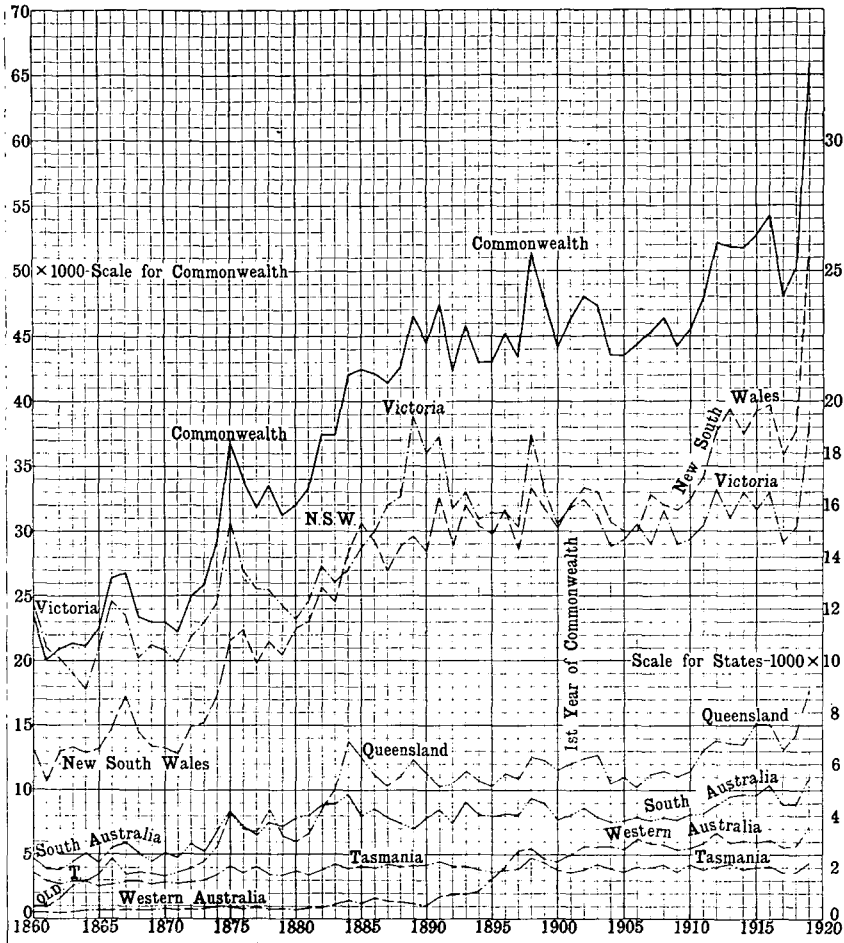
EXPLANATION OF GRAPHS.—The base of each small square represents an interval of one year for both Commonwealth and States, and the vertical height represents 500 marriages for the Commonwealth and 250 for the States.

The scale on the left relates to the Commonwealth, and that on the right relates to the States.

The distances upward from the zero line, marked 0, denote the total annual number of marriages in the States and Commonwealth, the scale of the latter being reduced one-half.

The names of the States to which the graphs refer are written thereon, and the lines used are similar to those for births on page 177.

GRAPHS SHEWING TOTAL ANNUAL DEATHS IN THE COMMONWEALTH AND STATES OF AUSTRALIA, 1860-1919.



(See table on page 165.)

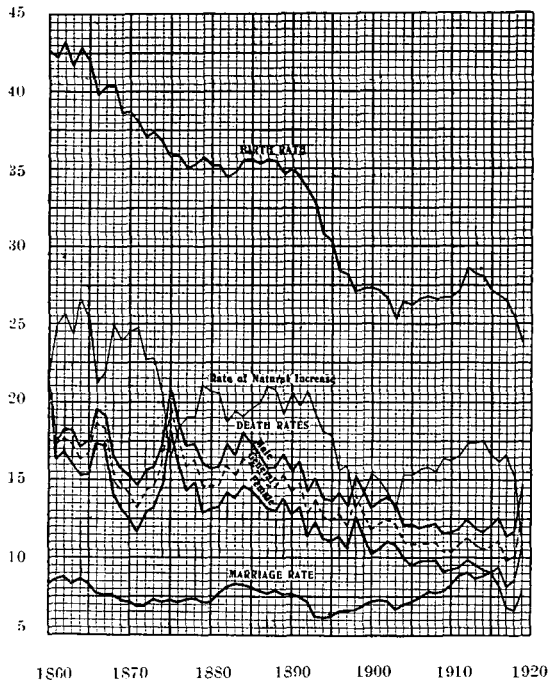
EXPLANATION OF GRAPHS.—The base of each small square represents an interval of one year for both Commonwealth and States, and the vertical height represents 1,000 persons for the Commonwealth and 500 for the States.

The scale on the left relates to the Commonwealth, and that on the right relates to the States.

The distances upwards from the common zero line for States and Commonwealth, marked 0, denote the total annual number of deaths in the States and Commonwealth, the scale of the latter being reduced one-half.

The names of the States to which the curves refer are written thereon, and the lines used are similar to those for births on page 177.

GRAPHS SHEWING GENERAL BIRTH, NATURAL INCREASE, DEATH (MALE, GENERAL, AND FEMALE) AND MARRIAGE RATES IN THE COMMONWEALTH OF AUSTRALIA, 1860-1919.



(See pages 142, 157, and 165.)

EXPLANATION OF GRAPHS.—The base of each small square represents one year's interval, and the vertical height, according to the character of the curve, one half per thousand of the population—the basic line being five per thousand of the population.

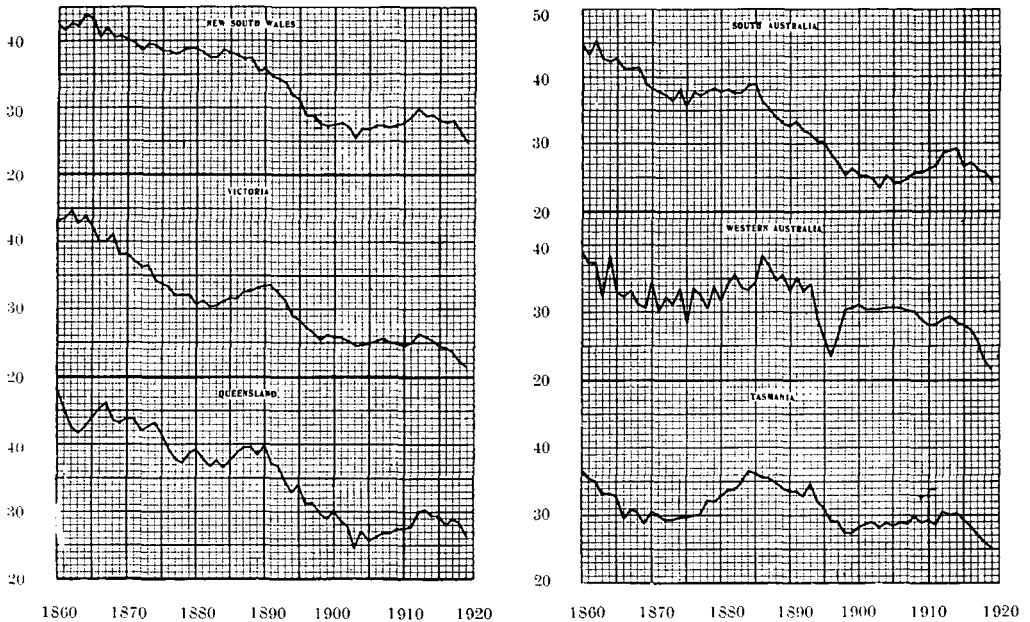
#### BIRTH RATE GRAPHS. (See next page.)

EXPLANATION OF GRAPHS.—The base of each small square represents one year's interval, and the vertical height one birth per thousand of the population—the basic line for each State being twenty per thousand of the population.

#### DEATH RATE GRAPHS. (See next page.)

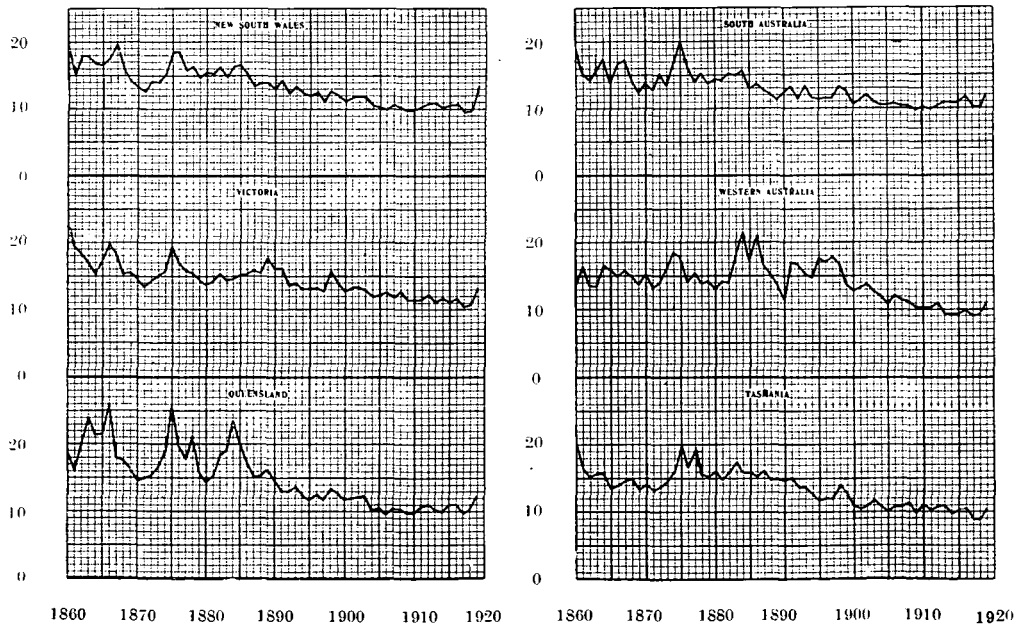
EXPLANATION OF GRAPHS.—The base of each small square represents one year's interval, and the vertical height one death per thousand of the population. The zero for each State is shown by a thickened line.

GRAPHS SHEWING BIRTH RATES IN THE STATES OF NEW SOUTH WALES, VICTORIA, QUEENSLAND, SOUTH AUSTRALIA, WESTERN AUSTRALIA, AND TASMANIA, 1860-1919.



(See Table page 142.)

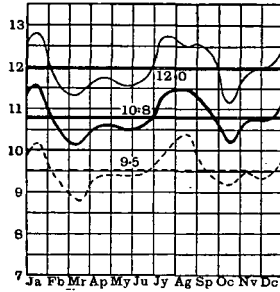
GRAPHS SHEWING DEATH RATES IN THE STATES OF NEW SOUTH WALES, VICTORIA, QUEENSLAND, SOUTH AUSTRALIA, WESTERN AUSTRALIA, AND TASMANIA, 1860-1919.



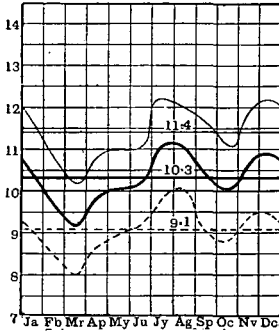
(See Table page 165.) For explanation of above graphs see page 180.



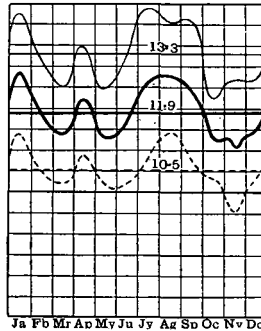
## GRAPHS SHEWING GENERAL MONTHLY DEATH RATES 1907-1912.



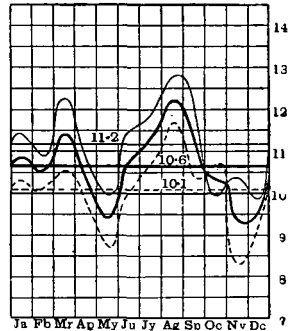
## COMMONWEALTH.



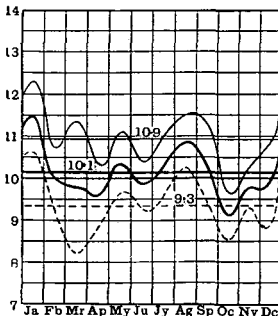
## NEW SOUTH WALES.



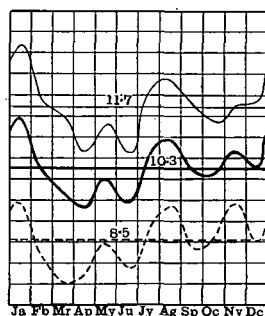
## VICTORIA.



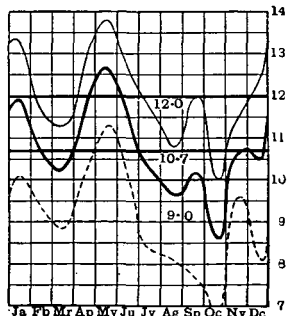
## TASMANIA.



## SOUTH AUSTRALIA.



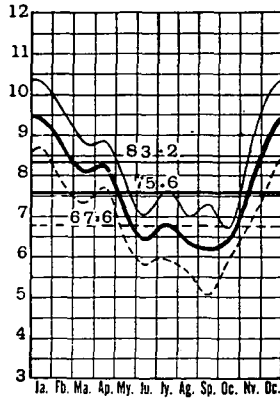
## QUEENSLAND.



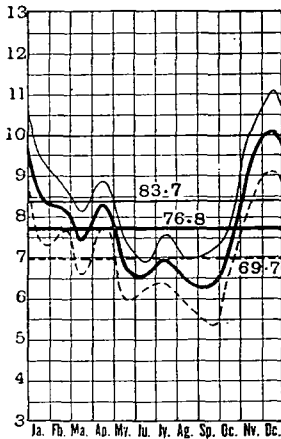
## WESTERN AUSTRALIA.

Male Death Rates shewn : \_\_\_\_\_  
 Female " " \_\_\_\_\_  
 General " " \_\_\_\_\_

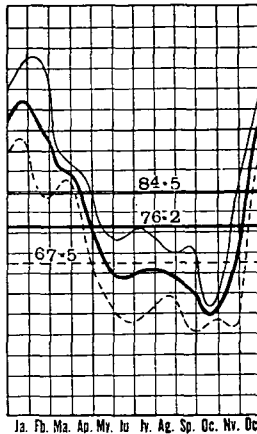
## GRAPHS SHIFWING INFANTILE MONTHLY DEATH RATES, 1907-1912.



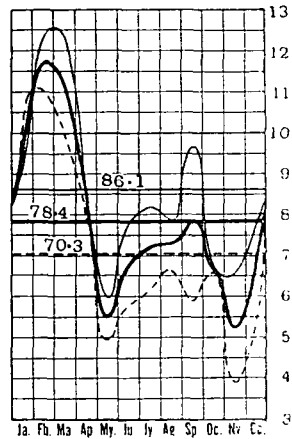
COMMONWEALTH.



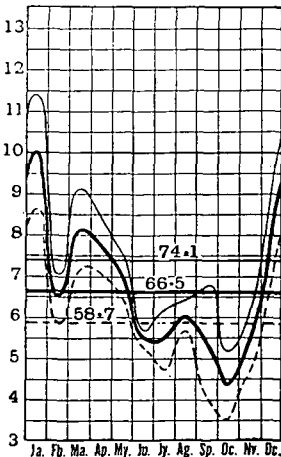
NEW SOUTH WALES.



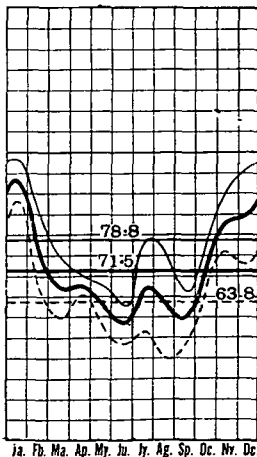
VICTORIA.



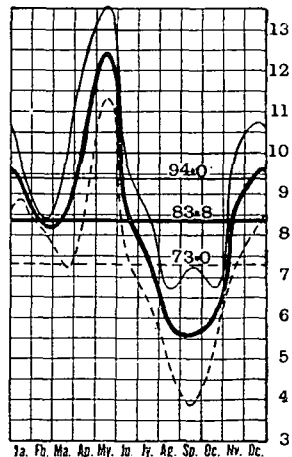
TASMANIA.



SOUTH AUSTRALIA.



QUEENSLAND.



WESTERN AUSTRALIA.

Male Death Rates shewn : —————  
 Female " " - - - - -  
 General " " . . . . .



should be ascertained. The calculation for 1919 is shewn below for each of the States and Territories and for the Commonwealth, the distribution of the mean population of 1919 into age-groups being in accordance with the distribution as found at the Census of 1911 :—

## INDEX OF MORTALITY, STATES AND COMMONWEALTH, 1919.

Age-Group.	Mean Population, 1919, distributed according to Results of Census of 1911.	Number of Deaths, 1919.	No. of Deaths per 1,000 of Mean Population, 1919, in each Age-Group.	Age Distribution per 1,000 of Standard Population.	Index of Mortality.
<b>NEW SOUTH WALES.</b>					
Under 1 year .. ..	54,067	3,493	64.61	25.5	1.65
1 year and under 20 .. ..	774,270	2,657	3.43	398.0	1.36
20 years " 40 .. ..	658,751	5,882	8.93	269.6	2.41
40 " " 60 .. ..	353,664	5,749	16.16	192.3	3.11
60 " and upwards .. ..	123,457	8,563	69.36	114.6	7.95
Total .. ..	1,966,209	26,344	13.40	1,000.0	16.48
<b>VICTORIA.</b>					
Under 1 year .. ..	34,690	2,148	61.92	25.5	1.58
1 year and under 20 .. ..	564,384	1,873	3.32	398.0	1.32
20 years " 40 .. ..	464,125	3,969	8.55	269.6	2.30
40 " " 60 .. ..	295,501	4,383	14.83	192.3	2.85
60 " and upwards .. ..	107,542	6,997	65.06	114.6	7.46
Total .. ..	1,466,242	19,370	13.21	1,000.0	15.51
<b>QUEENSLAND.</b>					
Under 1 year .. ..	19,278	1,347	69.87	25.5	1.78
1 year and under 20 .. ..	292,056	1,159	3.97	398.0	1.58
20 years " 40 .. ..	233,584	1,574	6.74	269.6	1.82
40 " " 60 .. ..	126,647	1,953	15.42	192.3	2.97
60 " and upwards .. ..	41,363	2,823	68.25	114.6	7.82
Total .. ..	712,928	8,856	12.42	1,000.0	15.97
<b>SOUTH AUSTRALIA.</b>					
Under 1 year .. ..	11,737	708	60.32	25.5	1.54
1 year and under 20 .. ..	178,472	562	3.15	398.0	1.25
20 years " 40 .. ..	150,173	1,060	7.06	269.6	1.90
40 " " 60 .. ..	83,321	1,057	12.69	192.3	2.44
60 " and upwards .. ..	32,065	2,088	65.12	114.6	7.46
Total .. ..	455,768	5,475	12.01	1,000.0	14.59
<b>WESTERN AUSTRALIA.</b>					
Under 1 year .. ..	8,649	426	49.25	25.5	1.26
1 year and under 20 .. ..	118,478	371	3.13	398.0	1.25
20 years " 40 .. ..	118,789	783	6.59	269.6	1.78
40 " " 60 .. ..	64,609	1,116	17.27	192.3	3.32
60 " and upwards .. ..	12,977	894	68.89	114.6	7.89
Total .. ..	323,502	3,590	11.10	1,000.0	15.50
<b>TASMANIA.</b>					
Under 1 year .. ..	5,943	345	58.05	25.5	1.48
1 year and under 20 .. ..	90,016	245	2.72	398.0	1.08
20 years " 40 .. ..	64,665	339	5.24	269.6	1.41
40 " " 60 .. ..	37,579	459	12.21	192.3	2.35
60 " and upwards .. ..	13,213	804	60.85	114.6	6.97
Total .. ..	211,416	2,192	10.37	1,000.0	13.29
<b>NORTHERN TERRITORY.</b>					
Under 1 year .. ..	43	7	162.79	25.5	4.15
1 year and under 20 .. ..	884	5	5.66	398.0	2.25
20 years " 40 .. ..	1,283	13	10.13	269.6	2.73
40 " " 60 .. ..	2,161	43	19.90	192.3	3.83
60 " and upwards .. ..	437	17	38.90	114.6	4.46
Total .. ..	4,808	85	17.68	1,000.0	17.42

INDEX OF MORTALITY, STATES AND COMMONWEALTH, 1919—*continued*.

Age-Group.	Mean Population, 1919, distributed according to Results of Census of 1911.	Number of Deaths, 1919.	No. of Deaths per 1,000 of Mean Population, 1919, in each Age-Group.	Age Distribution per 1,000 of Standard Population.	Index of Mortality.
<b>FEDERAL TERRITORY.</b>					
Under 1 year .. ..	53	3	56.60	25.5	1.44
1 year and under 20 .. ..	947	3	3.17	398.0	1.26
20 years " 40 .. ..	710	3	4.23	269.6	1.14
40 " " 60 .. ..	430	5	11.63	192.8	2.24
60 " and upwards .. ..	171	4	23.39	114.6	2.68
<b>Total .. ..</b>	<b>2,311</b>	<b>18</b>	<b>7.79</b>	<b>1,000.0</b>	<b>8.76</b>
<b>COMMONWEALTH.</b>					
Under 1 year .. ..	134,460	8,477	63.04	25.5	1.61
1 year and under 20 .. ..	2,019,507	6,875	3.40	398.0	1.35
20 years " 40 .. ..	1,692,080	13,623	8.05	269.6	2.17
40 " " 60 .. ..	965,912	14,765	15.29	192.3	2.94
60 " and upwards .. ..	331,225	22,100	66.99	114.6	7.68
<b>Total .. ..</b>	<b>5,143,184</b>	<b>65,930</b>	<b>12.82</b>	<b>1,000.0</b>	<b>15.75</b>

NOTE.—The small number of persons whose ages were not ascertained at the 1911 Census have been proportionately distributed among the various age-groups, and the same plan has been followed in regard to the persons who died in 1918, and whose ages were not stated in the certificates of death.

It will be seen that among the States in 1919 New South Wales had the highest index and the highest crude rate, while Tasmania had the lowest index and crude rate. The range of the indexes was above that of the crude rates, the latter varying from 10.37 per thousand in Tasmania to 13.40 per thousand in New South Wales, a range of 3.03 per thousand, while the index varied from 13.29 per thousand in Tasmania to 16.48 per thousand in New South Wales, a range of 3.19 per thousand.

For purposes of comparison with previous years the index of mortality is shown in the following table for each of the seven years 1913–1919:—

## INDEX OF MORTALITY, STATES AND TERRITORIES, 1913–1919.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Northern Territory.	Federal Territory.	C'wealth.
1913 ..	13.61	13.50	13.25	13.25	12.58	13.54	20.17	6.13	13.47
1914 ..	12.72	14.11	12.70	13.03	12.56	12.11	20.35	5.17	13.18
1915 ..	13.24	13.54	14.30	13.09	12.79	13.04	21.62	7.15	13.47
1916 ..	13.48	14.28	14.37	14.45	14.15	13.43	22.63	3.63	13.99
1917 ..	12.45	12.81	12.64	12.65	12.93	11.78	13.42	6.70	12.63
1918 ..	12.86	13.23	13.94	12.53	13.69	11.70	15.40	2.37	13.07
1919 ..	16.48	15.51	15.97	14.59	15.50	13.29	17.42	8.76	15.75

15. *Monthly Variations in Death Rates.*—(i) *General Death Rates.* The annual death rates, corresponding to the number of deaths registered in each equalised month, have been calculated for the six years 1907–1912, and a series of diagrams shewing the results for each State and the Commonwealth as a whole appears on page 182 of this issue, distinguishing the rates for males, females, and persons. The curves shewing the male and female rates exhibit in each State a fairly parallel course, irregularities

being, however, more strongly marked in the case of the male curve. The minimum rates in New South Wales and Queensland fall within the autumn months, from March to May, while in Victoria, South Australia, Western Australia, and Tasmania they fall in the spring months, October and November. In no case is there, however, a very great difference between the rates in spring and in autumn, the figures for the Commonwealth being 10.19 per thousand in March, and 10.34 per thousand in October. The maximum rates in New South Wales, Victoria, and Tasmania are experienced in August, and in Queensland in September, with the rates for December and January as secondary maxima. In South Australia the maximum rate of 11.33 per thousand falls in January, the rate for August standing next with 10.80 per thousand. In Western Australia the maximum rate is found in May.

(ii) *Infantile Death Rate.* A similar series of diagrams, shewing the monthly variations in the infantile death rates, appears on page 183. With the exception of Western Australia, where the maximum occurs in May, the maxima are found in the summer months in every State. The rates gradually decrease from January to March, shewing in several States a slight increase in April, with a further diminution until July. In July and August the rates rise to some extent, to fall again until October or November. From that time a rapid rise takes place, until the maximum is reached in December or January. Tasmania, where the seasons are rather later than in the continental States, shews two distinct minima in May and November, with a summer maximum in February, and a fairly high rate in September. In Western Australia the rates are moderately high in December and January, and drop until March, to rise rapidly in April and May, when the maximum is reached. From May to September there is a gradual decrease, with a quick rise from the latter month until December.

16. *Causes of Death.*—(i) Information regarding the changes in the classification of causes of death will be found in previous editions of this Year Book (*e.g.*, Year Book No. 6, pages 222 and 223). The statement will suffice, therefore, that the classification adopted by the Commonwealth Bureau of Census and Statistics is that of the International Institute of Statistics, as amended by the Committee of Revision which met in 1909. The detailed classification groups causes of death under 189 different headings in fourteen categories, as follows:—

- |   |   |
|---|---|
| i. General Diseases.  | viii. Diseases of the Skin and Cellular Tissue. |
| ii. Diseases of the Nervous System and Organs of Special Sense. | ix. Diseases of the Organs of Locomotion.       |
| iii. Diseases of the Circulatory System.                        | x. Malformations.                               |
| iv. Diseases of the Respiratory System.                         | xi. Infancy.                                    |
| v. Diseases of the Digestive System.                            | xii. Old Age.                                   |
| vi. Diseases of the Genito-urinary System and Adnexa.           | xiii. Violence.                                 |
| vii. Puerperal Condition.                                       | xiv. Ill-defined Diseases.                      |

(ii) *Compilation of Vital Statistics for 1907 and Subsequent Years in Commonwealth Bureau.* The vital statistics of the Commonwealth from the year 1907 onward have been tabulated according to this classification in the Commonwealth Bureau, and the system is being employed in all the State offices in the preparation of their monthly and quarterly bulletins of vital statistics.

(iii) *Classification of Causes of Death, 1913 to 1919, according to Abridged International Classification.* An abridged classification, which enumerates thirty-eight diseases and groups of diseases according to the revised classification, is in use in many European and American States, while the Commonwealth statistics have been compiled on the detailed classification of 189 headings. A table has been compiled showing the causes of death according to the abridged classification, so that the results may be compared with those of countries which use the abridged index.

The compilations for the years 1913 to 1919 will be found in full in "Bulletins Nos. 31 to 37 of Population and Vital Statistics"; here it will suffice to give the abridged classification under thirty-eight headings for the year 1919.

## CAUSES OF DEATH, COMMONWEALTH, 1919.

## (a) MALES.

Cause.	N.S.W.	Vic.	Q'land.	S. Aus.	W. Aus.	Tas.	Nor. Ter.	Fed. Ter.	C'wlth.
1 Typhoid Fever ..	73	20	42	10	15	9	..	..	169
2 Typhus ..	..	..	..	..	..	..	..	..	..
3 Malaria ..	3	..	12	1	9	..	..	..	25
4 Small-pox ..	..	..	..	..	..	..	..	..	..
5 Measles ..	4	11	3	3	..	1	..	..	22
6 Scarlet Fever ..	6	14	3	2	1	2	..	..	28
7 Whooping Cough ..	45	15	22	3	5	7	..	..	97
8 Diphtheria and Croup ..	67	98	48	47	17	12	..	..	289
9 Influenza ..	3,518	1,940	606	297	341	121	12	1	6,836
10 Asiatic Cholera ..	..	..	..	..	..	..	..	..	..
11 Cholera Nostras ..	..	1	..	..	..	..	..	..	1
12 Other Epidemic Diseases ..	27	17	26	7	23	2	1	..	103
13 Tuberculosis of the Lungs ..	770	595	261	165	220	62	17	..	2,090
14 Tuberculosis of the Men- inges ..	43	41	1	12	3	9	..	..	109
15 Other forms of Tubercu- losis ..	44	49	17	20	12	10	..	..	152
16 Cancer and other Malignant Tumours ..	929	601	309	215	157	77	3	..	2,291
17 Simple Meningitis ..	120	64	41	26	21	10	..	..	282
18 Congestion, Hæmorrhage and Softening of Brain ..	464	364	208	129	63	47	..	..	1,275
19 Organic Diseases of the Heart ..	1,147	925	489	274	233	166	5	..	3,239
20 Acute Bronchitis ..	98	50	39	15	5	7	1	..	215
21 Chronic Bronchitis ..	210	200	69	39	22	10	2	..	552
22 Pneumonia ..	655	450	175	143	83	43	4	..	1,553
23 Other Diseases of the Respiratory System (Tuberculosis exceptd.) ..	509	543	168	88	81	42	2	..	1,433
24 Diseases of the Stomach (Cancer excepted) ..	69	79	56	29	19	11	..	..	263
25 Diarrhœa and Enteritis (children under 2 years only) ..	626	259	308	118	76	27	..	..	1,414
26 Appendicitis & Typhlitis ..	87	49	35	20	10	10	..	1	212
27 Hernia, Intestinal Ob- structions ..	103	77	49	22	22	18	1	..	292
28 Cirrhosis of the Liver ..	79	51	52	18	14	3	1	..	218
29 Nephritis and Bright's Disease ..	518	415	214	101	62	36	..	..	1,346
30 Non-cancerous Tumours and other Diseases of Female Genital Organs ..	..	..	..	..	..	..	..	..	..
31 Puerperal Septicæmia (Puerperal Fever, Puerperal Peritonitis, Puerperal Phlebitis) ..	..	..	..	..	..	..	..	..	..
32 Other Puerperal Acci- dents of Pregnancy and Confinement ..	..	..	..	..	..	..	..	..	..
33 Congenital Debility and Malformations ..	921	611	302	195	106	87	3	1	2,226
34 Senile Debility ..	1,016	763	317	241	120	82	4	2	2,545
35 Violence ..	770	507	408	194	200	71	10	1	2,161
36 Suicide ..	171	99	90	32	38	7	3	..	440
37 Other Diseases ..	2,033	1,481	908	394	321	167	11	1	5,316
38 Unspecified or Ill-defined Diseases ..	131	119	59	67	41	19	2	..	438
Total—Males ..	15,256	10,508	5,337	2,927	2,340	1,175	82	7	37,632

## CAUSES OF DEATH, COMMONWEALTH, 1919.

## (b) FEMALES.

Cause.	N.S.W.	Vic.	Q'land.	S. Aus.	W. Aus.	Tas.	Nor. Ter.	Fed. Ter.	C'wlth.
1 Typhoid Fever ..	49	13	27	7	5	2	..	..	103
2 Typhus ..	..	..	..	..	..	..	..	..	..
3 Malaria ..	..	1	7	..	1	..	..	..	9
4 Small-pox ..	..	..	..	..	..	..	..	..	..
5 Measles ..	4	14	5	6	..	..	..	..	29
6 Scarlet Fever ..	10	21	1	6	2	1	..	..	41
7 Whooping Cough ..	59	18	24	6	2	5	..	..	114
8 Diphtheria and Croup ..	71	112	49	35	16	9	..	..	292
9 Influenza ..	2,265	1,515	440	221	171	104	..	..	4,716
10 Asiatic Cholera ..	..	..	..	..	..	..	..	..	..
11 Cholera Nostras ..	..	..	..	..	..	..	..	..	..
12 Other Epidemic Diseases ..	23	6	13	4	6	2	..	..	54
13 Tuberculosis of the Lungs ..	486	453	147	172	75	55	..	1	1,389
14 Tuberculosis of the Men- inges ..	26	25	8	11	2	7	..	..	79
15 Other forms of Tubercu- losis ..	38	51	10	18	4	8	..	..	129
16 Cancer and other Malignant Tumours ..	777	668	260	226	97	100	1	1	2,130
17 Simple Meningitis ..	76	56	28	19	10	10	..	..	199
18 Congestion, Hæmorrhage and Softening of Brain ..	429	359	159	140	53	52	..	..	1,192
19 Organic Diseases of the Heart ..	906	861	322	288	129	118	1	..	2,625
20 Acute Bronchitis ..	109	41	22	20	7	6	..	..	205
21 Chronic Bronchitis ..	204	170	44	51	15	11	..	..	495
22 Pneumonia ..	485	311	116	113	43	34	..	1	1,103
23 Other Diseases of the Respiratory System (Tuberculosis exceptd.) ..	390	351	89	80	42	28	..	..	980
24 Diseases of the Stomach (Cancer excepted) ..	70	60	48	18	12	7	..	..	215
25 Diarrhœa and Enteritis (children under 2 yrs. only) ..	488	205	232	115	47	18	..	1	1,106
26 Appendicitis & Typhlitis ..	53	38	15	19	8	7	..	..	140
27 Hernia, Intestinal Ob- structions ..	84	78	23	26	16	9	1	1	238
28 Cirrhosis of the Liver ..	38	24	19	10	5	1	..	..	97
29 Nephritis and Bright's Disease ..	302	279	157	71	38	28	..	..	875
30 Non-cancerous Tumours and other Diseases of the Female Genital Organs ..	43	31	19	14	16	9	..	..	132
31 Puerperal Septicæmia (Puerperal Fever, Puer- peral Peritonitis, Puer- peral Phlebitis) ..	73	38	27	13	11	4	..	..	166
32 Other Puerperal Acci- dents of Pregnancy and Confinement ..	154	106	64	42	28	10	..	..	404
33 Congenital Debility and Malformations ..	657	478	206	146	83	88	..	1	1,659
34 Senile Debility ..	823	890	203	215	66	98	..	..	2,295
35 Violence ..	256	172	101	54	37	18	..	..	638
36 Suicide ..	49	30	11	5	7	4	..	..	106
37 Other Diseases ..	1,516	1,290	597	337	181	148	..	5	4,074
38 Unspecified or Ill-defined Diseases ..	75	97	26	40	15	16	..	..	269
Total—Females ..	11,088	8,862	3,519	2,548	1,250	1,017	3	11	28,298



## CAUSES OF DEATH, COMMONWEALTH, 1919.

(c) TOTAL—MALES AND FEMALES.

Cause.	N.S.W.	Vic.	Q'land.	S. Aus.	W. Aus.	Tas.	Nor. Ter.	Fed. Ter.	C'with.
1 Typhoid Fever ..	122	33	69	17	20	11	..	..	272
2 Typhus ..	..	..	..	..	..	..	..	..	..
3 Malaria ..	3	1	19	1	10	..	..	..	34
4 Small-pox ..	..	..	..	..	..	..	..	..	..
5 Measles ..	8	25	8	9	..	1	..	..	51
6 Scarlet Fever ..	16	35	4	8	3	3	..	..	69
7 Whooping Cough ..	104	33	46	9	7	12	..	..	211
8 Diphtheria and Croup ..	138	210	97	82	33	21	..	..	581
9 Influenza ..	5 783	3,455	1,046	518	512	225	12	1	11,552
10 Asiatic Cholera ..	..	..	..	..	..	..	..	..	..
11 Cholera Nostras ..	..	1	..	..	..	..	..	..	1
12 Other Epidemic Diseases ..	50	23	39	11	29	4	1	..	157
13 Tuberculosis of the Lungs ..	1,256	1,048	408	337	295	117	17	1	3,479
14 Tuberculosis of the Men- inges ..	69	66	9	23	5	16	..	..	188
15 Other forms of Tuber- culosis ..	82	100	27	38	16	18	..	..	281
16 Cancer and other Malignant Tumours ..	1,706	1,269	569	441	254	177	4	1	4,421
17 Simple Meningitis ..	196	120	69	45	31	20	..	..	481
18 Congestion, Hæmorrhage and Softening of the Brain ..	893	723	367	269	116	99	..	..	2,467
19 Organic Diseases of Heart ..	2,053	1,786	811	562	362	284	6	..	5,864
20 Acute Bronchitis ..	207	91	61	35	12	13	1	..	420
21 Chronic Bronchitis ..	414	370	113	90	37	21	2	..	1,047
22 Pneumonia ..	1,140	761	291	256	126	77	4	1	2,656
23 Other Diseases of the Respiratory System (Phthisis excepted) ..	899	894	257	168	123	70	2	..	2,413
24 Diseases of the Stomach (Cancer excepted) ..	139	139	104	47	31	18	..	..	478
25 Diarrhœa and Enteritis (children under 2 years only) ..	1,114	464	540	233	123	45	..	1	2,520
26 Appendicitis & Typhlitis ..	140	87	50	39	18	17	..	1	352
27 Hernia, Intestinal Ob- structions ..	187	155	72	48	38	27	2	1	530
28 Cirrhosis of the Liver ..	117	75	71	28	19	14	1	..	315
29 Nephritis and Bright's Disease ..	820	694	371	172	100	64	..	..	2,221
30 Non-cancerous Tumours and other Diseases of the Female Genital Organs ..	43	31	19	14	16	9	..	..	132
31 Puerperal Septicæmia (Puerperal Fever, Puer- peral Peritonitis, Puer- peral Phlebitis) ..	73	38	27	13	11	4	..	..	166
32 Other Puerperal Acci- dents of Pregnancy and Confinement ..	154	106	64	42	28	10	..	..	404
33 Congenital Debility and Malformations ..	1,578	1,089	508	341	189	175	3	2	3,885
34 Senile Debility ..	1,839	1,653	520	456	186	180	4	2	4,840
35 Violence ..	1,026	679	509	248	237	89	10	1	2,799
36 Suicide ..	220	129	101	37	45	11	3	..	546
37 Other Diseases ..	3,549	2,771	1,505	731	502	315	11	6	9,390
38 Unspecified or Ill-defined Diseases ..	206	216	85	107	56	35	2	..	707
Total—Males and Females	26,344	19,370	8,856	5,475	3,590	2,192	85	18	65,930

(d) The classification for the years 1913 to 1918 is shewn for the Commonwealth in the following table, and for purposes of comparison the figures for the year 1919 have been repeated from the preceding table. Male and female deaths for 1914 are shewn on pages 188 and 189 of the ninth issue, for 1915 on pages 198 and 199 of the tenth issue, for 1917 on pages 204 and 205 of the eleventh issue, and for 1918 on pages 197 and 198 of the twelfth issue of this book.

## CAUSES OF DEATH, COMMONWEALTH, 1913 TO 1919.

## MALES AND FEMALES.

Cause.	1913.	1914.	1915.	1916.	1917.	1918.	1919.
1 Typhoid Fever .. .. .	576	604	561	529	284	251	272
2 Typhus .. .. .	..	..	..	..	..	..	..
3 Malaria .. .. .	24	22	30	50	49	41	34
4 Small-pox .. .. .	1	3	1	1	..	..	..
5 Measles .. .. .	186	155	439	211	72	82	51
6 Scarlet Fever .. .. .	39	29	104	134	64	81	69
7 Whooping Cough .. .. .	560	320	185	426	282	234	211
8 Diphtheria and Croup .. .. .	808	716	703	893	646	645	581
9 Influenza .. .. .	341	331	389	278	168	848	11,552
10 Asiatic Cholera .. .. .	..	..	..	..	..	..	..
11 Cholera Nostras .. .. .	3	2	2	4	1	2	1
12 Other Epidemic Diseases .. .. .	185	176	205	249	144	174	157
13 Tuberculosis of the Lungs .. .. .	3,252	3,111	3,064	3,198	2,883	3,035	3,479
14 Tuberculosis of the Meninges .. .. .	252	207	213	215	206	208	188
15 Other forms of Tuberculosis .. .. .	296	256	278	310	275	292	281
16 Cancer and other Mal. Tumours .. .. .	3,603	3,675	3,702	3,979	4,022	4,246	4,421
17 Simple Meningitis .. .. .	753	812	1,209	1,201	690	583	481
18 Congestion, Hæmorrhage and Softening of the Brain .. .. .	2,281	2,204	2,118	2,230	2,214	2,297	2,467
19 Organic Diseases of the Heart .. .. .	4,989	4,836	4,370	4,509	3,852	3,976	5,864
20 Acute Bronchitis .. .. .	397	389	489	512	321	399	420
21 Chronic Bronchitis .. .. .	991	959	913	1,057	829	1,121	1,047
22 Pneumonia .. .. .	1,966	1,992	2,225	2,220	1,896	2,141	2,056
23 Other Diseases of the Respiratory System (Tuberculosis excepted) .. .. .	1,812	1,866	2,212	2,243	1,941	2,199	2,413
24 Diseases of the Stomach (Cancer excepted) .. .. .	447	368	351	263	394	409	478
25 Diarrhœa and Enteritis (Children under two years only) .. .. .	3,176	3,506	2,815	3,018	1,719	1,732	2,520
26 Appendicitis and Typhlitis .. .. .	364	374	356	321	321	371	352
27 Hernia, Intestinal Obstructions .. .. .	486	460	488	501	449	543	530
28 Cirrhosis of the Liver .. .. .	365	380	376	309	335	297	315
29 Nephritis and Bright's Disease .. .. .	2,211	2,127	2,274	2,329	2,203	2,144	2,221
30 Non-cancerous Tumours and other Diseases of the Female Genital Organs .. .. .	153	138	139	153	148	150	132
31 Puerperal Septicæmia (Puerperal Fever, Peritonitis, Phlebitis) .. .. .	235	215	182	282	250	183	106
32 Other Puerperal Accidents of Pregnancy and Confinement .. .. .	428	419	394	411	482	409	404
33 Congenital Debility, &c. .. .. .	3,823	3,860	3,993	3,826	3,423	3,454	3,885
34 Senile Debility .. .. .	4,116	4,130	4,686	4,980	4,770	4,664	4,840
35 Violence .. .. .	3,168	3,121	2,851	2,712	2,056	2,641	2,799
36 Suicide .. .. .	647	643	658	577	502	498	546
37 Other Diseases .. .. .	8,241	8,670	9,090	9,433	8,871	9,226	9,390
38 Unspecified or Ill-defined Diseases .. .. .	614	644	717	633	667	664	707
Total .. .. .	51,789	51,720	52,782	54,197	48,029	50,249	65,930

17. Certification of Deaths.—Information was obtained in 1919 as to the persons by whom the 65,930 deaths which occurred in the Commonwealth were certified. The result of the enquiry shews that approximately 91.5 per cent. (in 1914, 88.8 per cent.; in 1915, 89.3 per cent.; in 1916, 89.5 per cent.; in 1917, 89.3 per cent.; and in 1918 89.9 per cent.) were certified by medical practitioners, and 8.2 per cent. (in 1914, 10.7 per cent.; in 1915, 10.2 per cent.; in 1916, 9.9 per cent.; in 1917, 10.3 per cent.; and in 1918, 9.8 per cent.) by coroners after inquests or magisterial enquiries, while in 0.3 per cent. (in 1913, 0.5 per cent.; in 1914, 0.5 per cent.; in 1915, 0.5 per cent.; in 1916, 0.6 per cent.; in 1917, 0.4 per cent.; and in 1918, 0.3 per cent.) of the cases there

was either no certificate given or particulars were not forthcoming. The results are shewn in detail in Bulletin No. 37; a short summary will therefore suffice here:—

### CERTIFICATION OF DEATHS, COMMONWEALTH, 1919.

Death Certified by—	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Nor. Ter.	Fed. Ter.	C'wlth.
Medical practitioner	24,217	17,476	8,298	4,975	3,224	2,042	58	17	60,307
Coroner ..	2,111	1,888	394	484	339	140	27	1	5,384
Not certified or not stated ..	16	6	164	16	27	10	..	..	239
Total Deaths	26,344	19,370	8,856	5,475	3,590	2,192	85	18	65,930

Of the cases certified by coroners, violent deaths numbered 2,488, senile decay 417, organic heart disease 445, ill-defined causes 287, congenital debility 143, cerebral hæmorrhage and apoplexy 118, pneumonia 140, Bright's disease 91, diarrhœa and enteritis 107, pulmonary tuberculosis 85, diseases of arteries, aneurisms, &c., 141, broncho-pneumonia 72, acute and chronic alcoholism 49, puerperal diseases 38, and infantile convulsions 47; a total of 4,528 out of 5,384.

Of uncertified causes of death, violent deaths numbered 35, congenital debility 26, senile debility 36, ill-defined causes 28, infantile convulsions 10, and pulmonary tuberculosis 4; a total of 139 out of 239.

**18. Deaths from Special Causes.**—The table on p. 191 furnishes comparisons for the last seven years only, and comparisons will, therefore, generally be restricted to that period.

(i) *Typhoid Fever.* Of the 272 deaths recorded in 1919, 122 occurred in New South Wales, 33 in Victoria, 69 in Queensland, 17 in South Australia, 20 in Western Australia, and 11 in Tasmania. There has been a marked diminution since 1916.

(ii) *Typhus.* No deaths from typhus have been registered from 1913 to 1919.

(iii) *Malaria.* Deaths from malarial diseases are practically confined to the tropical districts of Northern Queensland and Western Australia, and to the Northern Territory, 19 out of 34 deaths registered in 1919 having occurred in Queensland and 10 in Western Australia.

(iv) *Small-pox.* The number of deaths from small-pox in Australia is very small, six deaths only resulting in the seven years under review.

(v) *Measles.* No serious epidemic of measles has occurred for several years; the deaths in 1914 totalling 155. A large increase in the number of deaths occurred in 1915, but in 1916 the total fell again to 211, and in 1917 to 72, rising slightly in 1918 to 82, but falling in 1919 to 51.

(vi) *Scarlet Fever.* The mortality from this source is very light, the average of deaths from 1913 to 1919 being less than 90 per annum.

(vii) *Whooping Cough.* In 1913 the number of deaths was 560, falling to 185 in 1915, and increasing again to 426 in 1916, with a further fall to 282 in 1917, of which 142 occurred in New South Wales and 67 in Victoria. The number registered in 1919 was the smallest in the period under review except in 1915.

(viii) *Diphtheria and Croup.* Deaths from this cause reached a figure of 808 in 1913. The numbers declined to 716 in 1914 and 703 in 1915, but increased to 893 in 1916, and fell to 645 in 1918, and 581 in 1919, of which 138 were registered in New South Wales, 210 in Victoria, 97 in Queensland, 82 in South Australia, 33 in Western Australia, and 21 in Tasmania.

(ix) *Influenza.* In 1914, 331 deaths were registered from this cause; in 1915, 389; in 1916, 278; and in 1917, 168. In 1918 there was rather a serious outbreak, the deaths rising to 848. In 1919 Australia experienced the full effect of the world-wide epidemic, the number of deaths reaching the unprecedented figure of 11,552, of which almost exactly one-half occurred in New South Wales. The deaths in States were as

follows :—Ordinary influenza—New South Wales, 568 ; Victoria, 345 ; Queensland, 247 ; South Australia, 47 ; Western Australia, 42 ; Tasmania, 29 ; and Northern Territory, 11 ; total, 1,289. Pneumonic influenza—New South Wales, 5,215 ; Victoria, 3,110 ; Queensland, 799 ; South Australia, 471 ; Western Australia, 470 ; Tasmania, 196 ; Northern Territory, 1 ; and Federal Territory, 1 ; total, 10,263.

A special feature of the epidemic was that the deaths occurred principally at the younger and middle ages, and not at the older ages as in ordinary influenza. This is illustrated in the following table :—

#### DEATHS FROM INFLUENZA, COMMONWEALTH, 1919.

Age Groups.	Ordinary Influenza.		Pneumonic Influenza.	
	Number.	Percentage of Total Deaths.	Number.	Percentage of Total Deaths.
Deaths under 5 .. ..	144	11.17	348	3.39
„ 5-19 .. ..	102	7.91	665	6.48
„ 20-39 .. ..	411	31.89	5,535	53.93
„ 40-59 .. ..	350	27.15	2,889	28.15
„ 60 and above .. ..	282	21.88	826	8.05
Total .. ..	1,289	100.00	10,263	100.00

Further reference to deaths, etc., from influenza will be found in Section xxxiv., Miscellaneous.

(x) *Asiatic Cholera*. No cases of Asiatic cholera have ever occurred in the Commonwealth.

(xi) *Cholera Nostras*. Isolated cases only of choleraform diarrhoea occurred in each of the seven years. One death from this cause was registered during 1917, and 2 in 1918.

(xii) *Other Epidemic Diseases*. The number of deaths registered under this heading was 185 in 1913, 176 in 1914, 205 in 1915, 249 in 1916, 144 in 1917, 174 in 1918, and 157 in 1919. The list in 1919 includes the following diseases :—Dysentery 88, erysipelas 56, leprosy 8, other epidemic diseases 5. There have been no deaths from plague in the Commonwealth since 1912.

(xiii) *Tuberculosis of the Lungs and Acute Miliary Tuberculosis*. The deaths in 1919 numbered 3,365 ; viz., 2,027 males and 1,338 females. The figures for the years 1913 to 1918 were 3,252, 3,111, 3,064, 3,198, 2,883, and 3,035 respectively. Of the deaths in 1919, 1,207 occurred in New South Wales, 1,015 in Victoria, 396 in Queensland, 327 in South Australia, 289 in Western Australia, 114 in Tasmania, and 17 in the Northern Territory.

(xiiia) *Tuberculosis of the Respiratory System*. Of the various forms of tuberculosis prevalent in the Commonwealth, that which has attracted the most attention and has been the subject of the widest comment is phthisis, or tuberculosis of the lungs. The intimate relation, however, between tuberculosis of the lungs and that of other parts of the respiratory system renders it desirable that all forms of tuberculosis of the respiratory system should be brought under one head for various investigations concerning the age incidence and duration of this disease.

In the matter of the age incidence of death from tuberculosis of the respiratory system, diagrams were given in Year Books 2, 3, and 4, pp. 239, 217, and 206 respectively, showing the frequency of deaths at successive ages in England and Wales during 1906 (Fig. 1) and in the Commonwealth during 1907 (Fig. 2). These were superseded by a fuller reference based on later results in Year Book No. 5, pp. 230, &c. The results given depended upon intercensal estimates of population, and these having been adjusted to agree with the Census of 3rd April, 1911, some slight amendments of the figures in previous issues were made in Year Book No. 5.

(xiv) *Tuberculosis of the Meninges*. The number of deaths ascribed to this cause has varied very slightly during the last six years. The greatest number of deaths, viz., 252, occurred in 1913, and the least number, viz., 188, in 1919.

(xv) *Other Forms of Tuberculosis.* The deaths in 1919 include the following forms of tuberculosis:—Abdominal tuberculosis, 121; Pott's disease, 53; white swellings, 17; tuberculosis of other organs, 42; and disseminated tuberculosis, 48.

(xva) *All Forms of Tuberculosis.* A complete tabulation of all the different tubercular diseases from which deaths occurred in 1919 will be found in Bulletin No. 37 of Population and Vital Statistics. Here it will suffice to shew a few of the features of the tabulation mentioned. The total number of deaths due to tubercular diseases was 3,948, viz., 2,351 males and 1,597 females. The following table shows the ages of these 3,948 persons :—

**AGES OF PERSONS WHO DIED FROM TUBERCULAR DISEASES,  
COMMONWEALTH, 1919.**

Ages.	Male.	Female.	Total.	Ages.	Male.	Female.	Total.
Under 5 years ..	87	72	159	55 years and under 60	182	58	240
5 years and under 10	19	28	47	60     "     "     65	132	40	172
10     "     "     15	17	31	48	65     "     "     70	72	28	100
15     "     "     20	20	83	204	70     "     "     75	35	19	54
20     "     "     25	179	225	404	75     "     "     80	19	7	26
25     "     "     30	250	260	510	80     "     over ..	7	3	10
30     "     "     35	288	201	489				
35     "     "     40	289	194	483	Unspecified ..	3	..	3
40     "     "     45	242	132	374				
45     "     "     50	236	108	344				
50     "     "     55	211	70	281	Total Deaths ..	2,351	1,597	3,948

A tabulation has been made of the occupations of males dying from tubercular diseases during 1919. A summary is here given :—

OCCUPATIONS OF MALES WHO DIED FROM TUBERCULAR DISEASES,  
COMMONWEALTH, 1919.

Occupation.	No. of Deaths.	Occupation.	No. of Deaths.
Professional class .. ..	214	Agricultural class .. ..	168
Domestic class .. ..	71	Pastoral class .. ..	44
Mercantile class .. ..	348	Working in mines and quarries ..	234
Engaged in transport and communication .. ..	191	Other primary producers .. ..	9
Manufacturing class .. ..	266	Independent means .. ..	9
Engaged in building and construction .. ..	98	Dependents .. ..	184
Other industrial workers ..	463	Occupation not stated .. ..	52
		Total Male Deaths ..	2,351

The length of residence in the Commonwealth of persons who died from tubercular diseases has been tabulated for the year 1919 for all the Commonwealth States, with the following results :—

LENGTH OF RESIDENCE IN COMMONWEALTH OF PERSONS WHO DIED FROM  
TUBERCULAR DISEASES. 1919.

Length of Residence in Commonwealth.	Male.	Fem.	Total.	Length of Residence in Commonwealth.	Male.	Fem.	Total.
Born in Commonwealth ..	1,652	1,342	2,994	Resident 10 years & under 15	51	22	73
Resident under 1 year ..	6	2	8	"    15    "    "    20	31	10	41
"    1 year ..	6	..	6	"    20    "    over ..	317	112	429
"    2 years ..	9	3	12	Length of residence not stated	144	26	170
"    3    "    ..	11	3	14				
"    4    "    ..	16	5	21				
"    5    "    and under 10	108	72	180	Total Deaths ..	2,351	1,597	3,948

From the preceding table and the table on page 173, it will be seen that, among persons who had lived less than 5 years in Australia, 537 deaths occurred, and of these 61, or 11.4 per cent., were due to tubercular diseases.

In order to shew the prevalence of tuberculosis in the several States, the death rates from tubercular diseases are given in the following table, together with the percentage which deaths from tuberculosis bear to the total number of deaths registered :—

**DEATH RATES (a) FROM TUBERCULOSIS AND PERCENTAGE ON TOTAL DEATHS, COMMONWEALTH, 1919.**

State.	Death Rates (a) from Tuberculosis.			Percentage on Total Deaths.		
	Males.	Females.	Total.	Males.	Females.	Total.
New South Wales .. ..	0.87	0.56	0.72	5.62	4.96	5.34
Victoria .. ..	0.96	0.70	0.83	6.52	5.97	6.27
Queensland .. ..	0.76	0.48	0.62	5.23	4.69	5.01
South Australia .. ..	0.92	0.83	0.87	6.73	7.89	7.27
Western Australia .. ..	1.38	0.52	0.98	10.04	6.48	8.80
Tasmania .. ..	0.75	0.68	0.71	6.89	6.88	6.89
Northern Territory .. ..	4.61	..	3.54	20.73	..	20.00
Federal Territory .. ..	..	0.96	0.43	..	9.09	5.56
Commonwealth .. ..	0.92	0.62	0.77	6.25	5.64	5.99

(a) Number of deaths from tuberculosis per 1,000 of mean population.

The following table, which gives for a number of countries the death rates from pulmonary and military tuberculosis per 1,000 persons living, shews that the Commonwealth occupies a very enviable position when compared with most European countries :—

**PULMONARY AND MILITARY TUBERCULOSIS—DEATHS PER 1,000 PERSONS LIVING.**

Country.	Year.	Death Rate.	Country.	Year.	Death Rate.
Rumania .. ..	1914	0.40	United States (Registration Area) ..	1915	1.28
Denmark .. ..	1914	0.44	Prussia .. ..	1913	1.37
New Zealand .. ..	1918	0.60	Switzerland .. ..	1914	1.38
Australia .. ..	1919	0.68	Jamaica .. ..	1915	1.47
Ontario (Canada) .. ..	1917	0.88	Japan .. ..	1913	1.50
Ceylon .. ..	1915	0.89	Sweden .. ..	1912	1.60
Belgium .. ..	1912	0.93	Ireland .. ..	1916	1.69
Italy .. ..	1914	1.05	Norway .. ..	1914	1.76
Scotland .. ..	1916	1.06	France .. ..	1911	1.80
Netherlands .. ..	1915	1.10	Chile .. ..	1914	2.55
England and Wales .. ..	1916	1.20	Finland .. ..	1914	2.57
Spain .. ..	1914	1.23	Austria .. ..	1912	2.83
German Empire .. ..	1913	1.24	Serbia .. ..	1911	3.24
United Kingdom .. ..	1917	1.25	Hungary .. ..	1912	3.49

(xvi) *Cancer and other Malignant Tumours.* The number of deaths from cancer has increased continuously to 4,421 in 1919. Of the deaths registered in 1919, 2,291 were those of males, viz., 929 in New South Wales, 601 in Victoria, 309 in Queensland, 215 in South Australia, 157 in Western Australia, 77 in Tasmania, and 3 in the Northern Territory; while 2,130 were those of females, viz., 777 in New South Wales, 668 in Victoria, 260 in Queensland, 226 in South Australia

97 in Western Australia, 100 in Tasmania, and one each in the Northern Territory and Federal Territory. Bulletin No. 37 contains a complete tabulation of the various types of cancer and of the seat of the disease, of which the following is a summary:—

#### DEATHS FROM CANCER, COMMONWEALTH, 1919.

Seat of Disease.	Male.	Female.	Total.
Cancer, &c., of the buccal cavity .. .. .	243	24	267
"    "    the stomach and liver .. .. .	1,001	636	1,637
"    "    the peritoneum, the intestines, and the rectum ..	296	297	593
"    "    the female genital organs .. .. .	..	414	414
"    "    the breast .. .. .	..	321	321
"    "    the skin .. .. .	123	60	183
"    "    other organs .. .. .	628	378	1,006
Total Deaths .. .. .	2,291	2,130	4,421

Of these deaths, 1,040 were described as cancer, 2,233 as carcinoma, 172 as epithelioma, 566 as "malignant disease," 55 as "malignant tumour," 30 as neoplasm, 52 as "rodent ulcer," 259 as sarcoma, and 14 as scirrhus.

The ages of the 4,421 persons who died from cancer in 1919 are shewn in the following table, from which it will be seen that while the ages below 35 are not by any means immune from the disease, the great majority of deaths occurred at ages from 35 upwards, the maximum being found in the age group 60 to 65:—

#### AGES OF PERSONS WHO DIED FROM CANCER, COMMONWEALTH, 1919.

Ages.	Male.	Female.	Total.	Ages.	Male.	Female.	Total.
Under 15 years ..	21	10	31	55 years and under 60 ..	327	292	619
15 years and under 20 ..	5	9	14	60 " " 65 ..	389	312	701
20 " " 25 ..	7	9	16	65 " " 70 ..	358	257	615
25 " " 30 ..	19	17	36	70 " " 75 ..	274	195	469
30 " " 35 ..	22	38	60	75 " " 80 ..	203	166	369
35 " " 40 ..	50	71	121	80 " " 85 ..	105	91	196
40 " " 45 ..	86	132	218	85 years and over ..	49	57	106
45 " " 50 ..	142	192	334	Unspecified ..	3	2	5
50 " " 55 ..	231	280	511				
				Total Deaths ..	2,291	2,130	4,421

A tabulation, of which the following is a summary, has been made of the occupations of males who died from cancer:—

#### OCCUPATIONS OF MALES WHO DIED FROM CANCER, COMMONWEALTH, 1919.

Occupation.	No. of Deaths.	Occupation.	No. of Deaths.
Professional class .. .. .	113	Agricultural class .. .. .	367
Domestic class .. .. .	73	Pastoral class .. .. .	94
Mercantile class .. .. .	276	Working in mines and quarries ..	107
Engaged in transport and communication .. .. .	171	Other primary producers .. .. .	25
Manufacturing class .. .. .	255	Independent means .. .. .	45
Engaged in building and construction .. .. .	154	Dependents .. .. .	41
Other industrial workers .. .. .	486	Occupation not stated .. .. .	84
		Total Male Deaths .. .. .	2,291

As the following tables shew, the total death rates from cancer are below those for tubercular diseases in South Australia and Western Australia only. The male death rates from cancer were, in 1917, in excess of those from tuberculosis in all the States except South Australia and Western Australia, while the female death rates were in excess in all the States with the exception of South Australia. While the death rates from tuberculosis have a general tendency to decrease, the death rates from cancer have, on the contrary, shewn an increase in nearly every recent year. In 1914, while the death rate from tuberculosis decreased from 0.79 to 0.73 per thousand, the rate for cancer remained stationary, the result being that the rate for cancer exceeded that for tuberculosis by 0.02 per thousand. In 1915 the death rate from cancer was 0.03 per thousand; in 1916, 0.06 per thousand; in 1917, 0.13 per thousand; in 1918, 0.14 per thousand, and in 1919, 0.09 per thousand in excess of that of tuberculosis.

**DEATH RATES(a) FROM CANCER AND PERCENTAGE ON TOTAL DEATHS,  
COMMONWEALTH, 1919.**

State.	Death Rates (a) from Cancer.			Percentage on Total Deaths.		
	Males.	Females.	Total.	Males.	Females.	Total.
New South Wales .. ..	0.94	0.78	0.87	6.09	7.01	6.48
Victoria .. ..	0.84	0.89	0.87	5.72	7.54	6.55
Queensland .. ..	0.84	0.75	0.80	5.79	7.39	6.43
South Australia .. ..	1.00	0.94	0.97	7.34	8.87	8.05
Western Australia .. ..	0.92	0.63	0.79	6.71	7.76	7.08
Tasmania .. ..	0.71	0.97	0.84	6.55	9.83	8.07
Northern Territory .. ..	0.80	0.89	0.83	3.66	33.33	4.71
Federal Territory .. ..	..	0.96	0.43	..	9.09	5.55
Commonwealth .. ..	0.89	0.83	0.86	6.09	7.53	6.71

(a) Number of deaths from Cancer per 1,000 of mean population.

The following table shows the death rate of the Commonwealth in comparison with other countries:—

**CANCER—DEATH RATE IN VARIOUS COUNTRIES.**

Country.	Year.	Rate.	Country.	Year.	Rate.
Ceylon .. ..	1915	0.09	Prussia .. ..	1913	0.83
Rumania .. ..	1914	0.13	New Zealand .. ..	1918	0.85
Serbia .. ..	1911	0.14	<b>Australia .. ..</b>	<b>1919</b>	<b>0.86</b>
Jamaica .. ..	1915	0.17	Ireland .. ..	1916	0.91
Chile .. ..	1914	0.36	German Empire .. ..	1913	0.91
Hungary .. ..	1912	0.47	United States (Regis-		
Spain .. ..	1914	0.57	tration Area) .. ..	1915	0.91
Denmark .. ..	1914	0.58	Norway .. ..	1914	1.02
Japan .. ..	1913	0.66	Netherlands .. ..	1915	1.09
Italy .. ..	1914	0.67	Sweden .. ..	1912	1.10
Belgium .. ..	1912	0.71	Scotland .. ..	1916	1.12
Ontario (Canada) .. ..	1915	0.72	United Kingdom .. ..	1916	1.15
France .. ..	1911	0.80	England and Wales .. ..	1917	1.21
Austria .. ..	1912	0.81	Switzerland .. ..	1914	1.28



The fifth issue of this Year Book contains, on pages 230, *et seq.*, a paper dealing, *inter alia*, with the incidence of cancer in the Commonwealth. The paper is not reprinted in the present issue.

(xvii) *Simple Meningitis.* Deaths from this cause increased seriously in 1915 and 1916, since when they have steadily declined. Sporadic cases of cerebro-spinal meningitis, which occurred to the end of 1914, are included in the figures, but from 1915 onward they were tabulated separately, the deaths during 1919 from cerebro-spinal meningitis being 79, and those from all other forms of meningitis, 402. Of the former, 29 occurred in New South Wales, 17 in Victoria, 13 in Queensland, 8 in South Australia, 5 in Western Australia, and 7 in Tasmania.

(xviii) *Apoplexy, Hæmorrhage and Softening of the Brain.* The deaths registered under this heading have been remarkably steady during the period under review. The figures for 1919 are made up as follows:—Cerebral hæmorrhage and apoplexy, 1,219 males and 1,164 females; softening of the brain, 56 males and 28 females.

(xix) *Organic Diseases of the Heart.* The number of deaths registered in 1919 was 5,864, viz., 3,239 males and 2,625 females. Of these deaths, New South Wales was responsible for 1,147 males and 906 females; Victoria for 925 males and 861 females; Queensland for 489 males and 322 females; South Australia for 274 males and 288 females; Western Australia for 233 males and 129 females; Tasmania for 166 males and 118 females; the Northern Territory for 5 males and 1 female; and the Federal Territory for 1 male. To the figures for 1919 correspond the following death rates and percentages to total deaths:—

**DEATH RATES (a) FROM ORGANIC HEART DISEASE AND PERCENTAGE ON  
TOTAL DEATHS, COMMONWEALTH, 1919.**

State.	Death Rates (a) from Organic Heart Disease.			Percentage on Total Deaths.		
	Males.	Females.	Total.	Males.	Females.	Total.
New South Wales	1.16	0.92	1.04	7.52	8.17	7.79
Victoria ..	1.27	1.15	1.22	8.80	9.71	9.22
Queensland ..	1.33	0.93	1.14	9.16	9.17	9.16
South Australia	1.27	1.20	1.23	9.36	11.30	10.26
Western Australia	1.37	0.84	1.12	9.96	10.32	10.08
Tasmania ..	1.53	1.15	1.34	14.13	11.60	12.96
Northern Territory	1.36	0.89	1.25	6.10	33.33	7.06
Federal Territory	..	..	..	..	..	..
Commonwealth	1.26	1.02	1.14	8.60	9.28	8.89

(a) Number of deaths from Organic Heart Disease per 1,000 of mean population.

(xx) *Acute Bronchitis.* The classification of causes of death requires deaths of persons under five years of age, which are merely ascribed to "bronchitis," to be classified under "acute bronchitis," and similarly certified deaths of older persons under "chronic bronchitis." This rule has been followed throughout in compiling the tables for 1913-1919, with the result that acute bronchitis is credited with 397 deaths in 1913, 389 in 1914, 489 in 1915, 512 in 1916, 321 in 1917, 399 in 1918; and 420 deaths in 1919, viz., 215 males and 205 females.

(xxi) *Chronic Bronchitis.* The adjustment mentioned in the preceding paragraph gives a total of 1,047 deaths in 1919.

(xxii) *Pneumonia.* The 1919 figures were 1,553 males and 1,103 females, a total of 2,656 deaths.

(xxiii) *Other Diseases of the Respiratory System.* This head was established in 1910, the figures previously being included in "Other Diseases" (paragraph xxxvii). Deaths in 1913, 1,812; in 1914, 1,866; in 1915, 2,212; in 1916, 2,243; in 1917, 1,941; in 1918, 2,199; and in 1919, 2,413. The total for 1919 is made up as follows, viz.:—Diseases of the larynx, 80 deaths; diseases of the thyroid body, 35 deaths; broncho-pneumonia, 1,339 deaths; pleurisy, 195 deaths; pulmonary congestion and apoplexy, 200 deaths; gangrene of the lung, 22 deaths; asthma, 204 deaths; pulmonary emphysema, 9 deaths; fibroid phthisis (miners' complaint), 249 deaths; other diseases of the respiratory system (tuberculosis excepted), 80 deaths.

(xxiv) *Diseases of the Stomach (Cancer excepted).* In 1919 this heading includes—Ulcer of the stomach, 86 males, 55 females; and other diseases of the stomach (cancer excepted), 177 males, 160 females; a total of 478 deaths.

(xxv) *Diarrhœa and Enteritis (Children under two years only).* The number of deaths due to these causes is always a large one, varying from 1,719 in 1917 to a maximum of 3,506 in 1914. The total for 1919 was 2,520, distributed amongst the six States as follows:—New South Wales, 626 males, 488 females, total 1,114; Victoria, 259 males, 205 females, total 464; Queensland, 308 males, 232 females, total 540; South Australia, 118 males, 115 females, total 233; Western Australia, 76 males, 47 females, total 123; Tasmania, 27 males, 18 females, total 45; and Federal Territory, 1 female.

The following are the death rates and percentages on total deaths due to infantile diarrhœa and enteritis in the States and Territories for the year 1919:—

**DEATH RATES (a) FROM INFANTILE DIARRHŒA AND ENTERITIS, AND PERCENTAGE ON TOTAL DEATHS, COMMONWEALTH, 1919.**

State.	Death Rates (a) from Infantile Diarrhœa and Enteritis.			Percentage on Total Deaths.		
	Males.	Females.	Total.	Males.	Females.	Total.
New South Wales	0.63	0.50	0.57	4.10	4.40	4.23
Victoria ..	0.36	0.27	0.32	2.46	2.31	2.40
Queensland ..	0.84	0.67	0.76	5.77	6.59	6.09
South Australia	0.55	0.48	0.51	4.03	4.51	4.26
Western Australia	0.45	0.31	0.38	3.25	3.76	3.43
Tasmania ..	0.25	0.17	0.21	2.30	1.77	2.05
Federal Territory	..	0.96	0.43	..	9.09	5.56
Commonwealth	3.55	0.43	0.49	3.76	3.91	3.82

(a) Number of deaths from these diseases per 1,000 of mean population.

As a large number of these deaths is directly due to improper feeding, it would be interesting to know the percentage of infants who were bottle-fed, but, unfortunately, no provision exists for the registration of this information. The number of deaths was larger than usual in 1908, particularly in Victoria, and to a lesser degree in South Australia and in Tasmania, owing to the phenomenal heat experienced in the early part of that year. In 1913 all the States, with the exception of New South Wales and South Australia, experienced lower rates than in 1912, and in 1914 the rate fell in New South Wales and Western Australia, while it rose in Victoria, South Australia and Tasmania, and remained stationary in Queensland. The rates for 1915 were considerably lower than those for 1914 in every State with the exception of Queensland and South Australia, while in 1916 Victoria, South Australia and Tasmania had higher rates than in 1915. In 1917, every State experienced a large fall, the rates in Victoria, South Australia and Tasmania being less than half those of 1916. In 1918 the deaths from this cause were hardly more numerous than those for 1917, but 1919 shewed a large advance.

(xxvi) *Appendicitis and Typhlitis*. Prior to 1910, deaths from these causes were included in *Other Diseases*, (paragraph xxxvii.). Deaths numbered 374 in 1914, 356 in 1915, 321 in 1916, 321 in 1917, 371 in 1918, and 352 in 1919, viz., 212 males and 140 females.

(xxvii) *Hernia, Intestinal Obstructions*. The number of deaths has not varied within great limits from year to year, the number registered in 1919 being 530, viz., 292 males and 238 females.

(xxviii) *Cirrhosis of the Liver*. There is little variation in the number of deaths from 1914 to 1919. 315 deaths were registered in 1919, viz., 218 males and 97 females.

(xxix) *Nephritis and Bright's Disease*. The number of deaths attributable to these diseases from year to year is a very large one. In 1914, there were 2,127, 1,281 males and 846 females; in 1915, 2,274, 1,413 males and 861 females; in 1916, 2,329, 1,416 males and 913 females; in 1917, 2,203, 1,343 males and 860 females; in 1918, 2,144; and in 1919, 2,221, viz., 1,346 males and 875 females. Of the deaths registered in 1919, those of 59 males and 68 females were ascribed to acute nephritis, and those of 1,287 males and 807 females to Bright's Disease. New South Wales was responsible for 820 deaths; Victoria for 694; Queensland for 371; South Australia for 172; Western Australia for 100; and Tasmania for 64; making the total of 2,221.

(xxx) *Non-cancerous Tumours and other Diseases of the Female Genital Organs*. Deaths in 1913 numbered 153; in 1914, 138; in 1915, 139; in 1916, 153; in 1917, 148; in 1918, 159; and in 1919, 133. Included in the 133 deaths registered in 1919 were the following:—Non-puerperal uterine hæmorrhage, 2; non-cancerous uterine tumours, 44; other diseases of the uterus, 24; cysts and ovarian tumours, 27; salpingitis and other diseases of the female genital organs, 35; non-puerperal diseases of the breast (cancer excepted), 1.

(xxxi) *Puerperal Septicæmia* (*Puerperal Fever, Puerperal Peritonitis, Puerperal Phlebitis*). The number of deaths is fairly constant, varying from a maximum of 282 in 1916 to a minimum of 166 in 1919.

(xxxii) *Other Puerperal Accidents of Pregnancy and Confinement.* The deaths in 913 numbered 428: in 1914, 419; in 1915, 394; in 1916, 411; in 1917, 482; in 1918, 409; and in 1919, 404. Included in the 404 deaths registered in 1919 were the following:—Accidents of pregnancy, 84; puerperal hæmorrhage, 101; other accidents of childbirth, 44; puerperal albuminuria and convulsions, 129; puerperal phlegmasia alba dolens, embolus, sudden death, 39; and death following childbirth, 7.

(xxxiii) *All Puerperal Causes.* The 570 deaths registered in 1919 under the two preceding headings will be found tabulated in "Bulletin No. 37; Commonwealth Demography," under various aspects. It will suffice to repeat here that the 570 mothers who died from puerperal causes included 528 married women and 42 single.

The ages of the mothers who died varied from 14 to 50 years, and are shewn in the following table:—

AGES OF MOTHERS WHO DIED FROM PUERPERAL CAUSES, COMMONWEALTH, 1919.

Age at Death.	Married Women.	Single Women.	Total.	Age at Death.	Married Women.	Single Women.	Total.
14 years ..	..	1	1	34 years ..	22	1	23
15 " ..	..	1	1	35 " ..	23	..	23
16 " ..	1	..	1	36 " ..	25	..	25
17 " ..	2	1	3	37 " ..	26	..	26
18 " ..	2	2	4	38 " ..	25	..	25
19 " ..	8	6	14	39 " ..	26	..	26
20 " ..	6	4	10	40 " ..	20	..	20
21 " ..	11	2	13	41 " ..	8	..	8
22 " ..	14	4	18	42 " ..	15	..	15
23 " ..	19	3	22	43 " ..	6	..	6
24 " ..	28	3	31	44 " ..	4	..	4
25 " ..	16	1	17	45 " ..	2	..	2
26 " ..	24	2	26	46 " ..	1	..	1
27 " ..	27	1	28	47 " ..	1	..	1
28 " ..	35	3	38	50 " ..	1	..	1
29 " ..	23	2	25				
30 " ..	29	5	34				
31 " ..	27	..	27				
32 " ..	19	..	19				
33 " ..	32	..	32				
				Total deaths	528	42	570

The total number of children left by the married mothers shewn in the above table was 1,587, an average of almost exactly three children per mother.

Thirty-two of the mothers who died had been married less than one year, 69 between one and two years, 37 between two and three years, the duration of marriage ranging up to 29 years, apart from 9 cases in which the date of marriage cannot be stated. This tabulation will be found in detail, distinguishing the ages at marriage, in "Bulletin No. 37; Commonwealth Demography," as will a further tabulation shewing in combination the duration of marriage and previous issue.

(xxxiii) *Congenital Debility and Malformations.* The total deaths registered under these heads in 1919 were 3,885, of whom 3,839 were children under one year of age. The figures include :—Malformations, 282 males, 226 females, total 508; and congenital debility, icterus, and sclerema of children under one year of age, 1,944 males and 1,433 females, total 3,377; or a grand total of 3,885. Of these deaths, 1,578 were registered in New South Wales, viz., 921 males and 657 females; 1,089 in Victoria, viz., 611 males and 478 females; 508 in Queensland, viz., 302 males and 206 females; 341 in South Australia, viz., 195 males and 146 females; 189 in Western Australia, viz., 106 males and 83 females; 175 in Tasmania, viz., 87 males and 78 females; 1 male in the Northern Territory, and 1 male and 1 female in Federal Territory.

(xxxiv) *Senile Debility.* The deaths ascribed to "old age" form a large group, and are in excess of those due to infantile debility. In 1919, 4,840 deaths were attributed to this cause, and were distributed among the States as follows: 1,839 occurred in New South Wales, viz., 1,023 males and 816 females; 1,653 in Victoria, viz., 763 males and 890 females; 520 in Queensland, viz., 317 males and 203 females; 456 in South Australia, viz., 241 males and 215 females; 186 in Western Australia, viz., 120 males and 66 females; 180 in Tasmania, viz., 82 males and 98 females; 4 males in the Northern Territory, and 2 males in the Federal Territory.

Of the males whose deaths were described as due to senility, one was aged between 50 and 54, and the deaths ranged up to ten over the age of 100. Of the females, one was aged between 55 and 60, and 9 were of the age of 100 or over.

(xxxv) *Violence.* A very large number of deaths is due every year to external violence, and, as might be expected from the fact that their occupations expose them much more to accidents, males largely predominate. The figures quoted are exclusive of suicides, which have been treated as a separate group. Deaths ascribed to violence numbered in 1913, 3,168, viz., 2,503 males and 665 females; in 1914, 3,121, viz., 2,458 males and 663 females; in 1915, 2,851, viz., 2,251 males and 600 females; in 1916, 2,712, viz., 2,134 males and 578 females; in 1917, 2,656, viz., 2,069 males and 587 females; in 1918, 2,641, viz., 2,039 males and 602 females; and in 1919, 2,799, viz., 2,161 males and 638 females. Of the deaths registered in 1919, those of 770 males and 256 females occurred in New South Wales; those of 307 males and 172 females in Victoria; those of 408 males and 101 females in Queensland; those of 194 males and 54 females in South Australia; those of 200 males and 37 females in Western Australia; those of 71 males and 18 females in Tasmania; those of 10 males in the Northern Territory; and that of 1 male in the Federal Territory.

The following table shews the various kinds of violent deaths which occurred in 1919, distinguishing males and females :—

#### DEATHS FROM EXTERNAL VIOLENCE, COMMONWEALTH, 1919.

Cause of Death.	Males.	Females.	Total.
Poisoning by food .. .. .	16	17	33
Venomous bites and stings .. .. .	5	3	8
Other acute poisonings .. .. .	44	24	68
Conflagration .. .. .	3	..	3
Burns (conflagration excepted) .. .. .	132	158	290
Absorption of deleterious gases (conflagration excepted) .. .. .	59	28	87
Accidental drowning .. .. .	386	88	474
Traumatism by firearms .. .. .	132	12	144
Traumatism by cutting or piercing instruments .. .. .	1	..	1
Traumatism by fall .. .. .	295	58	353
Traumatism in mines or quarries .. .. .	71	..	71

DEATHS FROM EXTERNAL VIOLENCE, COMMONWEALTH, 1919—*continued.*

Cause of Death.	Males.	Females.	Total.
Traumatism by machines .. .. .	26	..	26
Traumatism by other crushing (vehicles, railways, &c.) .. .. .	459	92	551
Injuries by animals .. .. .	64	7	71
Starvation, thirst, fatigue .. .. .	35	4	39
Excessive cold .. .. .	1	..	1
Effects of heat .. .. .	51	20	71
Lightning .. .. .	10	3	13
Electricity (lightning excepted) .. .. .	12	1	13
Homicide by firearms .. .. .	27	16	43
Homicide by cutting or piercing instruments .. .. .	2	4	6
Homicide by other means .. .. .	37	25	62
Fractures (cause not specified) .. .. .	96	49	145
Other external violence .. .. .	197	29	226
Total Deaths .. .. .	2,161	638	2,799

In every kind of violent death there was, therefore, an excess of males, with the exception of burning accidents, homicide by cutting or piercing instruments, and excessive cold.

(xxxvi) *Suicide.* It may be said that suicides have remained fairly stationary during recent years, the number in 1913 having been 647, viz., 516 males and 131 females; in 1914, 643, viz., 534 males and 109 females; in 1915, 658, viz., 536 males and 122 females; in 1916, 577, viz., 466 males and 111 females; in 1917, 502, viz., 408 males and 94 females; in 1918, 498, viz., 408 males and 90 females; and in 1919, 546, viz., 440 males and 106 females. Of the suicides in 1919, those of 171 males and 49 females occurred in New South Wales; those of 99 males and 30 females in Victoria; those of 90 males and 11 females in Queensland; those of 32 males and 5 females in South Australia; those of 38 males and 7 females in Western Australia; those of 7 males and 4 females in Tasmania; and those of 3 males in the Northern Territory.

The modes adopted by persons who committed suicide in the years 1913 to 1919 were as follows :—

## MALE AND FEMALE SUICIDES (MODES ADOPTED), COMMONWEALTH, 1913 TO 1919.

Mode of Death.	Males.		Females.		Total.	
	Total of 6 years 1913-18.	1919.	Total of 6 years 1913-18.	1919.	Total of 6 years 1913-18.	1919.
Poisoning .. .. .	567	86	329	47	896	133
Asphyxia .. .. .	6	5	6	3	12	8
Hanging or Strangulation .. .. .	410	60	95	15	505	75
Drowning .. .. .	203	27	110	14	313	41
Firearms .. .. .	1,033	148	44	7	1,077	155
Cutting instruments .. .. .	500	90	32	7	532	97
Precipitation from a height .. .. .	28	5	18	7	46	12
Crushing .. .. .	39	9	10	2	49	11
Other modes .. .. .	82	10	13	4	95	14
Total .. .. .	2,868	440	657	106	3,525	546

The death rates from suicide and the percentage on total deaths borne by suicides are shewn in the following table :—

**DEATH RATES (a) FROM SUICIDE AND PERCENTAGE ON TOTAL DEATHS,  
COMMONWEALTH, 1919.**

State.	Death Rates (a) from Suicide.			Percentage on Total Deaths.		
	Males.	Females.	Total.	Males.	Females.	Total.
New South Wales ..	0.17	0.05	0.11	1.12	0.44	0.83
Victoria ..	0.14	0.04	0.09	0.94	0.34	0.67
Queensland ..	0.25	0.03	0.14	1.69	0.31	1.14
South Australia ..	0.15	0.02	0.08	1.09	0.20	0.68
Western Australia ..	0.22	0.05	0.14	1.62	0.56	1.25
Tasmania ..	0.06	0.04	0.05	0.59	0.39	0.50
Northern Territory ..	0.81	..	0.62	3.66	..	3.53
Commonwealth ..	0.17	0.04	0.11	1.17	0.34	0.83

(a) Number of deaths from suicide per 1,000 of mean population.

From the following table, which shews the ages of the persons who committed suicide in 1919, it will be seen that both extreme youth and extreme old age are represented :—

**AGES OF PERSONS WHO COMMITTED SUICIDE, COMMONWEALTH, 1919.**

Ages.	M.	F.	Total.	Ages.	M.	F.	Total.
10 years and under 14	2	..	2	70 years and under 75	9	1	10
15 ..	20	3	16	75 ..	80	1	9
20 ..	25	17	26	80 ..	85	5	5
25 ..	30	52	63	85 ..	90	1	1
30 ..	35	42	53	90 ..	94	..	..
35 ..	40	50	62	Not stated	4	..	4
40 ..	45	47	61				
45 ..	50	51	65				
50 ..	55	46	55				
55 ..	60	36	48				
60 ..	65	32	37				
65 ..	70	25	29	Total Deaths ..	440	106	546

The following table shews the occupations of the 440 males who committed suicide :—

**OCCUPATIONS OF MALE PERSONS WHO COMMITTED SUICIDE,  
COMMONWEALTH, 1919.**

Occupation.	Deaths.	Occupation.	Deaths.
Professional class .. ..	44	Pastoral class .. ..	29
Domestic class .. ..	16	Working in mines and quarries ..	21
Mercantile class .. ..	52	Other primary producers ..	8
Engaged in transport and communication .. ..	31	Independent means .. ..	2
Manufacturing class .. ..	45	Dependents .. ..	7
Engaged in building and construction .. ..	16	Occupation not stated .. ..	18
Indefinite industrial workers ..	109		
Agricultural class .. ..	42	Total Deaths .. ..	440

It has been said that suicide has become more frequent during recent years, but an examination of the figures from the year 1871 onwards shews that the assertion needs qualification. The absolute figures have certainly increased, but proportionately to the population the figures for 1906-10 were practically the same as those for 1886-90 and 1891-95. The figures for the five years 1911-15, shew, however, a regrettable increase, not only absolutely, but also in proportion to the population. The last four years shew lower figures and percentages than the average of 1911-15, and in 1918 particularly the figures in proportion to population decreased almost to the level of the period 1871-85. No particulars are available for Western Australia prior to 1886, and from 1886 to 1895 the sexes are not distinguished. The figures for the first five periods are, therefore, exclusive of Western Australia :—

**SUICIDES, COMMONWEALTH, 1871-75 TO 1919.**

Period.	Number of Suicides.			Suicides per One Million.			Suicides of Females to 100 Suicides of Males. Based on—	
	Males.	Females.	Total.	Males.	Females.	Total.	Absolute Figures.	Rates.
1871-75 ..	715	150	865	150.94	37.56	99.07	20.98	24.88
1876-80 ..	878	145	1,023	159.69	31.06	100.62	16.51	19.45
1881-85 ..	999	183	1,182	152.58	32.90	97.61	18.32	21.56
1886-90 ..	1,394	292	(a) 1,686	179.20	43.97	(c) 116.92	20.95	24.54
1891-95 ..	1,574	337	(b) 1,911	181.34	44.09	(d) 117.07	21.41	24.31
1896-1900	1,838	410	2,248	191.11	47.88	123.65	22.31	25.05
1901-05 ..	2,054	380	2,434	201.78	40.88	124.98	18.50	20.26
1906-10 ..	2,031	437	2,468	186.11	43.22	117.39	21.51	23.22
1911-15 ..	2,546	577	3,123	206.15	50.36	131.17	22.66	24.43
1916 ..	466	111	577	190.06	45.21	117.58	23.82	23.78
1917 ..	408	94	502	169.55	37.66	102.40	23.04	22.21
1918 ..	408	90	498	166.97	35.48	99.99	22.06	21.25
1919 ..	440	106	546	171.40	41.15	106.16	24.09	24.01

(a) 1705 inclusive of Western Australian figures. (b) 1981 inclusive of Western Australian figures. (c) 116.49 inclusive of Western Australian figures. (d) 119.11 inclusive of Western Australian figures.

In the fifth issue of this Year Book (pp. 240, *et seq.*), the result of a series of investigations into the periodicity of suicide was published. The paper was partly reprinted in the following year (pp. 241, *et seq.*), but is not repeated in the present issue.



(xxxvii) *Other Diseases.* The number of causes included under this heading is a very large one, amounting to no less than 79 of the items shown in the detailed classification, and deaths were recorded under every one of these with the exception of the following:—Glanders, rabies, pellagra, occupational poisonings other than lead poisoning, and intestinal parasites. The total number of deaths under "other diseases" in 1914 was 8,670, viz., 5,081 males and 3,589 females; in 1915, 9,090, viz., 5,259 males and 3,831 females; in 1916, 9,433, viz., 5,489 males and 3,944 females; in 1917, 8,871, viz., 5,147 males and 3,724 females; in 1918, 9,226, viz., 5,290 males and 3,936 females; and in 1919, 9,390, viz., 5,316 males and 4,074 females. In accordance with the revised edition of the classification, the following changes were made in this heading during 1910: beri-beri is now included under this heading instead of under (xii), "Other Epidemic Diseases." Other diseases of the respiratory system are now shewn under a new head (xxiii), and appendicitis and typhlitis under head (xxvi). Some of the diseases included here account for very considerable numbers of deaths. Particulars of the deaths included in 1919 are shewn in the following table:—

CAUSES OF DEATHS INCLUDED UNDER "OTHER DISEASES," COMMONWEALTH, 1919.

Causes.	M.	F.	Total.	Causes.	M.	F.	Total.
Purulent Infection and Septicæmia .. .. .	76	74	150	Diseases of the Lymphatic System .. .. .	18	6	24
Anthrax .. .. .	4	..	4	Hæmorrhages, Other Diseases of Circulatory System ..	35	26	61
Tetanus .. .. .	77	16	93	Diseases of the Mouth and its Associated Organs ..	9	15	24
Mycoses .. .. .	3	1	4	Diseases of the Pharynx ..	23	21	44
Beri-beri .. .. .	36	2	38	Diseases of the Oesophagus ..	6	6	12
Rickets .. .. .	2	2	4	Diarrhoea and Enteritis of Children over two years of age and Adults ..	491	512	1,003
Syphilis .. .. .	84	58	142	Ankylostomiasis .. .. .	1	1	2
Gonococcus Infection ..	4	4	8	Other Diseases of the Intestines .. .. .	38	33	71
Other Tumours (Tumours of the female genital organs excepted) .. .. .	13	24	37	Acute Yellow Atrophy of the Liver .. .. .	6	9	15
Acute Articular Rheumatism ..	68	64	132	Hydatid Tumours of the Liver .. .. .	26	22	48
Chronic Rheumatism & Gout ..	89	103	192	Biliary Calculi .. .. .	38	69	107
Scurvy .. .. .	4	3	7	Other Diseases of the Liver ..	79	100	179
Diabetes .. .. .	282	353	635	Diseases of the Spleen .. ..	8	7	15
Exophthalmic Goitre .. .. .	2	80	82	Simple Peritonitis (non-puerperal) .. .. .	85	107	192
Addison's Disease .. .. .	13	22	35	Other Diseases of the Digestive System .. .. .	16	20	36
Leucæmia .. .. .	52	43	95	Other Diseases of the Kidneys and their Adnexa .. .. .	103	69	172
Anæmia, Chlorosis .. .. .	189	194	383	Calculi of Urinary Passages ..	15	6	21
Other General Diseases .. ..	45	23	73	Diseases of the Bladder .. ..	146	26	172
Acute and Chronic Alcoholism ..	133	32	165	Other Diseases of the Urethra, Urinary Abscess, &c. ..	34	4	38
Chronic Lead Poisoning .. ..	16	2	18	Diseases of the Prostate .. ..	213	..	213
Other Chronic Poisonings .. ..	2	..	2	Non-venereal Diseases of the Male Genital Organs .. ..	1	..	1
Encephalitis .. .. .	58	51	109	Gangrene .. .. .	60	54	114
Progressive Locomotor Ataxia ..	54	13	67	Furuncle .. .. .	22	6	28
Other Diseases of the Spinal Cord .. .. .	189	123	312	Acute Abscess .. .. .	42	44	86
Paralysis without indicated cause .. .. .	194	148	342	Other Diseases of the Skin and Adnexa .. .. .	35	19	54
General Paralysis of the Insane ..	136	23	159	Non-tuberculous Diseases of the Bones .. .. .	32	15	47
Other Forms of Mental Alienation .. .. .	43	40	83	Other Diseases of the Joints (Tuberculosis and Rheumatism excepted) .. ..	4	1	5
Epilepsy .. .. .	135	91	226	Amputations .. .. .	1	1	2
Convulsions (non-puerperal) ..	5	19	24	Other Diseases of the Organs of Locomotion .. .. .	1	..	1
Convulsions of Children under five years of age .. .. .	172	158	330	Other Diseases peculiar to Infancy .. .. .	332	238	570
Chorea .. .. .	5	6	11	Want of Care (Infants) .. ..	4	3	7
Neuralgia and Neuritis .. .. .	14	14	28	Total Deaths .. .. .	5,316	4,074	9,390
Other Diseases of the Nervous System .. .. .	139	128	267				
Diseases of the Eye .. .. .	1	1	2				
Diseases of the Ear .. .. .	18	8	26				
Pericarditis .. .. .	24	17	41				
Acute Endocarditis .. .. .	215	216	431				
Angina Pectoris .. .. .	104	48	152				
Diseases of the Arteries, Atheroma, Aneurism ..	515	172	687				
Embolism and Thrombosis .. ..	169	237	406				
Diseases of the Veins (Varices, Varicose Ulcers, Hæmorrhoids) .. .. .	8	16	24				

(xxxviii) *Unspecified or Ill-defined Diseases.* The number of cases which has to be included here is a considerable one from year to year, comprising 614 in 1913, 644 in 1914, 717 in 1915, 633 in 1916, 667 in 1917, 664 in 1918, and 707 in 1919. The detailed classification distinguishes these ill-defined diseases under three headings:—Ill-defined organic diseases, including such definitions as dropsy, anasarca, ascites, general œdema, &c. sudden death, including syncope; and unspecified or ill-defined causes, of which the following are specimens:—Asthenia, coma, dentition, exhaustion, heart failure, &c. In 1919 the number of cases of death which would have to be classed under the first of these categories was 30; those belonging to the second, 46; and those belonging to the third, 631. It is, of course, true that there must always occur some cases where the disease is not well characterised, or where sufficient information is not procurable to allow of a clear definition being given in the certificate of death, but in the majority of cases included under this heading a more complete diagnosis and consequently a more satisfactory certificate would no doubt have been possible.

In the fifth issue of this Year Book, pp. 234, *et seq.*, some observations were published dealing with the incidence of scarlet fever, measles, whooping cough, diphtheria and croup, typhoid, diarrhœa, enteritis, and dysentery.

19. *Causes of Death in Classes.*—The figures presented in the preceding paragraphs relate to certain definite causes of death. It is almost generally acknowledged that figures of this kind are of greater value in medical statistics than is a classification under general headings. The classification under fourteen general headings adopted by the compilers of The International Nomenclature is, however, shewn in the following table, together with the death rates and percentages on total deaths pertaining to those classes:—

DEATHS, DEATH RATES (a), AND PERCENTAGES ON TOTAL DEATHS IN CLASSES, COMMONWEALTH, 1919.

Class.	Total Deaths.			Death Rates. (a)			Percentage on Total Deaths.		
	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.
1. General diseases .. .. .	13,406	10,189	23,595	5.22	3.96	4.59	35.63	36.00	35.79
2. Diseases of the Nervous System and of the Organs of Special Sense .. .. .	2,720	2,214	4,934	1.06	0.86	0.96	7.23	7.83	7.50
3. Diseases of the Circulatory System .. .. .	4,327	3,363	7,690	1.69	1.30	1.50	11.50	11.88	11.66
4. Diseases of the Respiratory System .. .. .	3,753	2,783	6,536	1.46	1.08	1.27	9.97	9.83	9.91
5. Diseases of the Digestive Organs .. .. .	3,225	2,718	5,943	1.26	1.05	1.15	8.57	9.60	9.02
6. Diseases of the Genito-Urinary System and Adnexa .. .. .	1,858	1,113	2,971	0.72	0.43	0.58	4.94	3.93	4.51
7. Puerperal Condition .. .. .	..	570	570	..	0.22	0.11	..	2.02	0.86
8. Diseases of the Skin and of the Cellular Tissue .. .. .	159	123	282	0.06	0.05	0.06	0.42	0.44	0.43
9. Diseases of the Organs of Locomotion .. .. .	38	17	55	0.02	0.01	0.01	0.10	0.06	0.08
10. Malformations .. .. .	282	226	508	0.11	0.09	0.10	0.75	0.80	0.77
11. Infancy .. .. .	2,280	1,671	3,951	0.89	0.65	0.77	6.06	5.92	5.90
12. Old Age .. .. .	2,545	2,295	4,840	0.99	0.89	0.94	6.76	8.11	7.34
13. Violence .. .. .	2,601	744	3,345	1.01	0.29	0.65	6.91	2.63	5.07
14. Ill-defined Diseases .. .. .	438	269	707	0.17	0.10	0.13	1.16	0.95	1.07
Total .. .. .	37,632	28,293	65,930	14.66	10.98	12.82	100.00	100.00	100.00

(a) Number of deaths per 1,000 of mean population.

20. *Deaths of Children under one Year.*—"Bulletin No. 37; Commonwealth Demography," contains tables shewing for twenty-one causes the age at death of children dying during the first year of life. In the Bulletin mentioned, the particulars

are published for males and females separately for the States, Territories and Commonwealth, but the totals for the Commonwealth only are here shewn for both sexes combined :—

### DEATHS OF CHILDREN UNDER ONE YEAR, COMMONWEALTH, 1919.

Age at Death.				Whooping Cough.	Pulmonary Tuberculosis.	Acute Miliary Tuberculosis.	Tubercular Meningitis.	Abdominal Tuberculosis.	Disseminated Tuberculosis.	Syphilis.	Simple Meningitis.	Cerebro-Spinal Meningitis.	Convulsions.	Acute Bronchitis.
Under 1 week	..	..	2	..	..	..	..	..	..	5	4	..	84	8
1 week and under 2	..	..	..	..	..	1	..	..	..	..	5	..	26	6
2 weeks	..	3	..	..	..	..	..	1	..	3	1	..	7	5
3	..	..	1 mth.	..	..	..	..	..	..	2	1	..	5	8
1 month	..	2	..	..	..	..	..	..	..	15	2	1	16	32
2 months	..	3	..	..	..	2	..	..	..	10	10	1	6	22
3	..	4	..	..	..	1	1	..	..	13	12	3	13	16
4	..	5	..	..	..	3	..	..	..	9	12	1	10	12
5	..	6	..	..	1	1	..	..	..	6	15	4	10	6
6	..	7	..	..	..	..	5	1	..	6	15	2	11	6
7	..	8	..	..	1	1	1	1	1	1	8	..	1	8
8	..	9	..	..	..	1	1	1	..	1	9	..	7	10
9	..	10	..	..	1	1	2	2	1	3	10	3	8	7
10	..	11	..	..	1	5	2	..	..	..	8	1	8	9
11	..	12	..	..	1	5	2	..	..	1	12	..	8	5
Total under 1 year ..				104	7	5	26	11	2	75	124	16	220	160

Age at Death.		Broncho-Pneumonia.	Pneumonia.	Diarrhea and Enteritis.	Hernia and Intestinal Obstruction.	Malformations.	Congenital Debility, Icterus and Sclerema.	Other Diseases peculiar to Early Infancy.	Lack of Care.	Other Causes.	Total.
Under 1 week	..	4	13	7	9	216	2,110	468	6	115	3,051
1 week and under 2	..	3	10	14	5	41	311	57	..	48	527
2 weeks	.. 3 ..	10	7	31	1	24	197	14	..	37	340
3	.. " " 1 mth.	14	6	31	2	11	132	12	..	23	252
1 month	.. 2 ..	58	21	155	5	38	221	12	..	82	672
2 months	.. 3 ..	34	10	206	7	31	116	2	..	63	533
3	.. 4 ..	33	10	217	4	23	90	5	1	50	509
4	.. 5 ..	16	21	218	7	21	52	..	..	51	450
5	.. 6 ..	21	11	183	12	9	46	..	..	35	365
6	.. 7 ..	22	13	182	11	9	29	..	..	45	368
7	.. 8 ..	15	8	160	10	6	30	..	..	46	303
8	.. 9 ..	21	11	152	8	7	11	..	..	57	302
9	.. 10 ..	26	19	146	6	3	13	..	..	49	308
10	.. 11 ..	24	14	111	3	7	11	..	..	39	245
11	.. 12 ..	21	15	107	3	6	8	..	..	44	239
Total under 1 year ..		322	189	1,920	93	452	3,377	570	7	784	8,464

It will be seen that the maximum number of deaths from convulsions, pneumonia, broncho-pneumonia, malformations, congenital debility, icterus and sclerema, other diseases peculiar to early infancy, and lack of care, occurred during the first month of life, while acute bronchitis was most fatal during the second month. Diarrhœa

and enteritis carried off more children in the fourth and fifth months than in any other. the numbers gradually decreasing toward the end of the year. Whooping cough reached its maximum during the second and third months of life.

21. **Ages at Death of Married Males and Females, and Issue.**—"Bulletin No. 37: Commonwealth Demography" contains a number of tables for the Commonwealth, shewing the age at marriage, age at death, duration of life after marriage, birthplaces, and occupations, in combination with the issue of married persons who died in 1919. A short summary of the tables mentioned is given hereunder. Deaths of married males in 1919 numbered 18,776, and of married females, 17,724. The tabulations mentioned in the sequel deal, however, with only 18,310 males and 17,356 females, the information in the remaining 834 cases being too incomplete to be utilised. The total number of children in the families of the 18,310 males was 86,245; and of the 17,356 females, 86,627. The average number of children is shewn for various age-groups in the following table :—

**AGES AT DEATH OF MARRIED MALES AND FEMALES, AND AVERAGE ISSUE, COMMONWEALTH, 1919.**

Age at Death.	Average Family of Males.	Average Family of Females.	Age at Death.	Average Family of Males.	Average Family of Females.
Under 20 years ..	1.00	0.66	70 to 74 years ..	6.27	6.47
20 to 24 years ..	0.66	1.10	75 „ 79 „ ..	6.65	6.63
25 „ 29 „ ..	1.49	1.84	80 „ 84 „ ..	6.65	6.78
30 „ 34 „ ..	2.03	2.68	85 „ 89 „ ..	6.93	6.57
35 „ 39 „ ..	2.74	3.39	90 „ 94 „ ..	6.94	6.56
40 „ 44 „ ..	3.32	3.93	95 „ 99 „ ..	5.96	6.78
45 „ 49 „ ..	3.67	4.05	100 years and upwards	5.89	6.40
50 „ 54 „ ..	4.06	4.75	Age not stated ..	3.53	6.43
55 „ 59 „ ..	4.70	5.24			
60 „ 64 „ ..	5.36	5.69			
65 „ 69 „ ..	5.71	6.50	All ages ..	4.71	4.99

The figures shewn in the preceding table include the issue both living and dead; and the proportion between them, taking the issue of deceased males and females together, was about as 1,000 to 274, or, roughly speaking, as seven to two. The totals are shewn in the following table :—

**ISSUE OF MARRIED MALES AND FEMALES, COMMONWEALTH, 1919.**

Issue of Married Males.	Males.	Females.	Total.	Issue of Married Females.	Males.	Females.	Total.
Living ..	34,595	34,387	68,982	Living ..	33,110	33,522	66,632
Dead ..	9,548	7,715	17,263	Dead ..	11,132	8,863	19,995
Total ..	44,143	42,102	86,245	Total ..	44,242	42,385	86,627

These figures shew a masculinity in the births of 2.94, which agrees fairly well with the experience of the birth statistics.

22. **Ages at Marriage of Males and Females, and Issue.**—While the table giving the average families of married males and females naturally shews an increase in the averages with advancing ages at death, the following table, which gives the average families of males and females according to the age at marriage of the deceased parents, shews a corresponding decrease in the averages as the age at marriage advances :—

**AGES AT MARRIAGE OF MALES AND FEMALES, AND AVERAGE ISSUE,  
COMMONWEALTH, 1919.**

Age at Marriage.	Average Family of Males.	Average Family of Females.
Under 20 years .. .. .	5.99	6.73
20 to 24 „ .. .. .	5.59	5.33
25 „ 29 „ .. .. .	4.76	3.95
30 „ 34 „ .. .. .	4.25	2.69
35 „ 39 „ .. .. .	3.40	1.76
40 „ 44 „ .. .. .	2.85	0.54
45 „ 49 „ .. .. .	2.18	0.04
50 „ 54 „ .. .. .	1.35	..
55 „ 59 „ .. .. .	1.03	..
60 „ 64 „ .. .. .	0.54	..
65 years and upwards .. .. .	0.09	..
Age not stated .. .. .	4.74	5.13
All ages .. .. .	4.71	4.99

It will be seen that of women who were married at ages from 40 to 44 years, one in every three gave birth to a child.

23. **Duration of Life after Marriage of Males and Females.**—The duration of life after marriage has been tabulated for males and females both in combination with the age at marriage, and with the total and average issue. The tables shewing the result do not, however, lend themselves to condensation, and are, therefore, omitted here. They will be found in “Bulletin No. 37 of Commonwealth Demography,” pages 209 to 214.

24. **Birthplaces of Married Males and Females, and Issue.**—The following table shews the birthplaces of married males and females whose deaths were registered in 1919, together with their average issue. No generalisations can, of course, be made in those cases where the number of deaths is small, and where the average family had to be worked out on small figures. But where the figures are comparatively large, as in the case of natives of the Commonwealth, differences occur between the averages of the individual States which appear inexplicable on any other ground than that of inefficient registration in some of the States. It will be noted that the differences occur both in the male and female averages. Although the figures apply to the Commonwealth as a whole, it must be borne in mind that the vast majority of deaths of natives of any one State are registered in that particular State.

**BIRTHPLACES AT MARRIAGE OF MALES AND FEMALES, AND AVERAGE ISSUE, COMMONWEALTH, 1919.**

Birthplace.	Married Males.		Married Females.		Birthplace.	Married Males.		Married Females.	
	Deaths.	Average Family.	Deaths.	Average Family.		Deaths.	Average Family.	Deaths.	Average Family.
New South Wales ..	3,965	4.46	4,288	4.79	Japan ..	4	0.50	..	..
Victoria ..	3,281	3.83	3,137	4.06	Java ..	2	1.50	..	..
Queensland ..	637	3.66	787	3.70	Philippine Islands..	..	..	..	..
South Australia ..	1,098	4.37	1,149	4.51	Syria ..	11	3.91	3	5.33
Western Australia ..	127	4.62	143	4.66	Other Asiatic C'ntries	1	1.00	..	..
Tasmania ..	666	4.98	679	5.14	Mauritius ..	4	3.25	8	5.75
New Zealand ..	147	3.14	123	3.54	Union of Sth. Africa	16	4.06	12	4.50
England ..	4,215	5.29	3,295	5.70	Other African British Possessions	..	..	2	4.50
Wales ..	158	5.32	100	5.78	Egypt ..	1	..	..	..
Scotland ..	1,079	5.40	949	5.74	Other African C'ntries	..	..	..	..
Ireland ..	1,636	5.66	2,034	5.94	Canada ..	32	5.13	11	3.09
Isle of Man ..	10	3.70	4	7.75	Jamaica ..	1	..	1	5.00
Other European British Possessions..	28	4.11	20	5.45	Newfoundland ..	3	5.33	3	3.33
Austria-Hungary ..	20	2.80	8	2.88	Other American British Possessions..	4	5.00	4	3.00
Belgium ..	7	4.43	1	11.00	Brazil ..	1	4.00	1	8.00
Denmark ..	79	4.82	27	4.85	Chile ..	1	10.00	1	4.00
France ..	47	4.45	23	4.13	Mexico ..	..	..	..	..
Germany ..	402	6.52	257	6.74	United States ..	63	4.56	34	4.32
Greece ..	24	2.96	4	1.50	Other American Countries	25	4.60	5	5.40
Italy ..	61	3.00	10	4.10	Fiji ..	3	4.33	1	3.00
Netherlands ..	12	4.33	4	2.75	Papua ..	..	..	..	..
Norway ..	34	4.74	7	5.43	Other Polynesian British Possessions	1	7.00	..	..
Portugal ..	6	5.50	..	..	New Caledonia ..	4	3.50	2	2.00
Russia ..	57	4.14	31	5.06	New Hebrides ..	1	2.00	..	..
Spain ..	6	4.00	1	..	Samoa ..	..	..	1	5.00
Sweden ..	68	4.54	16	3.88	Other Polynesian Is.	1	6.00	..	..
Switzerland ..	16	6.00	8	6.75	S. Sea Islds. (so descd.)	10	2.30	7	2.57
Other Europ. C'tries	7	3.14	3	1.67	At Sea ..	49	6.20	54	7.06
British India ..	35	3.77	23	4.87	Not stated ..	50	3.76	61	5.33
Ceylon ..	8	3.13	..	..					
Straits Settlements	1	7.00	5	2.40					
Other Asiatic British Possessions	2	1.50	3	6.67					
China ..	83	2.27	6	5.17					
					Total ..	18,310	4.71	17,356	4.99

25. Occupations of Married Males, and Issue.—A final tabulation shews the average issue in combination with the occupation of deceased males. When these figures are available for a number of years they will afford some clue to the much debated question as to the decrease in the birth rate among various classes of the population.

**OCCUPATIONS OF MARRIED MALES, AND AVERAGE ISSUE, COMMONWEALTH, 1919.**

Occupation.	Deaths of Married Males.		Average Family.	Occupation.	Deaths of Married Males.		Average Family.
	Deaths.	Average Family.			Deaths.	Average Family.	
Professional class ..	1,195	4.03		Agricultural class ..	2,703	6.22	
Domestic class ..	635	3.84		Pastoral class ..	740	5.32	
Mercantile class ..	2,559	3.77		Working in mines and quarries	1,206	4.88	
Engaged in transport and communication	1,771	4.18		Other primary producers	139	4.77	
Manufacturing class ..	2,264	4.38		Independent means	279	5.01	
Engaged in building and construction	1,122	4.95		Dependents	85	6.07	
Indefinite industrial workers ..	3,099	4.71		Occupation not stated	513	5.24	
				Total ..	18,310	4.71	

In the fifth issue of this Year Book (pp. 227 to 229), a series of observations was published dealing with the Commonwealth Rates of Infantile Mortality. These observations are not reprinted in the present issue.

#### § 4. Legislation relating to Registration of Births, Deaths, and Marriages, and Legitimation of Children.

1. General.—A review in summarised form of the legislation dealing with these matters is given in the conspectus following.

**CONSPECTUS OF ACTS IN FORCE RELATING TO THE REGISTRATION OF BIRTHS,  
COMMONWEALTH OF AUSTRALIA, AND IN ENGLAND**

Particulars.	New South Wales.	Victoria.	Queensland.	South Australia.
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1. REGISTRATION OF  
*A.—Births*

1. Acts relating to the Registration of Births and Deaths	Registration of Births, Deaths, and Marriages Act 1899	Registration of Births, Deaths, and Marriages Act 1915, 1915 (No. 2), 1916. Infant Life Protection Act 1915	An Act for Registering Births, Deaths, and Marriages, 1855. The Amended Registration Act of 1867	The Registration of Births and Deaths Act 1874. Births, Marriages, and Deaths Registration Amendment Act, 1907
2. Definition of Terms	(a) <i>Parent</i> .—Father, or, if he is dead or absent, mother or guardian. (b) <i>Tenant</i> .—Principal occupier for time being of any dwelling-house or tenement, and in case of gaol, prison, house of correction, hospital, lunatic asylum, or other public or charitable institution, the head officer or person in actual charge thereof	<i>Occupier of any house or tenement</i> includes owner, lessee, or other person in occupation of any building, and gaoler, master, or superintendent of gaol, prison, reformatory or industrial school, hospital, hospital for insane, or public or charitable institution	(a) <i>Parent</i> .—Same as New South Wales (b) <i>Tenant</i> .—Same as New South Wales (c) <i>District Registrar</i> .—Any District Registrar or Assistant District Registrar	(a) <i>Occupier of house</i> includes master or keeper, or officer in charge of gaol, prison, house of correction, hospital, lunatic asylum, or public or charitable institution (b) <i>Registrar</i> includes Registrar-General, Deputy Registrar, District Registrar, or Assistant Registrar
3. Chief Registration Officers	Registrar - General appointed by Governor.	Government Statist and Assistant Government Statist appointed by Governor	Registrar - General and Deputy Registrar-General appointed by Governor	Registrar - General and Deputy Registrar-General appointed by Governor
4. Other Registration Officers	District Registrars and Assistant District Registrars appointed by Governor	Registrars appointed by Governor	Same as New South Wales	District Registrars appointed by Governor and Assistant District Registrars appointed by Registrar-General

## DEATHS, AND MARRIAGES, AND THE LEGITIMATION OF CHILDREN IN THE AND WALES, SCOTLAND AND IRELAND.

Western Australia.	Tasmania.	England and Wales.	Scotland.	Ireland.
BIRTHS AND DEATHS.				
<i>and Deaths.</i>				
The Registration of Births, Deaths, and Marriages Act 1894, 1900, 1907, 1914	The Registration of Births and Deaths Act 1895 The Registration of Births and Deaths Amendment Act 1906 Infant-Life Protection Act 1907	Parochial Registers Act 1812 Births and Deaths Registration Act 1836, 1837, 1874 Merchant Shipping Act 1894	The Registration of Births, Deaths, and Marriages (Scotland) Act 1854, 1855, 1860 The Lord Clerk Register (Scotland) Act 1879	The Registration of Births and Deaths (Ireland) Act 1863, 1880
(a) <i>Parent</i> .—Same as New South Wales (b) <i>Occupier of any house or tenement</i> .—Principal occupier for time being of any dwelling - house or tenement, and in case of gaol, prison, hospital, lunatic asylum, or other public or charitable institution, the head officer or person in actual charge thereof (c) <i>Still-born child</i> .—Child of seven months' gestation or over not born alive	(a) <i>General Search</i> .—A search without stating the object of the search, or, where to aid inquiry some essential particular relating to name, relationship, age, or locality is lacking (b) <i>Particular Search</i> .—A search for a specific entry where all essential particulars respecting an inquiry are available, and which involves a search in index books not extending over a period of three years	(a) <i>Relative</i> includes relatives by marriage (b) <i>Occupier</i> includes governor, keeper, master, matron, superintendent, or other chief resident officer of every public institution, and where a house is let in separate apartments or lodgings, any person residing in such house who is the person under whom such lodgings, &c., are immediately held, or his agent (c) <i>General Search</i> .—A search during a number of successive hours not exceeding 6, without stating the object of the search (d) <i>Particular Search</i> .—A search over any period not exceeding 5 years for a given entry	(a) <i>Occupier</i> includes guardian, master, governor, keeper, house surgeon, or superintendent of gaol, prison or house of correction, workhouse, hospital, lunatic asylum, or public charitable institution (b) <i>Parish</i> includes any division of a parish or union of parishes into a District or Districts made in pursuance of the Act (c) <i>Heritor</i> .—A person entitled to elect a schoolmaster under Act 43 Geo. IV., c. 54	(a) <i>Relative</i> includes relatives by marriage (b) <i>Occupier</i> includes governor, keeper, master, matron, superintendent, or other chief resident officer of prison, lock-up, workhouse, barracks, lunatic asylum, hospital and prescribed public, religious, or charitable institution, and where a house is let in separate apartments or lodgings, any person residing in such house who is the person under whom such lodgings, &c., are immediately held, or his agent (c) <i>Guardians</i> include any body of persons performing the functions of guardians within the meaning of the Acts relating to the relief of the poor (d) <i>General and Particular Search</i> .—Same as England and Wales
Registrar - General and Deputy Registrar-General appointed by Governor	Registrar - General and Deputy Registrar - General appointed by Governor	Registrar - General appointed under the Great Seal of the United Kingdom	Deputy Clerk Register, who must be an advocate of the Scottish Bar of not less than 10 years' standing appointed by His Majesty	Registrar - General appointed by Lord Lieutenant. Assistant Registrar - General appointed by Registrar-General with approval of Lord Lieutenant
Governor may appoint District, Deputy District, and Assistant Registrars, or may vest in Registrar-General power to appoint and remove same	Registrars and Deputy Registrars appointed by Governor	(a) Superintendent Registrar for each District and Registrar for each Sub-district appointed by Board of Guardians. If guardians neglect to appoint within 14 days, Registrar-General appoints (b) Consular officers to keep registers abroad	(a) Sheriff in control and superintendence of Registrars. Registrars elected by Parochial Board of each parish. If no Board, heritors to appoint subject to approbation of Sheriff. Assistant Registrars appointed by Registrars (b) District Examiners appointed by Deputy Clerk Register	(a) Clerk of Union to be Superintendent Registrar, in default Guardians appoint (b) Medical officer of each Dispensary District to be Registrar, in default Guardians appoint (c) In default of Guardians appointing Lord Lieutenant to do so. (d) Each Superintendent and Registrar may appoint a deputy



CONSPECTUS OF ACTS IN FORCE RELATING TO THE REGISTRATION OF BIRTHS,  
COMMONWEALTH OF AUSTRALIA, AND IN ENGLAND

Particulars.	New South Wales.	Victoria.	Queensland.	South Australia.
1. REGISTRATION OF BIRTHS				
<i>A.—Births and</i>				
5. Registry Districts	All Registry Districts existing when Act passed. Governor may alter existing division, but one District must be Registry District for Sydney	Governor divided State into Districts and defined limits thereof, and may revoke, vary, and alter limits	Governor divided State into Registry Districts and has power to alter such division	Governor divided State into Districts, and may alter boundaries, reduce size of or create new Districts
6. Registry Offices	<i>Chief Office.</i> —"General Registry for New South Wales" in Sydney, established prior to passing of Act	(a) <i>Chief Office.</i> — Government Statist's in Melbourne (b) <i>Other Offices.</i> — Appointed by Governor	<i>Chief Office.</i> — "General Registry for Queensland" in Brisbane	(a) <i>Chief Office.</i> — "General Registry Office of Births and Deaths" in Adelaide (b) <i>Other Offices.</i> —According to regulations
7. Regulations	Registrar - General, with approval of Governor, may make regulations for management of General Registry and to be observed by District Registrars	Governor may make regulations for (a) management of Registry Offices, (b) guidance of Government Statist and Registrars, and (c) carrying out provisions of Act No penalty for breach to exceed £5	Registrar - General, with approval of Governor, may make regulations for management of General Registry and to be observed by District Registrars	Registrar - General, with approval of Governor, may make regulations (a) for management of Registrars' offices, (b) for prescribing duties of Registrars, (c) for departmental working of Act, and (d) generally for carrying out and enforcing provisions of Act
8. Books, Forms, &c.	Registrar - General to furnish each District Registrar with (a) books for registry of births and deaths and (b) forms for certified copies of entries in such books	Government Statist to furnish every Registrar of Births and Deaths with a sufficient number of registration forms	Registrar - General to furnish District Registrars with (a) register books and (b) forms for certified copies of same	(No provision in Act)

DEATHS, AND MARRIAGES, AND THE LEGITIMATION OF CHILDREN IN THE AND WALES, SCOTLAND AND IRELAND—*continued.*

Western Australia.	Tasmania.	England and Wales.	Scotland.	Ireland.
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AND DEATHS—*continued.*Deaths—*continued.*

Governor fixed boundaries of Registry Districts and may alter or vary any District and the boundaries thereof	Governor divided State into Districts, and may increase number or alter boundaries of Districts	Guardians of Unions and Parishes to divide into Districts approved by Registrar-General, who may include extra-parochial places in Districts, and, with consent of Local Government Board, unite or divide Districts	(a) Existing parishes which may be divided or united into Districts by Sheriff. Where parish is wholly or partly in a burgh, town council possesses powers of parochial boards. (b) Deputy Clerk Register may divide into Examination Districts	(a) Every Union formed by Poor Law Commissioners is a Superintendent's District. (b) Each Dispensary District of a Poor Law Union, with approval of Registrar-General, is a Registrar's District. (c) Registrar-General, with approval of Lord Lieutenant, may alter Districts;
Chief Office.—"The General Registry for Western Australia" in Perth	(No provision in Act)	(a) Chief Office. — "The General Register Office" in London (b) Other Offices. — Guardians to provide Registry offices, in default, Commissioner of Treasury to do so at expense of parish	Chief Office.—"The General Registry Office of Births, Deaths, and Marriages" in Edinburgh	(a) Chief Office.—General Register Office in Dublin (b) Other Offices. — Guardians to provide offices for Superintendent Registrars, which may, with sanction of Poor Law Commissioners, be made in some part of existing poorhouse
Governor may make regulations (a) for management of General and District Registries, (b) for effectual carrying out of Act, and (c) may alter, amend or repeal regulations	Governor or Registrar - General, with consent of Governor, may (a) alter forms in the Schedules to the Act or (b) prescribe new forms, and (c) may make regulations.	Local Government Board, or Registrar-General, with approval of same, may make regulations (a) for management of Register and (b) for duties of Registrar-General, officers, and Registrars	Secretary for Scotland, or Deputy Clerk Register, with his approbation, may make regulations for (a) management of General Registry Office and (b) discharge of duties of officers and Registrars	Lord Lieutenant or Registrar - General, with his approval, may make regulations (a) for management of General Register Office and (b) for discharge of duties of officers
Registrar - General to furnish District Registrars with (a) books for registry of births and deaths and (b) forms for certified copies thereof	Registrar - General to furnish registers, books, and forms to all parties requiring same	(a) Registrar - General to provide Superintendent Registrars with register books and forms for certified copies, and Registrars with iron boxes (b) Board of Guardians to provide Superintendent Registrars with fire-proof repositories	Deputy Clerk Register to (a) provide each Registrar with iron box and (b) furnish register books of births and deaths, certificates, schedules, notices, and forms	(a) Registrar-General to furnish Registrars with books and forms for indexes (b) Treasury to furnish strong iron boxes for keeping registers in

CONSPECTUS OF ACTS IN FORCE RELATING TO THE REGISTRATION OF BIRTHS,  
COMMONWEALTH OF AUSTRALIA, AND IN ENGLAND

Particulars.	New South Wales.	Victoria.	Queensland.	South Australia.
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1. REGISTRATION OF BIRTHS

*A.—Births and*

9. <i>Duties of Registrars, &amp;c.</i>	Registrar to inform himself carefully of every birth and death happening within his district and to register same in register with particulars as soon as possible after the event, without fee	(a) Registrar to inform himself carefully of every birth and death occurring within his district, and, as soon after the event as convenient, to learn and register, without fee, particulars in duplicate (b) Registrar to reside within district and cause his name, with addition of "Registrar of Births and Deaths," to be placed in some conspicuous place at or near outer door of his office	Same as New South Wales	Registrar and Assistant Registrar to inform himself carefully of every birth and death happening in his district and to ascertain and register, as soon after the event as conveniently can be done, without fee, the particulars required to be registered
10. <i>Returns to be made</i>	District Registrar, in April, July, October, and January to transmit to General Registry copies of registers made during preceding three months	(a) Registrar to send notice of birth or death to Government Statist, within seven days of registration (b) Registrar to transmit in January, April, July, and October to Government Statist one of the forms in which birth or death has been registered, to be kept in office of latter as record (c) Government Statist to send annual abstract of number of births and deaths to Chief Secretary to be laid before Parliament	District Registrar to transmit in April, July, October, and January to General Registry copies of registers of births and deaths made during preceding three months, to be kept by Registrar-General.	(a) Assistant Registrar to forward to District Registrar certificates in duplicate within 7 days from date thereon (b) District Registrar files one certificate and forwards other to Registrar-General. (c) Registrar-General and District Registrars cause certificates to be bound constituting General and District Registers of Births and Deaths
11. <i>Indexes of Registers, &amp;c.</i>	(a) Registrar-General to keep—(i) indexes of district registers, (ii) index of register for district of Sydney, (iii) general index of all births and deaths in New South Wales (b) District Registrar to keep index of his register books	Government Statist and every Registrar to keep indexes of all register books	(a) Registrar-General to keep indexes of District registers and general index of all births and deaths in Queensland (b) District Registrar to keep index of his register books	Registrar - General and every District Registrar to keep indexes of register books

## DEATHS, AND MARRIAGES, AND THE LEGITIMATION OF CHILDREN IN THE AND WALES, SCOTLAND AND IRELAND—continued.

Western Australia.	Tasmania.	England and Wales.	Scotland.	Ireland.
AND DEATHS—continued.				
Deaths—continued.				
<p>(a) Registrar to inform himself carefully of every birth and death happening within his district, and, as soon as possible after event, to register same in proper books</p> <p>(b) Registrar to dwell within his district and have notice board, with "District Registrar," or "Assistant District Registrar" thereon, in some conspicuous place on outside door of office</p>	<p>(a) Registrar to inform himself carefully of particulars to be registered touching births and deaths and to enter and register all particulars in the register</p> <p>(b) Registrar to dwell within his district and cause "Registrar of Births and Deaths" to be placed on or near outer door of office</p>	<p>(a) Registrar to inform himself carefully of every birth and death happening in his district, and, upon receiving personally the particulars required, to register birth within 3 months or death within 12 months, free of charge, unless he registers at house, when fee of one shilling is payable</p> <p>(b) Registrar to dwell in or have known office in his sub-district, and place near outer door, name, "Registrar," and hours of attendance</p>	<p>(a) Registrar to inform himself carefully of every birth and death happening within his parish or district, and to register same, without fee, as soon as conveniently may be after event</p> <p>(b) Registrar or Assistant Registrar to dwell or have office within his parish or district, and have name and Registrar for parish or district placed on or near outer door of dwelling or office. District examiners to compare with Registrars, registers and duplicate registers and docket same</p>	<p>(a) Registrar to inform himself carefully of every birth and death happening within his district, and to register same, without fee, upon receiving personally particulars required from informant</p> <p>(b) Superintendent Registrar or Registrar to reside or have place of business within his district and place name, title, and days and hours of attendance on or near outer door of office</p>
<p>District Registrar, on first of every month, to transmit to Registrar-General duplicates of registers of births and deaths entered during preceding month. Such duplicates kept in General Registry as Registrar-General thinks fit</p>	<p>Registrar to transmit in April, July, October, and January to Registrar-General certified copies of all entries of births and deaths made during preceding months. In case of loss or mis-carriage, Registrar to transmit fresh copies.</p>	<p>(a) Registrar to send certified copies of entries to end of March, June, September, and December to Superintendent Registrar, who forwards to Registrar-General</p> <p>(b) Registrar to make quarterly account of number of births and deaths registered, and is entitled to 2s. 6d. for each of first 20 entries and 1s. for each subsequent entry</p> <p>(c) Superintendent Registrar to furnish similar account, and is paid 2d. for each entry</p> <p>(d) Registrar-General to send annual abstract to Local Government Board to be laid before Parliament.</p>	<p>(a) Registrar to keep duplicate register and to transmit one copy annually to Sheriff to be forwarded to Deputy Clerk Registrar</p> <p>(b) Registrar to make out twice a year account of number of births and deaths registered, and is paid 2s. for each of first 20 entries and 1s. for each subsequent entry. In lieu Parochial Board may pay Registrar fixed salary and retain fees</p> <p>(c) Deputy Clerk Registrar to transmit annual abstract to Secretary of State to be laid before Parliament</p>	<p>(a) Registrar, in April, July, October, and January to deliver to Superintendent Registrar copy of all entries made during preceding quarter, also account of number of entries, and is paid 1s. for each entry</p> <p>(b) Registrar to send filled registers to Superintendent Registrar</p> <p>(c) Superintendent Registrar to send copies to Registrar-General, and is paid 2d. for each entry</p> <p>(d) Registrar-General to send annual abstract to Lord Lieutenant to be laid before Parliament</p>
<p>(a) Registrar - General to keep indexes of births and deaths in General Registry</p> <p>(b) District Registrar to keep index of register books</p>	<p>Registrar - General and all Registrars to keep in their respective offices indexes of all entries in register books</p>	<p>(a) Registrar-General to keep indexes of all certified copies of registers</p> <p>(b) Superintendent Registrar to keep index of district register on form supplied by Registrar-General</p>	<p>(a) Deputy Clerk Registrar to keep tabular alphabetical index of all registers in his custody</p> <p>(b) Registrar to keep index of duplicate registers kept by him</p>	<p>(a) Registrar-General to keep indexes of registers in general Registry Office</p> <p>(b) Superintendent Registrar to keep index of registers in his office</p>

CONSPECTUS OF ACTS IN FORCE RELATING TO THE REGISTRATION OF BIRTHS,  
COMMONWEALTH OF AUSTRALIA, AND IN ENGLAND

Particulars.	New South Wales.	Victoria.	Queensland.	South Australia.
1. REGISTRATION OF BIRTHS				
<i>A.—Births and</i>				
<i>12. Searches in Indexes and Registers</i>	Every person, on payment of fee and giving written memorandum of particular entry he desires to find or search for, entitled at reasonable hours to search indexes and registers in which such entry appears to be	Government Statist or Registrar, upon receipt of fee and application of any person, to cause at all reasonable hours search to be made of index or register	Same as New South Wales	Every person entitled at all reasonable hours to require search to be made in indexes on payment of fee. Only officials entitled to personally search indexes, books or entries
<i>13. Certified Copies of Entries</i>	Every person, on payment of fee, entitled to have copy of any entry certified by Registrar-General or District Registrar.	On application and on payment of fee, Government Statist to give certified copy under his hand of any entry	Every person entitled to have copy of entry in register, certified by Registrar-General or District Registrar, on payment of fee	Any person entitled to have certified copy of entry in register books under hand and seal of Registrar-General, Deputy Registrar-General, or District Registrar, on payment of fee
<i>14. Fees for Searches and certified Copies</i>	<i>a</i> ) Every search in any index, 5s. <i>b</i> ) Every certified copy of any entry or of any birth or death, 2s. <i>c</i> ) Every search for certificates of births, baptisms, or burials registered prior to passing of Act 19 Vic. no. 34, or every copy of such certificate, 1s. <i>d</i> ) Certificate under Friendly Societies' Act, max., 1s.	<i>a</i> ) From 1st July, 1853—(i) Every search (and extract from entry if desired), 2s. 6d.; (ii) Every certificate (including search), 7s. 6d.; (iii) Certificate under Friendly Societies' Act, 1s.; (iv) Certificate under Commonwealth Life Assurance Company's Act, 2s. 6d. <i>b</i> ) Prior to 1st July, 1853—(i) Every search (and extract from entry, if desired), 1s.; (ii) Every certificate (including search), 2s.	<i>a</i> ) Every search in any index, 5s.; <i>b</i> ) Every certified copy of any entry or of any birth or death, 2s.; <i>c</i> ) Certificate under Friendly Societies' Act, max., 1s.	<i>a</i> ) Any search, 1s. <i>b</i> ) Every certified copy, 2s. 6d.
<i>15. Recipients of Fees</i>	<i>a</i> ) Fees paid to Registrar-General, or in his office, paid into Consolidated Revenue Fund <i>b</i> ) Fees paid to District Registrars retained by them	All fees to be accounted for by Government Statist and Registrars and paid into the Consolidated Revenue	<i>a</i> ) Fees paid to Registrar-General or in his office to be paid to His Majesty <i>b</i> ) Fees paid to District Registrars retained by them	All fees to be applied for the purposes of the general revenue of the State, except fee of 2s. 6d. levied and received by Assistant Registrar for late registration of birth or death

DEATHS, AND MARRIAGES, AND THE LEGITIMATION OF CHILDREN IN THE  
AND WALES, SCOTLAND AND IRELAND—continued.

Western Australia.	Tasmania.	England and Wales.	Scotland.	Ireland.
AND DEATHS—continued.				
Deaths—continued.				
Registrar - General and District Registrars to allow, at all reasonable times, searches in register books on payment of prescribed fee	Any person entitled, at reasonable hours, every day, except Sunday, Christmas Day, Good Friday, and public holidays, to search indexes in register books kept by Registrar-General and Registrars.	(a) Registrar-General's Office. — Every person entitled to search indexes between 10 a.m. and 4 p.m. on any day except Sunday, Christmas Day, and Good Friday on payment of fee (b) Superintendent Registrar's Office. — Every person entitled at all reasonable hours to make searches in indexes on payment of fee	(a) Deputy Clerk Registrar's Office. — Every person entitled on payment of fee to search index between 10 a.m. and 4 p.m. on any day except Sunday (b) Registrar's Office. — Every person entitled on payment of fee to search indexes at reasonable hours, subject to regulations prescribed by Sheriff	(a) Registrar-General's Office. — Every person entitled to search indexes between 10 a.m. and 4 p.m. every day except Sunday, Christmas Day and Good Friday. (b) Superintendent Registrar's Office. — Every person entitled at all reasonable times to search indexes and register books
Registrar-General or District Registrar to give sealed or stamped certified copy under his hand of entry in register book on payment of fee	On production of essential information, any person entitled to have certified copy of entry in register book under hand of Registrar-General or Registrar on payment of fee	Every person entitled to have certified copy of entry in register book, under hand of Registrar-General and Superintendent Registrar, on payment of fee	Every person entitled to have copy of entry in register on payment of fee	Every person entitled to have certified copy of entry in register on payment of fee and stamp duty of 1d.
(a) Every search in an index, 2s. 6d. (b) Every certified copy of any entry, 1s. (c) Every certificate on search, 7s. 6d. (d) Certificate under Friendly Societies' Act, max., 1s.	(a) General search of index or register books, not exceeding one hour, 2s. 6d., every additional hour or part, 1s. 6d. (b) Particular search of index or register book only, 1s. (c) Certificate with particular search but exclusive of general search—(i) without seal, 2s. 6d.; (ii) with seal, 5s. (d) Certificate under Friendly Societies' Act, max., 1s.	(a) General Registrar's Office.—(i) General search, 20s.; (ii) Particular search, 1s.; (iii) Certified copy of entry, 2s. 6d. (b) Superintendent Registrar's Office.—(i) General search, 5s.; (ii) Particular search, 1s.; (iii) Search not over one year, 1s.; (iv) each additional year, 6d.; (v) Certificate of copy of entry, 2s. 6d.; (vi) Certificate of birth under Education, Factory or Insurance Acts, 6d.; (vii) Certificates under Friendly Societies' or Savings Bank Acts, 1s.	(b) Deputy Clerk Registrar's Office.—(i) General search, 20s.; (ii) Particular search, 1s.; (iii) Extract, 2s. (b) Registrar's Office.—(i) General search, 2s.; (ii) Particular search, 1s.; (iii) Extract, 2s. (c) Certificate of birth under Factory Act, 6d.; under Education Act, max., 1s. (d) Certificate under Friendly Societies' or Savings Bank Acts, 1s.	(a) Registrar-General's Office.—(i) General search, 20s.; (ii) Particular search, 1s.; (iii) Certified copy, 2s. 6d. (b) Superintendent Registrar's Office.—(i) General search, 5s.; (ii) Particular search, 1s.; (iii) Certified copy, 2s. 6d. (c) Registrar's Office.—(i) Search, 1s.; (ii) Certified copy, 2s. 6d.
(a) Fees paid to Registrar-General or in his office paid into General Revenue of State (b) Fees received by District Registrar retained for his own use (c) Fees received by Assistant District Registrar, one-half retained by him, one-half paid to District Registrar	(a) Fees received by Registrar-General and by Registrars for Hobart and Launceston paid into Consolidated Revenue Fund (b) Fees received by other Registrars retained by them for their own use and benefit	(a) Fees received by Registrar-General to be paid to credit of Exchequer (b) Fees received by Superintendent and other Registrars retained by them	(a) Fees received by Deputy Clerk Registrar paid into Exchequer (b) Registrar entitled to demand fees and to transmit copy of accounts annually to Sheriff	(a) Fees received by Registrar-General paid into Exchequer (b) Fees received by Superintendent Registrars or Registrars retained by them

CONSPECTUS OF ACTS IN FORCE RELATING TO THE REGISTRATION OF BIRTHS,  
COMMONWEALTH OF AUSTRALIA, AND IN ENGLAND

Particulars.	New South Wales.	Victoria.	Queensland.	South Australia.
1. REGISTRATION OF BIRTHS				
<i>A.—Births and</i>				
16. <i>Correction of Errors in Registers, &amp;c.</i>	Person charged with duty of making entry not liable for penalty if, within one month of discovery of error, he corrects same by making and signing new marginal entry—(a) in case of birth, in presence of parent, (b) in case of death, in presence of tenant, or (c) in any such cases, respectively, in presence of District Registrar, who makes like alteration in certified copy	Where any Registrar is informed of or discovers any error in entry, he is to correct same. Correction to be made—(a) within six months of information or discovery; (b) in case of birth, in presence of parents; (c) in case of death, in presence of occupier of house where death occurred; (d) in case of death or absence of persons required, on written authority of Government Statist or in presence of and attested by two credible witnesses who have knowledge of the truth of correction. Correction to be made in margin, and dated, and copy sent to Government Statist	Same as New South Wales	No person liable for penalty if within one calendar month after discovery of error, erroneous entry has been corrected by entry in margin with date—(a) in case of birth, in presence of parent; (b) in case of death, in presence of inmate of house where death occurred; or (c) in the event of death or absence, in presence of District Registrar and two credible witnesses, who are to attest same. Registrar-General to be notified of correction
17. <i>Penalties</i>	(a) Refusing or neglecting to give notice or information, knowingly registering contrary to Act. Max., £10 (b) Person negligently losing or injuring register book or certified copy, Registrar refusing or omitting to register. Max., £20 (c) Stating wilful falsehood in declaration, guilty of perjury	(a) Refusing or neglecting to give notice or information. Max., £10 (b) Person losing or injuring register or copy, Registrar refusing or omitting to register, failing to forward documents to or to cancel registration on demand of Government Statist. Min., £10; max., £50 (c) Making false statements, guilty of perjury (d) Failing to give notice of birth or death of boarded-out illegitimate child. Max., six months with or without hard labour, or £25	(a) Refusing or neglecting to give notice or information, or knowingly registering contrary to Act. Max., £10 (b) Losing or injuring register or copy, Registrar refusing or omitting to register. Max., £20 (c) Making false statements for insertion in register. Max., £200, with or without three years with hard labour (d) Wilfully destroying or injuring register or copy, counterfeiting same, making false entry, forging signature or seal of Registrar, hard labour on roads or public works up to 5 years, or max. £500, or imprisonment up to 3 years with or without hard labour	(a) Failing to give notice of birth or death. Max., £10 (b) Neglecting to state particulars, or making false statements, when called upon. Max., £50 (c) Wilfully making false statements for insertion in register, guilty of perjury (d) Wilfully destroying or injuring, falsely making or counterfeiting register or copy, inserting false entry, giving false certificate, certifying to copy or extract knowing it to be false, forging seal, guilty of felony

DEATHS, AND MARRIAGES, AND THE LEGITIMATION OF CHILDREN IN THE AND WALES, SCOTLAND AND IRELAND—*continued.*

Western Australia.	Tasmania.	England and Wales.	Scotland.	Ireland.
<i>AND DEATHS—continued.</i>				
<i>Deaths—continued.</i>				
<p>(a) Clerical error may be corrected by any person authorized by Registrar-General.</p> <p>(b) Error of fact or substance may be corrected by Registrar-General, or by District Registrar on order of Registrar-General, in margin upon receipt of fee of 2s. 6d. and upon production of statutory declaration, setting forth nature of error and true facts of case, made by person required to give information concerning birth or death, or in default, by two credible witnesses having knowledge of the truth of the case</p>	<p>(a) Clerical error may be corrected by person authorized by Registrar-General.</p> <p>(b) Error of fact or substance may, within 3 months of discovery and not exceeding two years of registration, be corrected—(i) person requiring correction to produce declaration before J.P. stating nature of error and true facts; (ii) Registrar to make new entry to which reference made by writing across original entry with date; (iii) New entry to be signed by person requiring correction to be made and two credible witnesses. One of the three must be person who was required to give information of birth or death</p>	<p>Error of fact or substance may be corrected by entry in margin, upon production of statutory declaration made by two persons required to give information under Act, or, in default, by two credible persons having knowledge of the truth and upon payment of fee of 2s. 6d.</p> <p>If error occurs in information after inquest, coroner may certify to facts</p>	<p>(a) Clerical error in duplicate registers may be corrected by District Examiners.</p> <p>(b) Person discovering error to forthwith give information to Sheriff, who summons person concerned in making erroneous entry and person interested, and examines them on oath. If satisfied he authorizes corrections to be made in "The Register of Corrected Entries," enters same in margin of original entry and transmits copy to Deputy Clerk Register.</p> <p>Register of Corrected Entries to be kept in duplicate and one copy to be transmitted annually to Deputy Clerk Register</p>	<p>(a) Clerical error may be corrected by any person authorized by Registrar-General.</p> <p>(b) Error of fact or substance may be corrected by entry in margin upon payment of fee of 2s. 6d., and upon production by person requiring correction of statutory declaration made by person required to give information, or, in default, by two credible witnesses having knowledge of truth. Coroner may certify to nature of error</p> <p>Declaration or certificate to be forwarded to Registrar-General</p>
<p>(a) Refusing to answer questions as to particulars. Max., £5.</p> <p>(b) Refusing or neglecting to give notice, information, or particulars, to transmit certificate, to pay fee, knowingly registering contrary to Act, Registrar omitting to furnish duplicates of registers to Registrar-General. Min., £2; max., £10</p> <p>(c) Losing or injuring register, Registrar refusing or omitting to register, failing to obey order of Justices to register. Max. £20</p> <p>(d) Making false declaration or statement. Max., £200 with or without imprisonment with hard labour for 2 years</p> <p>(e) Wilfully destroying, injuring, or counterfeiting register or copy, inserting false entry, giving false certificate, certifying to false extract, forging seal, penal servitude up to 5 years</p>	<p>(a) Refusing or neglecting to give notice or information, or to make declaration, Registrar refusing or neglecting to transmit returns. Max., £10</p> <p>(b) Losing or injuring register or copy, Registrar refusing or omitting to register. Max., £20</p> <p>(c) Wilfully making false statements, guilty of misdemeanour</p> <p>(d) Wilfully destroying, injuring or counterfeiting register or copy, inserting false entry, giving false certificate, forging or counterfeiting seal or signature, penal servitude not exceeding 5 years</p>	<p>(a) Failing to give information. Max., £2</p> <p>(b) Master of ship failing to send returns. Max., £5</p> <p>(c) Neglecting to send certified copies of registers, or Registrar registering in contravention of Act. Max., £10</p> <p>(d) Registrar refusing or omitting to register, or losing or injuring register. Max., £50</p> <p>(e) Forging or falsifying certificate, on summary conviction. Max., £10, on conviction on indictment, fine, or penal servitude not exceeding 7 years</p>	<p>(a) Registrar refusing or omitting to register. Max., £10</p> <p>(b) Making false entry or statement, wilfully destroying, obliterating, erasing, or injuring, or counterfeiting entry in register, inserting false entry, giving false certificate, transportation for not exceeding 7 years, or imprisonment for not exceeding 2 years</p>	<p>(a) Failing to give notice of birth or death. Max., 20s.</p> <p>(b) Failing to give particulars, refusing to sign register. Max., 40s.</p> <p>(c) Registrar refusing or omitting to register, losing or injuring register, refusing or neglecting during 1 month to send registers or copies to Superintendent Registrar. Max., £10</p> <p>(d) Wilfully making false answers or false certificate or declaration, or false statements, forging certificates, &amp;c., on summary conviction. Max., £10, on conviction on indictment, fine or penal servitude not exceeding 7 years</p>



CONSPECTUS OF ACTS IN FORCE RELATING TO THE REGISTRATION OF BIRTHS,  
COMMONWEALTH OF AUSTRALIA, AND IN ENGLAND

Particulars.	New South Wales.	Victoria.	Queensland.	South Australia.
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1. REGISTRATION OF BIRTHS

*A.—Births and*

<b>18. Recovery of Penalties</b>	Penalties recoverable before two Justices of the Peace or Police Magistrate in a summary way, upon complaint of any person	Penalties recoverable in Court of Petty Sessions	Fines and penalties recoverable in a summary way before two Justices of the Peace or Police Magistrate	Penalties recoverable before two Justices of the Peace in a summary way, with right of appeal to Local Court of Adelaide in its full jurisdiction
<b>19. Miscellaneous Provisions</b>	..	(a) When Government Statist certifies that a birth or death has been registered by some person other than a Registrar, Governor may validate registration (b) If Government Statist satisfied that a registration is false, or illegally made, he may, under direction of Attorney-General, cancel same, and direct Registrar to do so also on margin of register	..	..

*B.—*

<b>1. Acts relating to Registration of Births</b>	Notification of Births Act 1915	Infant Life Protection Act 1915	Infant Life Protection Act 1905	..
<b>2. Persons required to give Notice and furnish Particulars of Birth</b>	Parent .. ..	A. To give notice— (a) Father or mother; or (b) Occupier of house or tenement; or (c) Legally qualified medical practitioner or nurse present at birth B. To give information—(a) Father or mother, or, in case of death, absence or inability; (b) occupier of house or tenement	Parent .. ..	(a) Father or mother, or (b) Occupier of house or tenement in which birth happens, or (c) Any person authorized by such father, mother, or occupier

DEATHS, AND MARRIAGES, AND THE LEGITIMATION OF CHILDREN IN THE  
AND WALES, SCOTLAND AND IRELAND—continued.

Western Australia.	Tasmania.	England and Wales.	Scotland.	Ireland.
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## AND DEATHS—continued.

## Deaths—continued.

Every offence, not declared to be a felony or misdemeanour, summarily punishable on conviction before two or more Justices of the Peace in Petty Sessions upon complaint of any person	Penalties recoverable before a Police or Stipendiary Magistrate or two Justices of the Peace upon complaint of person authorized by Registrar-General	Fines recoverable on summary jurisdiction before two Justices. Where sum to be paid exceeds £5, appeal may be made to next Court of Quarter Sessions	Penalties recoverable by summary proceedings by Sheriff	Penalties recoverable in a summary way before a Justice or Justices of the Peace sitting in Petty Sessions
(a) Informant to either—(i) subscribe his name in register; or (ii) forward to District Registrar by post statement of particulars with statutory declaration certifying same (b) When birth or death not duly registered, and person whose duty it was to inform is convicted of failing to do so, Justices may order person to inform District Registrar within certain time (c) No entry inadmissible as evidence merely by reason that it is not signed by informant	(a) Declarations may be made before any Registrar or Justice of the Peace (b) Registrar may refuse to do an act for which a fee is demandable until such fee is first paid (c) Registrar-General, Registrar, and Deputies exempt from serving on any jury or inquest	(a) Every Registrar exempt from serving on a jury or inquest, and from every parochial and corporate office whatever (b) Prosecution on indictment must be commenced within 3 years after the commission of the offence	(a) Clerk Register, with consent of His Majesty in Council, may diminish fees or alter forms (b) If parties, who are bound to give information, do not attend Registrar, he shall require them to do so, and, if they fail, he makes a second intimation, and on their failing again, applies to Sheriff, who issues a warrant	(a) Superintendent Registrars and Registrars exempt from serving on any jury or inquest, and from any parochial or corporate office whatever (b) Prosecution on indictment to be commenced within 3 years after commission of offence

## Births.

Adoption of Children Act 1896	Legitimation Act 1905 Notification of Births Act 1910	Notification of Births Act 1907	..	..
(a) Parent, or (b) Occupier of house or tenement in which birth took place	(a) Father or mother, or, in case of death, absence, or inability (b) Occupier of house or tenement in which child born, and (c) Person or persons having charge of child, and (d) Each person present at birth	(a) Father or mother; or, in default, (b) Occupier of house in which child born; or (c) Each person present at birth; or (d) Person having charge of child	(a) Parent or parents, or, in case of death or inability of parents— (b) Person in charge of child, and (c) Occupier of house or tenement in which birth took place, and (d) Nurse present	(a) Father and mother, or, in default, (b) Occupier of house in which to his knowledge child was born, and (c) Each person present at birth, and (d) Person having charge of child

**CONSPECTUS OF ACTS IN FORCE RELATING TO THE REGISTRATION OF BIRTHS,  
COMMONWEALTH OF AUSTRALIA, AND IN ENGLAND**

Particulars.	New South Wales.	Victoria.	Queensland.	South Australia.
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I. REGISTRATION OF BIRTHS

B.—Births

<p><b>3. Particulars required for Registration of Birth</b></p>	<p>Year. District. Place. Name of Registrar</p> <p>(a) Child; (i) When and where born; (ii) Name, and whether present or not; (iii) Sex</p> <p>(b) Father. A. (i) Name and Surname; (ii) Rank or Profession; (iii) Age; (iv) Birthplace. B. (i) When and where married; (ii) Previous issue, living (names and ages), deceased (sexes)</p> <p>(c) Mother. (i) Name and maiden name; (ii) Age; (iii) Birthplace</p> <p>(d) Informant. Signature, Description, and Residence</p> <p>(e) Witnesses; (i) Accoucheur; (ii) Nurse or (iii) Names of Witnesses</p> <p>(f) Signatures of District Registrar, date and where registered</p> <p>(g) Name. If added after Registration of Birth</p>	<p>Year. District. Name of Registrar.</p> <p>(a) Child—(i) When and where born; (ii) Name, whether present or not; (iii) Sex</p> <p>(b) Father — (i) Name, surname, occupation; (ii) Age; (iii) Birthplace; (iv) When and where married; (v) Previous issue, living and deceased</p> <p>(c) Mother—(i) Name and maiden surname; (ii) Age; (iii) Birthplace</p> <p>(d) Informant, Signature, Description, and Residence</p> <p>(e) Witnesses — (i) Accoucheur; (ii) Nurse by whom certified; (iii) Names of occupier or other witnesses</p> <p>(f) Registrar — (i) When registered and where; (ii) Signature of Registrar</p> <p>(g) Name. If added after Registration of Birth</p>	<p>Date Received. District.</p> <p>(a) Child—(i) When born; (ii) Where born (name of place or street); (iii) Christian name and sex</p> <p>(b) Father—(i) Christian name (in full); (ii) Surname; (iii) Profession, trade, or occupation, and age last birthday; (iv) Birthplace; (v) Date of marriage (to mother of child herein mentioned); (vi) Where married (to mother of child herein mentioned); (vii) Date and place of any previous marriage</p> <p>(c) Previous children of father living—(i) by marriage to mother of child herein mentioned (names and ages last birthday); (ii) by any previous marriage (names and ages last birthday)</p> <p>(d) (Children dead—(i) by marriage to mother of child herein mentioned (number and sex); (ii) by any previous marriage (number and sex)</p> <p>(e) Mother—(i) Christian name; (ii) If previously widowed, late surname; (iii) Maiden surname and age; (iv) Birthplace</p> <p>(f) Name and address of doctor in attendance at birth (if present)</p> <p>(g) Name of nurse or other person present at birth</p> <p>(h) Informant — (i) Signature; (ii) Relationship to child; (iii) Residence; (iv) Witness to signature; (v) Date</p>	<p>Year. Name of District.</p> <p>(a) When born, and where</p> <p>(b) Name (if any)</p> <p>(c) Sex</p> <p>(d) Name, surname, and birthplace of father</p> <p>(e) Name, surname, and birthplace of mother</p> <p>(f) Year of marriage of parents</p> <p>(g) Number of previous issue—(i) living; (ii) deceased</p> <p>(h) Rank or profession of father</p> <p>(i) Signature, description, and residence of informant</p> <p>(j) When registered</p> <p>(k) Signature of Registrar</p> <p>(l) Name, if added after registration of birth</p> <p>(m) Date of entry</p>
<p><b>4. Period within which Registration should be made</b></p>	<p>Sixty days next after the birth</p>	<p>Sixty days next after day of birth</p>	<p>Sixty days next after the birth</p>	<p>Forty-two days next after the day of birth</p>
<p><b>5. Second Period within which Registration may be made, and Procedure for Registration during that Period</b></p>	<p>Six months next after birth or arrival in State if not born therein. Registrar to register upon (a) some person present at birth, or (b) parent making solemn declaration according to the best of his knowledge and belief of particulars required</p>	<p>Twelve months next after birth. (a) Any person present at birth, or (b) father or (c) guardian to make solemn declaration of particulars before Government Statist or Registrar. Fee, 5s.</p>	<p>Three years following birth or arrival of child of under 18 months in the State. Parent to make solemn declaration before J.P. and pay fee of 2s. 6d.</p>	<p>Six calendar months from birth. Registrar may require (a) person required to give information, or (b) any person present at or cognizant of birth to make solemn declaration of particulars and pay fee of 2s. 6d.</p>

DEATHS, AND MARRIAGES, AND THE LEGITIMATION OF CHILDREN IN THE  
AND WALES, SCOTLAND AND IRELAND—*continued.*

Western Australia.	Tasmania.	England and Wales.	Scotland.	Ireland.
<p>AND DEATHS—<i>continued.</i></p> <p>—continued.</p>				
<p>Name of District and Registrar</p> <p>(a) Child—(i) When and where born; (ii) Name, and whether present at registration or not; (iii) Sex</p> <p>(b) Father—A. (i) Name and surname, rank or profession; (ii) Age; (iii) Birth-place. B. (i) When and where married; (ii) Previous issue, living and deceased</p> <p>(c) Mother—(i) Name and maiden surname; (ii) Age; (iii) Birth-place</p> <p>(d) Informant, signature, description and residence</p> <p>(e) Witnesses—(i) Accoucheur; (ii) Nurse by whom certified; (iii) Names of occupier or other witnesses</p> <p>(f) When registered and where</p> <p>(g) Signature of District Registrar</p> <p>(h) Name, if added after registration of birth</p>	<p>Year. Name of District.</p> <p>(a) Born—(i) When; (ii) Where</p> <p>(b) Name of child (if any)</p> <p>(c) Sex</p> <p>(d) Father, name and surname</p> <p>(e) Mother—(i) Name and surname; (ii) Maiden surname; (iii) When married; (iv) Where married;</p> <p>(f) Rank or profession of father</p> <p>(g) Informant—(i) Signature; (ii) Description; (iii) Residence</p> <p>(h) When registered</p> <p>(i) Signature of Registrar</p> <p>(j) Name, if added after registration of birth</p>	<p>(a) When born</p> <p>(b) Name (if any)</p> <p>(c) Sex</p> <p>(d) Name and surname of father</p> <p>(e) Name and maiden surname of mother</p> <p>(f) Rank or profession of father</p> <p>(g) Signature, description, and residence of informant</p> <p>(h) When registered</p> <p>(i) Signature of Registrar</p> <p>(j) Baptismal name, if added after registration of birth</p>	<p>Year. Parish. County or Burgh. Name of Registrar.</p> <p>(a) Child—(i) Name (if given), and whether informant present or not. Baptismal name (if different), or name given without baptism and date of insertion thereof; (ii) Sex; (iii) When born, year, day of month, hour; (iv) Where born, if in lodgings, so stated</p> <p>(b) Father—(i) Name, rank, profession, or occupation, age, birthplace; (ii) When and where married, issue living and deceased</p> <p>(c) Mother—Name, maiden name, age, birthplace</p> <p>(d) Informant—Signature of father or mother, or other informant and residence, if out of house in which birth occurred</p> <p>(e) When and where registered. Signature of Registrar</p>	<p>Name of District, Union, and County.</p> <p>(a) Date and place of birth</p> <p>(b) Name (if any)</p> <p>(c) Sex</p> <p>(d) Name, surname, and dwelling-place of father</p> <p>(e) Name, surname, and maiden name of mother</p> <p>(f) Rank and profession of father</p> <p>(g) Signature, qualification, and residence of informant</p> <p>(h) When registered</p> <p>(i) Signature of Registrar</p> <p>(j) Baptismal name, if added after registration of birth, and date</p>
Sixty days next after day of birth. Fee for registration by District Registrar 1s., by Assistant Registrar 2s.	Sixty days next after birth	Forty-two days next after day of birth	Twenty-one days next after birth	Forty-two days next after birth
Twelve months following day of birth or arrival in State of child of under 18 months. Parent or other person making application to make statutory declaration as to truth of particulars and pay fee of 5s. to District or 10s. to Assistant Registrar	Twelve months next after birth. (a) Person present at birth, or (b) parent or (c) guardian, to make solemn declaration before Registrar of particulars and pay fee of 5s. Registrar may require attendance at his office	Three months from date of birth. Any person required to furnish particulars to attend, within seven days after notice, at Registrar's office and give required information	Three months after date of birth. (a) Person required to give information, or (b) any person having knowledge of particulars, upon being required, to attend personally and give information to Registrar	Three months from date of birth. Any of the persons required to give information, to attend, after 7 days' notice, personally at Registrar's office and give information

CONSPECTUS OF ACTS IN FORCE RELATING TO THE REGISTRATION OF BIRTHS,  
COMMONWEALTH OF AUSTRALIA, AND IN ENGLAND

Particulars.	New South Wales.	Victoria.	Queensland.	South Australia.
I. REGISTRATION OF BIRTHS				
<i>B.—Births</i>				
6. <i>Third Period within which Registration may be made and Procedure for Registration during that Period</i>	..	Seven years from date of birth. Written authority of Government Statist in accordance with regulations required prior to registration. Fee, 10s., and search, costing 2s. 6d., must be first made, in proof of birth not having been previously registered	..	..
7. <i>Final Period after which Registration may not be made</i>	Six months following birth if it took place in State or after arrival in State, if child born at sea or outside of New South Wales	Seven years from date of birth, except by the authority of a Judge of Supreme Court or of County Courts. Fee and search as No. 6	Three years following birth or arrival in State of child under 18 months of age	Six calendar months from birth, unless child born at sea or in any part of Australasia other than South Australia
8. <i>Registration of Birth occurring outside State or District</i>	In case of arrival in New South Wales of child under 18 months of age, born at sea or in any place outside of New South Wales, whose parents are about to take up their abode therein, Registrar to register birth upon solemn declaration by parent of particulars	The birth of a child, born at sea or in any State of the Commonwealth other than Victoria, of parents whose ordinary place of abode is within Victoria, may, within 12 months of birth, be registered upon solemn declaration by parent or guardian. If born at sea, after 12 months	No provision is made except for births at sea, but according to the Amendment Act of 1867 a Registrar may register "after 60 days and within 3 years following the arrival in the colony of any child under the age of 18 months"	In case of child born at sea or in any part of Australasia, other than South Australia, of parents whose ordinary place of abode is within South Australia, Registrar may register birth on solemn declaration of particulars by father, mother, or guardian, or person approved by Registrar-General
9. <i>Registration of Birth occurring at sea</i>	Master of British or Colonial vessel on arrival in port in New South Wales to furnish to Health Officer of port, or, if there be none, to Chief Officer of Customs, particulars of birth	Master of vessel trading to any port in Victoria to forthwith make a minute setting forth particulars, and on arrival to send certificate of minute to Government Statist for entry in Marine Register book	Master of British or Colonial vessel, on arrival in port in Queensland, to furnish to Health Officer of port, or, if there be none, to Chief Officer of Customs, particulars of birth	..

DEATHS, AND MARRIAGES, AND THE LEGITIMATION OF CHILDREN IN THE AND WALES, SCOTLAND AND IRELAND—*continued.*

Western Australia.	Tasmania.	England and Wales.	Scotland.	Ireland.
Seven years from date of birth. Written authority of Registrar-General in accordance with regulations required prior to registration. Fee: 5s. to District, 10s. to Assistant Registrar	Five years from date of birth. Written authority of Registrar-General required prior to registration. Fee 5s.	Twelve months next after birth. Any person required to furnish particulars to attend, within seven days of notice, at Registrar's office and give required information with solemn declaration in presence of Registrar and Superintendent Registrar, who both sign register and receive fee of 2s. 6d.	..	Twelve months next after birth. Any person required to give information to attend, after 7 days' notice, at office of Registrar, produce solemn declaration of particulars required, and pay fee of 2s. 6d.
Seven years from date of birth, except by authority of Judge of Supreme Court	Five years from date of birth, except under authority of Judge of Supreme Court	Twelve months next after birth, except under authority of Registrar-General, and on payment of fee of 10s.	Three months following day of birth, unless parents or guardian make declaration before Sheriff and pay fee of 2s.	Twelve months next after birth, except on written authority of Registrar-General and payment of fee of 5s.
Parent of child under 18 months of age, born in any country other than Western Australia, if remaining within Western Australia for 60 days, to inform District Registrar and make within such period statutory declaration of the truth of all particulars	In case of arrival in State of child whose birth has not been registered elsewhere, and who is under 18 months at time of arrival, born at sea or in any place outside of State, whose parents or guardians are about to take up their abode in the State, Registrar may, within 12 months after arrival, on solemn declaration by one parent or guardian, register birth without fee	(a) Consular officer to register child born within his district (b) Child born abroad not within consular district may be registered at any consulate, provided consular officer satisfied and 7 years have not elapsed since birth and sanction of Secretary of State obtained (c) Person removing from a sub-district, before registration took place, may make declaration, within 3 months, to Registrar of sub-district to which he has moved, which declaration is forwarded on payment of fee of 2s. to Registrar of district in which birth took place	(a) If parish where-in birth occurred is different from parish of domicile of parents, Registrar of former to transmit copy of entry to Registrar of latter, who is to transcribe same in his register, noting on margin name of parish of birth (b) Birth of child of any Scottish subject taking place in a foreign country, if intimated to Deputy Clerk Register within 12 months thereof, and certified by British Consul, to be entered in "The Foreign Register"	(a) Any person required to give information who removes, before registration, out of district in which birth took place, may give information in presence of Registrar paying fee 2s. Declaration to be sent to Registrar of district where birth took place and entered there (b) Birth of child of Irish parents which takes place in a foreign country, if intimated to Registrar-General within 12 months thereof and certified by British Consul, to be entered in "The Foreign Register"
Master of British or Colonial vessel, on arrival at port in Western Australia, to send through Health Officer of port, or, if none, through Chief Officer of Customs, particulars of birth to District Registrar, who enters same in Marine Register of Births and transmits form to Registrar-General for entry in general Marine Register of Births	..	(a) Master of British ship to enter birth in log book, and, on arrival at port in United Kingdom, or at such time and place as Board of Trade directs, to send return to Registrar-General of Shipping and Seamen, who forwards copy to Registrar-General of Births and Deaths for entry in Marine Register Book (b) Captains of His Majesty's ships to send return direct to Registrar - General of Births and Deaths	Same as England and Wales	Same as England and Wales

AND DEATHS—*continued.*—*continued.*

CONSPECTUS OF ACTS IN FORCE RELATING TO THE REGISTRATION OF BIRTHS,  
COMMONWEALTH OF AUSTRALIA, AND IN ENGLAND

Particulars.	New South Wales.	Victoria.	Queensland.	South Australia.
I. REGISTRATION OF BIRTHS				
B.—Births				
10. <i>Registration in event of finding new-born child exposed</i>	Chief or head constable to forthwith inform Registrar thereof and of place where found	Member of police force in charge of nearest police station to forthwith give notice and information of fact and place of finding to Government Statist or District Registrar	Same as New South Wales	Constable of or resident within district or person by whom child is found to forthwith give notice and information thereof and of place where found to District Registrar
11. <i>Registration of Birth of illegitimate, adopted, or still-born Child. (Special provisions)</i>	(No provision)	<i>Illegitimate Child.</i> —When birth registered by father, he may be registered as father and his name given to child. Occupier of house in which illegitimate child born to notify Registrar within 3 days. If not in city, town, or borough, notification to be made within 1 week to Registrar or member of police force in charge of nearest police station. If mother is occupier 3 weeks allowed for information	<i>Illegitimate Child.</i> —Occupier of house in which illegitimate child born, within 3 days of birth, to notify District Registrar in writing. If house not in city or town notice may be given within 1 week to District Registrar or officer in charge of nearest police station. If mother is occupier 3 weeks allowed. Parent not relieved from onus of registration	(No provision)
12. <i>Registration of Name given given subsequent to Registration of Birth</i>	Parent, within 7 days, to deliver to District Registrar certificate, signed by minister or other person who gave name. Registrar to make additional entry in register and certify same on certificate. Minister or other person giving name to deliver certificate on payment of fee of 1s.	If name given within 12 months of registration by baptism or in presence of Registrar (a) Minister or Registrar to sign certificate and deliver to parent or guardian or person procuring the giving of the name. (b) Parent, etc., to deliver certificate to Government Statist or District Registrar. (c) Registrar to register name on receipt of certificate	Same as New South Wales	If name given within 6 months after registration in presence of Registrar, District Registrar, on receipt of fee of 10s., to register name or additional name in register and notify Registrar-General thereof
13. <i>Evidence</i>	Certified copies of registers admissible as evidence ( <i>Evidence Act</i> )	Certified copies of registers or entries, signed by Government Statist or Assistant Government Statist, to be <i>prima facie</i> evidence in any Court or before any person acting judicially	(a) Certificates or certified copies given and sealed by Registrar-General or District Registrar to be received in all Courts of justice as evidence (b) Certificate of Registrar-General that original register is lost or destroyed to be received in any Court of justice as conclusive evidence	(a) Certified copies of entries under hand and seal of Registrar-General or Deputy Registrar-General to be received as evidence in any Court of justice within South Australia and its dependencies (b) Certificate of Registrar-General that register is lost or destroyed also to be evidence

DEATHS, AND MARRIAGES, AND THE LEGITIMATION OF CHILDREN IN THE AND WALES, SCOTLAND AND IRELAND—*continued.*

Western Australia.	Tasmania.	England and Wales.	Scotland.	Ireland.
Chief or head of police in district to inform District Registrar thereof and of place where child was found	(No provision)	Person finding and person in whose charge child placed to give, within 7 days, such information as he possesses to Registrar and to sign register	Person finding to forthwith give notice to Registrar, or to Inspector of Poor, or to District Constable, who give notice thereof to Procurator-fiscal	Same as England and Wales
<p>(a) <i>Adopted Child.</i>—When order of adoption made, Registrar to make entry in register of surname of adopting parent</p> <p>(b) <i>Still-born Child.</i>—Birth to be registered, without fee, within 14 days. If born more than 10 miles from nearest medical practitioner, magistrate, or officer of police, birth to be reported within 14 days of burial to nearest police officer</p>	<p><i>Illegitimate Child.</i>—Father not required to give information. Registrar not to enter name of father except at joint request of both mother and father (Also same as Queensland)</p>	<p>(a) <i>Illegitimate Child.</i>—Father not required to give information. Name of father not to be entered in register, except at joint request of both parents</p> <p>(b) <i>Still-born Child.</i>—Birth not to be registered</p>	<p><i>Illegitimate Child.</i>—Same as England and Wales</p> <p>When paternity found by decree of Court, Clerk of Court to notify, within 10 days, Registrar of parish of domicile of father, who adds to entry name of father and "illegitimate" in margin</p> <p>If child registered as illegitimate found by Court to be legitimate, entry to be made</p> <p>If child legitimated <i>per subsequens matrimonium</i>, Registrar to note same on margin with date of marriage</p>	<p><i>Illegitimate Child.</i>—No person, as father, required to give information</p> <p>Registrar not to enter name of father, except on joint request of both parents</p>
Parent or guardian or person procuring name to be altered or given, within 60 days, to deliver to District Registrar certificate signed by minister or other person who has altered or given name. Certificate to be given on payment of fee of 1s. Registrar to enter name in register, on receipt of fee of 2s. 6d., and transmit certified copy to Registrar-General	Parent or guardian or person who signed original entry, within 12 months of registration, to deliver to Registrar certificate signed by minister or parent or guardian giving name, with fee of 2s. Registrar to enter name and send certificate, with copy of entry, to Registrar-General. Fee to minister for certificate of baptism not to exceed 1s.	Parent or guardian, within 12 months after registration, to have name entered in register on giving certificate of baptism or other certificate to Registrar with fee of 1s. Registrar to enter same and forward copy to Registrar-General. If child baptised, minister signs certificate, on receipt of fee of 1s., otherwise parent or guardian signs	<p>(a) Parent or guardian or person procuring name to be given, within 6 months, to give Registrar certificate of baptism or other certificate with fee of 1s. Registrar to insert name in register and transmit duplicate to Deputy Clerk Registrar</p> <p>(b) After 6 months authority of Sheriff necessary</p> <p>Certificate of registration to be produced at baptism, in default Minister to forthwith notify baptism to Registrar</p>	Same as England and Wales
Certified copies of registers or of entries in registers, signed and sealed by Registrar-General or District Registrar, to be received as <i>prima facie</i> evidence in all proceedings, whether civil or criminal	<p>(a) Copy of register or of entry, certified under hand of Registrar or deputy, and sealed or stamped, to be evidence in any Court</p> <p>(b) Certificate under hand of Registrar-General that original register is lost or destroyed to be conclusive evidence</p> <p>(c) Certificate from any part of British Dominions not to require further proof</p>	Certified copy of entry in general register, sealed with seal of General Register Office, to be received as evidence in all Courts	Extract of entry, signed by Deputy Clerk Register or Registrar, admissible as evidence in all parts of His Majesty's Dominions	Certified copy of entry, stamped with seal of General Register Office, admissible as evidence in all parts of His Majesty's Dominions

AND DEATHS—*continued.*—*continued.*



CONSPECTUS OF ACTS IN FORCE RELATING TO THE REGISTRATION OF BIRTHS,  
COMMONWEALTH OF AUSTRALIA, AND IN ENGLAND

Particulars.	New South Wales.	Victoria.	Queensland.	South Australia.
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1. REGISTRATION OF BIRTHS				
<i>B.—Births</i>				
14. <i>When copy of Entry in Register not Evidence</i>	No register or certified copy to be received in evidence when registration has been effected six months—(a) following such birth in New South Wales; or (b) after the arrival in New South Wales of the child, if born at sea or outside the State	(a) No register or entry to be given in evidence unless signed and attested by informant, nor certified copy unless original so signed and attested (b) No register or certified copy to be evidence wherein it appears that 12 months have intervened between birth and registration, unless made by written authority of Government Statist	(No provision) ..	(No provision) ..
15. <i>Penalties</i> ..	Failing to give notice in accordance with <i>Notification of Births Act</i> , max., £2	Registering birth after 60 days in contravention of Act, max., £5	Neglecting to give notice of birth of illegitimate child, max., £25, or imprisonment for six months	Registering birth after six months following day of birth, max., £50
16. <i>Miscellaneous</i>	<i>Notification of Births Act 1915</i> (only applies to proclaimed municipalities and shires).—Father, if actually residing in house when birth took place, or person in attendance upon mother, to give notice within 36 hours to Under-Secretary of Department of Public Health or person authorized by him. To apply to child which has issued after 28th week of pregnancy, alive or dead. Notification in addition to ordinary registration of birth	..	..	..

<i>C.—</i>				
1. <i>Acts relating to Registration of Deaths</i>	..	Cemeteries Act 1915	Cremation Act 1913 ..	Cremation Act 1891, 1919

DEATHS, AND MARRIAGES, AND THE LEGITIMATION OF CHILDREN IN THE  
AND WALES, SCOTLAND AND IRELAND—continued.

Western Australia.	Tasmania.	England and Wales.	Scotland.	Ireland.
AND DEATHS—continued.				
—continued.				
<p>(a) When 12 months have intervened between birth and registration, unless entry made by written authority of Registrar-General</p> <p>(b) When 7 years have expired between birth and registration, unless entry made by authority of Judge of Supreme Court</p>	<p>(a) When birth was registered after 12 months, unless entry made on written authority of Registrar-General</p> <p>(b) When birth was registered after 5 years, unless entry made on authority of Judge of Supreme Court</p>	<p>(a) Unless register signed by informant or entry made upon certificate from Coroner or in pursuance of provisions with respect to registration of birth at sea</p> <p>(b) When registration was made after 3 months from birth unless signed by both Superintendent Registrar and Registrar</p> <p>(c) When made after 12 months, unless under authority of Registrar-General</p>	<p>No register of birth, except in case of child born at sea, admissible in evidence if made after 3 months have elapsed between date of birth and registration, unless entry signed by District Examiner</p>	<p>When not sealed with seal of General Register Office</p>
District Registrar knowingly registering birth after 12 months, max., £50	<p>(a) Registrar registering 12 months after birth, save as provided by Act and by <i>Legitimation Act</i>, max., £50</p> <p>(b) Failing to give notice under <i>Notification of Births Act</i>, max., 20s.</p>	<p>(a) Registering birth after 3 months without declaration, or after 12 months without authority, max., £10</p> <p>(b) Failing to notify birth under <i>Notification of Births Act</i>, max., £1</p>	<p>(a) Failing to give notice of birth within 21 days, max., 20s.; within 3 months, max., 40s.</p> <p>(b) Failing to give notice of finding of exposed new-born child. Registrar failing to enter registration of illegitimacy or legitimacy or to transmit extract, max., 40s.</p> <p>(c) Failing to produce child on demand by Registrar, 40s.</p> <p>(d) Registering birth after 3 months without authority, max., £5</p>	<p>(a) Failing to give notice of finding of new-born child exposed, max., 20s.</p> <p>(b) Registering birth after 3 or 12 months in contravention of Act, max., £5</p>
..	<p>(a) Penalty not to be imposed if within 60 days of birth declaration made and posted to Registrar</p> <p>(b) <i>Notification of Births Act 1910</i> (applies only to proclaimed Local Authority Districts).—Same as New South Wales, except that information to be given to clerk of Local Authority</p>	<p>(a) Registrar-General may direct that place of birth be added to entry</p> <p>(b) Registrar, on demand at time of registration, to furnish certificate of registration on receipt of fee not exceeding 3d.</p> <p>(c) <i>Notification of Births Act 1907</i> (only in force in such areas in which it is adopted by the Local Authority).—Same as New South Wales, except that information to be given to District Medical Officer of Health</p>	<p>When an entry of birth is made in a register, Registrar to give or transmit by post, within two days, without fee, extract of same to informant</p>	..

## Deaths.

Cremation Act 1897	Cremation Act 1905. Registration of Deaths in War Act 1915	Cremation Act 1902. Registration of Burial Act 1864 Burial Laws Amendment Act 1880	Cremation Act 1902 Burial Grounds (Scotland) Act 1855	Cemetery Act 1847	Clauses
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**CONSPECTUS OF ACTS IN FORCE RELATING TO THE REGISTRATION OF BIRTHS,  
COMMONWEALTH OF AUSTRALIA, AND IN ENGLAND**

Particulars.	New South Wales.	Victoria.	Queensland.	South Australia.
1. REGISTRATION OF BIRTHS				
<i>C.—Deaths</i>				
2. Person required to give Notice and furnish Particulars of Death	Tenant of house or place where death occurred	A. Notice—(a) Occupier of house or tenement; (b) legally qualified medical practitioner present at death; (c) nurse present at death B. Particulars—(a) Every person present at death or in attendance during last illness or in case of death, illness, disability or default; (b) occupier of house or tenement	Tenant of house or place where death occurred	(a) Father or mother of child (b) Occupier of house or tenement in which death happened (c) Any person authorized by (a) or (b)
3. Particulars required for Registration of Death	Year. District. Place. Registrar. (a) Descriptions—(i) When and where died; (ii) Christian name and surname, rank and profession; (iii) Sex and age (b) (i) Cause of death; (ii) Duration of last illness; (iii) Medical attendant; (iv) When he last saw deceased (c) (i) Christian name and surname of father; (ii) if known, with rank or profession; (iii) Christian and maiden name of mother (d) Signature, description and residence of informant (e) (i) Signature of District Registrar; (ii) Date; (iii) Where registered (f) If burial registered—A. (i) When; (ii) Where buried; (iii) Undertaker by whom certified. B. (i) Name; and (ii) Religion of minister; (iii) Names of two witnesses of burial (g) Where born and how long in Australian colonies or States, indicating which (h) If deceased was married—(a) (i) Where; (ii) At what age; (iii) To whom; (b) Issue in order of birth, their names and ages	Year. District. Registrar. (a) Description—(i) No.; (ii) When and where died; (iii) Name and surname; (iv) Sex and age (b) (i) Cause of death; (ii) Duration of last illness; (iii) Legally qualified medical practitioner by whom certified; (iv) When he last saw deceased (c) Name and surname of father and mother (maiden name, if known) with occupation (d) Signature, description and residence of informant (e) (i) Signature of Registrar; (ii) Date; (iii) Where registered (f) If burial registered—(i) When and where buried, undertaker by whom certified; (ii) Name and religion of minister or names of witnesses of burial (g) Where born and how long in the Australian States, stating which (h) If deceased was married—A. (i) Where; (ii) At what age; (iii) To whom. B. Issue, in order of birth, names and ages	District. (a) Date of death. (b) Where died. (c) Christian name (in full) and surname (d) Rank, profession or occupation (e) If deceased was in receipt of pension, state whether military, invalid or old-age (f) Age. (g) Cause of death and duration of illness (h) Medical attendant and when he last saw deceased (i) Parents — A. Father: (i) Christian name; (ii) Surname; (iii) Rank or profession or occupation. B. Mother: (i) Christian name; (ii) Maiden surname; (j) Where deceased was born (k) How long deceased was in the Australian States (stating which) (l) Name of clergyman (if any) who officiated at burial (m) If deceased was married—A. Married; (i) 1st at; (ii) 2nd at. B. Age when married: 1st; (ii) 2nd. C. To whom deceased was married — (i) 1st — Christian name in full, surname; (ii) 2nd—Ditto. D. Issue living — (i) By 1st marriage (names and ages); (ii) By 2nd marriage, ditto. E. Issue dead — (i) By 1st marriage (number and sex); (ii) By 2nd marriage, ditto (n) Name of undertaker (o) Residence prior to admission to hospital or institution (p) Informant — (i) Signature; (ii) Relationship (if any) to deceased; (iii) Residence; (iv) Date; (v) Witness to signature	Year. District. (a) When died (b) Name and surname (c) Sex (d) Age (e) Rank or profession (f) Usual residence (g) Birthplace and length of residence in Commonwealth (h) Age at marriage or re-marriage (i) Number of issue—living—(i) male; (ii) female (j) Number of issue deceased—(i) male; (ii) female (k) Cause of death (l) Place where death occurred (m) Signature, description and residence of informant (n) Signature of Registrar and date of registration

DEATHS, AND MARRIAGES, AND THE LEGITIMATION OF CHILDREN IN THE AND WALES, SCOTLAND AND IRELAND—*continued.*

Western Australia.	Tasmania.	England and Wales.	Scotland.	Ireland.
AND DEATHS— <i>continued.</i> — <i>continued.</i>				
Occupier of house or tenement in which death occurred	(a) Occupier of house or tenement in which death took place (b) Relatives of deceased present at death (c) Each person present at death, or, in default (d) Undertaker having charge of funeral	(a) Nearest relatives present at death or in attendance during last illness, or, in default (b) Every other relative dwelling or being in the same sub-district, or, in default (c) Each person present and occupier of house, or, in default (d) Each inmate of house and persons causing body to be buried	(a) Nearest relatives present at death (b) Occupier of house or tenement (c) If occupier be person who died, nearest relatives (d) Inmates of house or tenement	Same as England and Wales
District. Registrar. (a) Description—(i) When and where died; (ii) Name and surname, rank or profession; (iii) Sex and age (b) (i) Cause of death; (ii) Duration of last illness; (iii) Medical attendant by whom certified; (iv) When he last saw deceased (c) Name and surname of father and mother, maiden name if known, with rank or profession (d) Signature, description and residence of informant (e) (i) Signature of District Registrar; (ii) Date; (iii) Where registered (f) If burial registered—(i) When and where buried, undertaker by whom certified; (ii) Name and religion of minister, or names of witnesses of burial (g) Where born, and how long in the Australian colonies, stating which (h) If deceased was married—(i) Where; (ii) At what age; (iii) To whom; (iv) Issue in order of birth, their names and ages	Year. District. (a) Died—(i) When; (ii) Where (b) (i) Name and surname; (ii) Birth-place (c) Sex (d) Age (e) Rank or profession (f) (i) Cause of death; (ii) Medical attendant (g) Informant—(i) Signature; (ii) Description; (iii) Residence (h) When registered (i) Signature of Registrar	(a) Where died (b) Name and surname (c) Sex (d) Age (e) Rank or profession (f) Cause of death (g) Signature, description and residence of informant (h) When registered	Year, Parish, County or Burgh. Registrar (a) Name, rank, profession or occupation (b) Sex (c) Age (d) Where born and how long in this district (e) Parents' names and rank, profession, or occupation (f) If deceased was married—(i) To whom; (ii) Issue in order of birth, names and ages (g) Particulars of death—(i) When died, year, day of month, how; (ii) Where died; (iii) Cause of death and how long disease continued. Medical attendant by whom certified and when he last saw deceased; (iv) Burial place, undertaker by whom certified (h) Signature of informant (i) When and where registered and signature of Registrar	District. Union. County. (a) Date and place of death (b) Name and surname (c) Sex (d) Condition (e) Age last birthday (f) Rank, profession or occupation (g) Certified cause of death and duration of illness (h) Signature, qualification and residence of informant (i) When registered (j) Signature of Registrar

CONSPECTUS OF ACTS IN FORCE RELATING TO THE REGISTRATION OF BIRTHS,  
COMMONWEALTH OF AUSTRALIA, AND IN ENGLAND

Particulars.	New South Wales.	Victoria.	Queensland.	South Australia.
1. REGISTRATION OF BIRTHS				
<i>C.—Deaths</i>				
4. <i>Period with in which Registration should be made</i>	Thirty days next after death	Notice, 7 days after day of death Particulars 21 days next after death	Thirty days next after death	Ten days after the day of death
5. <i>Second period within which Registration may be made</i>				Six calendar months following the day of death Registrar may require (a) person required to give information; or (b) any person present at or cognizant of death to make solemn declaration of particulars and pay fee of 2s. 6d.
6. <i>Period after which Registration may not be made</i>	Thirty days next after death	Twenty-one days next after death	Thirty days next after death	Six calendar months from death, unless death occurred at sea or in some part of Australasia other than South Australia
7. <i>Registration of Death occurring elsewhere than in a house</i>	In case any dead body is found exposed, Coroner, or, if there be none, nearest Justice of Peace to forthwith inform District Registrar thereof and of place where found	If dead body found exposed, Coroner or member of police force in charge of nearest police station to forthwith give notice and information of fact and place of finding to Government Statist or District Registrar	Same as New South Wales	In case dead body found exposed, constable or Coroner to forthwith give notice and information thereof and of place where found to District Registrar
8. <i>Registration of Death occurring at sea</i>	Master of British or Colonial vessel, on arrival at port in New South Wales, to furnish health officer of port, or, if there be none, chief officer of Customs particulars on form supplied by latter	If any of His Majesty's subjects dies at sea on board British or Colonial vessel trading regularly to any port in Victoria, master to forthwith make minute of particulars and send certificate to Government Statist, who enters same in Marine Register Book	Master of British or Colonial vessel, on arrival at port in Queensland, to furnish health officer of port, or, if there be none, chief officer of Customs particulars required by Act	(No provision)

Western Australia.	Tasmania.	England and Wales.	Scotland.	Ireland.
AND DEATHS—continued.				
—continued.				
Fourteen days next following the day of death	Eight days, inclusive of day of death. If written notice be sent to Registrar with certificate of cause of death, particulars may be furnished within 32 days next after day of death	Five days from date of death. If written notice be sent to Registrar with certificate of cause of death, particulars may be furnished within 14 days next after day of death	Eight days next after date of death	Same as England and Wales
Twelve months next following day of death. Informant to make statutory declaration as to truth of particulars and pay fee. After 12 months registration can be effected on written authority of Registrar-General and on payment of fee	Twelve months from day of death or finding of dead body elsewhere than in house. Registrar may require person required to give information to attend personally within 7 days of notice and furnish particulars to best of his knowledge and belief	Twelve months from day of death. Registrar may require any person required to give information to attend personally within 7 days of notice and give necessary particulars	Fourteen days after date of death. Person required to give information or any other person having knowledge of particulars to attend personally and give information to Registrar	Same as England and Wales
Seven years from date of death except by authority of a Judge of Supreme Court	Twelve months from date of death, but Judge of Supreme Court may order Registrar to register death at any time	Twelve months from day of death, except on written authority of Registrar General	Fourteen days after date of death	Twelve months next after death, except with written authority of Registrar-General and on payment of fee of 5s.
When dead body found exposed, Resident Magistrate to inform District Registrar thereof, and of place where found	When person does not die in house, or dead body found elsewhere than in house, every relative of deceased having knowledge of any particulars, and, in default, any person taking charge of body, and person causing it to be buried, to give notice to Registrar within 8 days of death or finding and attend at office and sign register	Every relative, having knowledge of any particulars, and, in default, every person present at death, and, in default, person finding body and person taking charge of same, and person causing body to be buried to furnish particulars to Registrar within 5 days	(a) In event of person dying not in house or tenement, occupier of house or tenement in which such person was at the time lodging or residing, or, if person was occupier, inmates to notify Registrar within 24 hours. If not known where person lodged, any person present at death or finding body, or any parish or public officer or person to whom body brought to inform Registrar who notifies Procurator-fiscal (b) Person finding dead body of newborn child to notify Registrar or Inspector of Poor or District Constable	Same as England and Wales
Master of British or Colonial vessel, on arrival at port in Western Australia, to send, through health officer of port, or, in default, through chief officer of Customs, free of charge, to District Registrar particulars of death. District Registrar registers in Marine Register of Deaths	If person dies at sea on board any trading vessel entered or bound for any Tasmanian port, or, if person travelling to Tasmania dies at sea upon any vessel which touches at any Tasmanian port, captain or authorized agent to give information to District Registrar, and sign register	(a) Master of British ship to enter death in log-book with particulars, nationality and last place of abode of deceased, and send return on arrival at any port in United Kingdom, or at such time and place as Board of Trade directs, to Registrar-General of Shipping and Seamen, who forwards copy to Registrar-General of Births and Deaths for entry in Marine Register Book (b) Captain of His Majesty's ship to send return direct to Registrar-General of Births and Deaths	Same as England and Wales	Same as England and Wales

CONSPECTUS OF ACTS IN FORCE RELATING TO THE REGISTRATION OF BIRTHS,  
COMMONWEALTH OF AUSTRALIA, AND IN ENGLAND

Particulars.	New South Wales.	Victoria.	Queensland.	South Australia.
1. REGISTRATION OF BIRTHS				
<i>C.—Deaths</i>				
9. <i>Registration of Death when Inquest is held</i>	Coroner or Magistrate to notify to District Registrar verdict of jury or opinion of Magistrate, with particulars required for registration	Jury, Coroner, or Magistrate to inquire into particulars required for certificate of death. Coroner or Justice to inform Government Statist or Registrar	Coroner or Magistrate to notify to District Registrar verdict of jury or opinion of Magistrate, with all other necessary particulars	Coroner to forthwith give notice of finding of dead body exposed, with certificate of supposed cause of death
10. <i>Authority for Burial</i>	District Registrar, immediately upon registering death, to deliver, without fee, certificate of registration to undertaker, to be handed to minister or person performing funeral service	Registrar, immediately upon registering death, to deliver to undertaker certificate of registration of death	Same as New South Wales	Registrar, immediately upon registering death, to deliver, without fee, to undertaker certificate of registration of death, to be handed to person legally having charge of place of burial
11. <i>Burial without Authority</i>	Person burying or performing funeral or religious service to give notice of facts forthwith to District Registrar	Person who buries, cremates, or otherwise disposes of body to give notice forthwith to Government Statist or Registrar	Person performing funeral service to forthwith give notice to District Registrar	Person who buries or in any other way disposes of body to forthwith give notice to Registrar
12. <i>Burial when Inquest is held</i>	Coroner or Magistrate may order body to be buried before registration, and give certificate to undertaker	Coroner or Justice holding inquest may order body to be buried before registration, and gives undertaker certificate of his order	Same as New South Wales	Coroner may order body to be buried before registration, and give certificate to undertaker, to be delivered to person legally having charge of place of burial
13. <i>Burial of Still-born Child</i>	(No provision) ..	(No provision) ..	(No provision) ..	(No provision) ..

DEATHS, AND MARRIAGES, AND THE LEGITIMATION OF CHILDREN IN THE  
AND WALES, SCOTLAND AND IRELAND—*continued.*

Western Australia.	Tasmania.	England and Wales.	Scotland.	Ireland.
AND DEATHS— <i>continued.</i>				
— continued.				
Coroner to notify District Registrar verdict of jury or his opinion, with such particulars as he requires concerning the death	Coroner, within 8 days of finding of jury, to give information to Registrar	Coroner, within 5 days of finding of jury, to send particulars to Registrar	When a precognition is held, Procurator-fiscal to inform Registrar of result of same, and latter makes entry accordingly	Coroner to send to Registrar, within 5 days of finding of jury, certificate concerning death, specifying finding of jury and cause of death
District Registrar, immediately upon registering death, to deliver to undertaker certificate of registration, to be handed to minister or person who is required to bury or perform any religious service for the burial	Registrar, immediately upon registering death, to deliver to person giving information or to undertaker certificate of registration, to be handed to minister or person required to bury or perform any funeral or religious service at the burial	Registrar, on receipt of notice of death and medical certificate, to forthwith hand, free of charge, certificate of registration to person giving information or undertaker to be delivered to person who buries body or performs any funeral or religious service for burial	Registrar, immediately upon registering death, to deliver to informant, without fee, certificate of registration, to be handed by undertaker to person in charge of cemetery or place of burial	Registrar, on registering death or receipt of written notice with certificate of cause of death, to give, without fee, certificate of registration to informant or undertaker, to be delivered to person who buries body or performs funeral service
Person who buries or performs any funeral or religious service for burial to give notice forthwith to District Registrar	Undertaker, or, in default, registrar or caretaker of cemetery or person burying or performing service to notify Registrar within 7 days, giving particulars for registration	Person burying or performing funeral service to give notice to Registrar within 7 days	Person in charge of cemetery to give notice to Registrar within 3 days	Person who buries body or performs funeral service without order from Coroner or certificate to notify Registrar or Registrar-General within 7 days
Coroner may order body to be buried before registration, and give certificate to undertaker	Coroner may order body to be buried before registration, and give certificate to undertaker	Coroner to give order for burial to relative of deceased or to person who causes body to be buried or to undertaker	(No provision)	Coroner may authorize burial before registration
(a) Death to be registered within 14 days (b) Interment to be authorized by certificate of duly qualified medical practitioner or certified midwife or nurse or police or resident magistrate or officer of police not under rank of sergeant (c) If born 10 miles from such person certificate not necessary, but birth must be reported within 14 days to nearest police office	No person in control of or who buries bodies in burial ground to permit burial of still-born child without (a) certificate of medical practitioner who was in attendance at birth or who has examined body, or (b) declaration by person, who would have notified birth, if born alive, that no medical practitioner was present or that certificate not obtainable and that child was not born alive, or (c) order of Coroner holding inquest on body	Still-born child not to be buried without either (a) certificate from registered medical practitioner who was in attendance at birth or examined body, certifying that child was not born alive, or (b) declaration that no medical practitioner was present or that certificate was unobtainable and that child was not born alive, or (c) if inquest was held, order for burial from Coroner	(No provision)	Same as England and Wales



CONSPECTUS OF ACTS IN FORCE RELATING TO THE REGISTRATION OF BIRTHS,  
COMMONWEALTH OF AUSTRALIA, AND IN ENGLAND

Particulars.	New South Wales.	Victoria.	Queensland.	South Australia.
I. REGISTRATION OF BIRTHS				
<i>C.—Deaths</i>				
14. <i>Certificate of Cause of Death</i>	Medical attendant on deceased to deliver certificate of cause of death to person whose duty it is to give it, with information of death, to District Registrar	Legally qualified medical practitioner to certify to cause of death and duration of illness	Medical certificate of cause of death where physician or surgeon attended on deceased to accompany certificate of death	Medical practitioner, who attended upon deceased or examined body, to deliver to nearest of kin, occupier, or other informant certificate of cause of death, to be handed to District Registrar when notifying death
15. <i>Special Provisions for Cremation</i>		Person in charge of cremation to forthwith transmit to Government Statist or Registrar certificate of cremation. Permission to cremate must have two certificates from legally qualified medical practitioners, one of whom personally attended deceased, and the other a municipal officer of health or licensed under Cemeteries Act	District Registrar to issue "Cremation Permit" (a) upon receipt from two legally qualified medical practitioners, one stating that one had been in attendance, both stating that deceased died from natural causes, or, (b) after <i>post-mortem</i> shewing that deceased died from natural causes, or (c) upon receipt of certificate from J.P. who has held inquest that no further examination is necessary Registration to precede issue of cremation permit	Same as Queensland, with additional clause (d), in cases where death occurred in the Commonwealth outside South Australia, upon receipt of certificates from two medical practitioners entitled to practise and actually practising
16. <i>Certificate of Burial</i>	Undertaker to transmit forthwith after burial to District Registrar, certificate of burial signed by himself and two respectable householders	Undertaker to transmit to Government Statist or Registrar certificate of burial signed by himself and minister officiating at burial or two respectable witnesses who are householders	Same as New South Wales	(No provision) ..
17. <i>Register of Burials</i>	Register of burials kept by District Registrar	All burials and cremations in a cemetery to be registered in register book kept by trustees of cemetery	(No provision) ..	(No provision) ..

DEATHS, AND MARRIAGES, AND THE LEGITIMATION OF CHILDREN IN THE  
AND WALES, SCOTLAND AND IRELAND—*continued.*

Western Australia.	Tasmania.	England and Wales.	Scotland.	Ireland.
AND DEATHS— <i>continued.</i>				
—continued.				
Duly qualified medical practitioner, who attended deceased to give certificate of cause of death to informant, to be delivered to District Registrar. Not necessary in case of inquest	Medical practitioner, who attended deceased's last illness, to furnish certificate of cause, both secondary and primary, of death, free of cost to informant, to be delivered to Registrar. In absence of medical practitioner, midwife or other person acting in same capacity may give certificate	Registered medical practitioner in attendance during deceased's last illness to hand certificate of cause of death to informant, who delivers it to Registrar. When inquest held, certificate of finding of jury sufficient	Medical person, who was in attendance during last illness and until death, within 7 days to transmit to Registrar certificate of cause of death. If not sent, Registrar to transmit form, which must be returned, filled in, within 3 days of receipt	Registered medical practitioner, who attended deceased to give certificate of death to be delivered to Registrar. When inquest held, certificate of finding of jury sufficient
	<i>Cremation Act 1905</i> contains no special provisions for registration of death when body cremated	(a) Cremation not permitted until death registered, except on Coroner's certificate. Certificate required (i) from registered medical practitioner who attended deceased in last illness and can certify definitely as to cause of death, confirmed by second medical practitioner, or (ii) from medical practitioner, expert in pathology, appointed by cremation authority, after <i>post-mortem</i> examination or (iii) from Coroner (b) Still-born child may be cremated, if certified as such by registered medical practitioner after examination of body	Same as England and Wales	(No provision)
Undertaker or person who buries or otherwise disposes of dead body to transmit forthwith to District Registrar certificate of burial signed by himself and by officiating minister or two respectable persons	(No provision)	(No provision)	(No provision)	(No provision)
All burials within a cemetery to be registered in register book kept by Trustees of cemetery. Searches to be allowed on payment of fee of 1s.	(No provision)	Registers of burials to be kept by rector, vicar, or curate of a parish burial ground or by person appointed by owner of cemetery. Copies to be sent to Registrar of Ecclesiastical Court of Diocese	All burials within any burial ground to be registered in register kept by Parochial Board. Private registers may be kept, but such do not relieve proprietors from registering in parochial register	All burials within any burial ground provided under the <i>Public Health (Ireland) Act 1870</i> , to be registered in register book kept by Burial Board. Officer of Board to make returns to Registrar

CONSPECTUS OF ACTS IN FORCE RELATING TO THE REGISTRATION OF BIRTHS,  
COMMONWEALTH OF AUSTRALIA, AND IN ENGLAND

Particulars.	New South Wales.	Victoria.	Queensland.	South Australia.
I. REGISTRATION OF BIRTHS				
<i>C.—Deaths</i>				
18. <i>Evidence</i> ..	Certified copies of registers admissible as evidence. ( <i>Evidence Act</i> )	(a) Certified copies of registers or entries signed by Government Statist or Assistant Government Statist to be <i>prima facie</i> evidence in any court or before any person acting judicially (b) Register book of burials or copy or extract to be received as evidence of burial	(a) Certificates or certified copies given and sealed by Registrar-General or District Registrar to be received in all courts of justice as evidence (b) Certificate of Registrar-General that original register is lost or destroyed to be received in any court of justice as conclusive evidence	(a) Certified copies of entries under hand and seal of Registrar-General or Deputy Registrar-General to be received as evidence in any court of justice within South Australia and its dependencies (b) Certificate of Registrar-General that register is lost or destroyed also to be evidence
19. <i>When Copy of Entry in Register not Evidence</i>	..	(a) When not signed by informant (b) When there is not also entry of registration of burial or cremation in the register	When there is no entry of registration of burial in the register	When it appears that 6 months have intervened between the day of death and the day of registration
20. <i>Penalties</i> ..	..	(a) Burying without certificate of registration, or failing to give information when burying without certificate. Max. £20 (b) Failing to transmit certificate of cremation, undertaker omitting to send certificate of burial. Max. £5 (c) Registered person under <i>Infant Life Protection Act</i> failing to give notice of death of boarded-out illegitimate child. Max. 6 months' imprisonment with or without hard labour or £25 (d) Registrar giving certificate of registration of death of boarded-out child without authorization. Max. £50	(a) Cremation without permit. Max., £500 and/or imprisonment for 2 years (b) Breach of regulations under <i>Cremation Act</i> . Max. £10	(a) Burying without certificate and failing to notify Registrar. Max. £10 (b) Registering death after 6 months. Max. £50 (c) Medical practitioner refusing or neglecting to give certificate of cause of death. Max. £5 (d) Breach of regulations under <i>Cremation Act</i> . Max. £10

DEATHS, AND MARRIAGES, AND THE LEGITIMATION OF CHILDREN IN THE  
AND WALES, SCOTLAND AND IRELAND—continued.

Western Australia.	Tasmania.	England and Wales.	Scotland.	Ireland.
AND DEATHS—continued.				
—continued.				
<p>(a) Certified copies of registers or of entries in registers, signed and sealed by Registrar-General or District Registrar, to be received as <i>prima facie</i> evidence in all proceedings whether civil or criminal.</p> <p>(b) Register of burials or copy or extract to be received as evidence of burial before all courts and persons.</p>	<p>(a) Copy of register or of entry, certified under hand of Registrar or Deputy, and sealed or stamped to be evidence in any court.</p> <p>(b) Certificate under hand of Registrar-General, that original register is lost or destroyed, to be conclusive evidence.</p> <p>(c) Certificate from any part of British Dominions not to require further proof.</p>	<p>Certified copy of entry in General Register, sealed with seal of General Register Office, and register books of burials to be received as evidence in all courts.</p>	<p>Extract of entry signed by Deputy Clerk Register or Registrar admissible as evidence in all parts of His Majesty's Dominions. Copies of registers of burials to be evidence.</p>	<p>Certified copy of entry, stamped with seal of General Register Office, admissible as evidence in all parts of His Majesty's Dominions.</p>
<p>(a) When there is no entry in the register of registration of burial or other disposal of dead body.</p> <p>(b) When 12 months have intervened between death and registration, except registration authorized by Registrar-General.</p>	..	<p>(a) When entry in register (i) not signed by Informant, or (ii) not made upon certificate from Coroner, or (iii) not made in pursuance of Act relating to deaths at sea.</p> <p>(b) When more than 12 months have elapsed between day of death and day of entry unless made with authority of Registrar-General.</p>	..	<p>When not sealed with seal of General Register Office.</p>
<p>(a) District Registrar registering death after 12 months without authority. Max. £50.</p> <p>(b) Failing to deliver certificate of cause of death to Registrar, medical practitioner failing or neglecting to give same. Max. £2.</p> <p>(c) Interring still-born child contrary to Act. Max. £100 or 6 months' imprisonment with or without hard labour.</p>	<p>(a) Registering or causing death to be registered after 12 months, burying still-born child without certificate, burying or performing funeral service without certificate and failing to notify Registrar within 7 days. Max. £10.</p> <p>(b) Failing to deliver certificate of death, refusing or neglecting to give medical certificate, failing to deliver same to Registrar. Max. £2.</p> <p>(c) Contravention of regulations under <i>Cremation Act</i> Max. £50.</p> <p>(d) Contravention of provisions of <i>Infant Life Protection Act</i>. Max. £25 or imprisonment for 6 months.</p>	<p>(a) Failing to register burial. Max. £5.</p> <p>(b) Registering death or burying still-born child in contravention of Act, failing to give notice in case of burial without certificate. Max. £10.</p> <p>(c) Failing to deliver certificate of registration or of cause of death. Max. £2.</p> <p>(d) Breach of regulations under <i>Cremation Act</i>. Max. £50.</p> <p>(e) Making false declaration under <i>Cremation Act</i>. Max. 2 years' imprisonment with or without hard labour.</p>	<p>(a) Failing to give notice within 8 days of death, failing to notify Registrar in case of burial without authority. Max. 20s.</p> <p>(b) Failing to attend when required to give information, or to notify death outside of a house, or to notify finding of newborn child. Max. 40s.</p> <p>(c) Failing to deliver certificate of registration to undertaker. Max. £10.</p>	<p>Failing to deliver certificate of registration, failing to deliver certificate of cause of death to Registrar. Max. 40s.</p> <p>Registering death, or burying still-born child in contravention of Act. Max. £10.</p>

CONSPECTUS OF ACTS IN FORCE RELATING TO THE REGISTRATION OF BIRTHS,  
COMMONWEALTH OF AUSTRALIA, AND IN ENGLAND

Particulars.	New South Wales.	Victoria.	Queensland.	South Australia.
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## I. REGISTRATION OF BIRTHS

## C.—Deaths

21. <i>Miscellaneous Provisions</i>	..	<p>(a) In case of death of boarded-out infant, it is not lawful for any legally qualified medical practitioner other than medical officer appointed under <i>Neglected Children's Act</i> to give certificate of cause of death except by direction of Coroner or a Justice</p> <p>(b) Occupier of house in which death of illegitimate child under 5 years of age occurs, to give notice to Registrar</p> <p>(c) Occupier of house to notify death of boarded-out illegitimate child within 12 hours to Secretary for Department of Neglected Children and to the police</p>	Registered person in charge of boarded-out infant to give notice of death within 24 hours to nearest police station. Occupier of house in which death of illegitimate child under 5 years of age occurs or to which body brought to give notice in writing within 24 hours to District Registrar. If not in city or town, notice to be given within one week to District Registrar or officer in charge of nearest police station.	..
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## II. REGISTRATION

1. <i>Acts relating to Registration of Marriages</i>	Registration of Births, Deaths and Marriages Act 1899 Marriage Act 1899	Registration of Births, Deaths and Marriages Act 1915 Registration of Births, Deaths and Marriages Act (No. 2) 1915	The Marriage Act 1861, 1870 The Justices Marrying Act 1872	The Marriage Act 1867, 1868, 1882 Births, Marriages and Deaths Amendment Act 1907
2. <i>Definition of Terms</i>	..	<i>Registrar of Marriages.</i> —Any officer who, pursuant to Marriage Act, has been or is appointed by Governor for purpose of celebrating marriages	<i>District Registrar.</i> —Any District Registrar or Assistant District Registrar	<i>Officiating Minister.</i> —Any minister of religion, whose name is entered as officiating minister in book kept by Registrar-General, and any minister of religion statedly officiating as such who may be enrolled thereafter
3. <i>Chief Registration Officers</i>	Registrar-General appointed by Governor	Government Statist and Assistant Government Statist appointed by Governor	Registrar - General and Deputy Registrar-General appointed by Governor	Registrar-General and Deputy Registrar-General appointed by Governor

DEATHS, AND MARRIAGES, AND THE LEGITIMATION OF CHILDREN IN THE AND WALES, SCOTLAND AND IRELAND—*continued.*

Western Australia.	Tasmania.	England and Wales.	Scotland.	Ireland.
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AND DEATHS—*continued.*—*continued.*

No entry in register or certified copy to be inadmissible in evidence, by reason merely that entry has not been signed by informant	<p>(a) <i>Illegitimate Child.</i>—Occupier of house in which illegitimate infant under 5 years of age dies or to which body brought to give notice within 24 hours to Registrar. If not in city or town, notice to be given within one week to Registrar or officer in charge of nearest police station</p> <p>(b) <i>Registration of Deaths in War Act 1915.</i>—Registrar may register death of person killed in war outside Tasmania. Certificate of officer in charge of Base Records to accompany application for registration</p>	<p>Registrar - General may direct that place of death be added to entry in register. When burial takes place without rites of Church of England, person in charge of burial to transmit certificate of burial to rector, vicar or curate in charge of parish or to person keeping register in case of a burial ground or cemetery</p>	<p>Death of a Scottish subject taking place in a foreign country, if intimated to Registrar-General within 12 months and certified by British Consul, to be entered in "The Foreign Register"</p>	
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## OF MARRIAGES.

The Registration of Births, Deaths and Marriages Act 1894, 1900, 1907, 1914	The Marriage Act 1895 The Marriage Amendment Act 1896	Parochial Register Act 1812 Births and Deaths Registration Act 1836, 1837 Marriage Act 1836, 1898 Foreign Marriage Act 1892	The Registration of Births, Deaths and Marriages (Scotland) Act 1854, 1855, 1860 The Marriage (Scotland) Act 1856 The Lord Clerk Register (Scotland) Act 1879	The Marriages (Ireland) Act 1844 The Marriage Law (Ireland) Amendment Act 1863 The Registration of Marriages (Ireland) Act 1863 The Matrimonial Census and Marriage Law (Ireland) Amendment Act 1871
<i>Minister.</i> —A minister of religion or other person duly registered to celebrate marriages within Western Australia	<p>(a) <i>General Search.</i>—A search, without stating its object, or where, to aid enquiry, some essential particular relating to name, relationship, year or locality is lacking</p> <p>(b) <i>Particular Search.</i>—A search for a specific entry where all particulars are available, and which involves a search not extending over 3 years</p> <p>(c) <i>Officiating Minister.</i>—Any minister registered at office of Registrar-General</p>	<p>(a) <i>General Search.</i> A search during a number of hours not exceeding six, without stating its object</p> <p>(b) <i>Particular Search.</i>—A search over any period not exceeding five years for a particular entry</p>	<p>(a) <i>Minister</i> includes ministers and pastors of Christian congregations of all denominations</p> <p>(b) <i>Heritor.</i>—A person entitled to elect a schoolmaster under 43 Geo. IV. c. 54</p>	<p>(a) <i>General Search.</i>—A search during any number of successive days (<i>sic</i>) not exceeding six, without stating its object</p> <p>(b) <i>Particular Search.</i>—A search over any period not exceeding five years for any given register of marriages</p>
Registrar - General and Deputy Registrar-General appointed by Governor	Registrar - General and Deputy Registrar-General appointed under the Registration of Births and Deaths Act	Registrar - General appointed under the Great Seal of the United Kingdom	Deputy Clerk Registrar appointed by His Majesty	Registrar-General of Marriages appointed by Lord Lieutenant

CONSPECTUS OF ACTS IN FORCE RELATING TO THE REGISTRATION OF BIRTHS,  
COMMONWEALTH OF AUSTRALIA. AND IN ENGLAND

Particulars.	New South Wales.	Victoria.	Queensland.	South Australia.
II. REGISTRATION OF				
4. <i>Other Registration Officers</i>	District Registrars and Assistant District Registrars appointed by Governor	Registrars appointed by Governor	District Registrars and Assistant District Registrars appointed by Governor	District Registrars of Births and Deaths to be also District Registrars of Marriages
5. <i>Registry Districts</i>	All Registry Districts existing when Act was passed. Governor may alter existing division, but one district must be Registry District for Sydney	Governor divided State into Districts and defined limits and may revoke, vary and alter limits	Governor divided State into Registry Districts and may alter such division	Districts existing under the <i>Registration of Births and Deaths Act</i>
6. <i>Registry Offices</i>	<i>Chief Office.</i> —"General Registry for New South Wales" in Sydney, established prior to passing of Act	(a) <i>Chief Office.</i> —Government Statist's in Melbourne (b) <i>Other Offices.</i> —Appointed by Governor	<i>Chief Office.</i> —"General Registry for Queensland" in Brisbane	(a) <i>Chief Office.</i> —"General Registry Office" in Adelaide (b) <i>Other Offices.</i> —According to regulations
7. <i>Regulations</i>	Registrar - General, with approval of Governor, may make regulations for management of General Registry and to be observed by District Registrars	Governor may make regulations for—(a) management of Registry Offices; (b) guidance of Statist and Registrars; (c) carrying out Act. No penalty for breach to exceed £5	Registrar - General, with approval of Governor, may make regulations for management of General Registry and to be observed by District Registrars	Registrar-General, with approval of Governor, may make regulations for—(a) management of Registrar's offices; (b) prescribing duties of Registrars; (c) departmental working of Act; (d) generally carrying out and enforcing Act
8. <i>Books, Forms, &amp;c.</i>	Registrar-General to furnish to each District Registrar—(a) books for registry of marriages; (b) forms for certified copies; (c) forms of marriage certificate, and to every duly registered officiating minister forms of marriage certificates and books for the registry of marriages	Government Statist to furnish to every person empowered by law to celebrate marriages certificate forms	Registrar-General to furnish to District Registrar books for registry of marriages and forms for certified copies and to every officiating minister duly registered a sufficient number in duplicate of marriage registry books and forms	Registrar-General to furnish to every District Registrar, officiating minister and officiating registrar such printed forms as may be necessary to enable them to register marriages
9. <i>Duties of Registrars</i>	To inform himself carefully of every marriage happening within his district, and to register same in register, with particulars, as soon as possible after the event, without fee	Immediately after marriage to enter upon three marriage certificates the required particulars	Same as New South Wales	To preserve certificates forwarded to them and cause them to be bound in convenient volumes

DEATHS, AND MARRIAGES, AND THE LEGITIMATION OF CHILDREN IN THE AND WALES, SCOTLAND AND IRELAND—*continued.*

Western Australia.	Tasmania.	England and Wales.	Scotland.	Ireland.
<b>MARRIAGES—<i>continued.</i></b>				
District, Deputy District and Assistant Registrars appointed by Governor or by Registrar-General	(a) Registrars of Births and Deaths and their deputies to be Registrars of Marriages (b) Governor may appoint any official nominated by scheduled religious bodies to be a Registrar of Marriages	(a) Superintendent Registrars appointed by Board of Guardians (b) Registrars appointed by Registrar-General or by Superintendent Registrar with his approval (c) Other Registrars—(i) Clergymen of Church of England; (ii) Registering Officer of Quakers; (iii) Secretary of Synagogue; (iv) Registrar of Nonconformists; (v) Other duly authorized persons	Sheriff in control and superintendence of Registrars, who are elected by parochial board of parish. If no board, heritors appointed, subject to approbation of Sheriff. Assistant Registrars appointed by Registrars	Superintendent Registrars and Registrars as appointed under <i>Registration of Births and Deaths Act</i> if they think fit to accept office, otherwise Guardians of Unions appoint. Every Registrar may appoint a deputy
Governor fixed boundaries of Registry Districts and may alter or vary any district and the boundaries thereof	Districts as determined by or under the <i>Registration of Births and Deaths Act</i>	Guardians of Unions and parishes to divide into districts approved by Registrar-General, who may include extra-parochial places in districts, and with consent of Local Government Board, unite or divide districts	Existing parishes which may be divided or united into districts by Sheriff. Where parish is wholly or partly in a burgh, town council possesses powers of parochial boards	Same districts as under <i>Registration of Births and Deaths (Ireland) Act</i> . Lord Lieutenant, or Registrar-General, with his approbation, may alter boundaries of districts and form new districts
<i>Chief Office.</i> —"The General Registry for Western Australia" in Perth	Same as those for registration of births and deaths	Same as those for registration of births and deaths	Same as those for registration of births and deaths	(a) <i>Chief Office.</i> —"The General Register Office" in Dublin (b) <i>Other Offices.</i> —A register office in each district
Governor may make regulations for—(a) management of General and District Registries; (b) effectual carrying out of Act, and may alter, amend or repeal regulations	Governor may from time to time make rules and regulations for more effectually carrying out provisions of Act and may alter and repeal same	Local Government Board, or Registrar-General, with approval of same, may make regulations for—(a) management of Registrar; (b) duties of Registrar-General, officers and Registrars	Secretary for Scotland, or Deputy Clerk Registrar, with his approbation, may make regulations for—(a) management of General Registry Office; (b) discharge of duties of officer, and Registrars	Lord Lieutenant, or Registrar-General, with his approbation, may make regulations for management of Registrar Office and duties of Registrar-General, officers and Registrars
Registrar-General to furnish to every District Registrar register books for the registry of marriages and to every minister marriage register books and forms.	Registrar-General to furnish to every Registrar and officiating minister printed forms for registration of marriages	Registrar-General to provide every Registrar with duplicate marriage books for marriages and forms for certified copies thereof	Deputy Clerk Registrar to furnish to each Registrar register books of marriages, certificates, schedules notices and forms	Registrar-General to furnish duplicate marriage register books and forms for certified copies to—(a) Registrars; (b) rector, vicar or curate of every church or chapel; (c) every Presbyterian minister; (d) clerk of the Quakers; (e) every person authorized by Jews
To enter in marriage register book certificates of marriages which have been forwarded to him, or which he has himself celebrated. Fee for registering marriage, 2s. 6d.	When marriage celebrated by him or contracted before him, same as celebrator of marriage. (See No. 16.)	To register marriages in duplicate in the marriage register immediately after celebration on receipt of fee of 2s. 6d. One filled-in book to be retained by Registrar, other sent to Superintendent Registrar	To enter particulars of all marriage schedules received by him in register, and transmit all schedules and duplicate registers to Registrar-General	To make entries in register book of all certified copies of marriage certificates received, and to register every marriage solemnized in his presence



CONSPECTUS OF ACTS IN FORCE RELATING TO THE REGISTRATION OF BIRTHS,  
COMMONWEALTH OF AUSTRALIA, AND IN ENGLAND.

Particulars.	New South Wales.	Victoria.	Queensland.	South Australia.
II. REGISTRATION OF				
10. Returns to be made	(a) District Registrar in April, July, October, and January, to transmit to General Registry copies of entries in registers made during preceding three months (b) Minister celebrating marriage to transmit original certificate of marriage within 1 month to District Registrar	(a) Registrar of Marriages to send notice of marriage within 7 days after celebration, and certificates of marriage in January, April, July, and October to Government Statist (b) Government Statist to send abstract of number of marriages annually to Chief Secretary, to be laid before Parliament	District Registrar to transmit in April, July, October, and January to General Registry copies of entries in registers of marriages made during preceding 3 months	District Registrar, officiating minister, and officiating registrar to send quarterly to Registrar - General report of all marriages celebrated by them during 3 preceding calendar months
11 Indexes of Registers, &c.	(a) Registrar-General to keep—(i) Indexes of district registers; (ii) Index of register for District of Sydney; (iii) General Index of all marriages in New South Wales (b) District Registrar to keep index of his register books	(a) Government Statist and (b) Registrars of Marriages to keep indexes of all register books	(a) Registrar - General to keep—(i) Indexes of District Registers, and (ii) General Index of all marriages in Queensland (b) District Registrar to keep index of his register books	(a) Registrar-General and (b) District Registrars to keep indexes of register books
12. Searches in Indexes and Registers	Every person, on payment of fee and giving written memorandum of particular entry he desires to find or search for, entitled at reasonable hours to search indexes and registers in which such entry appears to be	Government Statist or Registrar, upon receipt of fee and application of any person, to cause at all reasonable hours search to be made of index or register	Same as New South Wales	Any person entitled at all reasonable hours to search indexes
13. Certified Copies of Entries	Every person, on payment of fee, entitled to copy of any entry, certified by Registrar-General or District Registrar	On application, and payment of fee, Government Statist to give certified copy of any entry under his hand	Same as New South Wales	Any person entitled to have certified copy of entry in register books under hand of Registrar-General or District Registrar, on payment of fee

DEATHS, AND MARRIAGES, AND THE LEGITIMATION OF CHILDREN IN THE  
AND WALES, SCOTLAND AND IRELAND—continued.

Western Australia.	Tasmania.	England and Wales.	Scotland.	Ireland.
<b>MARRIAGES—continued.</b>				
District Registrar to forward on first day of month following receipt copies of the marriage register received by him from ministers to Registrar-General	Registrar or officiating minister on 1st of January, April, July, and October, or within 14 days thereafter, to forward to Registrar - General report of all marriages performed during preceding month, distinguishing those performed by licence	(a) Superintendent Registrar to forward quarterly to Registrar-General copies of registers received by him, and receive fee of 2d. for each entry (b) Registrar to send similar copies quarterly, and receive fee of 6d. for each entry (c) Registrar - General to send annual abstract to Local Government Board, to be laid before Parliament	(a) Registrar to transmit one copy of register annually to Sheriff, to be forwarded to Deputy Clerk Register (b) Registrar to make out twice a year account of number of marriages registered, and is paid 2s. for each of first 20 entries, and 1s. for each subsequent entry. In lieu, parochial board may pay fixed salary (c) Deputy Clerk Register to send annual abstract to Secretary of State, to be laid before Parliament	(a), (b) Same as England and Wales (c) Registrar-General to send annual abstract to Lord Lieutenant, to be laid before Parliament (d) Rector, vicar, or curate of every church or chapel, Presbyterian minister, and registering officer of Quakers and Jews to send to Registrar quarterly copies of entries in their registers, and, when registers filled, one copy thereof
(a) Registrar-General to keep index of marriages in General Registry (b) District Registrar to keep index of his register books	Registrar - General to keep indexes of the register books in his office	(a) Registrar-General to keep indexes of all certified copies of registers (b) Superintendent Registrar to keep index of District Register on forms supplied by Registrar-General	(a) Deputy Clerk Register to keep tabulated alphabetical index of all registers in his custody (b) Registrar to keep index of duplicate registers kept by him	(a) Registrar-General to keep index of all certified copies (b) Superintendent Registrar and (c) Registrar to keep indexes of register books.
Registrar - General and District Registrars to allow at all reasonable times, searches in register books on payment of prescribed fee	Every person entitled, at all reasonable hours, on every day except Sunday, Christmas Day, Good Friday, and all public holidays to search indexes and register books in Registrar-General's office	(a) General Register Office.—Every person entitled to search indexes, between 10 a.m. and 4 p.m. on any day except Sunday, Christmas Day, and Good Friday on payment of fee (b) Registrar's Office.—Searches may be made at all reasonable times on payment of fee	(a) Deputy Clerk Register's Office.—Every person entitled on payment of fee to search index between 10 a.m. and 4 p.m. on any day except Sunday (b) Registrar's Office.—Every person entitled, on payment of fee, to search indexes at reasonable hours, subject to regulations prescribed by Sheriff (c) Other Offices.—Registrar, rector, vicar or curate of any church or chapel, Presbyterian minister, and registering officer of Quakers and Jews to allow searches in register books at all reasonable times	(a) Registrar - General's Office.—Searches may be made, on payment of fee, from 10 a.m. to 4 p.m. on any day except Sunday, Christmas Day, and Good Friday (b) Superintendent Registrar and Registrar's Office.—Searches in indexes allowed (c) Other Offices.—Registrar, rector, vicar or curate of any church or chapel, Presbyterian minister, and registering officer of Quakers and Jews to allow searches in register books at all reasonable times
Registrar-General or District Registrar to give sealed or stamped copy certified under his hand of entry in register book, on payment of fee	Every person may have certified copy of any entry under hand of Registrar - General on payment of fee	Registrar - General or Registrar may give certified copy of register of marriage on payment of fee	Every person entitled to have copy of entry in register on payment of fee	Certified copy of entry to be delivered on payment of fee

**CONSPECTUS OF ACTS IN FORCE RELATING TO THE REGISTRATION OF BIRTHS,  
COMMONWEALTH OF AUSTRALIA, AND IN ENGLAND**

Particulars.	New South Wales.	Victoria.	Queensland.	South Australia.
<b>II. REGISTRATION OF</b>				
<b>14. Fees for Searches and Certified Copies</b>	(a) Every search in any index, 5s. (b) Every certified copy of any entry or of any marriage, 2s.	(a) From 1st July, 1853—(i) Every search (and extract from entry, if desired), 2s. 6d.; (ii) Certificate (including search), 7s. 6d. (b) Prior to 1st July, 1853—(i) Every search (and extract from entry, if desired), 1s.; (ii) Every certificate (including search), 2s.	(a) Every search, 2s. (b) Certified copy of any entry, 2s. (c) Certified copy of any marriage, 2s.	(a) General search, 2s. 6d. (b) Particular search, 1s. (c) Certified copy of entry, 2s. 6d.
<b>15. Correction of Errors</b>	Person charged with duty of making entry not liable for penalty. If within 1 month of discovery of error, he corrects same, by making and signing new marginal entry (a) in presence of either of the parties to the marriage, or (b) in presence of District Registrar, who makes like alteration in certified copy	When Registrar is informed of, or discovers error in entry, he is to correct same (a) within 6 months, (b) in presence of parties to marriage, (c) in case of death or absence of any of same, on written authority of Government Statist, or (d) in presence of two credible witnesses who have knowledge of truth of correction. Correction to be made in margin and dated, and copy sent to Government Statist	Same as New South Wales	No person discovering error in form or substance of entry liable to penalty, if, within 1 month, he corrects error by dated entry in margin, in presence of (a) parties married, or (b) Registrar-General or District Registrar and two credible witnesses, who attest same. Registrar-General to be notified of correction
<b>16. Duties of Celebrators of Marriage</b>	After celebration of marriage certificate to be signed by minister or registrar, and by parties and by witnesses, and one copy delivered to one of the parties. Two copies to be signed, with declarations indorsed thereon	Immediately after marriage to enter upon three marriage certificates the required particulars. One copy to be kept by celebrator, one to be handed to one of the parties immediately after marriage, and one to be sent to Government Statist	Minister or Registrar or Justice of the Peace celebrating marriage to sign certificate and deliver one copy immediately after marriage to one of the parties, and minister or Justice of Peace within 1 month to transmit original certificate to District Registrar	To make out in triplicate certificate signed by parties, witnesses, and himself, and (a) deliver one copy to one of the parties immediately after marriage; (b) forward one within 7 days to District Registrar; c send one to Registrar-General

DEATHS, AND MARRIAGES, AND THE LEGITIMATION OF CHILDREN IN THE AND WALES, SCOTLAND AND IRELAND—*continued.*

Western Australia.	Tasmania.	England and Wales.	Scotland.	Ireland.
<b>MARRIAGES—<i>continued.</i></b>				
<p>(a) Every search in an index, 2s 6d.</p> <p>(b) Every certified copy of any entry, 1s.</p> <p>(c) Every certificate on search, 7s. 6d.</p>	<p>(a) General search, not exceeding 1 hour, 2s. 6d.; each additional hour or part, 1s. 6d.</p> <p>(b) Particular search, 1s.</p> <p>(c) Certificate with particular search only, without seal, 2s. 6d.; with seal, 5s.</p>	<p>(a) <i>General Register Office.</i>—(i) General search, 20s.; (ii) Particular search, 1s.; (iii) Copy of certificate, 2s. 6d.</p> <p>(b) <i>Registrar's Office.</i>—(i) Search over 1 year, 1s.; (ii) Each additional year, 6d.; (iii) Copy of certificate, 2s. 6d.</p>	<p>(a) <i>Deputy Clerk Register's Office.</i>—(i) General search, 20s.; Particular search, 1s.; extract, 2s.</p> <p>(b) <i>Registrar's Office.</i>—General search, 2s.; Particular search, 1s.; extract, 2s.</p> <p>(c) Certified copy of certificate of irregular marriage granted on warrant of Sheriff, 5s.</p>	<p>(a) <i>Registrar - General's Office.</i>—(i) General search, 20s.; (ii) Particular search, 1s.</p> <p>(b) <i>Superintendent Registrar's and Registrar's Offices.</i>—(i) General search, 5s.; (ii) Particular search, 1s.</p> <p>(c) <i>Registrar's Office.</i>—Search in entries not forwarded to Superintendent Registrar, 6d.</p> <p>(d) <i>Ministers', &amp;c., Registers.</i>—(i) Search not over 1 year, 1s.; (ii) Each additional year, 6d.</p> <p>(e) Certified copy of entry, 2s. 6d., and 1d. stamp duty</p>
<p>(a) Clerical error may be corrected by any person authorized by Registrar-General</p> <p>(b) Error of fact or substance may be corrected by Registrar-General or by District Registrar on his order, in margin, on receipt of fee of 2s. 6d. and of statutory declaration setting forth nature of error and true facts of case, made by person required to give information, or in default, by two credible witnesses having knowledge of the truth of the case</p>	<p>No person charged with duty of registering marriage, who discovers error, liable for penalty if within 1 calendar month of discovery and 2 years of registration of marriage, he corrects same in presence of Registrar-General or Registrar or officiating minister and two credible witnesses. Registrar-General to be notified of correction</p>	<p>Accidental errors may be corrected in presence of parties married, or, in case of death or absence, in presence of Superintendent Registrar and two credible witnesses. Correction to be made in margin of register</p> <p>If correction made within 1 month after discovery no penalty is to be enforced</p>	<p>Person discovering error to forthwith give information to Sheriff who summons person concerned in making erroneous entry and person interested and examines them on oath. If satisfied he authorizes correction to be made in "The Register of Corrected Entries," enters same in margin of original entry, and transmits copy to Deputy Clerk Registrar</p>	<p>(a) <i>Church of England, Presbyterians, Quakers, and Jews.</i>—Error may be corrected within 1 month of discovery, if correction made in margin, in presence of parties married, or, in case of death or absence, in presence of Registrar and two credible witnesses, who attest same</p> <p>(b) <i>Other Religions.</i>—Person discovering error to forthwith notify Justices at Petty Sessions, who summon person making error and persons interested, examines them on oath, and has correction made in margin</p>
<p>Minister or District Registrar, immediately after marriage, to register particulars in triplicate—(a) one copy to be delivered to one of the parties to marriage; (b) if celebrated by minister, one copy with fee to be sent to District Registrar, and forwarded by him to Registrar-General; (c) one copy retained by minister or District Registrar</p>	<p>To make out certificate of marriage in triplicate—(a) one copy to be delivered immediately after marriage to one of the parties thereto; (b) one copy to be forwarded to Registrar-General within 7 days; (c) one copy to be kept as record of marriage</p>	<p>To register marriage in duplicate in two of the marriage books immediately after celebration, on receipt of fee of 2s. 6d.</p>	<p>In case of regular marriage, copy of form of schedule to be produced with information required inserted therein, and signed by parties, witnesses, and minister, and delivered to the parties, who, within 3 days, are to deliver or send same by post to Registrar. Registrar to enter same in register, and transmit schedules with duplicate registers to Deputy Clerk Registrar</p>	<p>(a) Vicar, rector, or curate of church or chapel, Presbyterian minister, or registering officer of Quakers and Jews immediately after ceremony to register marriage in duplicate in two registers signed by minister or registering officer, parties, and two witnesses</p> <p>(b) With all marriages parties contracting to send certificate of marriage to Registrar</p>

CONSPECTUS OF ACTS IN FORCE RELATING TO THE REGISTRATION OF BIRTHS,  
COMMONWEALTH OF AUSTRALIA, AND IN ENGLAND

Particulars.	New South Wales.	Victoria.	Queensland.	South Australia.
II. REGISTRATION OF				
17. <i>Particulars required for Registration of Marriage</i>	<p>Year. District. Place. Registrar.</p> <p>(a) When and where married</p> <p>(b) Names and surnames of parties</p> <p>(c) Rank or profession</p> <p>(d) Usual place of residence</p> <p>(e) Condition (bachelor or spinster, widower or widow, divorced or divorced petitioner)</p> <p>(f) Birthplace</p> <p>(g) Ages</p> <p>(h) Parents—A. (i) Father (Christian name and surname); (ii) Mother, Christian name and maiden surname. B. Father's rank or profession</p> <p>(i) Where married</p> <p>(j) According to rites of</p> <p>(k) Signatures of parties, two witnesses, officiating minister and District Registrar</p>	<p>Year. Parish or Church. District. Denomination.</p> <p>(a) No. in register</p> <p>(b) When and where married</p> <p>(c) Name and surname of each party</p> <p>(d) Conjugal condition, also date of each former spouse (if widowed) or date of order absolute (if divorced)</p> <p>(e) Children by each former marriage—(i) living; (ii) dead</p> <p>(f) Birthplace</p> <p>(g) Occupation</p> <p>(h) Exact residence of each party—(i) present; (ii) usual</p> <p>(i) Parents' names—(i) Father, also occupation; (ii) Mother (full maiden name)</p> <p>(j) Declaration by parties as to whether by banns or licence, also how marriage celebrated</p> <p>(k) Signature of two witnesses</p> <p>(l) Certificate by Minister, Government Statist, or Registrar of Marriages</p>	<p>(a) Name of celebrator</p> <p>(b) Designation of celebrator</p> <p>(c) Church or address of place where celebrated</p> <p>(d) Bridegroom—(i) Name in full; (ii) Rank or occupation; (iii) Residence; (iv) Condition; (v) Age last birthday—(vi) Birthplace; (vii) Father's name (Christian name and surname in full); (viii) Father's rank or profession; (ix) Mother's Christian name and maiden surname</p> <p>(e) Bride. Same as bridegroom</p> <p>(f) Witnesses (names in full)</p> <p>(g) Signature of minister or Registrar</p> <p>(h) Usual signatures of parties to the marriage</p> <p>(i) Usual signatures of witnesses</p>	<p>Date. District.</p> <p>(a) Names and surnames to be written in full</p> <p>(b) Ages</p> <p>(c) Places and countries of birth</p> <p>(d) Condition</p> <p>(e) Trade or calling</p> <p>(f) Residence at time of marriage</p> <p>(g) Names and surnames of fathers of both parties</p> <p>(h) Place in which celebrated</p> <p>(i) Signatures of parties</p> <p>(j) Signatures of two witnesses</p> <p>(k) Trade or calling of witnesses</p> <p>(l) Residence of witnesses</p> <p>(m) Date</p> <p>(n) Signature of Registrar or officiating minister</p>
18. <i>Special Provisions for Quakers, Jews, &amp;c.</i>	<p>Certificate of marriage to be transmitted to District Registrar by person celebrating marriage or by one of the parties thereto, stating date, place of marriage, and name, designation and usual residence of each of the parties</p>	<p>In case of Quakers and Jews—Same as New South Wales, certificate to be transmitted within three months of date of marriage</p>	<p>Where both parties are Quakers or Jews, certificate of marriage to be transmitted within ten days to District Registrar by person celebrating marriage or by one of the parties thereto, stating date and place of marriage, and name, designation, and usual residence of each of the parties</p>	<p>Where any religious body or society has no officiating minister, Governor may direct Registrar-General to appoint officiating Registrar with same powers as officiating minister</p>
19. <i>Evidence</i> ..	<p>Certified copies of registers admissible as evidence (<i>Evidence Act</i>)</p>	<p>Certified copies of registers or of entries, signed by Government Statist or Assistant Government Statist to be <i>prima facie</i> evidence in any Court or before any person acting judicially</p>	<p>Certificates or certified copies of registers given and sealed by Registrar-General or District Registrar to be received in all courts of justice as evidence</p>	<p>Certified copies of registers under hand and seal of Registrar-General or District Registrar to be <i>prima facie</i> evidence in any court of justice within the State</p>

DEATHS, AND MARRIAGES, AND THE LEGITIMATION OF CHILDREN IN THE  
AND WALES, SCOTLAND AND IRELAND—*continued.*

Western Australia.	Tasmania.	England and Wales.	Scotland.	Ireland.
<b>MARRIAGES—<i>continued.</i></b>				
<p>(a) When and where married</p> <p>(b) Christian names and surnames</p> <p>(c) Ages</p> <p>(d) Condition</p> <p>(e) Rank, profession, or occupation</p> <p>(f) Residence — (i) present; (ii) usual</p> <p>(g) Father's Christian name and surname</p> <p>(h) Rank or profession of father</p> <p>(i) Mother's Christian name</p> <p>(j) Place where married</p> <p>(k) How married</p> <p>(l) Signatures of parties and witnesses</p>	<p>District, No. in Register</p> <p>(a) Marriage by licence or certificate</p> <p>(b) Rites under which marriage performed</p> <p>(c) Husband — (i) Signature; (ii) Residence, present, usual; (iii) Age; (iv) Profession or occupation; (v) Condition (if previously married, date of decease of former spouse, number of children, living, dead); (vi) Birthplace; (vii) Father's name and occupation; (viii) Mother's name</p> <p>(d) Wife. Same as husband</p> <p>(e) Signatures of two witnesses and celebrator of marriage</p>	<p>Year. Name of Church. Parish. County</p> <p>(a) When married</p> <p>(b) Name and surname</p> <p>(c) Age</p> <p>(d) Condition</p> <p>(e) Rank or profession</p> <p>(f) Residence at time of marriage</p> <p>(g) Father's name and surname</p> <p>(h) Rank or profession of father</p> <p>(i) Where married</p> <p>(j) Whether married by licence or banns</p> <p>(k) Signatures of parties, two witnesses and minister</p>	<p>Name of parish, county, or burgh. Registrar</p> <p>(a) When, where and how married</p> <p>(b) Signatures of parties</p> <p>(c) Residence — (i) present; (ii) usual</p> <p>(d) Age</p> <p>(e) Rank or profession and relationship of parties (if related)</p> <p>(f) Condition — (i) if a widower or widow, whether second or third marriage; (ii) Children by each former marriage, living, dead; (iii) Birthplace and when and where registered</p> <p>(g) If a regular marriage, signatures of officiating minister and witnesses</p> <p>(h) If irregular, date of extract, sentence of conviction or declaration of decree, and in what Court pronounced</p> <p>(i) When and where registered and signature of Registrar</p>	<p>Name of Church. Parish. City</p> <p>(a) When married</p> <p>(b) Name and surname</p> <p>(c) Age</p> <p>(d) Condition</p> <p>(e) Rank or profession</p> <p>(f) Residence at time of marriage</p> <p>(g) Father's name and surname</p> <p>(h) Rank and profession of father</p>
No special provision	Persons objecting to celebration of marriage by officiating minister or Registrar may mutually contract and celebrate marriage between themselves, but such celebration must be performed before two or more witnesses and in presence of Registrar of marriages, who registers same	<p>(a) Registering officer of Quakers must register marriage in duplicate as soon as conveniently may be after celebration</p> <p>(b) Secretary of Synagogue must register marriage in duplicate immediately after celebration</p>	No special provision	<p>(a) <i>Quakers</i>.—Registers kept by person whom recording clerk of Society of Friends at their central office in Dublin certifies to be a registering officer in Ireland</p> <p>(b) <i>Jews</i>.—Registers kept by person whom the president of the London committee of deputies of the British Jews certifies to be secretary of a Synagogue in Ireland</p>
Certified copies of registers signed and sealed by Registrar-General or District Registrar to be received as <i>prima facie</i> evidence in all proceedings whether civil or criminal	Certified copies of registers or entries under seal made or given by Registrar-General to be received as <i>prima facie</i> evidence in any court of justice within the State	<p>(a) Certified copies of entries sealed with seal of General Register Office to be received as evidence</p> <p>(b) Register of marriages is valid in law</p>	<p>(a) Extract of entry signed by Deputy Clerk Registrar or Registrar admissible as evidence in all parts of His Majesty's Dominions</p> <p>(b) Certified copy of irregular marriage granted on warrant of Sheriff to be evidence in United Kingdom and Dominions belonging thereto</p>	<p>(a) All certified copies of entries stamped or sealed with seal of General Register Office to be received as evidence</p> <p>(b) Certified copy not of any force or effect unless sealed or stamped</p>

**CONSPECTUS OF ACTS IN FORCE RELATING TO THE REGISTRATION OF BIRTHS,  
COMMONWEALTH OF AUSTRALIA, AND IN ENGLAND**

Particulars.	New South Wales.	Victoria.	Queensland.	South Australia.
<b>II. REGISTRATION OF</b>				
<b>20. Penalties ..</b>	<p>(a) Minister or person celebrating marriage failing to transmit certificate to District Registrar, min. £10; max., £50</p> <p>(b) Person negligently losing or injuring register or copy. Registrar refusing or omitting to register, max. £20</p>	<p>(a) Celebrator of marriage refusing or omitting to register marriage, husband of Quaker or Jew not transmitting certificate to Government Statist, person losing or injuring records, failing to forward documents to Government Statist, Registrar or minister of religion failing to cancel registration on demand, min., £10; max., £50</p> <p>(b) Failing to insert all information on demand by Government Statist, max. £5</p> <p>(c) Giving false information, guilty of perjury</p>	<p>(a) Celebrator of marriage, or in case of Quakers and Jews, parties to marriage, failing to transmit certificate to District Registrar, min., £10; max., £50</p> <p>(b) Person losing or injuring register, District Registrar refusing or omitting to register marriage, max., £50</p> <p>(c) Wilfully making false statements for insertion in register, guilty of perjury</p>	<p>(a) Celebrator of marriage neglecting to forward to Registrar-General or District Registrar, certificate of marriage, District Registrar refusing or omitting to register marriage, person in custody of register losing or injuring same, min., £5; max., £50</p> <p>(b) Failing to forward report or making false report to Registrar-General, max. £10</p> <p>(c) Wilfully making false declaration, signing false certificate, liable for perjury</p> <p>(d) Registrar registering marriage celebrated in contravention of Act, wilfully destroying register or copy, counterfeiting same, giving false certificate, forging seal, guilty of felony</p>
<b>21. Recovery of Penalties</b>	Penalties recoverable before two Justices of the Peace or Police Magistrate in a summary way, upon complaint of any person	Penalties recoverable in Court of Petty Sessions	Fines and penalties recovered in a summary way before two Justices of the Peace or Police Magistrate	Pecuniary penalties can be recovered in a summary way by any Special Magistrate or two Justices, with right of appeal to Local Court of Adelaide or Full Jurisdiction
<b>22. Limit of Time for Prosecutions</b>	No provision ..	No provision ..	No provision ..	No prosecution to be commenced, except within the space of 2 years after the offence was committed
<b>23. Miscellaneous Provisions</b>	..	<p>(a) Government Statist may return certificate to celebrator of marriage for completion or amendment to be made within 21 days</p> <p>(b) If Government Statist satisfied that registration is false or illegally made, Governor, under direction of Attorney-General, may cancel same. Registrar or minister of religion to cancel same on demand</p>	In event of minister or other authorized person failing to transmit particulars of marriage to District Registrar, it is lawful for Registrar-General to register such marriage after being duly satisfied by statement on oath or solemn affirmation of the negligence in transmitting same	..

## DEATHS, AND MARRIAGES, AND THE LEGITIMATION OF CHILDREN IN THE AND WALES, SCOTLAND AND IRELAND—continued.

Western Australia.	Tasmania.	England and Wales.	Scotland.	Ireland.
<b>MARRIAGES—continued.</b>				
<p>(a) Party to marriage refusing to answer questions as to particulars required, max. £5</p> <p>(b) Refusing or neglecting to give notice, information or particulars, min., £2; max., £20</p> <p>(c) District Registrar failing to furnish duplicates to Registrar-General, min., £2; max., £10</p> <p>(d) Losing or injuring register or copy, Registrar refusing or omitting to register, max. £20</p> <p>(e) Making false declaration or statement, max. £200 with or without imprisonment with hard labour for 2 years</p> <p>(f) Wilfully destroying, injuring or counterfeiting register or copy, inserting false entry, giving false certificate, certifying to false contract, forging seal; penal servitude up to 5 years</p>	<p>(a) Registrar or officiating minister neglecting to register or neglecting or refusing to forward certificate to Registrar-General, person in custody of register losing or injuring same, min., £5; max., £50</p> <p>(b) Destroying or injuring register, counterfeiting same, inserting false marriage, giving false certificate, forging seal or signature, guilty of felony</p>	<p>(a) Omitting to register marriage, losing or injuring register or certified copy thereof, max. £50</p> <p>(b) Neglecting to send certified copies of register books, max. £10</p> <p>(c) Breach of provisions of <i>Marriage Act 1898</i>, on summary conviction, max. £10, on indictment, max. 2 years with hard labour or £50</p>	<p>(a) Registrar refusing or omitting to register. Husband or wife failing to deliver or send schedule to Registrar, max. £10</p> <p>(b) Clerk of Court failing to notify Registrar of conviction or decree of declaration of irregular marriage, max. 40s.</p> <p>(c) Making false entry or statement, wilfully destroying, obliterating, injuring or counterfeiting entry or register, giving false certificate, transportation for not exceeding 7 years or imprisonment up to 2 years</p>	<p>(a) Husband failing to send certificate to Registrar; Registrar refusing or omitting to fill up certificate or register marriage, person losing or injuring register, failing to deliver registers or copies to Superintendent Registrar or Registrar-General within one month, max. £10</p> <p>(b) Minister neglecting or refusing to register marriage, max. £40</p> <p>(c) Wilfully making false statements, guilty of perjury</p>
Every offence, not a felony or misdemeanour, summarily punishable on conviction before two or more Justices of the Peace in Petty Sessions, upon complaint of any person	All proceedings for recovery of any pecuniary penalty, to be heard and determined and all penalties to be recovered in a summary way as prescribed by the <i>Magistrates Summary Procedure Act</i> . Appeals allowed under the <i>Appeals Regulation Act</i>	Fines recoverable on summary jurisdiction before two Justices. Where sum to be paid on summary conviction exceeds £5, appeal may be made to next Court of Quarter Sessions	Penalties recoverable by summary proceedings by Sheriff	Penalties recoverable before two Justices of the Peace. If penalty over £5, appeal may be made to next Court of General or Quarter Sessions
No provision	Every action or prosecution to be commenced within 3 years after the offence was committed	Prosecution on indictment to be commenced within three years after commission of offence	No provision	Prosecution for an offence punishable on summary conviction must be commenced within three calendar months next after the commission of the offence
If minister fails to transmit particulars of marriage to District Registrar, Registrar-General may register marriage on receipt of statutory declaration of failure of minister to transmit same	..	<p>(a) Registrar of Marriages exempt from serving on jury or inquest and from every parochial and corporate office whatever</p> <p>(b) <i>Foreign Marriage Act 1892</i>.—Marriage Officer (officer authorized by Secretary of State or under marriage regulation) to keep duplicate marriage register and send one to Secretary of State for transmission to Registrar-General</p>	<p>(a) In event of persons convicted before Justice of the Peace of having irregularly contracted marriage, they must register marriage in parish where conviction took place</p> <p>(b) If irregular marriage established by decree of declarator, either party may register in parish of domicile or usual residence. Production to Registrar of extract, warrant for registration, fee 20s. Magistrate or clerk of Court to notify Registrar</p>	..



CONSPECTUS OF ACTS IN FORCE RELATING TO THE REGISTRATION OF BIRTHS,  
COMMONWEALTH OF AUSTRALIA, AND IN ENGLAND

Particulars.	New South Wales.	Victoria.	Queensland.	South Australia.
II. REGISTRATION OF				
23. <i>Miscellaneous Provisions</i> —continued.	..	..	..	..

III. LEGITIMATION OF

1 Acts relating to Legitimation	The Legitimation Act of 1902	Registration of Births, Deaths and Marriages Act 1915	The Legitimation Act of 1899	The Legitimation Act 1898, 1902
2. <i>Legitimation of Children of Parents who have intermarried (Australian States only)</i>	Any child born before marriage of parents who afterwards intermarry deemed on registration of child to be legitimated from birth, provided no legal impediment to the intermarriage of such parents existed at the time of birth	Same as New South Wales	Same as New South Wales	Same as New South Wales
3. <i>Legitimation of Children of Parents, who intend to intermarry</i>	No provision	No provision	No provision	Registration can be effected within thirty days before intermarriage and legitimates child
4. <i>Registration of Legitimation of Child</i>	Father to produce to Registrar statutory declaration, with copy of certificate of marriage. Registrar to register child, whether dead or alive, as lawful issue of such man and wife, makes note in entry and intimates fact to Registrar-General	Father to produce to Government Statist statutory declaration with certificate of marriage or copy thereof. Government Statist to direct Registrar to register child, whether dead or alive as lawful issue of such man and his wife. Father to sign register, otherwise registration not deemed to have been effected	Same as New South Wales	(a) Within 30 days of intermarriage, parent to produce to Registrar, declaration by both parents, and certificate of marriage, if married. Registrar to make note in entry and intimate same to Registrar-General. Father to sign register. (b) After 30 days from intermarriage, parents to—(i) apply to Special Magistrate of Local Court for proof of marriage; (ii) give proof that they are the parents; (iii) obtain certificate of proof from him and file same with Registrar, who registers as above

DEATHS, AND MARRIAGES, AND THE LEGITIMATION OF CHILDREN IN THE AND WALES, SCOTLAND AND IRELAND—*continued.*

Western Australia.	Tasmania.	England and Wales.	Scotland.	Ireland.
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MARRIAGES—*continued.*

..	..	..	(c) If persons, who who contracted irregular marriage, within 3 months jointly apply to Sheriff, he certifies and grants warrant to Registrar to register same (d) Marriage of Scottish subject in foreign country, if intimated to Registrar-General within 12 months and certified by British Consul to be entered in "Foreign Register."	..
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## CHILDREN.

Legitimation Act 1909	The Legitimation Act 1905	Legitimacy Declaration Act 1858	Legitimacy Declaration Act 1858	The Legitimacy Declaration (Ireland) Act 1868
Any child born before the marriage of parents, who have intermarried is deemed on registration of such child to have been legitimated by such marriage from birth	Any child born before marriage of parents, who have intermarried, deemed to have been legitimated by the mere fact of such marriage	Any natural-born subject of the King or any person whose right to be deemed a natural-born subject depends wholly or in part on his legitimacy, being domiciled in England or claiming any real or personal estate situate in England may apply by petition to the Court, for Divorce and Matrimonial Causes praying for a decree that the petitioner is the legitimate child of his parents and that the marriage of his father and mother or of his grandfather and grandmother was a valid marriage	Any person domiciled in Scotland or claiming any heritable or movable property situate in Scotland, may raise and insist in an action of declarator before the Court of Sessions for the purpose of having it found and declared that he is entitled to be deemed a natural-born subject of His Majesty	Any natural-born subject of the King or any person whose right to be deemed a natural-born subject depends wholly or in part on his legitimacy, being domiciled in England or Ireland or claiming any real or personal estate situated in Ireland, may apply by petition to the Court of Probate in Ireland praying for a decree that the petitioner is the legitimate child of his parents and that the marriage of his father and mother or of his grandfather and grandmother was a valid marriage
No provision ..	No provision ..	..	..	..
Same as New South Wales	Same as New South Wales	..	..	..

### § 5. Graphical Representation of Vital Statistics.

1. **General.**—The progressive fluctuations of the numbers representing the total births and marriages are important indexes of the economic conditions and social ideals of a community. For this reason graphs have been prepared (see pages 177 and 178), shewing these fluctuations from 1860 to 1919, both for the States and the Commonwealth. The facts are very significant from the national point of view, and call for serious consideration. To appreciate the situation properly, it should be remembered that, normally, the increase of births and also of marriages will be similar to the increase of population. Although the marriage curve shews a falling off in marriages after 1891 (see page 178), it shews a recovery in 1894, and, with the exception of a small fall for 1903, it continually advanced until 1915. In 1916, 1917, and 1918 a heavy falling off was recorded, unquestionably owing to the European War. The same characteristic is not seen in the curve of births, which, from 1904 onwards, rose continually to 1914, when there was a decline to 1918.

#### ACTUAL BIRTHS, DEATHS, AND MARRIAGES

EXPERIENCED IN THE COMMONWEALTH DURING THE YEARS 1890 TO 1919, COMPARED WITH THE NUMBER THAT WOULD HAVE OCCURRED IF THE RATES OF 1890 HAD REMAINED IN OPERATION.

Year.	BIRTHS.		DEATHS.		MARRIAGES.	
	Actual.	Number of Births that would have been experienced if the 1890 birth rate had been in operation.	Actual.	Number of Deaths that would have been experienced if the 1890 death rate had been in operation.	Actual.	Number of Marriages that would have been experienced if the 1890 marriage rate had been in operation.
1890 ..	108,683		44,449		23,725	
1891 ..	110,187	111,802	47,430	45,737	23,862	24,419
1892 ..	110,158	114,502	42,268	46,842	22,049	25,009
1893 ..	109,322	116,617	45,801	47,707	20,631	25,470
1894 ..	104,660	118,734	42,958	48,573	20,625	25,933
1895 ..	105,084	111,002	43,080	49,501	21,564	26,428
1896 ..	100,134	123,212	45,202	50,405	23,068	26,911
1897 ..	101,137	125,419	43,447	51,308	23,993	27,393
1898 ..	98,845	127,371	51,406	52,106	24,472	27,819
1899 ..	100,638	129,088	47,629	52,809	25,958	28,194
1900 ..	102,221	130,848	44,060	53,529	27,101	28,579
1901 ..	102,945	132,599	46,330	54,245	27,753	28,961
1902 ..	102,776	134,603	48,078	55,065	27,926	29,399
1903 ..	98,443	136,189	47,293	55,714	25,977	29,745
1904 ..	104,113	137,917	43,572	56,420	27,682	30,122
1905 ..	104,941	139,959	43,514	57,256	29,004	30,569
1906 ..	107,890	142,030	44,333	58,103	30,410	31,021
1907 ..	110,347	144,248	45,305	59,011	32,470	31,505
1908 ..	111,545	146,720	46,426	60,022	32,551	32,045
1909 ..	114,071	149,526	44,172	61,170	33,775	32,658
1910 ..	116,801	152,869	45,590	62,537	36,592	33,387
1911 ..	122,193	157,072	47,869	64,257	39,482	34,306
1912 ..	133,088	162,477	52,177	66,468	42,147	35,487
1913 ..	135,714	168,032	51,789	68,740	41,594	36,700
1914 ..	137,983	172,073	51,720	70,394	43,311	37,583
1915 ..	134,871	173,159	52,782	70,838	45,224	37,820
1916 ..	131,426	171,654	54,197	70,222	40,289	37,491
1917 ..	129,965	171,484	48,029	70,153	33,666	37,454
1918 ..	125,739	174,217	50,249	71,251	33,141	38,031
1919 ..	122,290	179,548	65,930	73,431	40,540	39,195

The foregoing table shows the number of births, marriages, and deaths which would have been experienced had the rate for 1890 continued, and reveals the significance of the facts disclosed by the curves. It may be remarked that the death rate has greatly improved, and among other countries Australia stands in a very favourable position in this respect. At the same time the decline in the marriage rate, overtaken once more in 1907, and the still more serious decline in the birth rate, in a country but sparsely populated, have an obvious and most important bearing on the national future, and on the extent to which it is desirable to promote immigration.

**2. Graphs of Annual Births, Commonwealth and States** (page 177).—A striking feature of the graphs of births is the practically continuous increase in the number of births exhibited in the graph for the Commonwealth from 1860 to 1891, and the marked variations of subsequent years. As the curve clearly shews, a turning point in the number of births occurred in 1891, whilst, as regards the separate States, New South Wales and Tasmania date their decline in number from 1893, Victoria from 1891, and Queensland from 1890. In South Australia the corresponding decline took place as early as 1885, while in Western Australia the increase in number of births has been practically continuous to 1913.

It is of special interest to note the decline in births associated with the commercial crisis of 1891–3, and also the decline occurring in 1903, an accompaniment of the severe drought of that period.

In the case of New South Wales the graph crosses that of Victoria in 1879, *i.e.*, the births for that year were sensibly identical in the two States. A fairly continuous increase was experienced in the former State from 1860 to 1893, the only marked fluctuation being a sudden decline in 1889 and an equally rapid recovery in 1890. From 1893 to 1898 a somewhat rapid decline again took place, succeeded by a rise, the continuity of which was broken only by a sharp decline in 1903 and recovery in 1904. From 1904 to 1914 there was a gradual rise, followed in 1915 and 1916 by a decline, a slight rise in 1917, and further declines in 1918 and 1919.

In the case of Victoria the graph shews the increase between 1860 and 1880 to have been comparatively slight, the curve being a gradual rise, with fluctuations more or less marked to 1873, and a subsequent decline. From 1880 to 1891 the increase in the number of births is seen to be very rapid and practically continuous, while from 1891 to 1898 an equally sharp and continuous decline was experienced. A further rise and fall took place between 1898 and 1903, succeeded by a continuous rise from the last-mentioned year to 1907, and a slight fall in 1908, followed by a recovery in 1909. A slight fall in 1910 was followed by a continuous rise to 1914, since which year a continuous decline has been experienced.

Starting in 1860 with a lower number of births than any State except Western Australia, the Queensland graph shews that the births increased somewhat rapidly until 1867. The equality in the number of births in Queensland and Tasmania in 1864 is shewn by the Queensland curve crossing the Tasmanian curve at the line for that year. From 1867 to 1882 a continuous though somewhat less rapid increase was experienced, followed by a very rapid rise to 1890, in which year Queensland's maximum number of births prior to 1909 was recorded. The South Australian graph is crossed by that of Queensland at the year 1885. From 1890 onwards to 1908 the number of births fluctuated somewhat, but, on the whole, retained a practically stationary position at a height rather less than that of 1890. The most serious variation was a sudden fall in 1903, the drought year, and rapid recovery in 1904, with a further fall in 1905, and a continuous rise from 1906 to 1915. In 1916 there was a sudden fall, followed by a rapid rise in 1917, and a fall in 1918 and 1919.

The South Australian graph shews a slow but practically continuous rise from 1860 to 1885. This rise is followed by a slow but fluctuating decline to 1903, and a slight recovery to 1914. In 1915 there was a rapid fall, a slight rise in 1916, a further fall in 1917, a slight rise in 1918, and a fall in 1919.

The Western Australian curve indicates that an increase, which was practically continuous but very slow, took place from 1860 to 1884, and that a somewhat quicker rate of increase, experienced from 1884 to 1896, was succeeded by a still more rapid and very satisfactory rate of increase from 1896 to 1906. A slight fall was apparent to 1910, followed by a rapid rise to 1913. Since 1913 there has been a continuous decline.

The Tasmanian curve may be regarded as made up of five portions, of which the first, from 1860 to 1877, represents a period of very slight variation, with, on the whole, an increase; the second, from 1877 to 1884, a period of continuous and moderately rapid increase; the third, from 1884 to 1893, a period of rapid increase; the fourth, from 1893 to 1898, a period of continuous but slow decrease; and the fifth, from 1898 to 1914, a period of steady recovery. Since 1914 there has been a continuous fall.

It will be seen that the years in which the highest points were reached by the several curves are as follows:—

State ..	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
Year ..	1914	1891	1915	1914	1913	1914	1914

3. **Graphs of Annual Marriages, Commonwealth and States** (page 178).—The Commonwealth marriage graph from 1860 to 1885 reveals a moderate but somewhat fluctuating increase in the annual number of marriages between 1860 and 1871, a more rapid increase between 1871 and 1879, and a still more rapid increase between 1879 and 1885. From 1885 to 1891 the numbers continued to increase, but with marked fluctuations in magnitude. The financial crisis associated with the period subsequent to the latter year was accompanied by a strongly-marked decline in the number of marriages, which reached its lowest point in 1894. From that year onwards a fairly rapid recovery was effected, the record for 1891 being exceeded by that of 1897. This progress was maintained until 1902, when the severe drought of that and the succeeding year was collateral with a rapid fall in the number of marriages. An equally rapid recovery, however, has since taken place, and the number of marriages in the Commonwealth during 1915 was greater than in any preceding year. In 1916, 1917, and 1918, as already mentioned, there was a heavy falling off. In 1919 a recovery took place.

4. **Graphs of Annual Deaths, Commonwealth and States** (page 179).—The curves shewing the progression of the annual number of deaths indicate clearly that the periods for which exceptionally large numbers of deaths occurred were:—(a) 1866-7, (b) 1875-6, (c) 1884-5, (d) 1889-1891, (e) 1893, (f) 1898, (g) 1902-3, (h) 1916, and (i) 1919. It is remarkable that in each of the periods specified the phenomenon of a relatively high number of deaths was experienced in the majority of the States. Thus, as regards 1866-7, all the States except Western Australia and Tasmania were so affected; in 1875-6 all except Western Australia; in 1884-5 all were affected; in 1889 all except Western Australia and South Australia; in 1891 all except Queensland; whilst in 1893, 1898, and 1902-3 all were affected. In 1916 all States except Queensland were affected, and in 1919 each State shewed a large increase owing to the prevalence of influenza. The fact that the periods of high death rates have been practically identical in the several States furnishes an indication that the excessive mortality has been due to a considerable extent to some common cause operating throughout the Commonwealth.

It may be noted as curious that periods of heavy mortality have occurred at intervals of approximately nine years, viz. :—1866-7, 1875-6, 1884-5, 1893, and 1902-3. There are, however, two marked increases between the third and fourth dates, and one between the fourth and fifth.

Periods in which the number of deaths was exceptionally low are far less clearly defined than those in which the number was high, and the agreement amongst the States is also less complete. The principal periods of low mortality may be said to be 1861, 1869-71, 1879, 1892, 1897, 1900, 1904-5, 1909, 1914. In 1917 there were marked declines in all the States, succeeded in 1918 by less marked increases, and in 1919 by large increases, for the reason already stated.

5. **Graphs of Annual Birth, Death, and Marriage Rates and of Rate of Natural Increase—Commonwealth** (page 180).—(i) *General*. These graphs represent the number of births, deaths, and marriages, and the excess of births over deaths (natural increase) per 1,000 of the population of the Commonwealth, for each of the years 1860 to 1919.

(ii) *Births.* In the case of births, the graph indicates a well marked decline in rate during the period, and represents a fall from 42.56 per 1000 of population in 1860 to 23.78 per 1000 in 1919. This enormous reduction has been subject to small fluctuations during the period under review, but may, on the whole, be said to have been in evidence throughout. There are, however, two periods of arrested decline noticeable, one from 1877 to 1890, and the other from 1898 to the present time. The course of the graph thus indicates a rapid fall from 42.56 in 1860 to 34.99 in 1877, succeeded by a fluctuating but, on the whole, fairly stationary period to 34.98 in 1890, then a fall even more rapid to 27.15 in 1898, and a further comparatively stationary period to 23.78 in 1919. The lowest point reached, until 1919, viz., 23.78, was attained in 1903, the year in which the Commonwealth suffered severely from the worst drought it has ever experienced. From 1903 to 1912 there was an advance in the rate, followed by a decline to 1919. A declining birth rate is usually due to complex causes, amongst which the variations in the age constitution of the population, and the adoption of preventive measures, are generally considered the most potent. The highest birth rate recorded was 43.27 in 1862.

(iii) *Deaths.* The three graphs relating to deaths furnish particulars concerning the rates experienced during the period amongst males and females separately, and in the population as a whole, the latter occupying naturally a position between the other two. Throughout the period the rate for males has largely exceeded that for females, but the fluctuations in the two rates have synchronised remarkably, indicating that the conditions which have been responsible for the marked variations which have occurred from time to time have affected males and females alike. On the whole, the graphs furnish clear evidence of a satisfactory decline in the general death rate of the Commonwealth, a fall having taken place from 20.86 in 1860 to 10.66 in 1915. In 1916 there was a slight rise to 11.04, followed in 1917 by a fall to 9.80, the lowest rate yet recorded in the Commonwealth as a whole. In 1918 there was a slight rise to 10.09 followed by a rise to 12.82 in 1919. The graphical representation of the death rates brings into prominence six years in which the rates were exceptionally high when compared with those of adjacent years. These years are 1860, 1866, 1875, 1884, 1898, and 1919. The principal cause of the excessive rate of 1860 was the prevalence in that year of measles, scarlatina, and diphtheria, while the high rates of 1866, 1875, and 1898 were also largely due to epidemics of measles. Prior to 1892, when a rate of 12.91 was experienced, the lowest general death rate for the Commonwealth was that of 1871, viz., 13.24. The highest male death rate for the period was 20.97 in 1860, and the lowest 11.47 in 1917. For females the highest was 20.71 in 1860, and the lowest 8.18 in 1917. The difference between the male and female rate has, since 1869, been fairly constant, and has ranged between 1.97 and 3.68, with a mean value of about 2.7.

(iv) *Marriages.* In the case of the graph representing marriage rates, the fluctuations are less abrupt than in the case of the birth rate and death rate graphs, and the rate for 1915, 9.14, the highest ever recorded, does not differ very considerably from that of 1860, which was 8.42. The lowest marriage rate for the period was that of 1894, viz., 6.08, marking the culmination of the commercial and financial depression indicated by the declining rates from 1888 onwards. From 1894 to 1915 a satisfactory increase has been in evidence, disturbed only by the sharp decline which, in 1903, accompanied the severe drought experienced in the Commonwealth in that year. In 1916, 1917, and 1918 the rate declined to 8.21, 6.87, and 6.65 respectively, but increased to 7.88 in 1919.

(v) *Natural Increase.* This graph, which represents the excess of births over deaths per 1000 of population, exhibits marked fluctuations arising from the combined fluctuations in birth and death rates. Thus, corresponding to the high death rates of 1860, 1866, 1875, and 1898, there are exceptionally low rates of natural increase, accentuated in the last-mentioned year by a comparatively low birth rate. A combination of low birth rate and comparatively high death rate was also responsible for the very low rate of natural increase in 1903. The highest rate of natural increase for the period was 26.58 in 1864, and the lowest 10.96 in 1919.

6. *Graphs of Annual Birth Rates—States* (page 181).—These graphs furnish for the several States information similar to that supplied in the graph on page 180 for the Commonwealth as a whole. It will be seen that in every case the total effect has been

an extensive decline in rate, subject to very marked fluctuations. In all the States the period from 1875 to 1885 was one of arrested decline, if not of actual advance, in the birth rate. With the exception of a very low rate accompanying the drought in 1903, the variations in any of the States since 1901 have not been very marked, and in most cases a slight tendency to increase is in evidence up to 1913. From 1914 onwards decreases have been experienced.

The highest birth rates during the period were as follows :—New South Wales (1864), 44.00 ; Victoria (1862), 44.71 ; Queensland (1860), 47.93 ; South Australia (1862), 45.44 ; Western Australia (1860), 38.96 ; and Tasmania (1884), 36.63. The following were the lowest rates for the period :—New South Wales (1919), 24.68 ; Victoria (1919), 21.56 ; Queensland (1903), 24.53 ; South Australia (1903), 23.84 ; Western Australia (1919), 21.44 ; Tasmania (1919), 25.12.

**7. Graphs of Annual Death Rates—States (page 181).**—These graphs furnish for the several States similar information to that given for the Commonwealth as a whole in the diagram on page 180, and indicate in each case a satisfactory decline in death rate. It may be noted that an exceptionally high death rate was experienced in all the States in 1875, and that a similar uniformity, though on a smaller scale, is observable for the year 1898, the principal cause in each case having been an epidemic of measles. The highest death rates experienced during the period were as follows :—New South Wales (1867), 19.79 ; Victoria (1860), 22.77 ; Queensland (1866), 25.96 ; South Australia, (1875), 19.97 ; Western Australia (1884), 21.54 ; and Tasmania (1875), 19.99. The following were the lowest death rates for the period :—New South Wales (1917), 9.56 ; Victoria (1917), 10.36 ; Queensland (1906), 9.50 ; South Australia (1909), 9.74 ; Western Australia (1917), 8.97 ; and Tasmania (1918), 8.84.

**8. Graphs shewing Variations in Annual Death Rates from Month to Month.**—The graphs on pages 182 and 183 shew for the Commonwealth as a whole and for each of the six States the annual death rates for males, females, and persons calculated for equalised months, and the infantile death rate, calculated in the same way, also distinguishing males, females, and persons. Further particulars in regard to these graphs will be found on pages 186 and 187.

## SECTION VI.

## LAND TENURE AND SETTLEMENT.

## § 1. Introduction and Early History.

1. **Introduction.**—A comprehensive description, in a classified form, of the land tenure systems of the several States has been given in preceding issues of this book; see especially Year Book No. 4 (pp. 235 to 333). The details of that description have been necessarily condensed in the present issue, and for more complete information for past years, reference may therefore be made to Year Book No. 4. The historical matter dealing with the development of land legislation in the individual States may be found in Year Book No. 2 (pp. 263 to 272), and in a more condensed form in Year Books No. 3 (pp. 245 to 254), and No. 4 (pp. 235 to 244).

## § 2. Land Legislation in Individual States.

1. **New South Wales.**—(i) *Acts now in Force.* The Crown Lands Act of 1884 and the supplementary Act of 1889 (now incorporated in the Crown Lands Consolidation Act 1913), were passed chiefly for the purpose of putting an end to speculative selection without *bona fide* intention of settlement. Pastoral leases were required to be surrendered to the Crown and divided into two equal parts, one of which was returned to the lessee under a lease with a fixity of tenure for a term of years, the other half the lessee was allowed to hold under an annual occupation licence, but this half was always open for selection.

Nevertheless accumulation of land into large estates continued, and settlement proceeded slowly. Entirely new principles of agrarian legislation have been embodied in Crown Lands Acts passed in the years 1895 to 1919, the Closer Settlement Acts 1904 to 1919, and the Closer Settlement Promotion Act 1910, now incorporated in Closer Settlement Amendment Act 1918, which offer *bona fide* settlers special inducements by the introduction of new forms of tenure on easy terms and conditions.

(ii) *The Western Lands Acts.* All Crown lands in the Western Division of New South Wales are now subject to the special provisions of the Western Lands Acts 1901 and 1905, and amendments in 1908, 1909, 1918, and 1919. All leases or occupation licenses could be brought within the provisions of the Western Lands Act by application before the 30th June, 1902. Otherwise the leases or licenses were dealt with by the Board as if the Act had not been passed. All leases issued or brought under the provisions of the Western Lands Acts expire on the 30th June, 1943, except in cases where part of the land leased is withdrawn for the purpose of sale by auction, or to provide small holdings, in which case an extension of the term of lease of the remainder may be granted as compensation for the part withdrawn.

2. **Victoria.**—(i) *Acts now in Force.* The Land Act 1915 deals with the whole system of land occupation and alienation in this State. Closer Settlement was provided for by the Land Acts of 1898 and 1901 and amendments, until the introduction of the Closer Settlement Act 1904, amended in 1906, 1907, 1909, 1910, 1911 and 1912, and now included in the Closer Settlement Act 1915 (*Discharged Soldiers' Settlement Act 1917*). Other special forms of tenure have been provided for by the Settlement on Lands Act 1893 and the Small Improved Holdings Act 1906; these, however, are now embraced in the Land Act and Closer Settlement Act respectively.



(ii) *Mallee Lands.* The lands in the Mallee territory, comprising an area of about 11,000,000 acres in the north-western district of the State, can be cleared at a moderate expenditure. An extension of railway facilities and of successful systems of water supply should bring this territory into greater prominence as a field for agricultural enterprise. About one-half of this area is unalienated and available for occupation.

3. *Queensland.—Acts now in Force.* The Acts now in force are the Land Acts 1910 to 1920, the Closer Settlement Acts 1906–1917, and the Discharged Soldiers' Settlement Act 1917. The first-mentioned Acts substitute perpetual leasehold tenures for freeholding tenures in the case of all new selections and auction purchases, but conversion of existing holdings to the leasehold tenure is optional with the selector. The last-mentioned Act provides for the settlement of discharged soldiers on Crown land, land acquired under the Closer Settlement Acts, or land specially acquired for soldier settlement.

4. *South Australia.—Acts now in Force.* The Crown Lands Act 1915 repealed and consolidated previous Acts, and also consolidated the Closer Settlement and Village Settlement Acts. The Pastoral Act 1904 controls the pastoral occupation of lands, and the Irrigation and Reclaimed Land Act of 1914 provides for leases of reclaimed and irrigable lands.

5. *Western Australia.—Acts now in Force.* The Land Act 1898, which consolidated previous legislation as to the management of Crown lands, has in turn been amended at various times, and, with such amendments, is now in force. The Discharged Soldiers' Settlement Act 1918 provides for the settlement of discharged soldiers and sailors on the land. The principle of repurchasing Crown lands for the purpose of Closer Settlement was introduced by the Agricultural Lands Purchase Acts 1896 to 1904; these Acts were repealed and consolidated by the Agricultural Lands Purchase Act 1909.

6. *Tasmania.—Acts now in Force.* The law relating to land tenure and settlement is now consolidated in the Crown Lands Act 1911, the Closer Settlement Act 1913, and the Returned Soldiers' Settlement Act 1916 and its amendments.

7. *Northern Territory.—*Prior to the transfer of the Northern Territory to the Commonwealth on the 1st January, 1911, the sale and occupation of lands in the Territory were regulated by the Northern Territory Crown Lands Act 1890, the Northern Territory Land Act 1899, and the Northern Territory Tropical Products Act 1904, but from that date the further alienation and occupation of land in the Territory were suspended, pending a complete reorganisation of the system of land settlement by the Commonwealth Government. In December, 1912, an ordinance, cited as the Crown Lands Ordinance 1912, dealing with this question, was made, by which the conditions of land tenure and settlement in the Territory are now determined. Under this ordinance no further alienation of Crown lands is permitted, unless such alienation is in pursuance of existing agreements.

8. *Administration and Classification of Crown Lands.*—In each of the States of the Commonwealth there is now a Lands Department under the direction of a responsible Cabinet Minister, who is charged generally with the administration of the Acts relating to the alienation, occupation and management of Crown lands. The administrative functions of most of the Lands Departments are to some extent decentralised by the division of the States into what are usually termed Land Districts, in each of which there is a Lands Office, under the management of a land officer, who deals with applications for selections and other matters generally appertaining to the administration of the Acts within the particular district. In some of the States there is also a local Land Board or a Commissioner for each district or group of districts. In the Northern Territory the administration of the regulations relating to the occupation and management of Crown lands is in the hands of a Classification Board, consisting of the Director of Lands and two other officers appointed by the Administrator.

In most of the States, Crown lands are classified according to their situation, the suitability of the soil for particular purposes, and the prevailing climatic and other conditions. The modes of tenure under the Acts, as well as the amount of purchase money or rent and the conditions as to improvements and residence, may vary in each State according to the classification of the land. The administration of certain special Acts relating to Crown lands has in some cases been placed in the hands of a Board under the general supervision of the Minister; for such purpose, for instance, are constituted the Western Lands Board in New South Wales, the Lands Purchase and Management Board in Victoria, and the Closer Settlement Board in Tasmania.

In each of the States and in the Northern Territory there is also a Mines Department, which is empowered under the several Acts relating to mining to grant leases and licenses of Crown lands for mining and auxiliary purposes. Such leases and licenses are more particularly referred to in a later part of this section. (See § 9.)

Full information respecting lands available for settlement or on any matter connected with the selection of holdings may be obtained from the Commonwealth representative in London, from the Agents-General of the respective States in London, or from the Lands Departments of the various States in the Commonwealth. The administration and classification of Crown lands in each State were more fully dealt with in Year Book No. 2 (pp. 273-6).

### § 3. Tenures under which Crown Lands may be Alienated or Occupied.

1. *Introduction.*—Crown lands may now ordinarily be alienated either by free grant (in trust for certain specified purposes), by direct sale and purchase (which may be either by agreement or at auction), or by conditional sale and purchase. Crown lands may be occupied in the several States under a variety of forms of leases and licenses, issued both by the Lands and the Mines Departments.

2. *Classification of Tenures.*—The tabular statement given on pages 264 and 265 shews the several tenures under which Crown lands may be acquired or occupied in each State of the Commonwealth. The forms of tenure are dealt with individually in succeeding parts of this section.

(i) *Free Grants, Reservations, and Dedications.* The modes of alienation given in this category include all free grants either of the fee simple or of leases of Crown lands. "Free" homesteads in Queensland and Western Australia are not included in this class, these tenures being free in the sense that no purchase money is payable, but not free from residential and improvement conditions. Reservation and dedication, which are ordinarily conditions precedent to the issue of free grants, are also dealt with therein.

(ii) *Sales by Auction and Special Sales.* This class of tenure includes all methods by which the freehold of Crown lands may be obtained (exclusive of sales under the Closer Settlement and kindred Acts) for cash or by deferred payments, and in which the only condition for the issue of the grant is the payment of the purchase money.

(iii) *Conditional Purchases.* In this class are included all tenures (except tenures under Closer Settlement and kindred Acts) in which the issue of the grant is governed by the fulfilment of certain conditions (as to residence or improvements) other than, or in addition to, that of the payment of purchase money.

(iv) *Leases and Licenses.* This class includes all forms of occupation of Crown lands (other than under Closer Settlement and kindred Acts) for a term of years under leases and licenses issued by the Lands Departments. As the terms indicate, the freehold cannot be obtained under these forms of tenure.

# CLASSIFICATION OF TENURES UNDER WHICH CROWN LANDS MAY BE ALIENATED OR OCCUPIED.

New South Wales.	Victoria.	Queensland.
FREE GRANTS, RESERVATIONS, AND DEDICATIONS.		
Free grants in trust Volunteer land grants Reservations and dedications under Crown Lands Consolidation Act 1913 and Mining Act 1906	Free grants in trust and reservations under Land Act 1915	Free grants in trust Reservations under Land Act 1910 and under State Forests and National Parks Act 1906

## SALES BY AUCTION AND SPECIAL SALES.

Auction sales for cash or on credit After-auction sales Special sales Improvement purchases Purchases of suburban holdings, residential leases, week-end leases Returned Soldiers' special holdings	Auction sales for cash or on credit Special sales	*Auction sales for cash or on credit *After-auction sales *Special sales *Unconditional selections
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## CONDITIONAL PURCHASES.

Residential or non-residential conditional purchases Conversion of conditional purchase leases, homestead selections, homestead farms, settlement leases, Crown leases, special leases, church and school lands leases Homestead selections	Agricultural allotments, residential or non-residential Grazing allotments, residential or non-residential Selection from grazing area, perpetual or auriferous leases Selection from pastoral leases Mallee agricultural licences Murray settlement leases Selection purchase leases	*Agricultural farms *Agricultural homesteads *Prickly pear selections *Free homesteads
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## LEASES AND LICENSES.

Conditional leases Conditional purchase leases Settlement leases Improvement leases Annual leases Residential leases Special leases Snow leases Pastoral leases Scrub leases Inferior lands leases Occupation licences Western lands leases Homestead farms Suburban holdings Crown leases Leases in Irrigation Areas Week-end leases Returned Soldiers' special holdings	Grazing area leases Perpetual leases Mallee leases Licences of auriferous lands Leases of swamp or reclaimed lands Grazing licences Leases and licences for other than pastoral or agricultural purposes State forest and timber reserve licences	Grazing homesteads Grazing farms Occupation licences Special leases Perpetual lease selections Perpetual lease prickly pear selections Pastoral leases Preferential pastoral leases Auction perpetual leases (town, suburban, or country) After-auction ditto Non-competitive leases
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## CLOSER SETTLEMENT SALES, LEASES AND LICENSES.

Sales by auction Settlement purchase Annual leases Labour settlements	Special sales	*Sales by auction *Agricultural farms *Unconditional selections Auction perpetual leases Perpetual lease selections
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## MINES DEPARTMENTS' LEASES AND LICENSES.

Miners' rights Business licences Authorities to prospect Leases	Mining leases Special licences Miners' rights Business and residence licences	Miners' rights Mining leases and licences Miners' homestead leases
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\* Since 1st January, 1917, no new sales or selections under these tenures have been made, nor may any further areas be offered under these tenures.

# **CLASSIFICATION OF TENURES UNDER WHICH CROWN LANDS MAY BE ALIENATED OR OCCUPIED.**

South Australia.	Western Australia.	Tasmania.
<b>FREE GRANTS, RESERVATIONS, AND DEDICATIONS.</b>		
Free grants in trust Reservations and dedications under Crown Lands Act 1915 Artesian leases	Free grants in trust and free leases Reservations under Lands Acts 1898 and 1906	Free leases Reservations under Crown Lands Act 1911
<b>SALES BY AUCTION AND SPECIAL SALES.</b>		
Auction sales for cash After-auction sales Sales for special purposes	Auction sales for cash (The right to purchase the freehold or to lease town and suburban lots is sold by auction)	Auction sales for cash or on credit After-auction sales Special sales of residence or business allotments
<b>CONDITIONAL PURCHASES.</b>		
Agreements to purchase Special agreements under Pin- naroo Railway Act	Conditional purchase, residential or non-residential Conditional purchase by direct payment Conditional purchase of small blocks Homestead farms Conditional auction sales Workingmen's blocks	Selection of rural lands Homestead areas Selection in mining areas Conditional auction sales
<b>LEASES AND LICENSES.</b>		
Perpetual leases Miscellaneous leases Miscellaneous grazing and cul- tivation leases Irrigation and reclaimed land leases Special licenses Pastoral leases Leases with right of purchase	Pastoral leases Special leases Quarrying licenses	Grazing leases Miscellaneous leases Timber licenses and leases Residence licenses Occupation licenses Temporary licenses
<b>CLOSER SETTLEMENT SALES, LEASES, AND LICENSES.</b>		
Sales by auction Agreements to purchase Miscellaneous leases Irrigation and reclaimed area leases Village settlements Homestead blocks	Sales by auction Conditional purchases	Special sales Leases with right of purchase
<b>MINES DEPARTMENTS' LEASES AND LICENSES.</b>		
Miners' rights Mining leases Miscellaneous leases Business licenses Occupation licenses Mineral claims Search licenses	Miners' rights Mining leases Miners' homestead leases	Prospectors' licenses Miners' rights Mining leases Miscellaneous licenses

NOTE.—*Northern Territory.*—By the Crown Lands Ordinance of 1912, the only form of tenure under which land may be held in the Northern Territory, exclusive of land held under pre-existing rights, is that of leasehold. See § 7 of this section.

(v) *Closer Settlement Sales, Leases, and Licenses.* In this division are included all forms of tenure provided for under the various Closer Settlement Acts, and also under kindred Acts, such as the Village Settlements and Small Holdings Acts.

(vi) *Mines Departments' Leases and Licenses.* The tenures specified include all methods in which Crown lands may be occupied for mining and auxiliary purposes under leases and licenses issued by the Mines Department in the several States.

**3. Limitation of Tenures in New South Wales.**—In October, 1910, it was officially stated that it was the policy of the Government to discontinue the granting of the freehold of Crown lands. Under the Crown Lands Act 1912 this policy was partially given effect to by the discontinuance of the disposal of Crown lands by conditional purchase or as homestead selections, and by the institution of several new forms of tenure, viz., homestead farms, suburban holdings, irrigation farms, and Crown leases.

The first three are leases in perpetuity, while the term of a Crown lease is 45 years.

These four tenures did not then carry any rights of conversion, but by subsequent enactments the first and last mentioned may now be converted into other tenures, and ultimately into freehold, and the holder of a suburban holding may under certain conditions be permitted to purchase same.

**4. Tenure of Lands by Aliens.**—In the States of New South Wales, Queensland, South Australia, Western Australia, and Tasmania restrictions are imposed upon the tenure of lands by aliens (*i.e.*, persons other than natural-born or naturalized British subjects). In Victoria there are no such restrictions. This matter, however, is subject to the war-time regulations of the Commonwealth.

(i) *New South Wales.* Under the Crown Lands Consolidation Act 1913, an alien is not qualified to apply for an original homestead selection, original conditional purchase lease, settlement lease, original homestead lease, or original conditional purchase, unless he has resided in New South Wales for one year, and at the time of making application lodges a declaration of his intention to become naturalized within five years. If he fails to become naturalized within that period, the land is forfeited. This residential limit of twelve months does not, however, apply to applicants for homestead farms, Crown leases, suburban holdings, and leases within irrigation areas, but any alien who becomes the holder of any of these tenures must become naturalized within three years after his becoming such holder. Failure to comply with this regulation involves forfeiture of such holding, together with all improvements thereon.

(ii) *Victoria.* Under the Supreme Court Act 1915 (section 3), every alien friend resident in Victoria may acquire, either by grant from the Crown or otherwise, both real and personal property.

(iii) *Queensland.* Under the Land Act 1910 (section 59b and 62) an alien cannot apply for any land in Queensland unless he obtains a certificate that he is able to read and write from dictation words in such language as the Minister for Lands may direct. If he acquire a selection he must within five years of such acquisition become a naturalized subject.

(iv) *South Australia.* In South Australia, Asiatics are disqualified from holding perpetual leases of lands in irrigation areas under section 19 of the Irrigation and Reclaimed Lands Act 1914.

(v) *Western Australia.* In this State acquisition by aliens of the freehold of lands already alienated is subject to the provisions of the War Precautions Act. Every application to acquire Crown lands, whether by a British subject or an alien, is subject to the approval of the Minister for Lands, with an appeal to the Governor in Council. Persons of enemy origin, whether naturalized or not, must obtain the permission of the Commonwealth Attorney-General before they are eligible to acquire any Crown lands.

(vi) *Tasmania.* Under the Aliens Act 1913, aliens cannot hold real estate. An alien, if the subject of a friendly State, may, however, occupy lands for any term not exceeding twenty-one years.

(vii) *Northern Territory.* Leases are not granted to aliens, but they may hold occupation licenses for twelve months, subject to renewal, provided the land is not required for other purposes. Under the Mining Act 1903 Asiatic aliens are disqualified from holding gold or mineral leases.

### § 4. Free Grants, Reservations, and Dedications.

1. **Introduction.**—Although free grants of Crown lands were virtually abolished as far back as 1831, the Land Acts of all the States now contain provisions under which the free alienation or occupation of Crown lands for certain specified purposes—comprising generally charitable, educational, and public purposes—is allowed. In all the States, also, Crown lands may be excepted from sale and reserved to the Crown or dedicated for various public and special purposes. Generally, reservation and dedication are conditions precedent to the issue of a free grant. In addition to reservations of a permanent nature, temporary reservations are also made, but these are, as a rule, subject to considerable fluctuations in area by reason of withdrawals, renotifications, and fresh reservations.

The following table shews the area for which free grants were issued and the areas permanently reserved or dedicated in each State during 1901, and from 1914 to 1918 inclusive :—

#### PARTICULARS OF FREE GRANTS, RESERVATIONS, AND DEDICATIONS, 1901 AND 1914 TO 1918.

Year.	N.S.W.	Victoria.*	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
FREE GRANTS.							
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1901 ..	282	7	425	5	156	10†	885
1914 ..	1,888	290	295	33	17	223	2,746
1915 ..	1,596	96	1,271	22	3	172	3,160
1916 ..	1,679	26	18	6,556	1	17	8,297
1917 ..	2,066	51	18	250	7	14‡	2,406
1918 ..	926	25	33	309	Nil	5	1,298
RESERVATIONS AND DEDICATIONS.							
1901 ..	1,595	19,278	811,200	\$	189,856	4,231	1,026,160
1914 ..	1,430	5,303	..	16,120	502,167	6,718	531,738
1915 ..	512	2,280	103,494	46,738	173,155	27,066	353,245
1916 ..	2,426	6,482¶	8,251	21,390	157,601	1,602	197,752
1917 ..	779	7,637	906,008	10,312	154,110	6,717‡	1,085,563
1918 ..	501	1,581	142,081	12,780	274,391	10,453	441,787

\* Including both permanent and temporary reservations and dedications.

† Free leases.

‡ These are free leases for 99 years.

§ Not available.

|| Exclusive of South Australia.

¶ Including 222 acres reserved for recreation grounds.

2. **New South Wales.**—Crown lands may be reserved or dedicated for certain charitable, educational, and public purposes specified. No promises of dedication for religious purposes were made after the 11th May, 1880, on which date a resolution against any further such grants was passed by the Legislative Assembly. Volunteer Land Office Certificates ceased to be operative after the 31st January, 1912. All cases have now been dealt with.

(i) **Reservations.** In addition to the reservations referred to above, Crown lands may also be temporarily reserved as sites for cities, towns, or villages, and may be reserved for mining purposes. Crown lands within one mile of any made or projected railway may be temporarily reserved from sale, and any Crown lands may be reserved from sale for the preservation and growth of timber. Further, Crown lands may be reserved by notification in the *Gazette* from being sold or let upon lease or license, in such particular manner as may be specified, or may be reserved from sale or lease generally.

(ii) *Areas Granted and Reserved, 1918-19.* During the financial year 1918-19, the total area for which free grants were prepared was 1,118 acres, including grants of 1,099 acres of land resumed under the 12th clause of the Public Roads Act 1902. During the same period 381 acres were dedicated and permanently reserved, the number of separate dedications being 53.

On the 30th June, 1919, the total area temporarily reserved was 22,723,240½ acres, of which 6,090,618½ acres were for travelling stock, 3,739,427½ acres for forest reserves, 922,034½ acres for water, 1,307,530 acres for mining, and the remainder for temporary commons, railways, recreation and parks, and miscellaneous purposes.

3. *Victoria.*—Under section 10 of the Land Act 1915, the Governor is authorised to reserve Crown lands, either temporarily or permanently, from sale, lease or license, for any public purpose whatever.

During the year 1918 two free grants, comprising an area of 25 acres, were issued. During the same year reservations of both a permanent and temporary nature, comprising an area of 1,581 acres, were made: of this area 211 acres were reserved for recreation grounds.

4. *Queensland.*—Under the Land Act 1910, the Governor in Council may grant in trust, or reserve from sale, or lease, temporarily or permanently, any Crown lands required for public purposes.

(i) *Reservations.* Under section 2 of the State Forests and National Parks Act 1906, the Governor in Council may permanently reserve any Crown lands and declare them to be a State Forest or a National Park.

(ii) *Areas Granted and Reserved, 1918.* During the year 1918 there were 3 free grants issued for a total area of 33 acres. During the same period the area of reserves cancelled was 142,081 acres in excess of areas set apart as reserves. The total area reserved up to the end of the year 1918 was 14,312,706 acres.

5. *South Australia.*—Under section 7 (d) of the Crown Lands Act 1915, the Governor is empowered to dedicate by proclamation any Crown lands for various charitable, educational and public purposes, and may, at any time after dedication, grant the fee simple of such lands to secure the use thereof for the purpose for which they were dedicated.

(i) *Reservations.* Under section 7 (f) of the same Act, the Governor may by proclamation reserve any Crown lands (i) for the use of aborigines, (ii) for the purposes of military defence, (iii and iv) for forest or travelling stock reserves, (v) for public recreation grounds, (vi) for railways or tramways, (vii) for park lands, and (viii) for any other purposes he may think fit.

(ii) *Artesian Leases.* Under special circumstances free leases of pastoral lands may be granted to discoverers of artesian wells.

(iii) *Areas Granted and Reserved, 1918.* During the year 1918 there were 20 free grants issued for a total area of 309 acres. During the same year reserves comprising 12,780 acres were proclaimed.

6. *Western Australia.*—Under section 39 of the Land Act 1898, as amended by section 27 of the Act of 1906, the Governor may reserve any Crown lands which may be required for religious, charitable, or public purposes. These reservations may be either temporary or permanent.

During the year 1918, no free grants were issued, while the area reserved was 274,391 acres.

7. *Tasmania.*—Under section 11 of the Crown Lands Act 1911, the Governor may reserve any Crown lands for the purposes therein specified. The lands are ordinarily leased for a period of ninety-nine years at a peppercorn rental.

During the year ending 31st December, 1918, there were 2 free leases, comprising an area of 5 acres, issued. During the same period 10,453 acres were reserved, 240 acres being reserved for scenic purposes, 1 acre for cemetery purposes, 11 acres for hospital reserves, 1 acre for recreation purposes, 3,000 acres as a sanctuary for wild fowl, and 7,200 acres for other purposes. The total area reserved from sale and selection to the end of the year 1918 was 4,800,000 acres.

## § 5. Sales by Auction and Special Sales.

1. **Introduction.**—In all the States, sales by auction of Crown lands are held from time to time. Notifications of such sales are given in the Government *Gazettes* together with particulars as to the upset price and conditions of sale. Excepting in the case of South Australia, where land is sold at auction for cash only, the purchase may be either for cash or on credit by deferred payments. In most of the States land may also be purchased by private contract at the upset price, when it has been offered at auction and not sold. In the case of auction sales on credit in the States of Western Australia and Tasmania, certain improvement conditions are imposed, and such sales are therefore classed for the purposes of this article among *Conditional Purchases*. (See § 6.) In most of the States comparatively small areas of Crown lands may be sold without competition under special circumstances. Sales by auction and special sales under Closer Settlement Acts are referred to in a later part of this section. (See § 8.)

2. **New South Wales.**—Under the Crown Lands Act, lands not exceeding in the aggregate 200,000 acres for the whole State may be sold by auction during any one year. The sales are notified in the *Gazette* not less than one month before the day of sale. The upset prices may not be less than £8 an acre for town lands; £2 10s. for suburban lands; and other lands fifteen shillings. Town lands may not be sold in areas exceeding half-an-acre; suburban lands in areas exceeding twenty acres; and country lands in areas exceeding 640 acres. A deposit of 10 per cent. on the purchase money must be paid at the sale, and the balance in ordinary circumstances within three months. The Minister may submit land to sale on deferred payments, in which case the balance is spread over a fixed period (not exceeding 10 years) and is payable in annual instalments with 5 per cent. interest.

A fuller description of the conditions under which land may be purchased at auction may be found in the previous issues of the Year Book. (See Year Book No. 5, p. 273.)

*Alienation by Auction and Special Sales.* During the year ended the 30th June, 1919, the area of Crown lands sold by auction and special sales for which grants were prepared amounted to 12,126 acres, of which 10,261 acres were sold by auction in 773 lots; 630 acres were sold by after-auction sales in 369 lots; 31 acres were sold as improvement purchases in 51 lots; and 1,204 acres were sold as special purchases in 159 lots. The following table gives particulars of Crown lands alienated by auction and special sales during 1901 and for each year from 1914 to 1919:—

### NEW SOUTH WALES—AUCTION AND SPECIAL SALES, 1901 AND 1914 TO 1919.

Year.	Auction and After-auction Sales.	Improvement Purchases.	Special Sales.	Total.	
				Area.	Price.
	Acres.	Acres.	Acres.	Acres.	£
1901* ..	49,074	43	445	49,562	116,562
1914 ..	748†	51	2,801	3,600	32,222
1915 ..	501†	49	1,897	2,447	36,411
1916 ..	492	66	2,707	3,265	35,614
1917 ..	900	39	1,120	2,059	39,967
1918 ..	10,115	55	1,791	11,961	103,796
1919 ..	11,228	32	2,215	13,475	81,532

\* Year ended 31st December. Subsequent years to 30th June. † Exclusive of frontages sold under the Centennial Park Sale Act.

Particulars of total areas alienated are given hereinafter. (See § 11.)



3. **Victoria.**—Lands specially classed for sale by auction, and any land in any city, town, or borough, may be sold by auction in fee simple, not exceeding 100,000 acres in any one year, at an upset price of £1 an acre, or at any higher price determined. The purchaser must pay the survey charge at the time of the sale, together with a deposit of 12½ per cent. of the whole price; the residue is payable in equal half-yearly instalments, not exceeding forty in number, according to the amount, with interest at the rate of 4 per cent. per annum.

(i) *Special Sales without Competition.* Detached strips of land not exceeding twenty acres may be sold at a valuation to the owner of the adjoining freehold in cases somewhat similar to those specified above in respect to Crown lands in New South Wales.

(ii) *Areas Sold at Auction and by Special Sales.* The following table gives particulars of auction sales and special sales for the year 1901 and from 1914 to 1918 :—

**VICTORIA—AUCTION AND SPECIAL SALES, 1901 AND 1914 TO 1918.**

Particulars.	1901.	1914.	1915.	1916.	1917.	1918.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
Country lands .. ..	4,079	983	818	625	615	450
Town and suburban lands .. ..	2,127	1,273	1,276	622	617	739
Special sales .. ..	846	1,449	1,193	814	546	1,657
Total .. ..	7,052	3,705	3,287	2,061	1,778	2,846

Particulars of total areas alienated are given hereinafter. (See § 11.)

4. **Queensland.**—Up to 31st December, 1916, the Minister might, with the approval of the Governor-in-Council, cause any Crown lands to be offered for sale by auction. Town or suburban lands might be under either freeholding or perpetual lease tenure. The notification specified the amount of deposit, and the term for payment of the balance of the money, which term might not exceed ten years. The upset price might not be less than £8 per acre for town lands, £2 per acre for suburban lands, and 10s. per acre for country lands. Since the close of the year 1916, however, the perpetual lease tenure only is available.

(i) *After-auction Sales.* The notification of lands for sale by auction might declare that any lands therein mentioned, which had been offered at auction but not sold or withdrawn, should be open to purchase at the upset price by the first applicant. The price might be paid in the same instalments and at the same periods as if the land had been bought at the auction.

(ii) *Special Sales without Competition.* Land might be sold without competition to the holder or holders of adjoining lands at a price to be determined by the Land Court, under circumstances similar to those specified above in the case of New South Wales. When the holder of any land proved that, owing to danger from flood or other reasons, it was unsafe to reside on his holding, he might be granted, on payment of a price determined by the Land Court, an area not exceeding ten acres out of the nearest convenient and available Crown lands. Perpetual leasehold is now an alternative tenure.

(iii) *Areas Sold at Auction, after Auction, and by Special Sales.* The following table shows the areas sold at or after auction, and by special sales, during the year 1901 and from 1914 to 1918 :—

### QUEENSLAND—AUCTION AND SPECIAL SALES, 1901 AND 1914 TO 1918.

(FREEHOLDING TENURES.)

Particulars.			1901.	1914.	1915.	1916.	1917.	1918.
			Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
Town .. ..	..	..	334	446	149	..	..	..
Suburban ..	..	..	793	923	541	..	..	..
Country—								
Ordinary sales ..	..	..	52,132	5,260	2,623	..	..	..
Special sales ..	..	..	55	87	79	108	..	..
Total .. ..	..	..	53,314	6,716	3,392	108	..	..

Particulars of total areas alienated are given hereinafter. (See § 11.)

During 1918 there were in Queensland auction sales, under perpetual lease, of 163 acres for town areas, 428 acres for suburban areas, and 1,218 acres for country areas—a total of 1,809 acres. Particulars for four years are shewn in the following table :—

### QUEENSLAND—SALES OF PERPETUAL LEASES AT AUCTION, 1915, 1916, 1917, AND 1918.

Year.	Number of Lots Sold.				Area Sold.			
	Town.	Suburban.	Country.	Total.	Town.	Suburban.	Country.	Total.
					Acres.	Acres.	Acres.	Acres.
1915 ..	384	87	..	471	158	747	..	907
1916 ..	690	292	..	982	296	1,275	..	1,571
1917 ..	279	62	125	466	107	168	2,599	2,874
1918 ..	441	168	57	666	163	428	1,218	1,809
Total ..	1,794	609	182	2,585	724	2,620	3,817	7,161

(iv) *Unconditional Selections.* This form of tenure is similar to that of a sale by auction with deferred payment. The minimum price for the land is 13s. 4d. an acre, payable in twenty annual instalments, and the maximum area granted to the applicant is 1,280 acres. A deed of grant may be obtained upon payment of the purchase money. Selection under this tenure, in common with other freeholding tenures, has now ceased.

The following table shews the number and area of unconditional selections for which applications were accepted during the year 1901 and from 1914 to 1918 :—

### QUEENSLAND—UNCONDITIONAL SELECTIONS, 1901 AND 1914 TO 1918.

Particulars.			1901.	1914.	1915.	1916.	1917.	1918.
Number .. ..	..	..	151	48	35	8	..	..
Area .. ..	..	acres	24,322	12,081	5,639	3,035	..	..
Rent .. ..	..	£	1,180	448	213	103	..	..

5. *South Australia.*—The following lands may be sold by auction for cash :—  
 (a) Special blocks. Any single section of Crown lands which may be surrounded by lands sold or contracted to be sold, and any section (not exceeding 100 acres in area) which may be required for the establishment of any industry. (b) Crown lands which have been offered for perpetual lease, and not taken up for two years. (c) Town lands. (d) Suburban

lands. The upset price is determined by the Commissioner, and 20 per cent. of the purchase money must be deposited at the time of sale, and the residue paid within such a time as the Commissioner may allow.

(i) *After-auction Sales.* All Crown lands except town or suburban lands offered at auction and not sold remain open for leasing or sale under agreement, or may be sold by private contract for cash at the upset price.

(ii) *Sales for Special Purposes.* The Governor may, on the application of the purchaser or lessee under any of the Crown Lands Acts, grant two acres of the land comprised in such agreement or lease to trustees, to be used for any public or charitable purposes, or he may grant not over one acre of land, comprised in such agreement or lease, as a site for a shop, mill, or post office. The purchase money for such land must be paid at the time of application.

(iii) *Areas Sold for Cash.* The following table shews the areas sold for cash during the year 1901 and from 1914 to 1918. The total areas sold under all types of sale are shewn in a later part of this section. (See § 11.)

#### SOUTH AUSTRALIA.—AUCTION AND SPECIAL SALES, 1901 AND 1914 TO 1918.

Year .. .. .	1901.	1914.	1915.	1916.	1917.	1918.
Area in acres .. ..	11,314	51,248	29,081	30,799	36,964	29,921

6. *Western Australia.*—Surveyed town lots notified in the *Gazette* as open for sale, either to purchase outright, or to lease, are sold by public auction at a prescribed upset price. In the case of suburban lands, the purchaser must carry out certain improvements, which are more particularly referred to later. (See § 6, *Conditional Purchases.*)

*Areas Sold by Auction.* The following table shews the areas of town and suburban lands sold at auction during the year 1901 and from 1914 to 1919:—

#### WESTERN AUSTRALIA.—AUCTION SALES, 1901 AND 1914 TO 1919.

Year.. .. .	1901.	1914. <sup>1</sup>	1915. <sup>1</sup>	1916. <sup>1</sup>	1917. <sup>1</sup>	1918. <sup>1</sup>	1919. <sup>1</sup>
Area sold .. Acres	856	890	1,396	419	543	964	277
Number of Allotments	1,366	263	353	102	144	278	137

1. For the year ended 30th June.

Particulars as to total areas alienated are given in a later part of this section. (See § 11.)

7. *Tasmania.*—Any town lands may be sold at auction or by private contract, either for cash or on credit, provided that no such lands may be sold on credit if the price is less than £15. Rural lands may also be sold at auction or by private contract, but lots of first-class land may not be sold on credit if less than fifteen acres in area. In the case of sales on credit both of town and rural lands, improvement conditions are imposed, and such sales are therefore classified for the purposes of this article as *Conditional Purchases.* (See § 6.)

(i) *After-auction Sales.* All rural lands and town lands, not within five miles of any city, which have been offered at auction and not sold, may be purchased by private contract at the upset price, and subject to the conditions on which they were offered at auction.

(ii) *Sale of Land in Mining Towns.* The holder of a residence or business license, who is in occupation and is the owner of buildings and improvements upon the area licensed of a value equal to the upset price of such area, is entitled to purchase not more than half an acre in area. The areas may be sold on credit.

(iii) *Areas Sold for Cash.* The following table shews the areas sold for cash during the year 1901 and from 1914 to 1918 :—

**TASMANIA—AUCTION AND SPECIAL SALES, 1901 AND 1914 TO 1918.**

Year .. .. .	1901.	1914.	1915.	1916.	1917.	1918.
Area in acres .. ..	1,915	2,260	339	170	133	310

Particulars of total areas alienated are given in a later part of this section. (See § 11.)

**§ 6. Conditional Purchases.**

1. *Introduction.*—In all the States of the Commonwealth (*a*) the freehold of the land may be acquired under what are known as systems of conditional purchase by deferred payments of half-yearly or yearly instalments. Certain conditions, generally as to residence and improvements, have to be complied with before the freehold is granted, but these conditions are usually of a light nature and are inserted chiefly with the object of guaranteeing that the occupier will become of benefit to the community by making a reasonable effort to render his holding wealth-producing. Though there is a considerable similarity between some of the forms of tenure in the several States, the terms and conditions vary greatly in detail. As a rule a lease or license for a certain period is first issued to the selector, and upon fulfilment of the prescribed conditions and payment of the full amount of purchase-money the freehold is conveyed to him. In Queensland (*b*) and Western Australia “free” homesteads may be acquired. Although under these tenures no purchase-money is payable, the grant is conditional on the performance of residential and improvement conditions; these tenures are therefore included here with conditional purchases rather than with free grants.

2. *New South Wales.*—The following are the methods by which land may be alienated by conditional purchase :—(i) Residential conditional purchase; (ii) non-residential conditional purchase; (iii) conversion of certain holdings into conditional purchase; and (iv) homestead selections.

A description of the conditions under which land may be taken up under this form of tenure is given in previous issues of the Year Book. (See No. 6, p. 277.)

During the year ended the 30th June, 1919, deeds of grant were prepared on the completion of conditional purchases for 559,779 acres, making the total number of conditional purchases in existence at the end of the financial year 36,203 for a total area of 19,435,807 acres. The following table gives particulars of conditional purchases in 1901 and from 1914 to 1919 :—

**NEW SOUTH WALES.—CONDITIONAL PURCHASES, 1901 AND 1914 TO 1919.**

Year.	Applications Made.		Applications Confirmed.		Areas for which Deeds have been Issued.	
	Number.	Area.	Number.	Area.	During the Year ( <i>d</i> ).	To end of Year.
1901 ..	2,277	Acres. 549,898	1,555	Acres. 360,910	Acres. 500,554	Acres. 4,212,189
1914 ( <i>c</i> ) ..	512	65,306	554	67,534	322,556	15,960,930
1915 ( <i>c</i> ) ..	362	47,175	287	35,249	304,012	16,264,942
1916 ( <i>c</i> ) ..	216	22,495	183	23,552	307,016	16,571,958
1917 ( <i>c</i> ) ..	168	25,761	108	13,025	357,828	16,929,786
1918 ( <i>c</i> ) ..	271	32,085	121	16,211	388,338	17,318,124
1919 ( <i>c</i> ) ..	511	75,370	201	24,911	559,779	17,877,903

(*c*) Year ended 30th June. (*d*) Exclusive of exchanges under the Crown Lands Act 1895.

Further particulars as to the total areas alienated and in process of alienation are given hereinafter. (See § 11.)

(*a*) Except Queensland since 1916. (*b*) Prior to 1st January, 1917

During the year ended 30th June, 1919, there were 8 original and 12 additional homestead selections applied for, comprising an area of 17,266 acres. During the same period the total number of applications confirmed was 23, comprising 19,232 acres, and 3,092 homestead selections and grants, comprising an area of 985,914 acres, were in existence on the 30th June, 1919. This tenure is now practically superseded by the Homestead Farm tenure. Further particulars for previous years are given in a later part of this section. (See § 11.)

**3. Victoria.**—The freehold of agricultural and grazing lands may be acquired by conditional purchase under the following tenures :—(i) Agricultural, grazing and selection purchase allotments; (ii) agricultural and grazing allotments by selection from grazing area or perpetual leases; (iii) Mallee selection purchase leases; (iv) Murray settlements leases; and (v) swamp or reclaimed lands purchase leases.

A description of the conditions under which land may be taken up under this form of tenure may be found in previous issues of the Year Book. (See No. 6, p. 278.)

With reference to Murray settlement leases, two settlement areas have been laid out under the Act with due regard to irrigation conditions, viz., those at White Cliffs and Nyah, and at the former place a dry farm area has also been subdivided. At White Cliffs 6,273 acres were subdivided as homestead allotments, and 50,345 acres as dry farm allotments, while at Nyah 1,960 acres were subdivided as homestead allotments. In April, 1918, an area was subdivided at Merbein West (Irrigation conditions), and 36 allotments, comprising 571 acres, were allotted to discharged soldiers.

The subjoined table gives particulars shewing the areas selected conditionally during the year 1901 and from 1914 to 1918. A large proportion of the areas shewn has reverted to the Crown in consequence of non-fulfilment of conditions.

#### VICTORIA.—AREAS PURCHASED CONDITIONALLY, 1901 AND 1914 TO 1918.

(EXCLUSIVE OF SELECTION IN THE MALLEE COUNTRY.)

Particulars.	1901.	1914.	1915.	1916.	1917.	1918.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
With residence ..	466,155	132,085	112,144	117,180	69,210	61,884
Without residence ..	50,257	23,599	15,645	22,485	19,462	12,093
Total ..	516,412	155,684	127,789	139,665	88,672	73,977
No. of selectors ..	2,979	1,307	883	902	646	526

Particulars as to total areas alienated and in process of alienation are given in a later part of this section. (See § 11.)

**4. Queensland.**—The several types of selection under which the freehold might, prior to 1917, have been acquired by conditional purchase are as follows :—(i) Agricultural farms; (ii) agricultural homesteads; (iii) prickly pear selections; and (iv) free homesteads.

In previous issues of this book may be found the conditions under which land might be selected under this form of tenure. (See No. 6, p. 280.)

Since the close of the year 1916, no selections can be acquired on a freeholding basis, but existing selections are not affected, though they may be converted to perpetual leases if the selectors so desire.

*Number and Area of Conditional Purchases prior to 1917.* The following table shews the number and area of conditional purchases for which applications were accepted in 1901 and from 1914 to 1916 :—

**QUEENSLAND.—CONDITIONAL PURCHASES (APPLICATIONS ACCEPTED),  
1901 AND 1914 TO 1916.**

Year.	Agricultural Farms.		Agricultural Homesteads.		Prickly Pear Selections.		Total.	
	Number.	Area.	Number.	Area.	Number.	Area.	Number.	Area.
		Acres.		Acres.		Acres.		Acres.
1901 ..	661	160,804	669	155,512	19	48,450	1,349	364,766
1914 ..	1,554	538,844	25	5,927	636	683,000	2,215	1,227,771
1915 ..	978	300,302	12	1,913	451	481,258	1,441	783,473
1916 ..	399	120,207	5	1,337	203	180,921	607	302,465

During the years 1917 and 1918, no land was opened for selection, nor was any selected, under tenures involving freehold.

Particulars as to total areas alienated and in process of alienation may be found hereinafter. (See § 11.)

**5. South Australia.**—The types of conditional purchases under which land may be alienated in this State are as follows :—(i) Agreement to purchase, and (ii) Agreement under the Pinnaroo Railway Act 1903.

(i) *Agreement to Purchase.* Surveyed Crown lands are available for agreement to purchase, as well as for perpetual lease under the Crown Lands Acts of 1915, the purchase money being fixed by the Land Board, and payable in sixty half-yearly payments, including interest at not less than 2 per cent. per annum. The condition as to payment of instalments for land offered under the provisions of Act of 1915 in newly surveyed mallee lands is that no payment is made for the first four years, from the fifth to end of the tenth year interest only at the rate of 2 per cent. per annum on value of land is payable, the first instalment of purchase money, including interest at the rate of 4 per cent. per annum, being payable at the commencement of the eleventh year. All payments are made in advance, the term of agreement being thereby extended to forty years. If the conditions relating to fencing, vermin destruction, and, in some cases, to residence are fulfilled, the purchase may be completed after a term of six years from commencement of the agreement on payment of all principal and interest due. All minerals are reserved to the Crown, and the Crown may resume any part of the land for the purposes of roads, water conservation, mining, &c., compensation being payable to the purchaser for loss occasioned by resumption.

(ii) *Pinnaroo Railway Lands.* Under the Pinnaroo Railway Act 1903 provision was made for opening up about 1,500,000 acres of good agricultural country in the vicinity of a line from Pinnaroo, adjoining the Victorian border, to Tailm Bend, a distance of eighty-seven miles. These lands are now offered on agreement with covenant to purchase or on perpetual lease under the Crown Lands Act 1915. The railway has been paid for from the proceeds of the land already selected. The conditions of purchase are similar to those stated in par. (i) above.

The total area held on 30th June, 1919, was 1,106,114 acres; of this area purchase has been completed of 471,722 acres, and 16,179 acres are held on perpetual and right of purchase leases, allotted before the Pinnaroo Railway Act was passed.

(iii) *Particulars of Conditional Purchases.* The subjoined table gives particulars of the areas alienated by conditional purchase, on fulfilment of the conditions, at the end of 1901 and from 1914 to 1918 :—

**SOUTH AUSTRALIA—AREAS ALIENATED UNDER AGREEMENTS TO PURCHASE, 1901 AND 1914 TO 1918.**

Year .. .. .	1901.	1914.	1915.	1916.	1917.	1918.
Area in acres .. .. .	57,460	36,186	55,181	46,098	26,418	17,963

Particulars as to the total areas alienated and in process of alienation are given in a later part of this section. (See § 11.)

6. *Western Australia.*—The various types of selection under which the freehold can be alienated by conditional purchase in this State are as follows :—(i) Residential conditional purchase; (ii) non-residential conditional purchase; (iii) conditional purchase by direct payment; (iv) conditional purchase of blocks for vineyards, orchards, or gardens; (v) conditional purchase of grazing lands; (vi) free homestead farms; and (vii) town and suburban lots.

A full description of the various conditions under which land may be held under this form of tenure may be found in the previous issues of the Year Book. (See Year Book No. 5, pp. 283 and 284.) The following table shews the area of the selections for which grants were issued, the prescribed conditions having been fulfilled, during the year 1901 and from 1914 to 1919.

**WESTERN AUSTRALIA—AREAS SELECTED CONDITIONALLY FOR WHICH CROWN GRANTS WERE ISSUED, 1901 AND 1914 TO 1919.**

Particulars.	1901.	1914.(a)	1915.(a)	1916.(a)	1917.(a)	1918.(a)	1919.(a)
	Acres.	Acres.	Acres	Acres.	Acres.	Acres.	Acres.
Free homestead farms	147	80,784	62,520	61,395	69,816	45,770	42,888
Conditional purchases	5,234	101,421	144,684	50,845	80,096	126,642	100,237
Poison land leases..	..	5,357	4,001	5,034	..	3,977	..
Total ..	5,381	187,562	211,205	117,274	149,912	176,389	143,125
Number of holdings	48	994	859	724	897	946	872

(a) For financial year ended 30th June.

Particulars as to the total areas alienated absolutely, and in process of alienation, are given in a later part of this section. (See § 11.)

*Area Conditionally Alienated.* The following table shews the areas conditionally alienated under various methods of selection during the year 1901 and from 1914 to 1919 :—

**WESTERN AUSTRALIA—AREAS CONDITIONALLY ALIENATED, 1901 AND 1914 TO 1919.**

Particulars.	1901.	1914.(a)	1915.(a)	1916.(a)	1917.(a)	1918.(a)	1919.(a)
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
<i>Conditional Purchase—</i>							
Deferred payments (with residence)	161,302	338,804	164,461	85,957	47,659	124,861	496,694(d)
„ (without residence)	46,498	88,854	43,203	31,137	20,426	43,951	49,766
Direct payments (without residence)	1,909	985	685	208	146	597	840
<i>Free Homestead Farms</i> ..	63,623	112,874	62,140	32,549	21,357	21,818	24,059
<i>Under the Agric. Lands Purchase Acts</i>	4,295	2,451	4,122	1,026	96	2,813	38,890
<i>Grazing Leases</i> ..	64,834	454,881	227,940	157,712	145,956	352,535	.. (d)
<i>Poison Land Leases(b)</i> ..	9,530	..	..	..	..	..	..
<i>Workmen's Blocks(c)</i> ..	8	1	..	1	..	..	..
Total ..	351,999	998,850	502,551	308,590	235,640	546,575	610,249
Number of holdings ..	1,888	2,788	1,51	860	637	973	1,136

(a) For year ended 30th June. (b) Provisions repealed by Act of 1906. (c) Closer settlement. (See § 8, 7.) (d) Deferred payments (with residence) are now combined with grazing leases.

Particulars as to the total areas in process of alienation are given in a later part of this section. (See § 11.)

7. *Tasmania*.—The various types of conditional purchases in this State are as follows:—(i) Selection of rural land; (ii) homestead areas; (iii) selection in mining areas; and (iv) sales by auction on credit, either of town or rural lands. The conditions under which land may be selected under this form of tenure are given in previous issues of the Year Book. (See No. 6, p. 283.)

The following table shows the areas alienated absolutely under systems of conditional purchases and sales on credit, the conditions having been fulfilled, and also shows the areas sold conditionally and the applications for conditional purchases received and confirmed, during the year 1901 and from 1914 to 1918:—

**TASMANIA.—CONDITIONAL PURCHASES, 1901 AND 1914 TO 1918.**

Particulars.	1901.	1914.	1915.	1916.	1917.	1918.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
<i>Completion of Conditional Purchases</i> <sup>1</sup> ..	23,781	31,756	39,329	54,668	35,616	52,764
<i>Sold Conditionally—</i>						
Free Selections .. ..	40,001	38,774	42,584	35,716	21,686	24,796
Homestead Areas .. ..	9,108	184	100	99	90	90
Auction Sales on Credit .. ..	12,981	986	3,202	2,235	2,782	859
Other Sales (Town Lands) .. ..	636	1,260	740	479	515	675
Total .. ..	62,709	41,184	46,626	38,529	25,073	26,420
<i>Applications—</i>						
Received .. ..	1,444	1,515	1,610	842	913	1,499
Confirmed .. ..	768	543	563	328	344	350

1. Including selections and sales on credit.

Particulars of total areas alienated and in process of alienation are given hereinafter. (See § 11.)

## § 7. Leases and Licenses.

1. *Introduction*.—Leases and licenses are issued in all the States and in the Northern Territory for various terms and upon various conditions. In Victoria, Queensland, South Australia, and the Northern Territory perpetual leases are issued for an indefinitely long period upon payment of an annual rent, while in all the States leases or licenses of comparatively large areas may be obtained for pastoral purposes. Provision has also been made in all the States for convenient forms of leases and licenses for various special purposes, and also for special classes of lands. The leases and licenses dealt with below are exclusive of those issued under Closer Settlement and kindred Acts, and also of those issued for mining and auxiliary purposes. (See §§ 8 and 9.)

2. *New South Wales*.—The following are the various types of leases and licenses issued in this State:—(i) Conditional leases; (ii) conditional purchase leases; (iii) settlement leases; (iv) improvement leases; (v) annual leases; (vi) residential leases; (vii) special leases; (viii) snow leases; (ix) pastoral leases; (x) scrub leases; (xi) inferior lands leases; (xii) occupation licenses; (xiii) Western lands leases; (xiv) homestead farm leases; (xv) suburban holdings leases; (xvi) Crown leases; (xvii) irrigation farm leases; (xviii) week-end leases; (xix) leases of town lands; (xx) returned soldiers' special holdings.

A description in detail of the conditions which govern the issue of these various leases and licenses may be found in previous editions of the Year Book. (See Year Book No. 6, p. 285.)



On the 30th June, 1919, there were 56,932 leases and licenses current under the Lands Department and the Western Land Board, comprising 115,110,607 acres of Crown lands. Of these leases there were 54,040, comprising 39,867,280 acres, in the Eastern and Central Divisions; and 2,892, comprising 75,243,327 acres, in the Western Division.

The following table shews the areas held under various descriptions of leases and licenses at the end of the year 1901, and at the end of 1915-16 and following financial years, and also the area and rental of leases current on the 30th June, 1919 :—

**NEW SOUTH WALES.—AREAS OCCUPIED UNDER LEASES AND LICENSES,  
1901 AND 1915 TO 1919.**

Leases and Licenses.	1901.	1915-16.	1916-17.	1917-18.		1918-19.	
				Area.	Rent.	Area.	Rent.
	Acres.	Acres.	Acres.	Acres.	£	Acres.	£
Pastoral .. .. .	44,805,221	1,136,475	1,136,475	1,136,475	734		
Outgoing pastoral leases ..	..	857,313	802,941	725,312	6,971	677,221	6,097
Western land leases and licenses (a) .. .. .	..	73,755,143	73,693,368	73,754,817	91,595	75,243,327	93,145
Occupation (i) Ordinary ..	25,812,215	5,400,305	5,163,417	5,085,034	8,678	4,111,467	8,222
(ii) Preferential ..	12,985,651	1,204,845	1,184,341	1,159,345	6,215	966,613	4,240
Homestead leases .. .. .	10,953,388	351,374	351,374	153,275	255	51,074	64
Condit <sup>n</sup> (i) Gazetted .. .. .	13,014,055	15,663,382	15,226,444	14,831,535	191,220	14,468,840	190,214
(ii) Not gazetted leases (under provisional rent) ..	966,887	33,322	43,068	39,523	329	81,735	681
Conditional purchase leases ..	..	515,312	457,173	433,228	14,400	408,768	13,559
Settlement leases .. .. .	3,468,675	5,167,063	4,730,130	4,571,864	54,294	4,479,135	52,908
Improvement .. .. .	5,551,060	4,902,058	4,686,246	4,355,297	31,026	3,962,870	26,881
Arable .. .. .	6,755,942	2,991,573	2,649,284	2,516,954	20,425	2,552,665	21,517
Scrub .. .. .	1,535,415	1,854,648	1,812,694	1,689,956	6,540	1,658,675	6,496
Snow land .. .. .	79,582	6,069	10,909	131,420	1,232	134,420	1,272
Special .. .. .	124,877	647,916	650,384	664,935	37,904	663,919	37,016
Interior land .. .. .	288,530	75,451	75,451	73,711	280	71,710	271
Artesian well .. .. .	358,071	71,680	61,440	51,200	109	..	..
Blockholders' .. .. .	..	1	1	1	6	1	6
Residential leases (on gold and mineral fields) ..	5,751	13,435	13,365	13,675	1,676	13,511	1,663
Church and school lands ..	97,207	4,078	3,859	11	330	11	330
Permissive occupancies (b) ..	118,634	1,041,890	1,009,090	1,156,416	10,742	1,365,570	10,873
Prickly pear leases .. .. .	..	47,316	45,433	42,558	567	41,148	495
Crown leases .. .. .	..	1,896,765	2,134,446	2,449,587	28,292	2,694,879	31,303
Homestead farms .. .. .	..	969,453	1,036,685	1,081,622	3,360	1,410,612	4,303
Suburban holdings .. .. .	..	34,110	36,631	38,643	4,381	41,227	4,670
Week-end leases .. .. .	..	..	55	87	51	240	66
Leases of town lands .. .. .	..	..	16	17	56	17	62
Returned soldiers' special holdings .. .. .	..	..	639	2,575	450	10,952	1,437
Total under Lands Dept. & Western Land Board ..	126,921,161	118,640,977	117,015,359	116,159,073	522,118	115,110,607	517,791

(a) Includes permissive occupancy.

(b) Permissive occupancies in the Western Division not included.

The total annual rent derived from the leases and licenses issued by the Lands Department and the Western Lands Board amounted to £517,791, or an average of 1.06 pence per acre. Particulars regarding leases and licenses issued by the Mines Department are given in a later part of this section. (See § 9, *Occupation of Crown Lands for Mining Purposes*.)

3. **Victoria.**—The various types of leases and licenses (exclusive of Closer Settlement and Mines Department leases and licenses) which may be issued in this State are as follows :—(i) Grazing area leases; (ii) selection purchase leases; (iii) perpetual leases; (iv) Mallee perpetual leases; (v) licenses of auriferous lands; (vi) swamp or reclaimed lands leases; (vii) grazing licenses; (viii) leases and licenses for other than pastoral purposes; and (ix) State forests and timber reserves licenses.

A description in detail of the conditions which govern the issue of these various leases and licenses may be found in the previous issues of the Year Book. (See Year Book No. 5, pp. 291-2.)

*Areas held under Leases and Licenses.* The following statement shews the areas of Crown lands occupied under leases and licenses at the end of the year 1901 and from 1914 to 1918 :—

**VICTORIA.—OCCUPATION OF CROWN LANDS UNDER LEASE OR LICENSE,  
1901 AND 1914 TO 1918.**

Tenure.	Area in Acres.					
	1901.	1914.	1915.	1916.	1917.	1918.
Pastoral Leases .. ..	39,450					
Grazing Area Leases .. ..	2,338,649	2,048,281	2,575,480	2,502,556	2,573,143	2,503,197
Grazing Licenses—						
Land Acts 1890-91 .. ..	5,908,985					
Land Acts 1901 (excl. of Mallee)		5,437,029	5,254,997	4,647,510	4,493,453	5,069,740
Mallee Lands .. ..		4,851,246	4,368,746	4,974,132	5,028,808	2,796,686
Auriferous Lands (Licenses) .. ..	377,427	82,032	70,618	77,393	74,032	71,400
Swamp Lands (Leases) .. ..	4,200	3,868	3,824	3,825	3,670	3,412
Perpetual Leases .. ..	8,137	8,344	8,182	7,629	7,761	7,559
Mallee Pastoral Leases .. ..	7,980,592					
Mallee Allotment Leases .. ..						
Perpetual Leases under Mallee						
Land Act* 1896-1901 .. ..	448,842	293,716	244,765	220,914	202,943	197,253
Wattles Act 1890 .. ..	4,427					
Total .. ..	17,110,709	13,325,416	13,035,612	12,433,959	12,383,810	10,649,247

4. *Queensland.*—In this State Crown lands may be occupied under the following types of leases and licenses :—(i) Grazing homesteads; (ii) grazing farms; (iii) occupation licenses; (iv) special leases; (v) perpetual lease selections; (vi) perpetual lease prickly pear selections; (vii) pastoral leases; (viii) preferential pastoral leases; (ix) auction perpetual leases (town, suburban, and country); (x) non-competitive leases. An applicant for a grazing homestead or grazing farm may not hold more than 60,000 acres, and the term of the lease may not exceed 28 years.

(i) *Grazing Homesteads.* Lands opened for grazing selections are available for fifty-six days as grazing homesteads only. In the case of land selected up to 31st December, 1916, personal residence was necessary for the first five years, and prior to the expiration of such period or the earlier death of the lessee, a grazing homestead could not be assigned or transferred. Without the special permission of the Minister it could not be mortgaged during the five years except to the Agricultural Bank; thereafter the lease was subject to the condition of occupation. Since 1st January, 1917, grazing homesteads are subject to personal residence by the selector during the whole term of the lease, but the restrictions on assignment or transfer still operate only during the first five years.

(ii) *Grazing Farms.* In order to obtain priority of claim the applicant may tender an annual rent higher than the notified one, for the first seven years. As soon as the land is fenced the selector becomes entitled to a lease, and may thereafter mortgage the same. The lease is subject to the condition of occupation during the whole term. The Crown may resume the whole or part of the lease.

Particulars of the selection of grazing farms and grazing homesteads are given in the following paragraph :—

(iii) *Grazing Farms, Homesteads, and Scrub Selections.* The following table shews the number of grazing farms, grazing homesteads, and scrub selections, for which applications were accepted in 1901 and from 1914 to 1918 :—

**QUEENSLAND.—GRAZING FARMS, HOMESTEAD, AND SCRUB SELECTIONS,  
1901 AND 1914 TO 1918.**

Year.	Grazing Farms.		Grazing Homesteads.		Scrub Selections.		Total.	
	No.	Area.	No.	Area.	No.	Area.	No.	Area.
		Acres.		Acres.		Acres.		Acres.
1901 ..	247	1,371,283	47	290,785	19	48,450	313	1,710,518
1914 ..	272	3,380,918	288	3,462,488	..	..	560	6,843,406
1915 ..	222	2,461,836	275	3,084,517	..	..	497	6,446,353
1916 ..	112	1,412,652	247	3,065,096	..	..	359	4,477,748
1917 ..	129	1,925,059	197	2,243,218	..	..	326	4,168,277
1918 ..	175	3,111,716	210	2,597,571	..	..	385	5,709,287

The average rent in 1918 was .84d. per acre for grazing farms and 1.14d. per acre for grazing homesteads.

Particulars of total areas held under leases and licenses are given in a later part of this section. (See § 11.)

(iv) *Occupation Licenses.* Annual licenses are granted to occupy Crown lands which have been declared open for such occupation by notification in the *Gazette*. The rent is as specified by the notification or as bid by the licensee, but the Minister may by notice before the 1st September in any year increase the rent. The total number of licenses in force at the end of the year 1918 was 2,443, comprising an area of 63,585 square miles, the total rent being £49,601. Particulars of the area held under license for previous years are given in a later part of this section. (See § 11.)

(v) *Special Leases.* Leases of any portion of Crown land may be issued for a term not exceeding thirty years to any person for any manufacturing, industrial, business or recreation purposes. Leases for a similar term may be issued for any country lands reserved for public purposes and which are infested with noxious weeds.

During the year 1918 there were 120 leases for special purposes granted, comprising an area of 15,620 acres, the total annual rent being £709, and there were extant at the end of the year 791 such leases, comprising an area of 55,668 acres and reserving rents amounting to £4,141 per annum. In addition, 53 leases of reserves, aggregating 12,341 acres, were granted at rentals amounting to £278 per annum, the total number of these leases of reserves in force at the end of the year being 379, comprising an area of 146,696 acres and reserving rents amounting to £1,598. Particulars of special leases for previous years are given in a later part of this section. (See § 11.)

(vi) *Perpetual Lease Selections.* Up to 31st December, 1916, land proclaimed to be open for agricultural farm selection (see § 6, 4) might also be opened for perpetual lease selection, and the latter mode might be conceded priority of application over the former. The rent for the first period of ten years of the lease was  $1\frac{1}{2}$  per cent. on the proclaimed purchase price of the land for agricultural farm selection. The rent for each succeeding period of ten years was determined by the Land Court. Similar conditions of occupation and improvement as were prescribed for agricultural farms were attached to perpetual lease selections. From 1st January, 1917, land opened for agricultural selection may be opened only for perpetual lease selection, and land opened for prickly pear selection may be opened only for perpetual lease prickly pear selection. In the case of perpetual lease selections, the rent for the first period of 15 years is  $1\frac{1}{2}$  per cent. of the notified capital value of the land, and for each succeeding period of 15 years may be determined by the Land Court. In the case of perpetual lease prickly pear selections, no rent is payable during the pear-clearing period, but thereafter rents are paid in the same manner as for perpetual lease selections. The conditions of selection are similar to those for the previous tenures of agricultural farms and prickly pear selections.

#### QUEENSLAND.—PERPETUAL LEASE SELECTIONS, 1914 TO 1918.

Particulars.			1914.	1915.	1916.	1917.	1918.
Number	..	..	18	175	294	605	898
Area	..	Acres	12,991	59,760	114,011	207,581	305,873
Rent	..	£	153	973	1,806	3,141	4,596

Particulars of perpetual lease prickly pear selections taken up during 1917 and 1918 were as follows :—

#### QUEENSLAND.—PERPETUAL LEASE PRICKLY PEAR SELECTIONS, 1917 AND 1918.

Particulars.				1917.	1918.
Number	..	..	..	180	178
Area	..	..	acres	141,336	153,151

(vii) *Special Licenses.* Licenses to cut timber or to dig for any stone, gravel, earth, shells, or guano, may be issued.

(viii) *Pastoral Leases.* Up to 31st December, 1916, existing pastoral leases were deemed to be held under the Land Act 1910. Lands open for pastoral lease might be leased for a period not exceeding thirty years. The annual rent, per square mile, for the first ten years must be as notified in the *Gazette*, or in case of competition, bid at auction. If the value of the holding became enhanced by the development of public works in the neighbourhood, or by the occurrence of minerals on or near the holding, the rent might be redetermined. A new pastoral tenure, as from 1st January, 1917, was introduced by the amending Act of 1916, viz., preferential pastoral lease. Holdings under this tenure are confined to persons with no interests or limited interests in pastoral leases, and priority of application may be obtained by an applicant undertaking to reside on the holding personally during the first seven years.

The following table shews the total areas of pastoral leases occupied under the various Acts at the end of the year 1901 and from 1914 to 1918 inclusive :—

(a) QUEENSLAND.—PASTORAL LEASES OCCUPIED UNDER VARIOUS ACTS, 1901 AND 1914 TO 1918.

Particulars.	Area in Square Miles.					
	1901.	1914.	1915.	1916.	1917.	1918.
Pastoral Leases Act 1869 .. ..	39,307	..	..	..	..	..
Crown Lands Act 1884 .. ..	243,586	..	..	..	..	..
Land Act 1897 .. ..	15,046	..	..	..	..	..
Pastoral Leases Act 1900 .. ..	50,076	..	..	..	..	..
Pastoral Holdings New Leases Act 1901 .. ..	..	..	..	..	..	..
Land Act 1902 .. ..	..	..	..	..	..	..
Land Act 1910 .. ..	..	353,312	349,838	337,423	330,596	331,937
Land Act Amendment Act 1916 (preferential) .. ..	..	..	..	..	636	1,935
Total .. ..	348,015	353,312	349,838	337,423	331,232	333,872

(a) Up to the year 1910, resumed parts of pastoral holdings were included in these figures, but since that year they are held under occupation license, and are included in the figures under that head.

The gross area held at the end of the year 1918 for purely pastoral purposes (under *Occupation Licenses and Pastoral Leases*) was 397,457 square miles, at rentals aggregating £366,603 per annum. The area was 2,909 square miles more than that for the previous year, and the rental was £7,504 more. The average rent was 18s. 5½d. per square mile, as against 18s. 2½d. for the previous year. Six non-competitive perpetual leases were issued during 1918, the total area being 183 acres, and the annual rent £14.

5. *South Australia.*—The following are the various types of leases and licenses which are issued in this State:—(i) Perpetual leases; (ii) miscellaneous leases; (iii) miscellaneous grazing and cultivation leases; (iv) irrigation and reclaimed swamp leases; (v) licenses for special purposes; (vi) leases under the Pastoral Act 1904; and (vii) leases with right of purchase.

(i) *Perpetual Leases.* Surveyed Crown lands are available for perpetual leases as well as for agreements to purchase under Crown Lands Act of 1915. Under the Crown Lands Act of 1888 perpetual leases were granted in perpetuity, and the rent determined for each period of fourteen years, at least twelve months before the expiration of each such period. Under the Crown Lands Act of 1893 the revaluation section was repealed and the rent was fixed in perpetuity, generally at rates varying from 2 per cent. to

4 per cent. per annum on the value of the land as fixed by the Land Board. The condition as to payment of rent of land offered under provisions of the Act of 1915 in newly surveyed mallee lands is that no rent is charged for the first four years, and from the fifth to the end of the tenth year payment is made at the rate of 2 per cent. per annum, the full rate at 4 per cent. becoming due at the commencement of the eleventh year. All minerals are reserved to the Crown, and the Crown may reserve any part of the land for the purposes of roads, water conservation, mining, &c., compensation being payable to the lessee for loss occasioned by resumption.

The conditions under which the other leases and licenses are issued will be found in detail in the previous issues of the Year Book. (See Year Book No. 5, pp. 294 and 295.)

(ii) *Areas held under Lease.* The following table shews the areas held under leases and licenses at the end of the year 1901 and from 1914 to 1918 :—

**SOUTH AUSTRALIA.—AREAS UNDER LEASES AND LICENSES, 1901 AND 1914 TO 1918.**

Particulars.	1901.	1914.	1915.	1916.	1917.	1918.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
Right of Purchase Leases	5,639,519	2,634,685	2,574,640	2,504,143	2,440,731	2,402,355
Perpetual Leases ..	7,115,782	14,969,877	14,943,771	14,851,173	14,810,026	14,625,839
Pastoral Leases ..	68,916,125	96,382,130	95,756,850	95,016,370	100,889,010	95,264,050
Other Leases ..	3,905,729	1,193,767	1,144,683	1,128,630	1,049,522	617,654
Total held under Lease	85,577,155	115,180,459	114,419,944	113,500,316	119,189,289	112,909,896

6. *Western Australia.*—The following are the various types of leases and licenses issued in this State :—(i) Pastoral leases; (ii) permits and licenses to cut timber; (iii) special leases; and (iv) licenses for quarrying.

The conditions of tenure with respect to these leases and licenses may be found in the previous issues of the Year Book. (See Year Book No. 5, pp. 296–7.)

*Areas held under Leases and Licenses.* The following table shews the number and areas of leases and licenses issued during the year 1901 and from 1914 to 1919 :—

**WESTERN AUSTRALIA.—LEASES AND LICENSES ISSUED, 1901 AND 1914 TO 1919.**

Particulars.	1901.	1914.(a)	1915.(a)	1916.(a)	1917.(a)	1918.(a)	1919.(a)
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
Pastoral Leases ..	19,909,251	8,365,927	7,630,023	7,489,683	9,436,159	20,287,672	39,016,706
Special Leases ..	149	3,382	5,571	1,707	626	8,097	16,845
Leases in Reserves ..	324	233,037	196,340	434,455	178,402	87,712	539,041
Timber Leases and Permits(b)	109,630	21,528	38,000	219,088	329,370	84,770	93,171
Residential Lots ..	221	..	..	..	..	..	..
Total	20,019,575	8,623,874	7,869,934	8,144,933	9,894,557	20,468,251	39,665,763
Number issued ..	1,466	1,709	1,410	1,105	510	508	1,014

(a) For financial year ended the 30th June. (b) No timber leases granted since 1903. Timber leases and permits are now under the control of the Forests Department.

Particulars as to the total area occupied under leases and licenses are given in a later part of this section. (See § 11.)

7. *Tasmania.*—The several forms of leases and licenses in this State are as follows :— (i) Grazing leases ; (ii) miscellaneous leases ; (iii) timber licenses ; (iv) occupation licenses ; (v) temporary licenses ; and (vi) timber leases.

The conditions which govern the issue of these leases and licenses are more fully dealt with in the previous issues of the Year Book. (See Year Book No. 5, p. 297.)

*Areas held under Leases and Licenses.* The following table shews the areas of Crown lands occupied under leases and licenses at the end of the year 1901 and from 1914 to 1918 :—

**TASMANIA.—LEASES AND LICENSES ISSUED, 1901 AND 1914 TO 1918.**

Particulars.	1901.	1914.	1915.	1916.	1917.	1918.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
Ordinary Leased Land ..	1,280,688	1,400,300	1,452,068	1,434,113	1,193,169	1,201,169
Islands ..	149,165	135,000	204,630	207,630	197,406	197,918
Land Leased for Timber ..	40,768	162,631	120,832	146,881	155,889	188,804
Total ..	1,470,621	1,697,931	1,777,530	1,788,624	1,546,464	1,582,891

8. *Northern Territory.*—The system of land settlement in the Northern Territory has been reorganised by the Commonwealth Government. A New Lands Ordinance was passed in December, 1912, known as the Crown Lands Ordinance 1912, and future disposal of land in the Territory will be made in accordance with this Ordinance, which provides for a leasehold system only, and no further alienation of Crown lands will be permitted, unless such alienation is in pursuance of existing agreements. Under this Ordinance, the classification and control of Crown lands is in the hands of a Board, consisting of the Director of Lands and two other officers appointed by the Administrator. The classified land is leased in blocks, the maximum areas for agricultural lands are 1,280 acres in class 1, and 2,560 acres in class 2 ; for mixed farming and grazing, 12,800 acres in class 1, and 38,400 acres in class 2 ; for pastoral purposes, 300 square miles in class 1, 600 square miles in class 2, and 1,500 square miles in class 3. Before offering any land for leasing, the Board fixes the annual rental, but every lease is subject to reappraisalment of rent at specified periods, viz., every fourteen years in the case of town lands, and every 21 years in the case of agricultural and pastoral lands.

Leases under this Ordinance are in perpetuity except as regards pastoral and miscellaneous leases, the maximum term of which is fixed by the Classification Board when advertising lands for lease, but does not exceed 21 years for miscellaneous lease and first class pastoral lands, or 42 years for second and third class pastoral land.

In order to promote settlement in the Territory, the first 5,000 blocks of agricultural land taken up on perpetual lease under this Ordinance will be rent free during the life of the applicant, or for 21 years from the commencement of the lease, whichever period is longer.

The lessee must make a home on the land within two years after the date of the lease and thereafter reside on the land for a period of six months in each year in the case of land for cultivation, and four months in the year in the case of mixed farming and grazing ; he must also fence, improve, and stock his land in accordance with the terms of the lease.

Amending Ordinances have been passed from time to time, and regulations have been made modifying improvement conditions on leases, also allowing for the issue of licenses to graze stock on Crown lands. In November, 1918, an important amendment to the principal Ordinance was passed, amending Section 48, by providing that no resumptions should be made from pastoral leases held under that Ordinance, in class 1 during the first ten years of the lease, and in classes 2 and 3 during the first fourteen years of the lease, and at no time within 5 miles of the Head Station during the whole term of the lease, except for public purposes such as railways, tramways, &c., as specified in sub-section 2 of that section.

The various types of leases, licenses, and permits current are as follows:— (i) Agricultural leases; (ii) pastoral leases; (iii) special leases; (iv) town leases; (v) miscellaneous leases; (vi) leases with right of purchase; (vii) tropical products leases; (viii) leases for horsebreeding stations; (ix) licenses (grazing, occupation, &c.); and (x) pastoral and other permits. (See § 2, 7). The permit system was discontinued at the end of 1911.

*Areas held under Lease, License, and Permit.* The following table shews the total areas held under lease, license, and permit at the end of the years 1901 and 1914 to 1919:—

**NORTHERN TERRITORY.—AREA HELD UNDER LEASE, LICENSE, OR PERMIT, 1901 AND 1914 TO 1919.**

Particulars.	1901.	1914.	1915.	1916.	1917.	1918.	1919.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
Right of Purchase Leases	1,067	436	436	436	436	436	436
Pastoral Leases and Grazing Licenses ..	111,476,240	104,370,160	113,813,329	110,560,129	103,993,600	114,264,320	117,420,160
Other Leases and Licenses	1,176,981	88,637	112,862	109,353	108,387	199,362	5,297,610
Total ..	112,654,288	104,459,233	113,926,627	110,669,918	104,102,423	114,464,118	122,718,206

On 31st December, 1919, 601,210 acres were held under miscellaneous leases; 4,689,920 acres under permits; and 6,480 acres under other leases and licenses. On 30th June, 1919, 413 acres were held under gold-mining leases; 2,040 acres under mineral leases; 40 acres under protected gold-mining lease applications; 579 acres under protected mineral lease applications. On the same date, 121 claims were in operation, covering approximately 1,200 acres.

## § 8. Closer Settlement.

1. *Introduction.*—In all the States, Acts have been passed authorising the Governments to repurchase alienated lands for the purpose of cutting them up into blocks of suitable size and throwing them open to settlement on easy terms and conditions. Special Acts have also been passed in several of the States authorising the establishment on particular lines of co-operative communities, village settlements, and labour colonies. Lands may be acquired either compulsorily or voluntarily in New South Wales, Victoria, Queensland, and Tasmania, but only voluntarily in South Australia and Western Australia.

The following table gives particulars up to the latest available date of operations under the Closer Settlement Acts for each State and the whole Commonwealth:—

**CLOSER SETTLEMENT.—TOTAL AREAS ACQUIRED AND ALLOTTED UP TO 30th JUNE, 1919.**

Particulars.	N.S.W.(a)	Victoria.(b)	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
Area acquired .. acres	1,272,470	570,617	785,311	748,689	446,804	75,633	3,899,524
Purchasing price £	5,440,629	4,252,543	1,955,060	2,469,478	421,373	274,563	14,813,646
Farms, &c., { No.	2,885	3,431	2,755	2,757	704(c)	258	12,790(d)
allotted { acres	1,268,046	478,368	662,756	695,882	304,937	68,163	3,478,152

(a) In addition, 17 estates of an area of 240,991 acres, costing £1,091,944, have been acquired for group soldier settlements in New South Wales.

(b) In addition, 182,550 acres were acquired for returned soldiers; the cost was £1,982,223.

(c) Includes only farms for which Crown Grants have not issued.

(d) Complete figure for Western Australia not available.

The following table shews the areas of private lands acquired in each State in the financial year 1900-01, and at the end of each year from 1914 to 1919 :—

**CLOSER SETTLEMENT.—AREAS OF PRIVATE LANDS ACQUIRED,  
1901 AND 1914 TO 1919.**

Year ended 30th June.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1901 .. ..	..	28,553	132,760	..	46,624	..	207,937
1914 .. ..	685,156	567,687	664,363	632,715	446,804	60,232 (a)	3,056,957
1915 .. ..	685,156	564,520	664,363	611,402	446,804	73,162 (a)	3,045,407
1916 .. ..	745,883	564,600	785,311	661,117	446,804	73,320 (a)	3,277,035
1917 .. ..	747,204	567,943	785,311	685,217	446,804	75,259 (a)	3,307,738
1918 .. ..	759,526	565,442	785,311	685,611	446,804	75,259 (a)	3,317,953
1919 .. ..	823,899	711,071	785,311	691,109	446,804	75,259 (a)	3,533,453

(a) Including 10,382 acres of Crown lands.

2. **Government Loans to Settlers.**—For the purpose of promoting pastoral, agricultural, and similar pursuits, and with the object of assisting settlers in erecting buildings and carrying out improvements on their holdings, general systems have been established in all the States and in the Northern Territory under which financial aid is rendered to settlers by the State Governments. These general systems are more particularly referred to in the section in this book dealing with "Agriculture." In many of the Closer Settlement and similar Acts, however, special provisions have been inserted with the object of lending money to settlers taking up land under these Acts, with which to build homes or effect improvements. The principal features of these provisions are referred to below.

3. **New South Wales.**—Under the Closer Settlement Act of 1901 provision was made for the acquisition of private lands or of Crown lands held under lease, for the purpose of closer settlement. No power of compulsory resumption was conferred by the Act, which was in consequence practically inoperative. Under the Closer Settlement Act of 1904 and subsequent amendments, and the Promotion Section of the Closer Settlement Acts, the Government is empowered to resume private lands, either by agreement or by compulsory purchase, and to alienate them on favourable terms to persons who desire to settle and make homes for themselves and their families on the soil. Land acquired under the Closer Settlement Acts is subdivided into blocks or farms, and by notification in the *Government Gazette* is declared to be a settlement purchase area available for application. The *Gazette* notice also gives all necessary information as to the class and character of the land, and the capital value, area, &c., of each block or farm.

(i) **Closer Settlement Purchase.** Under this tenure a settler may acquire the freehold of the land under a system of deferred payments. A deposit of 6½ per cent. of the notified value of the settlement purchase must be lodged with the application, except in the case of discharged soldiers or sailors, who are not required to pay any deposit, and a similar amount by way of instalment, paid annually until the purchase-money, together with interest at the rate of 5½ per cent., is paid off. Prior to 1st September, 1917, the deposit and annual instalments ranged from 5 per cent. to 6 per cent., and the interest from 4 per cent. to 5 per cent. Under this system the balance due to the Crown will be paid off in thirty-one years, the holding then becoming a freehold. A condition of residence for five years attaches to every settlement purchase. Under the amending Act of 1918, interest only may be paid in lieu of such instalments for such periods, and subject to such conditions as the Minister may determine. The Minister may also postpone payment conditionally or unconditionally of such interest, or one or more instalments of purchase money, if satisfied of the inability of the holder to pay, provided that the amount owing to the Crown does not exceed the original capital value plus 80 per cent. of the value of improvements effected on the settlement purchase since commencement of title.



(ii) *Closer Settlement Permissive Occupancies.* The Minister may grant permits to occupy any lands within a settlement purchase area which remain undisposed of, subject to certain terms and conditions.

(iii) *Sales by Auction.* Areas within closer settlement districts necessary for township settlement may be set apart by notification in the *Gazette*. Allotments, each of which may not exceed half an acre in extent, within such areas may be sold by auction.

(iv) *The Promotion Section of the Closer Settlement Acts.* Under this Section any three or more persons or any one or more discharged soldiers within the meaning of the Returned Soldiers' (Amendment) Act 1917, each of whom is qualified to hold settlement purchases and who desire to purchase from the same owner any private lands may, upon entering into an agreement with the owner and subject to valuation by the Advisory Board and the Savings Bank Commissioners, acquire such lands through the Minister on closer settlement conditions.

The following table shews the number and area of farms allotted since the passing of the Act :—

**NEW SOUTH WALES.—OPERATIONS UNDER CLOSER SETTLEMENT  
PROMOTION ACT 1910. (a)**

Year.	Farms Allotted.		
	Number.	Area.	Amount Advanced.
		Aeres.	£
1910-11 .. .. .	26	10,785	54,131
1911-12 .. .. .	209	84,279	418,941
1912-13 .. .. .	274	107,791	599,145
1913-14 .. .. .	183	62,598	361,351
1914-15 .. .. .	95	35,963	201,163
1915-16 .. .. .	141	61,626	300,103
1916-17 .. .. .	57	28,877	123,330
1917-18 .. .. .	123	56,652	285,317
1918-19 .. .. .	41	22,533	95,748
Total .. .. .	1,149	471,104	2,439,229

(a) Now repealed and replaced by the Promotion Section of the Closer Settlement Acts.

(v) *Areas Acquired and Disposed of.* Up to the 30th June, 1919, 127 estates had been opened for settlement under the Closer Settlement Acts.

The following statement gives particulars of the aggregate areas opened up to the 30th June, in each year from 1914 to 1919 :—

**NEW SOUTH WALES.—CLOSER SETTLEMENT AREAS, 1914 TO 1919.**

Year Ended 30th June.	Areas.			Capital Values.		
	Acquired Lands.	Adjoining Crown Lands.	Total.	Acquired Lands.	Adjoining Crown Lands.	Total.
	Acres.	Acres.	Acres.	£	£	£
1914 .. .. .	685,156	89,540	774,696	2,685,660	163,254	2,848,914
1915 .. .. .	685,156	89,540	774,696	2,685,660	163,254	2,848,914
1916 .. .. .	745,883	91,987	837,870	2,870,116	167,962	3,038,078
1917 .. .. .	747,204	91,996	839,200	2,895,638	168,175	3,063,813
1918 .. .. .	759,526	91,996	851,522	2,947,221	170,259	3,117,480
1919 .. .. .	801,366	94,254	895,620	3,173,885	175,331	3,349,216

The total area thus set apart has been divided into 1,832 farms, comprising 868,979 acres, the remaining area being reserved for recreation areas, roads, stock routes, schools, &c.

The following table gives particulars as to the disposal of the farms by closer settlement purchase for the years ended the 30th June, 1914 to 1919 :—

NEW SOUTH WALES.—CLOSER SETTLEMENT ALLOTMENTS, 1914 TO 1919.

Year.	Farms Allotted by Board to Date.			Total Amount received in respect of Settlement Purchases.	Total Number of Applications received.
	Number.	Area.	Value.		
		Acres.	£	£	
1913-14 ..	1,567	734,125	2,806,285	493,795	1,578
1914-15 ..	1,588	742,610	2,834,792	506,073	1,591
1915-16 ..	1,609(a)	748,573(a)	2,860,636(a)	718,660	1,612
1916-17 ..	1,622	759,753	2,905,550	834,485	1,625
1917-18 ..	1,624	760,083	2,907,055	985,863	1,625
1918-19 ..	1,736	786,942	3,105,214	1,139,176	1,740

(a) Including 45 Settlement Purchase Farms of 24,714 acres, with a capital value of £107,716, since converted into Homestead Farms.

(vi) *Labour Settlements.* These settlements were founded by the Labour Settlements Acts 1893 and 1894, which were amended and repealed by the Labour Settlements Act 1902. Land might be set apart for lease for a period of 28 years as a labour settlement under the superintendence of a Board of Control. The functions of the Board of Control were to enrol members of the settlement; to make regulations concerning the work to be done; to apportion the work among the members; and to distribute the wages and profits. The Minister was empowered to grant financial assistance to the Board of Control. Only two settlements, those at Bega and Wilberforce, were established under the Act. The Labour Settlements Act 1902 was repealed by the Bega and Wilberforce Labour Settlements Act 1917, which dissolves the Boards of Control, and provides for the settlers applying for the blocks they occupy as Homestead Farms under the Crown Lands Consolidation Act 1913.

The Murrumbidgee Irrigation Act 1910 provides for the acquisition of 1,668,000 acres near Narrandera, in Riverina, for irrigation and other purposes in connexion with the Burrinjuck Irrigation Scheme. Part of this area has since been made available.

4. *Victoria.*—(i) *Closer Settlement Act 1915.* The Closer Settlement Act in Victoria is administered by a Board consisting of three persons appointed by the Governor in Council, and entrusted with power to acquire, either compulsorily or by agreement, private lands in any part of the State for the purpose of Closer Settlement. The Board may dispose of all lands acquired, either Crown lands or repurchased lands, on conditional purchase leases either as (a) farm allotments not exceeding £2,500 in value, (b) workmen's homes allotments not exceeding £250 in value, and (c) agricultural labourers' allotments not exceeding £350 in value. The price of the land must cover the cost of the original purchase and the cost of all improvements. Land acquired by the Board may also be sold in small areas in fee simple as sites for churches, public halls, butter factories, creameries, recreation reserves, or other public purposes.

The Board may approve of an agreement between an owner and one or more persons to purchase a farm or farms, not exceeding £2,500 in value. On the property being acquired by the Board, the applicant obtains a lease under Closer Settlement conditions.

(a) *Closer Settlement Leases.* Every conditional purchase lease is for such a term of years as may be agreed upon by the lessee and the Board, and payment must be made with interest at  $4\frac{1}{2}$  per cent. per annum by sixty-three half-yearly instalments, or such lesser number as may be agreed upon. Under the Act, postponement of payment of instalments may be granted by the Board up to 60 per cent. of the value of improvements. The lessee must personally reside during eight months in each year on his allotment, and for six years he must carry out prescribed improvements. Thereafter he may, with permission, transfer, assign, mortgage or sublet his allotment. After twelve years, if all conditions have been fulfilled, a Crown grant, with the same residence condition as that contained in the lease, will be issued. In the case of workmen's homes allotments the land must be fenced within one year, and a dwelling-house to the value of at least £50 must be erected within the same time; within two years further improvements must be made to the value of at least £25. As regards agricultural labourers' allotments, a dwelling-house to the value of at least £30 must be erected within one year, and within two years the allotment must be fenced. In the case of workmen's homes and agricultural labourers' allotments, the lessee may at any time transfer, assign or sublet with the consent of the Board.

(b) *Advances to Settlers.* The Board may make advances for the purpose of fencing and building dwelling-houses, and is empowered to erect dwelling-houses, outbuildings, or improvements on any allotment at a cost not exceeding £500 for any one allotment. Any sum so expended is repayable, with interest added, by instalments extending over a prescribed period, not greater than twenty years. Provision has also been made for deferring payments in case of hardship, as well as for advances (to the extent of 60 per cent. of the value of the improvements) to enable work to be carried on. Special advances may also be granted to purchase wire netting in rabbit-infested districts.

(c) *Loans to Municipalities.* Loans may be made out of the Closer Settlements Fund for the purpose of carrying out any road-making or other public works within the boundaries of an estate.

(d) *Areas acquired and made available for Closer Settlement.* The following statement shews the operations which have taken place in Victoria under the provisions of the Closer Settlement Acts 1898 to 1915, up to the 30th June, 1901 and 1914 to 1919 :—

### VICTORIA.—CLOSER SETTLEMENT, 1901 AND 1914 TO 1919.

(INCLUDING IRRIGATED AREAS.)

Year ended 30th June.	Total Area Acquired by Government to Date.	Total Cost to Date.	How Made Available for Settlement.						Number of Applications Granted to Date.	Total Receipts to Date.	Repayments of Principal to Date.	Area Available for Settlement.
			Farm Allotments.	Workmen's Homes Allotments.	Agricultural Labourers' Allotments.	Town Allotments.	Roads and Reserves.					
	Acres.	£	Acres.	Acres.	Acres.	Acres.	Acres.	No.	£	£	Acres.	
1901	28,553	151,566	28,461	69	..	44	240	193	7,529	..	..	..
1914	567,687	4,222,248	500,819	828	8,829	24,903	..	4,112	1,213,593	456,511	60,028	..
1915 <sup>a</sup>	567,993	4,230,055	509,454	782	5,111	26,163	..	4,227	1,432,187	528,980	56,525	..
1916	568,073	4,230,779	513,281	778	5,547	27,193	..	4,321	1,661,427	569,445	51,878	..
1917	571,953	4,277,356	517,467	781	4,720	27,546	4,201	4,509	1,670,959	608,723	43,017	..
1918	569,334	4,239,956	502,475	783	4,622	29,577	4,210	4,594	1,974,744	655,380	30,619	..
1919	570,617	4,252,543	501,537	785	4,586	30,244	5,037	4,476	2,300,705	729,493	23,689	..

<sup>a</sup> During 1915, areas previously classed as Workmen's Homes and Agricultural Allotments were transferred to Farm Allotments.

Up to 30th June, 1919, there were also acquired under the Discharged Soldiers' Settlement Act 1917 (including Crown Lands and Closer Settlement Areas taken over), 182,550 acres, at a cost of £1,982,223. Applications granted numbered 995; and 144,788 acres were made available for farm allotments.

(ii) *The Small Improved Holdings Act 1906.* Under this Act, which has been repealed, 2,822 acres at a cost of £53,568 allotted to 260 settlers were purchased close to towns where industrial employment could be obtained by the settlers.

These settlements are now under the control of the Closer Settlement Board.

(iii) *Village Communities.* The rights of lessees of land in Village Communities are now provided for in the Land Act 1915. Certain unalienated Crown lands were surveyed into allotments of one to twenty acres. The price is not less than twenty shillings an acre. Additional areas may be acquired by conditional purchase. The rent is a nominal one for three years. The total amount of monetary aid advanced up to the 30th June, 1919, was £67,379, of which sum the amount repaid to date was £44,768. After three years a lease may be obtained.

On the 30th June, 1919, there were 346 settlers actually residing, and 146 not residing, but improving, making a total of 492 in occupation. Including wives and children the total number in residence was 1,360.

(iv) *Closer Settlement in the Irrigation Districts.* The movement for closer settlement in the irrigation districts started about ten years ago, when the State adopted the policy of purchasing large areas of land commanded by irrigation schemes, and subdividing them for intensive culture. The management and supervision of these areas were formerly vested in two bodies—the Closer Settlement Board and the State Rivers and Water Supply Commission, but in order to do away with this dual control, the Amending Closer Settlement Act of 1912 (now incorporated in the Closer Settlement Act 1915) was passed, transferring to the Water Supply Commission the entire management, leasing, and general supervision of all such areas within irrigation districts. The State had expended between three and four million pounds on irrigation works, which were not being used to their full extent. Under the Goulburn Scheme, the largest of the State works, less than half the available water was being used, owing to lack of settlers to cultivate the land as irrigation requires. Previously, in the various districts the average size of farms varied from 400 to 600 acres, while under irrigation from about 12 to 80 acres will now give employment to a good-sized family and furnish them a comfortable living. The large farms of the irrigation districts could not be properly cultivated by their owners, and the only way to make irrigation a success was to subdivide these holdings and bring in farmers to cultivate the smaller areas. To this end the State offered to buy suitable land in any district having a reliable and ample water supply, at a price fixed by impartial expert valuers, and has purchased 118,400 acres for this purpose, and now administers also the irrigated closer settlements established on Crown lands at Merbein and Nyah, which contain respectively about 8,000 acres and 3,000 acres. This land is sold to settlers on 31½ years' terms with 4½ per cent. interest on deferred payments, under what are known as closer settlement conditions, which, while providing for the liberal terms and advances referred to in this paragraph, require, on the part of the settler or his successor, residence on the block for at least eight months in each year. These payments are calculated on the Cr dit Foncier basis and are equalised through the whole period. As a result, the settlers by paying an additional 1½ per cent., or 6 per cent. in all, in 31½ years pay off both principal and interest. In the early stages of irrigated closer settlement the State undertook, where desired by settlers, to prepare portions of their holdings for irrigation by grading, seeding, check-banking, and constructing distributory channels, settlers being allowed to pay the cost of such works by instalments extending over ten years. The development of these settlements has, however, now reached such a stage that this is no longer necessary. Contract labour is available to new settlers, and there are facilities for the carrying-out of this work locally, but financial assistance to the same extent is still available. To further help the settler of limited means, the State will build a house and allow twenty years to pay for it. The cash payments required are as follows:—On houses costing less than £100, £10; on houses costing more, the cash payment varies from 12½ to 30 per cent. of the estimated cost. The State also makes loans to settlers equal to 60 per cent. of the value of permanent improvements, these loans to be repaid in twenty years. Five per cent. interest

is charged on all advances—whether for houses, preparing land, or money furnished the settler. In the case of discharged soldiers, the cash deposits on both land and houses are dispensed with, and further concessions can be made in the form of suspension of payment of instalments during the first one, two, or three years of occupation. Last year 386 blocks were granted to new settlers, 352 of whom were discharged soldiers. During the past ten years 97,700 acres have been settled in farms averaging fifty acres each—which are now the homes of 1,985 new settlers. There are also 317 allotments comprising 12,800 acres ready for immediate occupation, and a further 9,000 acres being prepared for settlers. At Shepparton, one of the oldest of these settlements, there are now 269 settlers living where there were originally twenty-one. At Cohuna, another early settlement, some settlers made such satisfactory progress, that they paid in full their land and other instalments, when their leases, which were for  $31\frac{1}{2}$  years, were only some seven years old. In Koyuga there are fifty settlers with good houses, many young orchards, fine crops of lucerne and vegetables, where in November 1910 there was not a house, a family, or an acre of cultivated land. Of the total area settled, 26,000 acres are under lucerne, 14,000 under fruit, and 15,000 under other crops. There are now fourteen settlers' homes for every one that existed on these areas when repurchased by the State. Four hundred and eighty-six of the settlers are discharged soldiers.

Reports received regularly from officers in charge of irrigation districts indicate that in nearly all cases the settlers are making good progress on their holdings, and that there is undoubtedly an increasing feeling of security and permanence pervading these settlements.

The war conditions have made the disposal of the products of these settlements a matter of some difficulty. In regard to soft fruits, for instance, there was in the year 1916–17 a very heavy glut, and the position was so critical that the Commission arranged a peach pool for the irrigation closer settlement districts. This was continued until the Government, by obtaining some large war contracts for jam, was able in a great measure to arrange for the absorption of the surplus.

In Shepparton District the settlers, in view of these difficulties, established a co-operative fruit-processing factory, financial assistance being provided by the State. This cannery has proved a boon to the settlement, and the expectations entertained at the inception of the movement have been fully realized.

The quality of its canned fruits has proved the undoubted advantage of locating the factory in the vicinity of the orchards, while its value to the settlers is shown by the fact that last season they had 2,200 tons of fruit successfully treated, and were able to materially improve their financial position with the State.

The Murray Frontage Settlements are showing continual progress. The value of last season's production from the main Merbein Settlement of 6,000 acres reached the splendid total of £250,000. These settlements are becoming increasingly attractive to new settlers. Irrigable blocks have already been allotted there to 166 qualified soldiers, but the demand for such lands was so keen that the Commission has acquired the large estate of 30,000 acres known as "Red Cliffs" (adjacent to the Mildura Settlement) and is now preparing it for occupation by fully 1,000 additional returned soldiers.

**5. Queensland.**—(i) *Closer Settlement.* Under the provisions of the Act of 1906, private lands for closer settlement may be repurchased by the Crown, either by agreement or compulsorily.

(a) *Compulsory Acquisition.* The owner of an estate in possession, the whole of which is proposed to be taken compulsorily, has the right to retain in one block land of the value of £10,000 to £20,000, according to the value of the whole estate. The maximum sum which may be expended in any one year on the acquisition of land for the purpose of closer settlement is £500,000.

(b) *Disposal of Land.* A sufficient part of the land acquired must be set apart for roads, public reserves, and townships, and, up to the end of 1916, the remainder was proclaimed open for selection as agricultural farms under the Land Act 1910, which repealed the Land Acts 1897 to 1909, and under the Closer Settlement Act Amendment Act of 1913; the term of the lease was 40 years. The rent to be paid for the first year was equal to £10 for every £100 of the purchasing price; and (no payment being required during the second, third, or fourth years) an annual payment of £6 6s. 0d. for every £100, which continued from the fifth to the fortieth year, would, at the end of the term, have paid

off the principal sum together with interest. From 1st January, 1917, the opening of land for agricultural farm selection has not been allowed. Under the present law, the remainder of the land (after provision for roads, reserves, &c.) is opened for selection as perpetual lease selections at an annual rent fixed by the Minister, but at a rate per cent. of the capital value not more than the rate of interest paid by the Government on the purchase money of the estate of which the land forms part. The deposit of 10 per cent. is abolished, but so also is the provision that no rent need be paid during the second, third, and fourth years of the term. The rent may be reappraised for each period of fifteen years.

(c) *Areas Acquired and Selected.* The following table gives particulars of the operations under the above Acts at the end of the year 1901 and of each year from 1914 to 1918 :—

QUEENSLAND.—CLOSER SETTLEMENT, 1901 AND 1914 TO 1918.

Year.				Number of Estates Acquired.	Total Area Acquired to Date.	Total Amount of Purchase Money.	Total Area Selected to Date. (a)
					Acres.	£	Acres.
1901	..	..	..	15	132,760	335,056	124,710
1914	..	..	..	29	664,363	1,713,165	559,597
1915	..	..	..	29	664,363	1,713,165	582,788
1916	..	..	..	30	785,311	1,955,060	589,047
1917	..	..	..	30	785,311	1,955,060	587,724
1918	..	..	..	30	785,311	1,955,060	595,719

(a) In addition, at the end of the year 1918 there were 12,278 acres sold at auction and 3,411 acres retained by the Government for experimental farms and for other sales.

The total area opened for selection up to the end of the year 1918 was 641,363 acres, of which 595,719 acres had been selected by 2,220 selectors. There remained 45,644 acres unselected or reserved. The total amount of rent paid up to the same date was £1,309,454, the amount in arrear being £29,001. At the end of the year 1918 there were 2,220 selectors holding 2,338 agricultural farms, 252 unconditional selections, 73 perpetual lease selections, and five prickly pear selections. In addition, land and improvements to the value of £86,641 had been sold at auction.

(ii) *Group Settlement.* The Special Agricultural Selections Acts 1901 to 1905 were partly repealed by the Amending Act of 1909, which was in its turn repealed by the Land Act 1910. Under the last Act, land may be set apart for members of bodies of selectors who desire to settle in the same locality. The terms and conditions are similar to those in force for single selectors. Every group selection is subject to the condition of personal residence during the first five years of the term.

The Special Agricultural Selections Act 1905 provides that financial aid may be granted to all or any of the members of a body of selectors of agricultural homesteads. Advances may also be made to each selector for a value not exceeding £80 for the purpose of buying tools, rations, stock and poultry.

The portions opened for *group settlement* in 1918 numbered 341, and comprised a gross area of 110,620 acres. Up to the end of that year 295 portions, comprising 95,702 acres, valued at £113,498, had been applied for by members of the bodies of settlers for whom they were opened. This part of the Land Act is operated almost exclusively in the settlement of returned soldiers.

6. *South Australia.*—Under the provisions of the Crown Lands Acts the Commissioner may repurchase land for the purposes of closer settlement at a cost not exceeding £600,000 in any two years.

Reference is made on the next page to the provisions of the Irrigation and Reclaimed Lands Act 1908, as consolidated by the Act of 1914, regarding the settlement of reclaimed lands.

(i) *Disposal of Land.* The Crown Lands Act Further Amendment Acts enlarge the value of the blocks into which estates may be subdivided for closer settlement purposes from £2,000 to £4,000 unimproved value, or if the land is suitable for pastoral purposes only, to £5,000. The purchase-money, with interest thereon at 4 per cent. per annum, is payable in 128 half-yearly instalments.

For the first five years, improvements to the value of £3 for every £100 of the purchase money must be yearly effected.

(ii) *Areas Acquired and Selected.* The following table shews the area of land acquired by the Government in South Australia for the purposes of closer settlement, and the manner in which the same has been disposed of under the provisions of the Crown Lands Acts for the years 1902 and 1914 to 1918 :—

**SOUTH AUSTRALIA.—CLOSER SETTLEMENT, 1902 AND 1914 TO 1918.**

Year.	Area of Lands Repurchased to 31st Dec.	Agreements with Covenants to Purchase.	Total Area Leased as Homestead Blocks.		Perpetual Leases.	Miscellaneous Leases.	Sold.	Remainder Unoccupied, (including Roads).
			Right of Purchase.	Perpetual Lease.				
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1902	156,431		2,717	3,073	90,128	309	403	59,851
1914	657,629	476,332	796	1,584	51,863	164	63,964	62,926
1915	666,299	487,853	753	1,579	51,588	161	65,484	58,878
1916	729,963	487,355	733	1,513	52,138	164	66,607	121,453
1917	743,191	501,439	703	1,531	71,896	144	112,642	54,836
1918	743,191	497,032	703	1,531	54,826	144	124,728	64,227

During the financial year 1918-19, one property of 5,497 acres was repurchased. The total area repurchased at 30th June, 1919, was 748,689 acres, the purchase-money being £2,469,478. Of that area 695,882 acres had been allotted to 2,757 persons, the average area to each being 252 acres.

(iii) *Irrigation Areas.* Under the Irrigation and Reclaimed Lands Act 1914, special provisions are made for granting perpetual leases of reclaimed lands. The maximum area of irrigable or reclaimed land one person may hold in any irrigation area is 50 acres, but in the case of partnerships 50 acres may be held by each partner up to a maximum of 150 acres. Land above the irrigating channels is also offered to lessees of irrigable blocks for dry farming, grazing, &c. Each block is offered under perpetual lease, at a rent not less than a sum equivalent to 4 per cent. on the unimproved value of the land, plus the cost of reclaiming. In the case of swamp lands in the reclaimed lands, a drainage rate of from 5s. to 7s. 6d. per acre per annum is payable. On the irrigable land the water rate has been fixed at 30s. per acre per annum for the first four years, after which an amount will be charged sufficient to cover actual cost of supplying water, and the interest on pumping plants, channels, &c. A sliding scale covers both the rent and water rates for the first four years.

Under Part V. of the Act a fund has been constituted called the Lessees of Reclaimed Lands Loan Fund, consisting of money provided by Parliament to be expended by the Department in assisting settlers on the irrigation areas by fencing, clearing and grading their blocks, and constructing irrigation channels and drains and concrete tanks thereon. Such improvements will be undertaken up to a value not exceeding £15 per acre of the irrigable area in each lessee's block, but before the work can be commenced a deposit must be paid equal to 15 per cent. of the Department's estimated value of such improvements.

The total cost of the work, less amount of deposit paid, will be treated as a loan to the lessee, and will be repayable in twenty equal annual instalments, after the expiration of five years, or at any shorter period if so desired by the lessee, current rate of interest being charged.

Any lessee will be permitted to accept the contract for carrying out his own improvements, according to the specifications and estimate of the Department, up to the maximum amount per acre, as mentioned above.

(iv) *Village Settlement.* Out of the reserved lands, the Commissioner is directed to set apart for the purpose of village settlement such land as he shall consider fit (a) for horticultural purposes, to be termed "horticultural land"; (b) for agricultural purposes, to be termed "commonage land"; and (c) land whereon any irrigation works are situated. Land so set apart is to be divided as follows:—Horticultural lands into blocks of as nearly as practicable equal unimproved value, and of about ten acres in extent; and the commonage lands into one or more blocks of such area as the Commissioner may determine, and the lands so set apart in each case form the district of the association. No person may hold more than two blocks. Commonage lands may only be leased to the association on perpetual lease, and all unleased horticultural blocks are under the control of the association. Every member of each association must provide or contribute towards the maintenance and regulation of irrigation works, and the care and cultivation of the commonage lands.

As the Waikerie and Kingston districts were proclaimed irrigation areas under the *Irrigation and Reclaimed Lands Acts 1908 and 1909*, this would leave only the Lyrup Village Settlement, which is in a better position, both financially and as regards population, than the others.

(v) *Homestead Blocks.* Aboriginal reservations, except those at Point McLeay or Point Pearce, and other suitable lands may be offered as homestead blocks on perpetual lease or agreement to purchase. Each block must not exceed £100 in value, and residence by a member of the family for at least nine months of every year is compulsory.

There is now hardly any demand for homestead blocks, persons generally preferring small blocks of repurchased or Crown lands on ordinary conditions. The system appears to be of value only in centres of population where work can be obtained, and within a reasonable distance of a school.

(a) *Advances to Blockholders.* Advances up to £50 may be made by the Commissioner to any homestead blockholder who has complied with the conditions of his lease or agreement, to assist in erecting permanent buildings on the blocks, or other improvements. Advances must be repaid, with interest at 4 per cent. per annum, by twenty equal instalments, commencing twelve months from the date of advance. The Commissioner may, in case of hardship, extend the time of repayment, such deferred payments bearing interest at 5 per cent. per annum. The total amount advanced up to the 30th June, 1919, was £41,376, of which £39,664 had been repaid.

(b) *Particulars of Homestead Blocks.* The total number of leases and agreements of which purchase had been completed to the 31st December, 1918, was 2,381, comprising 35,781 acres, at a purchase price of £87,296, or an average of £2 8s. 10d. per acre, the average of each holding of which purchase was completed being 15 acres.

7. *Western Australia.*—Under the *Agricultural Lands Purchase Act 1909*, which repealed and consolidated the *Agricultural Lands Purchase Acts 1896 to 1904*, sums not exceeding in the aggregate £400,000 may be expended on the repurchase of Crown lands near the railways, suitable for immediate cultivation.

(i) *Acquisition of Land by the Government.* For the purpose of carrying out the provisions of the Acts, a Land Purchase Board has been constituted. Advised by the report of the Board, the Minister, with the approval of the Governor, may make a contract for the acquisition of the land by surrender at the price fixed by the Board, or at any lesser price.

(ii) *Sale of Repurchased Land.* After reservation of part of the repurchased land for public purposes, the remainder is thrown open for selection. The maximum quantity held by one person must not exceed 1,000 acres, or in special cases 2,000 acres.

(iii) *Conditions of Sale to Selectors.* The maximum selling price of any repurchased land is equal to 105 per cent. of the actual cost of the land plus the cost of any improvements made upon it. A lease for twenty to thirty years is issued at a rent the half-yearly instalments of which are to be at the rate of £3 17s. 9d. for each £100 of the selling price. Improvements must be made to the value of one-fifth of the purchase-money every two years of the first ten years of the lease. One-half of the land must be fenced within the first five years and the whole within ten years. Loans may be granted to selectors under the provisions of the *Agricultural Bank Acts*.



(iv) *Areas Acquired and Selected.* The transactions conducted under the provisions of the Agricultural Lands Purchase Acts are shewn for 1901 and for each year from 1914 to 1919 in the subjoined table:—

**WESTERN AUSTRALIA.—CLOSER SETTLEMENT, 1901 AND 1914 TO 1919.**

(a) Year.	Total Area Acquired.	Total Purchase- money.	Roads, Reserves, &c.	Total Area made available for Selection.	Area Selected during the Year.	Total Area occupied to Date.	Balance of Area available for Selection.	Total Revenue received to Date.
	Acres.	£	Acres.	Acres.	Acres.	Acres.	Acres.	£
1901 ..	46,624	52,764	1,459	45,165	4,295	37,235	7,930	14,451
1913-14	446,804	421,333	128,605	315,133	2,451	268,260	46,873	210,675
1914-15	446,804	421,373	15,825	430,979	4,122	272,190	158,789	239,409
1915-16	446,804	421,373	15,825	430,979	342	271,242	159,737	268,232
1916-17	446,804	421,373	15,825	430,979	77	269,648	161,331	295,740
1917-18	446,804	421,373	15,825	430,979	2,813	267,008	163,971	319,759
1918-19	446,804	421,373	15,825	430,979	38,890	304,937	126,002	343,767

(a) The figures for 1901 are up to 31st December. For subsequent years they are given as up to 30th June.

On the 30th June, 1919, the total expenditure, exclusive of purchase-money but including interest, was £192,901, which left a balance of £150,866. At the same date the amount invested as sinking fund was £143,028.

(v) *Workingmen's Blocks.* Any person not already holding land within the State is entitled to obtain a lease of lands which have been surveyed and thrown open for selection as workingmen's blocks. The maximum area that may be selected by one person is, if within any town or goldfield, half an acre, or five acres elsewhere. The price is not less than twenty shillings per acre, payable in ten years by half-yearly instalments. Residence and improvement conditions must be fulfilled. At the expiration of the lease, or at any time after five years from the date of the commencement of the lease, upon compliance with all conditions, and upon payment of the full purchase-money and fee, a Crown grant will be issued. No person who has once held a workingman's block is allowed to select another, except under very special circumstances.

The following table shews the number and area of accepted applications for workingmen's blocks during each year, as well as the total number and area in existence at the end of the year 1901 and for each year from 1914 to 1919:—

**WESTERN AUSTRALIA.—PARTICULARS OF WORKINGMEN'S BLOCKS,  
1901 AND 1914 TO 1919.**

Year	1901.	1914.(a)	1915.(a)	1916.(a)	1917.(a)	1918.(a)	1919.(a)
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**NUMBER AND AREA OF ACCEPTED APPLICATIONS DURING YEAR.**

Number ..	2	1	Nil	1	Nil	Nil	Nil
Area in Acres	6	1	Nil	1	Nil	Nil	Nil

**NUMBER AND AREA OF BLOCKS OCCUPIED AT END OF YEAR.**

Number ..	7	168	189(b)	176	134	108	83
Area in Acres	31	590	584	565	510	482	451

(a) For financial year ended 30th June. (b) Increase due to cancelled leases being reinstated.

During the years 1907 to 1911 residential blocks on the goldfields were made available as workingmen's blocks, instead of under residential lease.

8. **Tasmania.**—The principles of closer settlement were not introduced into Tasmania until the Closer Settlement Act of 1906 was passed. Under this Act, which was amended in 1908 and 1911, and consolidated in 1913, power is given to the Minister for Lands, on the recommendation of the Closer Settlement Board, to purchase compulsorily or by agreement private land in any part of Tasmania for the purpose of closer settlement, and also to deal with and dispose of any unoccupied Crown land for the same purpose.

(i) *Disposal of Land.* Lands so brought under the Act are subdivided into farm allotments of a suitable size—not exceeding £4,000 in value—and are disposed of by way of lease for 99 years. The rental is determined by the Board at a rate not exceeding 5 per cent. per annum on the capital value of the land. Any lessee who has fulfilled the conditions under the Act may, after the expiration of ten years of the term of the lease, purchase the land leased to him. The Minister has power to dispose of the fee simple of such land in any estate which is considered unsuitable for closer settlement.

A lessee must improve his holding to a value equal to 2½ per cent. on the capital value of the land in each of the first ten years of the term of his lease, and he must, within two years of the date of the lease, personally reside on his allotment during at least eight months of each of the following nine years. Provision is made for reserving a proportion of the allotments thrown open, and leasing the same, under special terms and conditions, to *bona fide* immigrants.

(ii) *Advances to Settlers.* The total advance by the Government in aid of the cost of effecting improvements to any one lessee must not exceed pound for pound of the sum expended by him in building and other improvements. Such advances must be repaid, together with interest at 5 per cent., in equal half-yearly instalments within a period not exceeding 21 years.

(iii) *Special Sales.* The fee-simple of land acquired may be disposed of by sale on the recommendation of the Board as sites for churches, public halls, dairy factories, fruit-preserving factories, mills, or creameries. The area sold may not exceed one acre in the case of a church or public hall, or five acres in other cases.

(iv) *Areas Acquired and Selected.* Up to the 30th June, 1919, twenty-four areas had been opened up for closer settlement. Particulars for ten years are given in the following statement:—

**TASMANIA.—CLOSER SETTLEMENT, 1910 TO 1919.**

Year.	Number of Farms made Available.	Number of Farms Allotted.	Area of Farms Allotted.	Rental of Farms Allotted.	Total Area Purchased.
			Acres.	£	Acres.
1910 .. ..	9	15	1,872	539	1,362
1911 .. ..	37	36	4,965	168	5,143
1912 .. ..	11	7	3,912	563	6,147
1913 .. ..	18	21	5,652	1,134	3,745
1914 .. ..	24	17	8,975	1,959	10,756
1915 .. ..	36	53	15,153	4,393	12,930
1916 .. ..	5	11	1,729	476	157
1917 .. ..	5	15	3,900	993	1,939
1918 .. ..	..	8	2,366	205	Nil
1919 .. ..	..	..	..	Nil	Nil

The total purchase money paid by the Government up to the 30th June, 1919, was £274,563.

9. **Northern Territory.**—In the Northern Territory, a Board is constituted to deal with assistance to settlers. During 1918–19, the number of applications received and dealt with by the Board was 18. The total amount of loans granted during the year was £422. A sum of £864 has been repaid on account of loans granted to date, and interest on the same. On 30th July, 1918, the total amount outstanding was £7,214.

### § 9. Occupation of Crown Lands under Leases and Licenses Issued by Mines Departments.

1. **Introduction.**—Leases and licenses for the occupation of Crown lands for mining and other purposes are issued by the Mines Departments in all the States. Such leases and licenses may be issued with respect to all Crown lands, whether otherwise unoccupied or whether occupied also under leases and licenses issued by the Lands Departments. Certain Crown lands, such as reserves, &c., are, however, subject to special conditions.

(i) **Mining on Private Lands.** Certain of the Crown lands of the several States have been alienated from time to time, subject to various reservations in respect of gold and other minerals which might afterwards be found therein. Other lands have been alienated without such reservation, but as the mineral gold does not pass from the Crown unless by express conveyance, it has remained the property of the State on all alienated lands. All lands alienated or in process of alienation are open to mining for gold; but to mining for other minerals, those lands only are open, in respect of which the rights are reserved in the grants. There are, however, generally certain reservations, such as those with reference to town or village lands and lands which have been built on or are used for special purposes. The working of minerals on private lands is regulated in the several States either by special Acts or by special provisions of the Acts relating to mining.

(ii) **Leases and Licenses Issued and Total Areas of Crown Lands Occupied.** The following tables shew the total areas of Crown lands for which leases and licenses for mining purposes were issued in each State during 1901, and for each year from 1914 to 1918 inclusive, and also the total areas of Crown lands occupied for mining purposes at the end of each year during the same period :—

#### CROWN LANDS, LEASES AND LICENSES FOR MINING PURPOSES, 1901 AND 1914 TO 1918.

Particulars.	N.S.W.	Victoria.(a)	Q'land.(b)	S. Aust.(c)	W.Aust.(c)	Tas.(c)	C'wealth.
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##### AREAS FOR WHICH LEASES AND LICENSES ISSUED.

		Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	
1901	..	..	50,349	..	55,698	93,985	37,593	18,125	(d)255,750
1914	..	..	31,573	12,774	126,160	766,866	29,127	15,123	981,623
1915	..	..	14,219	10,103	56,513	965,596	37,989	13,919	1,098,344
1916	..	..	40,616	7,173	31,106	557,911	23,448	9,306	669,560
1917	..	..	72,334	7,618	15,842	268,749	28,160	7,515	400,218
1918	..	..	13,329	6,451	18,888	132,623	26,070	5,773	203,134

##### TOTAL AREA OCCUPIED AT END OF YEAR.

1901	..	..	134,209	..	124,182	14,140	66,682	50,362	(d)389,575
1914	..	..	230,493	119,404	283,704	805,889	128,609	49,963	1,618,062
1915	..	..	224,621	108,773	242,196	1,012,427	145,920	53,060	1,786,997
1916	..	..	224,593	97,532	218,312	670,890	138,157	53,462	1,402,946
1917	..	..	231,981	88,599	221,647	274,003	113,656	54,391	984,277
1918	..	..	225,134	69,165	259,395	171,170	114,377	46,600	885,841

(a) Including private lands, leases, and water right licenses only. (b) Exclusive of lands held under miners' rights only. (c) Exclusive of miners' rights. (d) Excluding Victoria.

2. **New South Wales.**—Under the provisions of the Mining Act 1906 and the regulations made thereunder, Crown lands may be occupied for mining or other purposes by virtue of (i) miners' rights; (ii) business licenses; (iii) authorities to prospect; or (iv) leases.

A description of the conditions under which these licenses and leases are granted may be found in previous issues of the Year Book. (See Year Book No. 6, p. 307.)

(i) *Particulars of Leases and Licenses Issued, 1918.* The following table gives particulars of leases and licenses of Crown lands issued by the Mines Department during the year 1918 :—

NEW SOUTH WALES.—LEASES AND LICENSES ISSUED BY MINES DEPARTMENT DURING YEAR 1918.

Particulars.	Act under which Issued.	Purpose for which Issued.	Area.
<i>Leases—</i>	Mining Act 1906 .. ..	To mine for—	Acres.
" "	" " .. ..	Gold .. ..	823
" "	" " .. ..	Minerals other than coal .. ..	5,297
" "	" " .. ..	Coal .. ..	4,379
" "	" " .. ..	Leases (mining purposes) .. ..	150
Mining Act 1906 (Dredging) .. ..	" " .. ..	Gold .. ..	1,595
" " .. ..	" " .. ..	Minerals other than gold .. ..	
<i>Other forms of occupancy—</i>	Mining Act 1906 .. ..	Authorities to prospect .. ..	1,076
Total .. ..			13,329

(ii) *Leases and Licenses Issued and Areas Occupied.* The following table gives particulars of the areas of Crown lands for which leases and licenses were issued by the Mines Department during each year, and of the total areas of Crown lands occupied under such leases and licenses at the end of the year 1901 and from 1914 to 1918 inclusive :—

NEW SOUTH WALES.—LEASES AND LICENSES ISSUED BY MINES DEPARTMENT, 1901 AND 1914 TO 1918.

Purposes for which Issued or Occupied.	1901.	1914.	1915.	1916.	1917.	1918.
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LEASES AND LICENSES ISSUED.

	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
Gold mining .. ..	2,272	4,047	3,657	2,558	1,310	2,418
Mining for other minerals .. ..	47,990	26,590	9,741	13,509	12,839	9,676
Authorities to prospect .. ..	..	134	439	24,036	57,978	1,076
Other purposes .. ..	87	802	382	513	207	159
Total .. ..	50,349	31,573	14,219	40,616	72,334	13,329

TOTAL AREAS OCCUPIED.

	6,942	12,832	11,098	10,767	9,422	9,356
Gold mining .. ..	6,942	12,832	11,098	10,767	9,422	9,356
Mining for other minerals .. ..	126,885	212,864	207,812	207,595	216,399	209,577
Authorities to prospect .. ..	..	10	15	218	40	10
Other purposes .. ..	382	4,787	5,696	6,013	6,120	6,191
Total .. ..	134,209	230,493	224,621	224,593	231,981	225,134

3. *Victoria.*—The occupation of Crown lands for mining and auxiliary purposes in this State is regulated by the Mines Act 1915. The Department of Mines is authorised to issue mining leases (gold-mining, mineral, and dredging), also licenses (searching, tailings, and water-right), while miners' rights and business licenses are issued by the Treasury Department, and claims and residence areas are registered by local mining registrars. A description of the conditions governing the issue of these leases and licenses will be found in previous editions of the Year Book. (See Year Book No. 6, p. 308.)

Licenses of auriferous lands not for mining purposes may be issued by the Lands Department.

*Leases and Licenses Issued and Areas Occupied for Mining.* Particulars of leases and licenses for mining purposes of Crown lands alone are not available, the official returns including also private lands. During the year 1918 the number of mining leases, licenses, &c., issued was 181, covering an area of 5,563 acres; the rent, fees, &c., received thereon amounted to £599. No particulars are available as to the total area of either Crown or private land occupied for mining purposes.

4. *Queensland.*—The occupation of Crown lands for mining purposes in this State is regulated by the Mining Acts 1898 to 1920, the Mining for Coal and Mineral Oil Act, The Petroleum Act, and the Miners' Homestead Perpetual Leases Act. Under these Acts the Department of Mines is authorised to issue (i) miners' rights; (ii) mining leases; (iii) mining leases and licenses for coal and mineral oil; and (iv) miners' homestead perpetual leases.

The conditions which govern the issue of miners' rights and mining leases are described in previous issues of the Year Book. (See Year Book No. 6, p. 309). The Act under which Miners' Homestead Leases were granted has been amended, and the title is now "Miners' Homestead Perpetual Leases." Most of the old provisions remain, but rent is now perpetual, and is based on the value of the land:—If sold by auction 3 per cent. of the purchase price, otherwise 1½ per cent. of the capital value of the land. Rental is also subject to re-appraisal every ten years.

Mineral leases for coal may be granted for a term of 21 years at an annual rent of one shilling an acre, together with a royalty, according to the distance the lease is from a seaport or other place of delivery, of fourpence to sixpence per ton of coal raised during the first five years of the lease, and of eightpence to one shilling per ton during the remainder of the term. A lease for mineral oil with a maximum area of 320 acres may be granted for a term of 21 years at an annual rental of one shilling per acre, with a royalty of 5 per cent. of the value of all crude oil produced. Licenses to occupy not more than 2,560 acres may be granted to any person desiring to prospect Crown lands for coal and mineral oil upon payment of one penny for every acre comprised in the application.

Licenses to prospect for petroleum may be granted for areas up to 2,000 acres at a rental of one penny per acre, and for a period of five years, and the licensee may during the currency of his license take portion of the area (60 acres) as a mineral lease at a peppercorn rental and a royalty of 12½ per cent. of the gross value of all petroleum obtained from such lease, and he is also entitled while he is occupying and working his lease to 2½ per cent. of the value of all petroleum which may be obtained from the balance of the land comprised in his original license.

Mineral leases up to 30 acres may be granted to mine for petroleum at a peppercorn rental and royalty of 12½ per cent. of gross value of oil obtained.

The "Mining on Private Land Act 1909" authorises the granting of leases, &c., on and under private land, under conditions as to compensation, &c.

(i) *Particulars of Leases and Licenses Issued, 1918.* The subjoined table gives particulars of the leases and licenses of Crown lands issued for mining purposes during the year 1918:—

**QUEENSLAND.—LEASES AND LICENSES ISSUED BY MINES DEPARTMENT  
DURING YEAR 1918.**

Lease or License.	Mining Leases.				Miners' Homestead Leases.	Coal Prospecting Licenses.	Miscellaneous Holdings.
Purpose for which issued.	To mine for gold.	To mine for minerals other than gold.	Tramways.	Buildings and machinery.	Residence, business, &c.	To prospect for coal.	Mining, residence, &c.
Area in acres	254	1,710	..	..	13,920	3,004	(c)10,000

(a) Approximate.

(ii) *Particulars of Areas Occupied.* The following table shows the areas for which leases and licenses of Crown lands were issued during each year, and the total area occupied at the end of the year 1901 and from 1914 to 1918 inclusive.

QUEENSLAND.—LEASES AND LICENSES ISSUED BY MINES DEPARTMENT,  
1901 AND 1914 TO 1918.

Particulars.	1901.	1914.	1915.	1916.	1917.	1918.
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LEASES AND LICENSES ISSUED DURING YEAR.(a)

	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
Gold mining .. ..	3,581	356	581	102	479	254
Mining for other minerals .. ..	7,142	10,895	9,391	2,087	1,372	1,710
Other purposes .. ..	44,975	114,909	46,546	28,917	13,991	16,924
Total .. ..	55,698	126,160	56,518	31,106	15,842	18,888

TOTAL AREA OCCUPIED AT END OF YEAR.(a)

Gold mining .. ..	11,296	5,479	4,736	3,508	2,882	2,726
Mining for other minerals .. ..	23,113	39,205	43,389	39,799	39,754	42,193
Other purposes .. ..	89,773	239,020	194,071	175,005	179,011	214,476
Total .. ..	124,182	283,704	242,196	218,312	221,647	259,395

(a) Exclusive of lands held under miners' rights only.

5. **South Australia.**—In this State leases and licenses for mining purposes are issued by the Department of Mines under the authority of the Mining Act 1893, and amending Acts. Under these Acts mining and prospecting are permitted in virtue of (i) miners' rights; (ii) mining leases; (iii) coal or oil leases; and (iv) miscellaneous leases, and in addition occupation of Crown lands is permitted by virtue of (v) business claims, and (vi) occupation licenses.

The conditions which govern the issue of these various leases and licenses have been described in previous issues of the Year Book. (See Year Book No. 6, p. 311.)

(i) *Particulars of Leases and Licenses.* The following table gives particulars of leases and licenses of Crown lands issued by the Mines Department during the year 1918 :—

SOUTH AUSTRALIA.—LEASES AND LICENSES ISSUED BY THE MINES  
DEPARTMENT DURING YEAR 1918.

Particulars.	Act under which Issued.	Purpose for which Issued.	Area.
<i>Leases</i> .. ..	Mining Act 1893 .. ..	To mine for—	Acres.
<i>Mineral claims</i> .. ..		Gold and other metals and minerals	6,658
<i>Licenses</i> .. ..	Mining Act Amendment Act 1900 .. ..	To search for "precious stones, mineral phosphates, oil, rare metals, minerals, and earths, the mining for which has not proved payable in any portion of the State	15,878
<i>Occupation licenses</i> .. ..	Mining Act 1893 .. ..	Occupation by miners .. ..	110,080
Total .. ..	.. ..	.. ..	7
			132,623

(ii) *Leases and Licenses Issued and Areas Occupied.* The following table gives particulars of the areas of Crown lands for which leases and licenses were issued by the Mines Department during each year, and of the total area of Crown lands occupied under such leases and licenses at the end of the year 1901 and from 1914 to 1918 inclusive :—

**SOUTH AUSTRALIA.—LEASES AND LICENSES ISSUED BY MINES DEPARTMENT,  
1901 AND 1914 TO 1918.**

Particulars.	1901.	1914.	1915.	1916.	1917.	1918.
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**LEASES AND LICENSES ISSUED. (a)**

	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
Gold mining .. ..	1,377	625	356	83	215	54
Mining for other minerals ..	92,587	766,213	965,226	557,819	268,527	132,562
Other purposes .. ..	21	28	14	9	7	7
Total .. ..	93,985	766,866	965,596	557,911	268,749	132,623

**TOTAL AREAS OCCUPIED. (a)**

	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
Gold mining .. ..	14,140	1,581	1,840	1,505	1,509	1,240
Mining for other minerals ..	804,205	1,010,474	669,281	272,385	169,827	169,827
Other purposes .. ..	103	113	104	109	103	103
Total .. ..	14,140	805,889	1,012,427	670,890	274,003	171,170

(a) Exclusive of miners' rights.

The following table shews the total area occupied (exclusive of miners' rights) at the end of the year 1918, classified according to the nature of the holding :—

**SOUTH AUSTRALIA.—TOTAL AREA UNDER MINING ACTS, 1918.**

Nature of Holding.	Number.	Area.	Nature of Holding.	Number.	Area.
		Acres.			Acres.
Mineral leases ..	333	15,092	Search licenses ..	59	114,560
Gold leases ..	66	1,240	Coal and oil claims ..	9	5,760
Gold dredging leases ..	71	17,927	Gold claims ..	3	10
Miscellaneous leases ..	443	15,118	Coal and oil leases ..	4	1,360
Mineral claims ..	206	103	Total ..	1,194	171,170
Occupation licenses ..					

6. *Western Australia.*—The issue of leases and licenses by the Mines Department is regulated by the Mining Act 1904. Under this Act Crown lands may be occupied by virtue of (i) miners' rights; (ii) mining leases; and (iii) miners' homestead leases.

The conditions governing the issue of these leases and licenses are described in previous issues of the Year Book. (See Year Book No. 6, p. 312.)

(i) *Particulars of Leases and Licenses Issued, 1919.* The following table gives particulars of mining leases and licenses of Crown lands issued during 1919 :—

**WESTERN AUSTRALIA.—LEASES AND LICENSES ISSUED BY MINES DEPARTMENT, 1919. (a)**

Particulars.	Gold Mining.	Minerals other than Gold.	Miners' Homesteads.	Miscellaneous.	Total.
	Acres.	Acres.	Acres.	Acres.	Acres.
Leases ..	4,207	3,656	396	6	8,265
Licenses ..	12,583	49,005	..	97	61,685

(a) Exclusive of miners' rights.

(ii) *Particulars of Areas Occupied.* The following table shows the areas for which leases and licenses of Crown lands were issued during each year, and the total area occupied at the end of the year 1901 and from 1914 to 1919 inclusive :—

**WESTERN AUSTRALIA.—LEASES AND LICENSES ISSUED BY MINES DEPARTMENT, 1901 AND 1914 TO 1919.**

Particulars.	1901.	1914.	1915.	1916.	1917.	1918.	1919.
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**LEASES AND LICENSES ISSUED DURING YEAR. (a)**

	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
Gold mining ..	17,454	18,070	26,162	14,954	12,489	12,362	16,790
Mining for other minerals ..	19,281	9,434	9,389	6,647	14,819	12,981	52,661
Other purposes ..	858	1,623	2,438	1,847	852	727	499
Total ..	37,593	29,127	37,989	23,448	28,160	26,070	69,950

**TOTAL AREA OCCUPIED AT END OF YEAR. (a)**

	40,525	26,941	30,532	24,391	22,569	19,184	22,487
Gold mining ..	14,091	57,495	70,146	69,405	48,778	49,952	84,381
Mining for other minerals ..	12,066	44,173	45,242	44,361	42,309	45,241	38,439
Other purposes ..	66,682	128,609	145,920	138,157	113,656	114,377	145,307
Total ..							

(a) Exclusive of miners' rights.

7. *Tasmania.*—Under the provisions of the Mining Act 1917, Crown lands in this State may be occupied for mining and auxiliary purposes by virtue of (i) prospectors' licenses; (ii) miners' rights; (iii) mining leases; and (iv) miscellaneous licenses. Business and residence licenses within mining areas may be issued by the Lands Department.

A description of the conditions under which these leases and licenses are issued may be found in previous editions of the Year Book. (See Year Book No. 6, p. 314.)



(i) *Particulars of Leases and Licenses Issued, 1919.* The following table shews particulars of leases and licenses of Crown lands, exclusive of prospectors' licenses and miners' rights, issued by the Mines Department during the year 1919 :—

**TASMANIA.—LEASES AND LICENSES ISSUED BY MINES DEPARTMENT  
DURING 1919. (a)**

Mineral.	1919.		Mineral.	1919.	
	No.	Area.		No.	Area.
		Acres.			Acres.
Asbestos .. ..	..	..	Scheelite .. ..	..	..
Barytes .. ..	1	80	Silica .. ..	..	..
Clay .. ..	1	5	Silver .. ..	3	120
Coal .. ..	10	2,048	Slate .. ..	..	..
Copper .. ..	4	200	Tin .. ..	150	2,171
Gold .. ..	15	205	Wolfram .. ..	1	20
Iron .. ..	4	211	Dredging claims ..	14	231
Limestone .. ..	4	586	Machinery sites ..	5	28
Manganese .. ..	..	..	Mining easements ..	9	33
Minerals, other ..	33	1,498	Water rights .. ..	91	39
Ochre .. ..	1	20			
Osmiridium .. ..	2	50			
Pyrites .. ..	4	140	Total .. ..	352	7,685

(a) Exclusive of prospectors' licenses and miners' rights, which are issued by officers in different districts throughout the State, and as to which particulars are not available.

(ii) *Leases and Licenses Issued and Areas Occupied.* The following table gives particulars of the areas of Crown lands for which leases and licenses (exclusive of prospectors' licenses and miners' rights) were issued during each year, and of the total area of Crown lands occupied under such leases and licenses at the end of the year 1901 and from 1914 to 1919 inclusive :—

**TASMANIA.—LEASES AND LICENSES ISSUED BY MINES DEPARTMENT,  
1901 AND 1914 TO 1919. (a)**

Particulars.	1901.	1914.	1915.	1916.	1917.	1918.	1919.
<b>LEASES AND LICENSES ISSUED. (a)</b>							
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
Gold mining .. ..	1,067	1,354	520	684	784	294	205
Mining for other minerals ..	17,058	13,588	13,211	8,203	6,630	5,459	7,380
Other purposes .. ..	..	181	188	419	101	20	100
Total .. ..	18,125	15,123	13,919	9,306	7,515	5,773	7,685
<b>TOTAL AREAS OCCUPIED. (a)</b>							
Gold mining .. ..	3,394	2,130	2,026	1,692	1,761	657	537
Mining for other minerals ..	46,968	44,593	48,330	48,637	49,742	43,063	43,050
Other purposes .. ..	..	3,240	2,704	3,133	2,888	2,880	2,904
Total .. ..	50,362	49,963	53,060	53,462	54,391	46,600	46,491

(a) See note to preceding table.

8. *Northern Territory.*—The granting of leases and licenses for mining purposes in the Northern Territory is under the control of the Administrator. The area of land held under Mining Regulations in the Northern Territory has been previously referred to in § 7 of this chapter (page 284).

## § 10. Resumption by Crown of Alienated Lands.

1. **General.**—Under various Acts, alienated lands may be compulsorily resumed by the Crown in the several States for certain purposes, generally connected with works of a public nature. Resumptions for closer settlement purposes have already been referred to (see § 8 above). In most of the States there are Lands Clauses or similar Acts providing the machinery, and indicating the procedure to be adopted in assessing the compensation to be paid by the Crown to private owners in cases where the parties have failed to agree as to the amount to be paid. The provisions of these Acts are generally incorporated in the special Acts specifying the purposes for which alienated lands may be resumed. Lands leased for pastoral purposes may generally be resumed by the Crown on short notice. The lessee is ordinarily entitled to compensation for land resumed, for loss or depreciation in value of the lease caused by such resumption, and for improvements.

(a) *New South Wales.* Alienated lands may be recovered by the Crown for authorized works and certain public purposes under the provisions of the Public Works Act 1912, and in other cases may be acquired by the Crown by purchase, gift, or surrender under Executive authority. Alienated lands required for public roads may be resumed under the Public Roads Act 1902, and if containing gold may be resumed for mining under section 72 of the Mining Act 1906. Lands dedicated or granted by the Crown for public purposes may be resumed under Section 25 of the Crown Lands Consolidation Act 1913, and section 1 of the Public Trusts Act 1897. Surrender and exchange of lands alienated or in process of alienation may be carried out under section 195 of the Crown Lands Consolidation Act 1913.

(b) *Victoria.* In Victoria, lands may be resumed in accordance with the provisions of the Lands Compensation Act 1915, the Public Works Act 1915, the Railways Act 1915, the Land Act 1915, the Local Government Act 1915, the Water Act 1915, and the Forests Act 1915.

(c) *Queensland.* In this State, alienated lands may be resumed under the provisions of the Public Works Land Resumption Acts 1906 to 1917 for any of the purposes specified in section 4 of that Act.

(d) *South Australia.* In this State the principal Acts under which land is repurchased for public works are the Railway Commissioners Act 1887, the Water Conservation Acts 1886, 1889, and 1900, the Waterworks Act 1882, and the Sewers Act 1878.

(e) *Western Australia.* In Western Australia private lands may be resumed under the provisions of the Land Act 1898, the Roads Act 1911, and the Public Works Act 1902.

(f) *Tasmania.* The procedure for resuming land when required for road purposes is as follows :—

When provision is made by Parliament for a Public Works vote for any road, or when an amount is available from other sources, as under the Crown Lands Act (under which a proportion of the amount paid as purchase money is set aside for road purposes), application is made to the owner of the property through which the road is to pass. In most cases, land is either given free, or a price is agreed on between the owner and the officers of the Department. The purchase-money, with cost of necessary survey, is charged against the provision as referred to above, and the land is surveyed and proclaimed under the provisions of the Lands Vesting Act 1894. In case of it being impossible to settle the matter by arrangement with the owner, the land can be acquired by arbitration under the Lands Clauses Act, which is incorporated with the Public Works and Crown Lands

Acts, but since the passing of the Lands Resumption Act 1910 it is possible to acquire it compulsorily without waiting for the usual formalities. Under this Act a notification is given to the owner, the land is surveyed, and then resumed by notification in the *Gazette*, on the publication of which the fee simple of the land vests at once in the Crown absolutely. The owner is then called upon to submit his claim, and the amount can be settled either by arbitration or by a court of competent jurisdiction in accordance with the provisions of the Lands Resumption Act. This procedure under the Lands Resumption Act is now becoming much more general in cases where the land cannot be acquired by arrangement, and it is expected that the effect of the operation of the Act will be to the advantage of the Government and consequently of the public, in enabling land to be acquired more economically than under the former practice. The local bodies, i.e., the municipalities, have also power to acquire land under the provisions of the Local Government Act, but in practice it has been found most convenient for the procedure to be carried out by the Public Works Department on behalf of the local bodies, as this ensures the title being vested in the Crown, which gives uniformity of practice, and has also the effect that inquiry made as to title at the Government office shews at once the land that has been acquired.

2. **Areas Resumed.**—The subjoined table shews, so far as particulars are available, the areas of private lands resumed, exclusive of resumptions for closer settlement purposes, in each State during 1901 and 1914 to 1918 :—

#### AREAS OF PRIVATE LANDS RESUMED BY THE CROWN, 1901 AND 1914 TO 1918.

(EXCLUSIVE OF RESUMPTIONS FOR CLOSER SETTLEMENT.)

Year.	N.S.W.(a)	Victoria.(b)	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1901 ..	7,864	52	26	(c)	91	120	8,153(d)
1914 ..	527	(c)	..	(c)	(c)	(c)	(c)
1915 ..	1,997	(c)	84	(c)	(c)	492	(c)
1916 ..	1,619	(c)	401	(c)	(c)	(c)	(c)
1917 ..	6,737	(c)	443(e)	(c)	(c)	(c)	(c)
1918 ..	2,213	(c)	17,700	(c)	(c)	(c)	(c)

(a) To 30th June. (b) Exclusive of resumptions for railway purposes, which for the years 1901 to 1906 inclusive amounted to 13,081 acres. (c) Not available. (d) Exclusive of South Australia. (e) Including 361 acres resumed for soldier settlement purposes. In addition, there was resumed by various local authorities, 45 acres; and by the Water and Sewerage Board, 83 acres.

### § 11. Alienation and Occupation of Crown Lands in the Several States.

1. **Introduction.**—The tables given in the previous parts of this section shew separately the areas alienated, in process of alienation, and occupied under various tenures in the several States. The tables given below shew collectively the general condition of the public estate in each State, having regard to (a) the area alienated absolutely, which includes free grants, sales, and conditional purchases for which grants have been issued, the conditions having been complied with; (b) the area in process of alienation, comprising holdings for which the fee simple has not yet been alienated, but which are in process of sale under systems of deferred payments; (c) the area occupied under all descriptions of leases and licenses; and (d) the area unoccupied, which, ordinarily, includes roads, permanent reserves, forests, &c. In some cases, however, lands which are permanently reserved from alienation are occupied under leases and licenses, so that in such

cases the areas reserved are comprised in class (c) and not in class (d). Particulars of leases and licenses of reserved areas, as distinguished from leases and licenses of other lands, are not available. It should be observed that in many cases lands occupied under leases or licenses for pastoral purposes are held on short tenures only, and could thus be made available for settlement practically whenever required.

2. **New South Wales.**—The total area of the State of New South Wales (exclusive of Commonwealth Territory) is 198,036,500 acres, of which on the 30th June, 1919, 40,595,245 acres, or about one-fifth, were alienated absolutely: 20,724,214 acres, or about one-tenth, were in process of alienation; 115,335,741 acres, or upwards of three-fifths, were occupied under Lands Department, Western Land Board, or Mines Department leases and licenses: and the remaining 21,381,300 acres, or about one-tenth, were unoccupied. The next table shows the areas alienated, in process of alienation, held under leases and licenses, and unoccupied, in 1901 and from 1914–15 to 1918–19.

During the year 1918–19, a total area of 708,205 acres became available for Crown leases, homestead farms, suburban holdings, additional holdings, &c. Of this area, 721 acres were made available for irrigation farms and allotments, and 35,227 acres were acquired under the Closer Settlement Promotion Act. In addition, 696,842 acres were made available for soldiers' settlement.

**NEW SOUTH WALES.—ALIENATION AND OCCUPATION OF CROWN LANDS,  
1901 AND 1915 TO 1919.(a)**

Particulars.	Area in Acres.					
	1901.	1914–15.	1915–16.	1916–17.	1917–18.	1918–19.
<b>1. Alienated.</b>						
Granted and sold by private tender and public auction, at prices ranging from five to twenty shillings per acre, prior to 1862 ..	7,146,579	7,146,579	7,146,579	7,146,579	7,146,579	7,146,579
Sold by auction and other sales, 1862 to date ..	14,638,888	14,914,920	14,916,901	14,917,287	14,922,516	14,162,429
Conditionally sold, 1862 to date ..	4,212,189	16,264,942	16,571,958	16,929,786	17,318,124	17,887,903
Granted under Volunteer Land Regulations, 1867 to date ..	168,545	172,198	172,198	172,198	172,198	172,198
Granted for public and religious purposes ..	241,968	236,134	238,560	239,339	239,810	240,222
Homestead selections and grants ..	35,385	1,365,719	1,317,120	1,256,036	1,055,915	985,914
Total area alienated ..	26,443,554	40,100,492	40,363,316	40,661,225	40,855,172	40,595,245
<b>2. In Process of Alienation.</b>						
Under system of deferred payments ..	20,044,703	18,035,210	18,315,181	18,693,915	19,225,824	19,435,807
Under system of homestead selections (including leases converted, but excluding grants issued) ..	1,550,985	(b)	(b)	(b)	(b)	(b)
Closer settlement purchases ..	..	1,029,408	1,094,475	1,153,822	1,244,203	1,288,407
Total area in process of alienation ..	21,595,688	19,064,618	19,409,656	19,847,737	20,470,027	20,724,214
<b>3. Held under Leases and Licenses.</b>						
Total under Lands Department and Western Land Board ..	126,921,161	121,565,598	118,641,247	117,015,359	116,159,073	115,110,607
Mineral and auriferous leases and licenses (Mines Department) ..	134,209	230,493	224,621	224,593	231,981	225,134
Total leases under all Government Departments ..	127,055,370	121,796,091	118,865,868	117,239,952	116,391,054	115,335,741
<b>4. Unoccupied</b> ..	23,543,468	17,075,299	19,397,660	20,287,586	20,320,247	21,381,300

Area of State (exclusive of Commonwealth Territory)—198,036,500 acres.

(a) The figures for 1901 are up to the 31st December, while for the other years given they are up to the 30th June. (b) Now included under Homestead grants.

3. *Victoria*.—The total area of the State of Victoria is 56,245,760 acres, of which 24,503,531 acres, or about three-eighths, had been alienated absolutely up to the end of the year 1918; 7,562,762 acres were in process of alienation under deferred payments; and 10,649,247 acres were occupied under leases and licenses (exclusive of leases and licenses held under the Mines Department). The following table shews the areas alienated and in process of alienation, together with the areas reserved, leased, and available for occupation at the end of the year 1901 and from 1914 to 1918 :—

**-VICTORIA.—ALIENATION AND OCCUPATION OF CROWN LANDS,  
1901 AND 1914 TO 1918.**

Particulars.	Area in Acres.					
	1901.	1914.	1915.	1916.	1917.	1918.
1. <i>Alienated</i> .. .. .	20,066,875	24,138,965	24,256,222	24,345,425	24,427,467	24,503,531
2. <i>In Process of Alienation</i> —						
Exclusive of Mallee, &c. ..	3,587,668	2,004,248	2,025,172	2,069,321	2,059,101	2,051,422
Mallee Lands ..	87,606	5,334,113	5,534,655	5,682,094	5,500,708	5,511,340
Under Closer Settlement Acts ..	..	(c) 484,548	494,965	507,500	518,068	527,237
Village Settlements ..	55,077	24,529	20,861	19,989	18,175	16,888
Total .. .. .	3,730,351	7,362,890	8,075,653	8,278,904	8,096,052	8,106,887
3. <i>Leases and Licenses Held</i> —						
Under Lands Department ..	17,110,709	13,325,416	13,035,612	12,433,959	12,383,810	10,649,247
Under Mines Department (a) ..	..	..	..	..	..	..
4. <i>Unoccupied Crown Lands</i> (b) ..	15,337,825	11,418,489	10,878,273	11,187,472	11,338,431	12,986,095

Total area of State—56,245,760 acres.

(a) Not available. (b) Including leases and licenses held under the Mines Department, which are not available. (c) This area is also included with land alienated.

Crown lands in Victoria include roads, 1,748,162 acres; water reserves, 314,846 acres; agricultural colleges, &c., 84,990 acres; State forests and timber reserves (under Forest Act), 4,121,697 acres; State forests and timber reserves under Land Acts, 142,300 acres; reserves in the Mallee, 397,881 acres; unsold land in towns, &c., 2,183,831 acres; and other reserves, 304,672 acres.

4. *Queensland*.—The total area of this State is 429,120,000 acres, of which, on the 31st December, 1918, 16,771,717 acres, or about one twenty-fifth, were alienated absolutely; 9,763,261 acres, or about one forty-fourth, were in process of alienation; 325,875,052 acres, or about three-quarters, were occupied under leases and licenses; roads, reserves, &c., occupied 16,780,386 acres, the remaining 59,929,584 acres being unoccupied. From 1901 to 1918 the area alienated absolutely increased by 3,238,249 acres, or 23.9 per cent., and the area in process of alienation by 6,971,597 acres, or 250 per cent.

The following table shews the areas alienated absolutely, the areas in process of alienation, and the areas held under various forms of lease and license at the end of the year 1901 and from 1914 to 1918 :—

**QUEENSLAND.—ALIENATION AND OCCUPATION OF CROWN LANDS,  
1901 AND 1914 TO 1918.**

Particulars.	Area in Acres.					
	1901.	1914.	1915.	1916.	1917.	1918.
<b>1. Alienated Absolutely.</b>						
By Purchase .. ..	13,462,304	16,159,145	16,360,715	16,483,906	16,583,135	16,684,981
Without Payment .. ..	71,164	85,396	86,667	86,684	86,702	86,736
<b>Total .. ..</b>	<b>13,533,468</b>	<b>16,244,541</b>	<b>16,447,382</b>	<b>16,570,590</b>	<b>16,669,837</b>	<b>16,771,717</b>
<b>2. In Process of Alienation</b>	<b>2,791,664</b>	<b>10,586,914</b>	<b>10,776,793</b>	<b>10,566,829</b>	<b>10,215,839</b>	<b>9,763,261</b>
<b>3. Occupied under Leases and Licenses.</b>						
Runs in Settled Districts ..	176,000	226,119,640	223,896,160	215,950,840	211,581,200	212,439,720
„ Unsettled Districts ..	222,553,760					
Occupation Licenses ..	35,103,600	46,814,960	45,609,280	44,619,240	40,929,360	40,694,600
Grazing Farms and Homesteads ..	21,793,242	57,869,972	62,568,511	64,773,601	67,292,732	71,091,155
Scrub Selections .. ..	272,946	214,932	213,648	206,155	206,154	206,154
Leases Special Purposes ..	249	121,595	158,045	173,200	156,592	202,364
Under Mines Department ..	124,182	308,704	267,195	238,311	241,647	279,396
Perpetual Lease Selections ..	..	49,905	112,065	228,876	527,133	954,623
Auction Perpetual Leases ..	..	..	..	2,479	5,278	7,041
<b>Total .. ..</b>	<b>280,023,979</b>	<b>331,499,708</b>	<b>332,824,904</b>	<b>326,192,702</b>	<b>320,970,096</b>	<b>325,875,052</b>
<b>4. Roads and Reserves</b> ..	<b>..</b>	<b>15,561,184</b>	<b>15,793,438</b>	<b>15,857,492</b>	<b>16,827,711</b>	<b>16,780,386</b>
<b>5. Unoccupied</b> .. ..	<b>132,770,889</b>	<b>55,227,653</b>	<b>53,277,483</b>	<b>59,932,387</b>	<b>64,436,517</b>	<b>59,929,584</b>
<b>Total area of State—429,120,000 acres.</b>						

The area open for selection (as distinguished from occupation for purely pastoral or special purposes) under every mode at the beginning of the year 1918 was 17,151,188 acres, and the area opened during the year was 8,404,702 acres, while the area withdrawn was 2,940,933 acres. The area selected was 6,180,953 acres, and the area remaining open at the end of the year was 16,434,004 acres. The number of grazing selections was 385 as against 326 in the previous year, and their gross area 5,709,287 acres, as against 4,168,277 acres.

**5. South Australia.**—The area of the State of South Australia is 243,244,800 acres. In this State, at the end of the year 1918, there were 10,785,941 acres, or about one twenty-fourth, alienated absolutely; 3,025,166 acres, or about one-eightieth, were in process of alienation; 113,081,068 acres, or about one-half, were occupied under leases and licenses; while the remaining 116,352,625 acres were unoccupied. The subjoined table shews for South Australia the areas of land alienated absolutely, and in process of alienation under deferred payments, and the area held under different forms of leases :—

**SOUTH AUSTRALIA.—ALIENATION AND OCCUPATION OF CROWN LANDS,  
1901 AND 1914 TO 1918.**

Particulars.	Area in Acres.					
	1901.	1914.	1915.	1916.	1917.	1918.
<b>1. Alienated—</b>						
Sold .. ..	7,413,510	10,383,620	10,467,883	10,544,779	10,608,162	10,655,953
Granted for Public purposes ..	121,613	122,851	122,873	129,429	129,679	129,988
<b>Total .. ..</b>	<b>7,535,123</b>	<b>10,506,471</b>	<b>10,590,756</b>	<b>10,674,208</b>	<b>10,737,841</b>	<b>10,785,941</b>

**SOUTH AUSTRALIA.—ALIENATION AND OCCUPATION OF CROWN LANDS,  
1901 AND 1914 TO 1918—continued.**

Particulars.	Area in Acres.					
	1901.	1914.	1915.	1916.	1917.	1918.
2. <i>In Process of Alienation</i> ..	553,774	2,410,137	2,943,395	3,039,292	3,104,763	3,025,166
3. <i>Held under Lease and Licenses—</i>						
Right of Purchase ..	5,639,519	2,634,685	2,574,640	2,504,143	2,440,731	2,402,355
Perpetual ..	7,115,782	14,969,877	14,943,771	14,851,173	14,810,026	14,625,839
Pastoral ..	68,916,125	96,382,130	95,756,850	95,016,370	100,889,010	95,264,050
Other Leases and Licenses ..	8,905,729	1,193,767	1,144,683	1,128,630	1,049,522	617,654
*Mining Leases and Licenses ..	14,140	805,889	976,489	670,890	247,933	171,170
Total ..	85,591,295	115,986,348	115,396,433	114,171,206	119,437,222	113,081,068
4. <i>Total Occupied</i> ..	93,680,192	128,902,956	128,930,584	127,884,706	133,279,826	126,892,175
5. <i>Area Unoccupied</i> ..	149,564,608	114,341,844	114,314,216	115,360,094	109,964,974	116,352,625

Total area of State—243,244,800 acres.

\* Exclusive of miners' rights.

6. **Western Australia.**—The total area of Western Australia is 624,588,800 acres, of which on the 30th June, 1919, 8,605,479 acres, or about one seventy-fourth part, were alienated absolutely; 13,237,947 acres, or about one forty-eighth part, were in process of alienation; while 245,449,497 acres, or nearly two-fifths, were occupied under leases and licenses issued either by the Lands or the Mines Departments. The remaining 357,295,877 acres, or nearly three-fifths, were unoccupied.

The following table shews the areas alienated absolutely and conditionally, and the areas held under leases and licenses at the end of the year 1901 and on 30th June, 1915, to 1919 :—

**WESTERN AUSTRALIA.—ALIENATION AND OCCUPATION OF CROWN LANDS,  
1901 AND 1915 TO 1919.**

Particulars.	Area in Acres.					
	1901.	1914-15.(a)	1915-16.(a)	1916-17.(a)	1917-18.(a)	1918-19.(a)
1. <i>Absolutely Alienated</i> ..	3,468,878	8,007,937	8,125,629	8,276,084	8,462,085	8,605,479
2. <i>In Process of Alienation—</i>						
Midland Railway Concessions ..	2,768,810	54,800	54,800	54,800	54,800	54,800
Free Homestead Farms ..	283,455	1,469,132	1,404,237	1,351,461	1,288,866	1,228,844
Conditional Purchases ..	1,319,554	8,402,856	7,911,998	7,673,356	11,467,291	11,626,805
Selections from the late W.A. Company ..	75,213	4,851	3,728	3,088	2,289	2,193
Selections under the Agricultural Lands Purchase Act ..	37,235	260,697	259,055	255,305	247,196	280,250
Special Occupation Leases and Licenses ..	8,867	1,498	1,398	1,398	1,398	1,298
Homestead or Grazing Leases ..	286,425	3,832,648	3,901,011	3,897,471	..	..
Poison Land Leases or Licenses ..	1,306,270	52,286	47,252	47,252	43,275	43,275
Immigrants' Grants ..	400	..	..	..	..	..
Village Allotments ..	6	34	32	32	31	30
Working-men's Blocks ..	31	584	565	558	482	452
Total in Process of Alienation ..	6,116,266	14,079,386	13,584,076	13,284,721	13,105,628	13,237,947

(a) Figures are now given up to 30th June.

WESTERN AUSTRALIA.—ALIENATION AND OCCUPATION OF CROWN LANDS,  
1901 AND 1915 TO 1919—*continued.*

Particulars.	Area in Acres.					
	1901.	1914-15.(a)	1915-16.(a)	1916-17.(a)	1917-18.(a)	1918-19.(a)
3. <i>Leases and Licenses in Force—</i>						
(i) <i>Issued by Lands Department</i>						
Pastoral Leases ..	96,508,549	186,418,417	193,023,620	189,574,945	204,820,869	241,697,020
Special Leases ..	448	35,948	37,559	33,516	38,285	53,584
Leases of Reserves ..	5,296	2,129,118	2,301,587	1,582,174	1,629,115	2,139,541
Selections on Goldfields ..	8,955					
Timber Leases and Licenses	865,180	(b)650,613	(b)654,550	(b)249,144	(b)627,160	(b)625,186
Timber Permits ..		(b)410,943	(b)608,594	(b)908,850	(b)823,289	(b)819,520
Residential Lots ..	550	267	268	274	289	289
(ii) <i>Issued by Mines Department</i>						
Gold Mining Leases ..	34,086	(b)128,609	(b)145,920	(b)386,350	(b)113,656	(b)114,377
Mineral Leases ..	6,576					
Other Leases ..	8,623					
Licenses ..	17,397					
Total under Leases and Licenses	97,450,660	189,773,915	196,772,098	192,735,253	208,052,623	245,449,497
4. <i>Area Unoccupied</i> ..	517,552,996	412,727,562	406,106,997	410,292,742	394,968,464	357,295,877

Total area of State—624,588,800 acres.

(a) Figures are now given as up to the 30th June.

(b) On the previous 31st December.

7. *Tasmania.*—Of the total area of Tasmania, namely, 16,777,600 acres, there were at the end of the year 1918, 5,197,283 acres, or about three-tenths, alienated absolutely; 1,122,797 acres, or about one-fourteenth, were in process of alienation; 1,832,416 acres, or about one-ninth, were occupied under leases and licenses for either pastoral, agricultural, timber, or mining purposes; or for closer or soldier settlement; or occupied or reserved by the Crown; the remaining 8,625,104 acres, or about one-half, being unoccupied. The following table shews the areas alienated, in process of alienation, and held under lease or license, and the area unoccupied at the end of the year 1901 and from 1914 to 1918. Closer Settlement leased areas are in the latter year not included in the area alienated absolutely, although the settlers have begun to exercise their right of purchase, which right becomes operative ten years after date of lease:—

TASMANIA.—ALIENATION AND OCCUPATION OF CROWN LANDS, 1901 AND  
1914 TO 1918.

Particulars.	Area in Acres.					
	1901.	1914.	1915.	1916.	1917.	1918.
1. <i>Alienated Absolutely</i> ..	4,621,585	5,085,868	5,125,197	5,179,865	5,155,511	5,197,283
2. <i>In Process of Alienation</i> ..	272,376	1,248,844	1,225,924	1,244,014	1,184,061	1,122,797
3. <i>Leases or Licenses—</i>						
(i) <i>Issued by Lands Department</i>						
Islands ..	149,165	135,000	204,630	207,630	197,406	197,918
Ordinary Leased Land ..	1,280,688	1,400,300	1,452,068	1,434,113	1,193,169	1,201,169
Land Leased for Timber ..	40,768	162,631	120,832	146,881	155,889	183,804
Closer Settlement ..		(a) 52,800	(a) 66,307	(a) 65,781	69,087	68,163
Soldier Settlement ..					3,430	17,556
(ii) <i>Issued by Mines Department</i>	50,362	52,376	53,060	53,462	54,391	46,600
(iii) <i>Occupied by Commonwealth and State Departments</i> ..		8,498	14,315	16,026	17,150	17,206
(iv) <i>Reserved for Public Purposes</i>		68,000	95,000	96,473	99,500	100,000
Total ..	1,520,983	1,826,805	1,939,905	1,954,585	1,790,022	1,832,416
4. <i>Total Area Occupied</i> ..	6,414,944	8,161,517	8,291,026	8,378,464	8,129,594	8,152,496
5. <i>Area Unoccupied</i> ..	10,362,656	8,616,083	8,486,574	8,399,136	8,648,006	8,625,104

Total area of State—16,777,600 acres.

(a) Included in 1. *Alienated Land.*



8. **Northern Territory.**—On the 1st January, 1911, the Northern Territory was taken over by the Commonwealth. In the Northern Territory at the end of the year 1918, there were 476,476 acres, or only about one seven-hundred-and-fourth part, alienated absolutely; 106,807,751 acres, or about one-third, were held under leases and licenses; while the remaining 228,309,049, or nearly two-thirds, were unoccupied. The following table shews the area of land alienated absolutely, and also the area under lease :—

**NORTHERN TERRITORY.—ALIENATION AND OCCUPATION OF CROWN LANDS, 1901 AND 1914 TO 1918.**

Particulars.	Area in Acres.					
	1901.	1914.	1915.	1916.	1917.	1918.
1. <i>Alienated</i> —						
Sold ..	473,230	474,422	474,542	475,494	475,194	476,428
Granted for Public Purposes ..	48	48	48	48	48	48
Total Alienated ..	473,278	474,470	474,590	475,542	475,542	476,476
2. <i>Leased</i> —						
Right of Purchase ..	1,067	436	436	436	436	436
Pastoral ..	111,476,240	104,370,160	113,813,329	110,560,129	103,993,600	64,964,864
Other Leases ..	1,176,981	88,637	112,862	109,353	108,387	41,365,975
Total Leases ..	112,654,288	104,459,233	113,926,627	110,669,918	104,102,423	106,331,275
3. <i>Total Occupied</i> ..	113,127,566	104,933,703	114,401,217	111,145,460	104,577,965	106,807,751
4. <i>Remainder Unoccupied</i> (a) ..	221,989,234	230,183,097	220,715,583	223,971,340	230,538,835	228,309,049

Total area of Northern Territory—335,116,800 acres.

(a) Including Aboriginal and other reserves, and Mission stations.

## § 12. Classification of Holdings According to Size.

1. **General.**—The classification of holdings according to their area is of interest chiefly in relation to the efforts made by the several States in recent years to promote settlement on the land on blocks of suitable size, especially by means of the Closer Settlement Acts. Returns shewing such a classification are not available for Queensland and the Northern Territory.

The following table gives particulars of the number of holdings in area series, as returned to the collectors of agricultural and pastoral statistics, for all the States excepting Queensland, and for the Federal Capital Territory, to the latest available date :—

### CLASSIFICATION OF HOLDINGS (ONE ACRE AND OVER) IN AREA SERIES.

Size of Holdings.	N.S.W. 1918-19.	Victoria. 1918-19.	S. Aust. 1918-19.	W. Aust. 1918-19.	Tasmania. 1918-19.	Federal Territory. 1918-19.
NUMBER.						
Acres.						
1 and under 50 ..	41,732	20,866	7,204	3,533	4,636	34
50 " 100 ..	8,291	8,036	1,840	607	2,363	20
100 " 500 ..	25,978	26,246	5,953	2,965	5,196	54
500 " 1,000 ..	9,982	11,224	4,050	3,310	793	33
1,000 " 5,000 ..	8,723	5,865	4,132	4,154	728	46
5,000 " 10,000 ..	1,014	290	114	263	126	9
10,000 " 20,000 ..	455	117	49	95	57	4
20,000 " 50,000 ..	233	35	23	27	33	4
50,000 and over ..	72	..	..	4	5	..
Total ..	96,480	72,679	23,365	14,958	13,937	204

CLASSIFICATION OF HOLDINGS (ONE ACRE AND OVER) IN AREA SERIES—*continued.*

Size of Holdings.	N.S.W. 1918-19.	Victoria. 1918-19.	S. Aust. 1918-19.	W. Aust. 1918-19.	Tasmania. 1918-19.	Federal Territory. 1918-19.
AREA.						
Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1 and under 50 ..	508,768	370,426	115,933	43,910	74,920	553
50 " 100 ..	651,534	572,349	140,463	51,150	163,830	1,461
100 " 500 ..	6,708,813	6,517,118	1,693,439	801,781	1,077,900	15,279
500 " 1,000 ..	7,006,246	7,763,815	2,942,877	2,697,576	517,530	25,089
1,000 " 5,000 ..	17,418,941	10,117,530	7,275,145	8,280,286	1,502,450	83,544
5,000 " 10,000 ..	6,939,872	1,996,606	818,841	1,814,892	874,250	57,567
10,000 " 20,000 ..	6,250,731	1,621,460	661,781	1,338,251	709,950	54,014
20,000 " 50,000 ..	6,756,127	1,016,847	641,137	756,492	894,400	130,931
50,000 and over ..	6,365,219	..	..	323,000	495,385	..
Total ..	58,606,251	29,976,151	14,239,616	16,107,338	6,310,615	368,438

2. **New South Wales.**—The total number of holdings of one acre and over in area in this State on the 31st March, 1901, was 69,439. On the 31st March, 1919, the corresponding number was 96,480, shewing an increase of about 39 per cent. The following table shews the number of holdings for which returns were received for 1900-1 and the years 1912-13 to 1918-19, except 1916-17 and 1917-18, figures for which are not available :—

## NEW SOUTH WALES.—CLASSIFICATION OF HOLDINGS (ONE ACRE AND OVER) IN AREA SERIES, 1901 AND 1913 TO 1919.(a)

Size of Holdings.	1900-01.	1912-13.	1913-14.	1914-15.	1915-16.	1918-19.
Acres.	Number.	Number.	Number.	Number.	Number.	Number.
1 to 50 ..	28,155	38,641	39,268	39,602	40,033	41,732
51 " 100 ..	8,929	8,955	8,923	8,771	8,586	8,291
101 " 500 ..	20,504	26,251	26,493	26,576	26,405	25,978
501 " 1,000 ..	6,105	8,616	8,842	9,068	9,326	9,982
1,001 " 5,000 ..	4,464	7,287	7,529	7,777	7,971	8,723
5,001 " 10,000 ..	579	853	889	928	942	1,014
10,001 " 20,000 ..	352	379	394	389	411	455
20,001 " 50,000 ..	202	245	235	231	233	233
50,001 and over ..	149	86	82	78	76	72
Total ..	69,439	91,313	92,655	93,420	93,983	96,480

(a) See 1. General, above.

3. **Victoria.**—The following table shews the number and area of holdings on the 1st March of those years for which figures are available :—

## VICTORIA.—CLASSIFICATION OF HOLDINGS (ONE ACRE AND OVER) IN AREA SERIES, 1906 TO 1919.(a)

Size of Holdings.	1906.	1908.	1910.	1912.	1919.
Acres.	Number.	Number.	Number.	Number.	Number.
1 to 50 ..	13,309	14,692	16,609	18,757	20,866
51 " 100 ..	5,864	6,223	6,696	7,356	8,036
101 " 500 ..	21,628	22,510	23,397	24,735	26,246
501 " 1,000 ..	7,688	7,817	8,216	10,181	11,224
1,001 " 5,000 ..	4,083	4,409	4,908	5,364	5,865
5,001 " 10,000 ..	220	231	239	267	290
10,001 " 20,000 ..	116	118	131	116	117
20,001 " 50,000 ..	73	61	42	34	35
50,001 and over ..	6	4	2	1	..
Total ..	52,987	56,065	60,240	66,811	72,679

(a) See 1. General, above.

4. **South Australia.**—In the State of South Australia the classification of holdings was available for the first time in 1910-11. The following table shews the number and area of such holdings for that and subsequent years, for which returns are available :—

**SOUTH AUSTRALIA.—CLASSIFICATION OF HOLDINGS (ONE ACRE AND OVER)  
IN AREA SERIES, 1910-11 TO 1918-19.(a)**

Size of Holdings.	1910-11.	1913-14.	1914-15.	1915-16.	1916-17.	1918-19.
Acres.	Number.	Number.	Number.	Number.	Number.	Number.
1 to 50 ..	6,745	6,757	7,013	7,195	7,272	7,204
51 „ 100 ..	1,646	1,726	1,778	1,793	1,867	1,840
101 „ 500 ..	5,542	5,806	5,801	6,033	6,016	5,953
501 „ 1,000 ..	3,370	3,707	3,835	3,977	4,057	4,050
1,001 „ 5,000 ..	2,540	3,196	3,417	3,794	4,006	4,132
5,001 „ 10,000 ..	110	112	114	125	127	114
10,001 „ 20,000 ..	53	42	41	42	43	49
20,001 „ 50,000 ..	23	22	23	24	24	23
50,001 and over ..	1	1	1	..	..	..
Total ..	20,030	21,369	22,023	22,983	23,412	23,365

(a) See 1. General, above.

5. **Western Australia.**—In this State the number of holdings of one acre and over in area was 5,699 for the season 1900-1 (see Year Book No. 1), and 14,958 for the season 1918-19. The subjoined table shews the classification of holdings for which agricultural and pastoral returns were received for 1901 and 1914-1919 :—

**WESTERN AUSTRALIA.—CLASSIFICATION OF HOLDINGS (ONE ACRE AND OVER)  
IN AREA SERIES, 1901 AND 1914 TO 1919.(a)**

Size of Holdings.	1900-1.	1913-14.	1914-15.	1915-16.	1916-17.	1917-18.	1918-19.
Acres.	Number.	Number.	Number.	Number.	Number.	Number.	Number.
1 to 50 ..	1,728	3,820	4,031	3,898	3,813	3,696	3,533
51 „ 100 ..	198	608	645	640	620	643	607
101 „ 500 ..	2,302	3,354	3,349	3,370	3,267	3,064	2,965
501 „ 1,000 ..	717	3,569	3,676	3,687	3,605	3,462	3,310
1,001 „ 5,000 ..	607	3,912	4,025	4,229	4,146	4,080	4,154
5,001 „ 10,000 ..	73	240	235	254	268	249	263
10,001 „ 20,000 ..	38	82	93	82	82	103	95
20,001 „ 50,000 ..	36(b)	27	25	27	28	24	27
50,001 and over ..	..	8	7	7	4	3	4
Total ..	5,699	15,620	16,086	16,194	15,833	15,324	14,958

(a) See 1. General, above.

(b) Including all holdings of 20,001 acres and upwards.

6. Tasmania.—In Tasmania the total number of holdings for which returns were received as on the 1st March, 1909, was 12,413. Particulars for previous years are not available. The following table shews the classification of such holdings in area series for 1913-14 and subsequent years :—

**TASMANIA.—CLASSIFICATION OF HOLDINGS (ONE ACRE AND OVER) IN AREA SERIES, 1913-14 TO 1918-19.(a)**

Size of Holdings.				1913-14.	1914-15.	1915-16.	1916-17.	1917-18.	1918-19.
Acres.				Number.	Number.	Number.	Number.	Number.	Number.
1 to	50	..	..	4,402	4,416	4,403	4,392	4,606	4,636
51 "	100	..	..	2,271	2,306	2,299	2,293	2,348	2,363
101 "	500	..	..	5,088	5,165	5,148	5,134	5,163	5,196
501 "	1,000	..	..	721	731	729	727	788	793
1,001 "	5,000	..	..	667	676	674	672	723	728
5,001 "	10,000	..	..	116	168	167	167	125	126
10,001 "	20,000	..	..	69	70	69	69	56	57
20,001 "	50,000	..	..	34	35	35	35	33	33
50,001 and over		..	..	3	3	3	3	5	5
Total				13,371	13,570	13,527	13,492	13,847	13,937

(a) See 1. General, above.

### § 13. The Progress of Land Settlement, 1901 to 1918.

1. Recent Progress.—The progress of settlement and the growth of land alienation in the States of the Commonwealth under recent legislation is seen in the subjoined statement, which shews concisely the condition of the public estate in each State and in the Commonwealth, at the end of 1901 and of each year from 1914 to 1918 inclusive. The effect of the land laws during that period has been generally to diminish the number of large holdings, at the same time restricting the area held under lease, while both the area alienated and the area in process of alienation have increased. As leases of large areas fall in or are otherwise terminated they are in many cases not renewed, but the land is then cut up for the purpose of settlement under systems of deferred payment; the State Governments, also, have in many cases acquired by repurchase considerable areas under the provisions of the various Closer Settlement Acts. Further, greater facilities have been granted to the working classes to acquire possession of the soil, and special inducements have been offered to *bona fide* settlers by the introduction of new forms of tenure on easy terms and conditions.

From 1901 to 1918 the area alienated absolutely in the whole Commonwealth increased by 30,950,556 acres, or 40 per cent.; the area in process of alienation increased by 20,612,459 acres, or 59 per cent.; the area leased by 160,958,316 acres, or 22 per cent.; while the area unoccupied decreased by 212,521,331 acres, or 20 per cent.

**TOTAL AREA ALIENATED, IN PROCESS OF ALIENATION, HELD UNDER LEASE  
OR LICENSE AND UNOCCUPIED,**

EXPRESSED ABSOLUTELY AND AS PERCENTAGES OF AREA OF ENTIRE STATE FOR THE  
YEARS 1901 AND 1914 TO 1918.

Year.	Alienated.		In Process of Alienation.		Held under Lease or License.		Occupied by the Crown or Unoccupied.*	
	Area in Acres.	Per Cent.	Area in Acres.	Per Cent.	Area in Acres.	Per Cent.	Area in Acres.	Per Cent.

**NEW SOUTH WALES.—AREA, 198,036,500 ACRES.†**

1901†	26,443,554	13.32	21,595,688	10.87	127,055,370	63.96	23,543,468	11.85
1914†	39,826,576	20.16	18,837,281	9.51	122,305,284	61.76	17,067,359	8.57
1915†	40,100,492	20.25	19,064,618	9.63	121,796,091	61.50	17,075,299	8.62
1916†	40,363,316	20.38	19,409,656	9.80	118,865,868	60.02	19,397,660	9.80
1917†	40,661,225	20.53	19,847,737	10.02	117,239,952	59.20	20,287,586	10.25
1918†	40,855,172	20.63	20,470,027	10.34	116,391,054	58.77	20,320,247	10.26

**VICTORIA.—AREA, 56,245,760 ACRES.**

1901	20,066,875	35.67	3,730,351	6.63	17,110,709	30.42	\$15,337,825	\$27.28
1914	24,138,965	42.92	7,362,890	13.09	13,325,416	23.69	\$11,418,489	\$20.30
1915	24,256,222	43.12	8,075,653	14.36	13,035,612	23.18	\$10,878,273	\$19.34
1916	24,345,425	43.28	8,278,904	14.72	12,433,959	22.11	\$11,187,472	\$19.89
1917	24,427,467	43.43	8,096,052	14.39	12,383,810	22.02	\$11,338,431	\$20.16
1918	24,503,531	43.57	8,106,887	14.41	10,649,247	18.93	\$12,986,095	\$23.09

**QUEENSLAND.—AREA, 429,120,000 ACRES.**

1901	13,533,468	3.15	2,791,664	0.65	280,023,979	65.26	132,770,889	30.94
1914	16,244,541	3.79	10,586,914	2.47	331,499,708	77.25	70,788,337	16.49
1915	16,447,382	3.83	10,776,793	2.51	332,824,904	77.56	69,070,920	16.10
1916	16,570,590	3.86	10,566,829	2.46	326,192,702	76.02	75,789,879	17.66
1917	16,669,837	3.88	10,215,839	2.38	320,970,096	74.80	81,264,228	18.94
1918	16,771,717	3.91	9,763,261	2.27	325,875,052	75.94	76,709,970	17.88

**SOUTH AUSTRALIA.—AREA, 243,244,800 ACRES.**

1901	7,535,123	3.10	553,774	0.23	85,591,295	35.18	149,564,608	61.49
1914	10,506,471	4.32	2,410,137	0.99	115,986,348	47.68	114,341,844	47.01
1915	10,590,756	4.35	2,943,395	1.21	115,396,433	47.44	114,314,216	47.00
1916	10,674,208	4.39	3,039,292	1.25	114,171,206	46.94	115,360,094	47.42
1917	10,737,841	4.41	3,104,763	1.28	119,437,222	49.10	109,964,974	45.21
1918	10,785,941	4.44	3,025,166	1.24	113,081,068	46.49	116,352,625	47.83

\* Including roads and reserves. † To 31st December; subsequent years to 30th June.

‡ Exclusive of Commonwealth Territory which is included in the figures for 1901.

§ Including Mines Department leases and licenses.

TOTAL AREA ALIENATED, IN PROCESS OF ALIENATION, ETC.—*continued.*

Year.	Alienated.		In Process of Alienation.		Held under Lease or License.		Occupied by the Crown or Unoccupied.*	
	Area in Acres.	Per Cent.	Area in Acres.	Per Cent.	Area in Acres.	Per Cent.	Area in Acres.	Per Cent.

## WESTERN AUSTRALIA.—AREA, 624,588,800 ACRES.

1901	3,468,878	0.56	6,116,266	0.98	97,450,660	15.60	517,552,996	82.86
1914†	7,795,319	1.25	13,853,630	2.22	184,277,656	29.50	418,662,195	67.03
1915†	8,007,937	1.28	14,079,386	2.26	189,773,915	30.38	412,727,562	66.08
1916†	8,125,629	1.30	13,584,076	2.18	196,772,098	31.50	406,106,997	65.02
1917†	8,276,084	1.32	13,284,721	2.13	192,735,253	30.86	410,292,742	65.69
1918†	8,462,085	1.35	13,105,628	2.10	208,052,623	33.31	394,968,464	63.24

## TASMANIA.—AREA, 16,777,600 ACRES.

1901	4,621,585	27.54	272,376	1.62	1,520,983	9.06	10,362,656	61.78
1914	5,085,868	30.31	1,248,844	7.44	1,826,805	10.89	8,616,083	51.36
1915	5,125,197	30.55	1,225,924	7.31	1,939,905	11.56	8,486,574	50.58
1916	5,179,865	30.87	1,244,014	7.42	1,954,585	11.65	8,399,136	50.06
1917	5,155,511	30.73	1,184,061	7.06	1,790,022	10.67	8,648,006	51.54
1918	5,197,283	30.98	1,122,797	6.69	1,832,416	10.92	8,625,104	51.41

## •NORTHERN TERRITORY.—AREA, 335,116,800 ACRES.

1901	473,278	0.14	..	..	112,654,288	33.62	221,989,234†	66.24
1914	474,470	0.14	..	..	104,459,233	31.17	230,183,097†	68.69
1915	474,590	0.14	..	..	113,926,627	33.99	220,715,583†	65.87
1916	475,542	0.14	..	..	110,669,918	33.02	223,971,340†	66.84
1917	475,542	0.14	..	..	104,102,423	31.07	230,538,835†	68.79
1918	476,476	0.14	..	..	106,331,275	31.73	228,309,049†	68.13

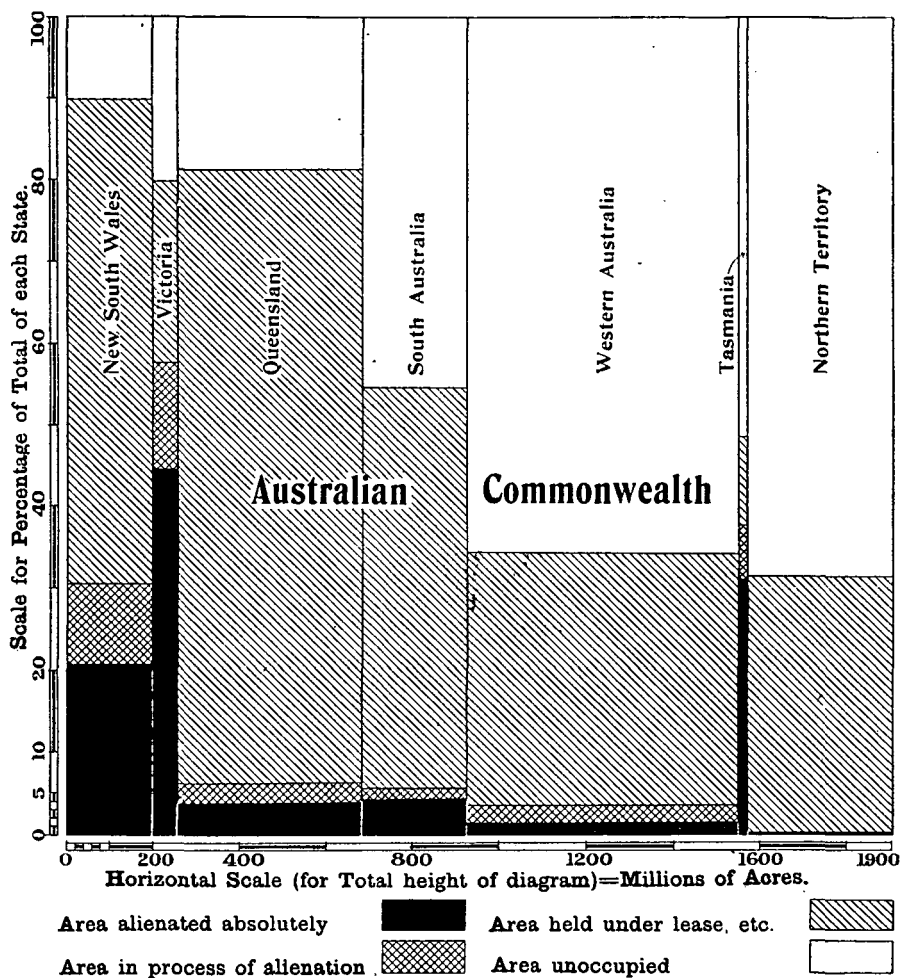
## THE COMMONWEALTH.§—AREA, 1,903,731,840 ACRES.

1901	76,142,761	4.00	35,060,119	1.84	721,407,284	37.89	1,071,121,676	56.27
1914	104,171,809	5.47	54,405,553	2.86	873,914,618	45.91	871,239,860	45.76
1915	105,056,196	5.52	56,255,766	2.96	889,007,113	46.69	853,412,765	44.83
1916	105,773,536	5.56	56,203,750	2.95	881,353,026	46.30	860,401,528	45.20
1917	106,444,507	5.59	55,812,496	2.93	868,990,307	45.65	872,484,530	45.83
1918	107,093,317	5.63	55,672,578	2.92	882,365,600	46.35	858,600,345	45.10

\* Including roads and reserves. † To 30th June. ‡ Including aboriginal reserves and mission stations.  
 § Including Federal Territory (601,580 acres). || Including Federal Territory: 41,112 acres, or 6.83 %, alienated; 78,812 acres, or 13.10 %, in process of alienation; 152,865 acres, or 25.41 %, held under lease or license; 328,791 acres, or 54.66 %, occupied by the Crown or unoccupied.

2. Diagram shewing Condition of Public Estate. The following diagram shews the condition of the public estate in the Commonwealth at the end of the year 1917, since which year some slight increases or decreases, which can be seen from the tables (*supra*) have occurred. The square itself represents the total area of the Commonwealth, while the relative areas of individual States are shewn by the vertical rectangles. The areas alienated absolutely, in process of alienation under systems of

deferred payments, and the areas held under leases or licenses, are designated by the differently-shaded areas as described in the reference given below the diagram, while the areas unoccupied are left unshaded :—



3. Federal Capital Territory.—The following particulars relate to the tenures of land within the Federal Capital Territory at the end of the year 1919 :—

#### FEDERAL CAPITAL TERRITORY, TENURES OF LAND, 1919.

	Acres.
Area of acquired lands .. .. .	203,054
Lands alienated .. .. .	41,269
In process of alienation (conditional purchases and conditional leases) ..	79,124
Held under lease issued by the State .. .. .	152,386
Unoccupied lands (roads, reserves, &c.) .. .. .	107,827
<b>Total Area of Territory .. .. .</b>	<b>583,660</b>

## SECTION VII.

## PASTORAL PRODUCTION.

## § 1. Initiation and Growth of Pastoral Industry.

1. **Early Statistics.**—In earlier issues of the Year Book will be found a brief reference to the pastoral industry in Australia prior to the year 1860. (See Year Book No. 6, page 330.)

2. **Subsequent Statistics.**—While the statistical records of live stock in Australia prior to the year 1860 are somewhat defective, from that year onwards fairly complete particulars are available for most of the States. At the present time, statistics of live stock are collected annually in all the States, principally through the agency of the police, but in the years 1885 to 1888 inclusive, and 1893 to 1895 inclusive, these particulars were not collected in South Australia, and similar gaps occur in the Victorian records for the periods 1895 to 1899 inclusive, and 1901 to 1903. In order to obtain totals for the Commonwealth for these years the missing numbers have been supplied by interpolation. The results so obtained probably differ but slightly from the actual numbers for the respective years.

3. **Increase in Numbers.**—Particulars concerning the numbers of each of the principal kinds of live stock in the Commonwealth at decennial intervals from 1860 to 1910, and from 1914 onwards in single years, are given in the following table, and are shewn continuously in the graphs hereinafter.

During the fifty-eight years covered by the table the live stock of the Commonwealth increased considerably, horses 486 per cent., cattle 222 per cent., sheep 333 per cent., and pigs 160 per cent. The average annual increases which these aggregates represent are as follows :—Horses, 3.10 per cent. ; cattle, 2.04 per cent. ; sheep, 2.56 per cent. ; and pigs, 1.66 per cent.

## COMMONWEALTH LIVE STOCK, 1860 TO 1918.

Year.				Horses.	Cattle.	Sheep.	Pigs.
1860	..	..	..	431,525	3,957,915	20,135,286	351,096
1870	..	..	..	716,772	4,276,326	41,593,612	543,388
1880	..	..	..	1,061,078	7,523,000	62,176,027	815,776
1890	..	..	..	1,521,588	10,299,913	97,881,221	891,138
1900	..	..	..	1,609,654	8,640,225	70,602,995	950,349
1910	..	..	..	2,165,866	11,744,714	92,047,015	1,025,850
1914	..	..	..	2,522,172	11,051,573	78,600,334	862,447
1915	..	..	..	2,377,920	9,931,416	69,257,189	753,693
1916	..	..	..	2,437,157	10,459,237	76,668,604	1,006,763
1917	..	..	..	2,498,940	11,829,135	84,965,012	1,169,365
1918	..	..	..	2,528,243	12,738,852	87,086,236	913,902



4. **Fluctuations.**—The increases referred to, however, have not been continuous, marked fluctuations having taken place during the period, mainly on account of the droughts which have from time to time left their impress on the pastoral history of Australia. These were in evidence in 1869, 1877, 1884, 1895 and subsequent years, 1902, to some extent in 1908, and in a severer form during the earlier half of 1912, and again during 1914 and 1915. The falling-off in the number of sheep in 1915 was 9,343,145, of cattle 1,120,157, of horses 144,252, and of pigs 108,754, being 11.91, 10.14, 5.72, and 12.61 per cent. respectively. The winter of 1913 was dry over Southern Australia, though the crops subsequently recovered under the influence of fine spring rains, but in 1914 and 1915, very pronounced drought conditions developed—enveloping the whole of sub-tropical Australia (except the New South Wales coast) during 1914, and all the Central and North-eastern parts of the continent in 1915. Throughout many parts of Western Australia, South Australia, the Riverina, Victoria, and Tasmania, the year 1914 was the driest on record, and similarly throughout a large part of Queensland and North-eastern New South Wales, 1915 was the worst year ever experienced. The result was a general failure of the crops throughout the wheat belt in 1914, heavy stock losses, the failure of the sugar crops of the East Coast and of a large proportion of the cereal crops on the Downs in Queensland.

The extraordinary recuperative power of Australia is reflected in the large increases in the numbers of stock which occurred in the good seasons supervening on the various droughts. Thus, in the nine years from 1902 to 1911, horses increased by 754,426, cattle by 4,766,212, and sheep by 39,335,174, the corresponding increases per cent. per annum being horses 4.57 per cent., cattle 5.90 per cent., and sheep 6.30 per cent.

The years in which the numbers of live stock attained their maxima are as follows:—Horses, 1918, 2,528,243; cattle, 1918, 12,738,852; sheep, 1891, 106,421,068; and pigs, 1917, 1,169,365.

5. **Live Stock in Relation to Population.**—The number of each kind of live stock per head of the population of the Commonwealth has varied during the past fifty-eight years in the manner shewn in the succeeding table:—

NUMBER OF AUSTRALIAN LIVE STOCK PER HEAD OF POPULATION, 1860 TO 1918.

Year.	Horses.	Cattle.	Sheep.	Pigs.	Year.	Horses.	Cattle.	Sheep.	Pigs.
1860 ..	0.38	3.45	17.58	0.31	1914 ..	0.51	2.24	15.91	0.17
1870 ..	0.43	2.60	25.24	0.33	1915 ..	0.48	2.01	14.04	0.15
1880 ..	0.48	3.37	27.87	0.37	1916 ..	0.50	2.14	15.68	0.21
1890 ..	0.48	3.27	31.06	0.28	1917 ..	0.50	2.39	17.13	0.24
1900 ..	0.43	2.29	18.75	0.25	1918 ..	0.50	2.51	17.16	0.18
1910 ..	0.49	2.65	20.80	0.23					

Considered in relation to population, the live stock attained its maximum for the period 1860–1918 in the quinquennium 1890–4, and its minimum in the year 1902. During the period under review, the number of horses varied but slightly in proportion to population, the range for the years shewn above being from 0.38 to 0.51 per head. In the case of cattle, the corresponding limits of variation were 2.01 and 3.45; sheep, 14.04 and 31.06; and pigs, 0.15 and 0.37.

6. **Live Stock in Relation to Area.**—The numbers of live stock per square mile in the several States and Territories of the Commonwealth are given in the following table :—

NUMBER OF LIVE STOCK PER SQUARE MILE.

States and Territories.	Date.	Horses.	Cattle.	Sheep.	Pigs.
New South Wales ..	30th June, 1919 ..	2.33	10.57	120.36	0.95
Victoria ..	1st March, 1919 ..	5.96	18.17	179.49	3.05
Queensland ..	31st Dec., 1918 ..	1.13	8.63	27.18	0.21
South Australia ..	30th June, 1919 ..	0.71	0.90	17.43	0.21
Western Australia ..	31st Dec., 1918 ..	0.18	0.97	7.36	0.09
Tasmania ..	1st March, 1919 ..	1.57	8.32	70.26	1.69
Northern Territory ..	31st Dec., 1918 ..	0.06	1.09	0.11	..
Federal Territory ..	30th June, 1919 ..	1.51	9.46	146.92	0.33
Commonwealth ..	1918-19 ..	0.85	4.28	29.28	0.31

7. **Minor Classes of Live Stock.**—The numbers of minor classes of live stock returned for 1918-19 were as follows :—Goats, 228,905; camels, 12,284; mules and donkeys, 13,251; and ostriches, 1,207. Of these, goats were most numerous in Queensland; camels, mules, and donkeys in Western Australia; and ostriches in South Australia. In the raising of goats, considerable attention has in recent years been devoted to the angora goat and its product (mohair), and over 15,000 angora goats are included in the total of 228,905 goats shewn above. Of these, 5,999 were in New South Wales, 3,212 in Western Australia, and 3,569 in Queensland, while the quantity of mohair produced in the latter State in 1918 was set down at 2,188 lbs., and the number of skins placed on the market was returned as 411.

8. **Net Exports of Principal Pastoral Products.**—The quantities by which the exports of the principal pastoral products of the Commonwealth exceeded the imports for the years 1914-15 to 1918-19 are as follows :—

QUANTITIES OF NET EXPORTS OF PRINCIPAL PASTORAL PRODUCTS OF THE COMMONWEALTH, 1914-15 TO 1918-19.

Products.	Unit of Quantity.	1914-15.	1915-16.	1916-17.	1917-18.	1918-19.
<b>Animals (living)—</b>						
Cattle ..	No.	10,121	5,417	2,743	1,117	644
Horses ..	"	23,655	14,589	14,228	23,876	8,686
Sheep ..	"	10,749	728	3,198	9,080	18,001
Bones ..	cwt.	33,802	16,378	26,884	20,363	25,669
Glue Pieces and Sinews ..	"	30,689	23,222	26,973	11,015	3,878
Glycerine ..	lb.	(a)	(a)	(a)	(a)	1,633,510
Hair ..	"	206,602	554,971	514,752	324,523	402,869
Hoofs ..	cwt.	11,012	8,347	10,497	8,618	10,000
Horns ..	"	(a)	(a)	(a)	(a)	(a)
<b>Meats—</b>						
Frozen Beef ..	lb.	292,056,035	114,654,569	242,040,115	180,222,185	119,938,442
Frozen Mutton and Lamb ..	"	193,263,877	38,332,651	66,811,253	19,174,231	59,672,405
Frozen Rabbits and Hares ..	pair	10,290,016	11,367,538	12,674,472	13,164,307	5,132,983
Frozen, Other ..	lb.	13,107,560	3,004,290	10,773,154	8,200,193	11,489,982
Potted and Extract of ..	"	(a)	(a)	(a)	(a)	(a)
Preserved in Tins, &c. ..	"	57,326,295	13,059,238	21,922,630	43,036,310	65,118,256
Other (excluding Bacon and Ham) ..	"	298,019	130,672	35,833	206,640	424,777
Sausage Casings ..	"	(a)	(a)	(a)	(a)	(a)
<b>Skins—</b>						
Hides ..	No.	1,134,483	453,691	99,154	15,873	26,819
Sheep ..	"	10,396,987	7,254,642	4,755,464	2,907,431	6,663,978
Rabbit and Hare ..	cwt.	56,437	51,857	48,403	71,991	117,569
Other, including Undressed Furs ..	No.	(a)	(a)	(a)	(a)	(a)
Tallow ..	cwt.	1,106,023	250,519	555,427	345,849	870,950
Wool—Greasy ..	lb.	443,812,275	408,461,233	331,776,079	243,784,651	457,995,701
Scoured ..	"	60,846,240	74,880,215	51,727,629	62,860,373	106,313,411
Tops ..	"	4,095,966	4,981,975	4,869,452	4,571,357	2,822,578

(a) Quantity not available.

The values of the net exports for the same five years are furnished in the next table, and amount to no less a total than £207,031,981 for the period, or an average of £41,406,396 per annum, of which wool represents 70 per cent. Meats, skins, and tallow rank next in order of importance.

**VALUE OF NET EXPORTS OF PRINCIPAL PASTORAL PRODUCTS OF THE  
COMMONWEALTH, 1914-15 TO 1918-19.**

Products.	1914-15.	1915-16.	1916-17.	1917-18.	1918-19.
Animals (living)—	£	£	£	£	£
Cattle .. .. .	19,553	10,089	4,582	—10,993	3,567
Horses .. .. .	378,505	185,183	306,200	453,616	161,533
Sheep .. .. .	14,204	—17,507	8,474	15,049	35,007
Bones .. .. .	20,918	10,009	20,783	21,806	27,156
Glue Pieces and Sinews .. .. .	17,641	12,815	21,416	15,196	6,904
Glycerine .. .. .	13,900	16,078	26,459	41,256	58,073
Hair .. .. .	26,445	26,684	26,802	21,243	29,335
Hoofs .. .. .	4,156	2,361	6,363	7,848	11,091
Horns .. .. .	—15,300	6,379	4,191	13,309	18,474
Meats—					
Frozen Beef .. .. .	4,989,810	2,175,343	4,945,716	3,697,957	2,471,136
Frozen Mutton and Lamb .. .. .	3,413,848	769,434	1,540,546	452,627	1,298,086
Frozen Rabbits and Hares .. .. .	531,920	724,624	913,142	985,190	308,965
Frozen, Other .. .. .	180,841	30,248	195,846	190,954	341,455
Potted and Extract of .. .. .	347,471	31,467	65,471	224,464	328,233
Preserved in Tins, &c. .. .. .	1,829,601	438,881	952,369	2,308,989	3,771,373
Other (excluding Bacon and Ham) .. .. .	4,375	3,195	1,151	5,713	15,380
Sausage Casings .. .. .	25,872	—21,726	1,210	—29,089	101,490
Skins—					
Hides .. .. .	1,234,871	266,674	184,886	211,449	156,084
Sheep .. .. .	1,743,209	1,242,358	1,137,832	808,782	1,921,411
Rabbit and Hare .. .. .	230,139	261,868	433,546	1,155,824	1,314,366
Other, including Undressed Furs .. .. .	106,319	253,458	190,738	276,537	313,472
Tallow .. .. .	1,566,907	436,225	1,241,219	886,128	2,167,728
Wool—Greasy .. .. .	17,470,385	20,172,243	21,870,113	16,981,347	31,477,707
Scoured .. .. .	4,113,951	5,841,054	5,394,259	6,094,040	10,351,553
Tops .. .. .	511,021	680,656	1,204,570	1,510,799	935,212
Total Values .. .. .	38,811,167	33,558,093	40,697,889	36,340,041	57,624,791

Note.—The minus sign (—) signifies net imports.

## § 2. Horses.

1. **Suitability of Australia for Horse-breeding.**—From the earliest times the suitability of the climate and pastures of Australia for the production of serviceable breeds of horses has been fully recognised. By the importation of high-class sires, and the careful selection of breeding mares, these natural advantages were utilised to the fullest extent, all classes of horses being bred. As a consequence of this combination of advantages, the Australian horse, whether of the heavy draught, medium weight, or light saddle and carriage variety, compares more than favourably with the product of other lands. The Australian horse has been found suitable for the army in India, and large numbers are obtained annually for remount purposes. During the last war Australian horses were found to be well adapted for all purposes, especially in Palestine.

2. **Distribution throughout the Commonwealth.**—As regards numbers, the State of New South Wales, the earliest settled of the group, established a lead, which it retained up to the end of 1913. For some years past Queensland has made rapid progress in

this regard, and in 1914 there were 743,059 horses in that State, as compared with 731,735 in New South Wales, and 552,053 in Victoria. New South Wales regained the lead during the next three seasons, but was again replaced by Queensland in 1918. Particulars for the several States for a series of years are as follows :—

**NUMBER OF HORSES IN STATES, TERRITORIES, AND COMMONWEALTH,  
1860 TO 1918.**

Year.	N.S.W.	Vic. (a)	Q'land.	S. Aust.	W. Aust.	Tas. (a)	N.T.	F.T.	C'wealth.
1860 ..	251,497	76,536	23,504	49,399	9,555	21,034	..	..	431,525
1870 ..	337,597	167,220	83,358	83,744	22,174	22,679	..	..	716,772
1880 ..	395,984	275,516	179,152	148,219	34,568	25,267	c2,372	..	1,061,078
1890 ..	444,163	436,459	365,812	187,686	44,384	31,165	11,919	..	1,521,588
1900 ..	481,417	392,237	456,788	166,790	68,253	31,607	12,562	..	1,609,654
1910 ..	650,636	472,080	593,813	249,326	134,114	41,388	24,509	..	2,165,866
1914 ..	6731,735	552,053	743,059	267,877	161,625	42,232	21,985	61,606	2,522,172
1915 ..	6718,232	493,779	686,871	253,333	163,016	41,422	19,957	61,310	2,377,920
1916 ..	6732,334	514,403	697,517	257,422	169,730	42,620	21,674	61,457	2,437,157
1917 ..	6740,806	514,061	733,014	262,840	178,151	42,396	26,231	61,441	2,498,940
1918 ..	6721,302	523,788	759,726	269,255	180,094	41,221	31,436	61,421	2,528,243

(a) 1st March year following. (b) 30th June year following. (c) Statistics not collected prior to 1880.

3. Proportion in the Several States and Territories.—The percentages of the number of horses in the several States and Territories on the total for the Commonwealth for the past five years are as follows :—

**PERCENTAGE OF HORSES IN EACH STATE AND TERRITORY ON THE TOTAL  
FOR COMMONWEALTH, 1914 TO 1918.**

Year.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	N.T.	F.T.	C'wealth.
	%	%	%	%	%	%	%	%	%
1914 ..	29.01	21.39	29.46	10.62	6.41	1.68	0.87	0.06	100.00
1915 ..	30.20	20.77	28.89	10.65	6.86	1.74	0.84	0.05	100.00
1916 ..	30.05	21.11	28.62	10.56	6.96	1.75	0.89	0.06	100.00
1917 ..	29.64	20.57	29.33	10.52	7.13	1.70	1.05	0.06	100.00
1918 ..	28.53	20.72	30.05	10.65	7.12	1.63	1.24	0.06	100.00

During the period under review, the proportion has increased in Western Australia, Queensland, and the Northern Territory, that in New South Wales and Victoria has diminished, while that of the remaining States has practically remained stationary.

4. Oversea Export Trade in Horses.—Australia's export trade in horses is fairly considerable, though somewhat fluctuating. During the past five years it has varied in number between 8,832 for the year 1918-19 and 24,172 in 1917-18, and in value between £189,354 in the former and £502,557 during the latter year. The total number of horses exported during the five years, exclusive of those shipped for military purposes, amounted to 88,833, an average of 17,767 per annum. The total value of the exports for the period

was £1,771,897, or £354,379 per annum. The average export value per head for the period was £19 18s. 11d. The numbers exported to the principal countries concerned in this trade are as follows :—

**NUMBER AND DESTINATION OF HORSES EXPORTED FROM THE  
COMMONWEALTH, 1914-15 TO 1918-19.**

Country to which Exported.	1914-15.	1915-16.	1916-17.	1917-18.	1918-19.	Total for 5 years.
	No.	No.	No.	No.	No.	No.
India .. ..	21,162	14,405	15,744	23,890	7,522	82,723
New Zealand .. ..	52	37	40	26	11	166
Java .. ..	65	280	148	..	633	1,126
Fiji .. ..	117	257	223	150	111	858
Straits Settlements .. ..	24	174	224	21	89	532
Japan .. ..	16	35	16	15	27	109
Philippine Islands .. ..	..	8	5	20	215	248
Mauritius .. ..	..	..	..	..	150	150
Papua .. ..	9	2	35	30	20	96
Other Countries .. ..	2,662	11	78	20	54	2,825
<b>Total .. ..</b>	<b>24,107a</b>	<b>15,209a</b>	<b>16,513a</b>	<b>24,172a</b>	<b>8,832a</b>	<b>88,833a</b>

(a) Exclusive of shipments for military purposes.

The corresponding particulars relative to the value of the horses exported are given in the next table :—

**VALUE OF HORSES EXPORTED FROM THE COMMONWEALTH,  
1914-15 TO 1918-19.**

Country to which Exported.	1914-15.	1915-16.	1916-17.	1917-18.	1918-19.	Total for 5 years.
	£	£	£	£	£	£
India .. ..	387,046	250,710	312,271	479,520	146,758	1,576,305
New Zealand .. ..	9,765	7,232	11,190	16,360	4,600	49,147
Java .. ..	1,243	5,352	3,818	..	18,336	28,749
Fiji .. ..	3,337	6,653	5,814	3,765	2,176	21,745
Straits Settlements .. ..	555	3,755	6,427	900	5,915	17,552
Japan .. ..	875	1,900	850	750	1,350	5,725
Philippine Islands .. ..	..	1,200	60	200	3,800	5,260
Mauritius .. ..	..	..	..	..	4,334	4,334
Papua .. ..	171	65	663	538	817	2,254
Other Countries .. ..	56,986	244	1,804	524	1,268	60,826
<b>Total .. ..</b>	<b>459,978a</b>	<b>277,111a</b>	<b>342,897a</b>	<b>502,557a</b>	<b>189,354a</b>	<b>1,771,897a</b>

(a) Exclusive of shipments for military purposes.

Consequent on the greater demand for remounts for the Indian Army, a large increase took place in the number of horses exported to that country during the four years ended 30th June, 1918. Of the 2,662 horses exported to "Other Countries" during 1914-15—2,270, valued at £50,075, were shipped to France. In addition to the exports shewn in the above tables, there were 39,348 horses, valued at £815,300, shipped from the Commonwealth for military purposes from the commencement of the war to 30th June, 1918.

The number of horses imported into the Commonwealth is comparatively small, consisting mainly of valuable animals introduced for breeding purposes, and coming principally from New Zealand and the United Kingdom. The average value per head of the horses imported during the last five years was £190 11s. 1d., as compared with £19 18s. 11d. per head for the exports for the same period. The average number imported per annum was, however, only 360, and the average annual value £57,372. The following table furnishes a comparison of imports and exports of horses during each of the five years 1914-15 to 1918-19 :—

**COMMONWEALTH IMPORTS AND EXPORTS OF HORSES,  
1914-15 TO 1918-19.**

Year.	Imports.		Exports.		Net Exports.	
	No.	Value.	No.	Value.	No.	Value.
		£		£		£
1914-15 .. ..	452	81,473	24,107	459,978	23,655	378,505
1915-16 .. ..	620	91,928	15,209	277,111	14,589	185,183
1916-17 .. ..	285	36,697	16,513	342,897	16,228	306,200
1917-18 .. ..	296	48,941	24,172	502,557	23,876	453,616
1918-19 .. ..	146	27,821	8,832	189,354	8,686	161,533

5. **Comparison with other Countries.**—The numbers of horses in some of the leading horse-breeding countries of the world, according to the latest available returns, are as follows :—

**NUMBER OF HORSES IN SOME OF THE LEADING HORSE-BREEDING  
COUNTRIES OF THE WORLD.**

Country.	Date.	Number of Horses. (,000 omitted.)	Country.	Date.	Number of Horses. (,000 omitted.)
Russian Empire (a) ..	1914	35,846	Sweden .. ..	1918	715
U.S. of America ..	1918	21,534	Uruguay .. ..	1908	556
Argentine Republic ..	1914	8,324	Denmark .. ..	1918	545
Brazil .. ..	1916	6,065	Spain .. ..	1916	489
Austria-Hungary (b) ..	1910-13	4,380	Bulgaria .. ..	1910	478
Canada .. ..	1918	3,609	Chile .. ..	1914	458
Germany (c) ..	1915	3,342	New Zealand ..	1918	363
Australia .. ..	1918	2,528	Netherlands ..	1918	362
France (d) ..	1917	2,283	Finland .. ..	1910	361
United Kingdom ..	1918	1,916	Belgium .. ..	1913	267
British India ..	1918	1,681	Philippine Islands	1915	223
Japan .. ..	1916	1,572	Algeria .. ..	1913	216
Rumania .. ..	1916	1,219	Norway .. ..	1918	210
Mexico .. ..	1902	859	Serbia .. ..	1910	153
Italy .. ..	1918	804	Switzerland ..	1918	129
Cuba .. ..	1916	750	Portugal .. ..	1906	88
Union of S. Africa ..	1911	719	Egypt .. ..	1916	34

(a) Including Poland, Caucasus and Siberia. (b) Austria 1910, Hungary 1913, Croatia-Slavonia 1911, Bosnia-Herzegovina 1910. (c) Exclusive of army horses. (d) Exclusive of invaded area.

6. **Relation to Population.**—In proportion to population, horses are much more numerous in the Northern Territory than in any other of the principal divisions of the Commonwealth. Queensland is next in order, while Tasmania has the smallest number of horses per head. In all cases, with the exception of Northern Territory and Western Australia, the number of horses per head of population was somewhat lower in 1918 than in 1914. Particulars for the past five years are as follows :—

NUMBER OF HORSES PER HEAD OF POPULATION,  
1914 TO 1918.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	N. Terr.	F. Terr.	C'wealth.
1914 ..	0.39	0.39	1.10	0.61	0.50	0.21	5.53	0.62	0.51
1915 ..	0.39	0.35	1.01	0.58	0.51	0.21	4.37	0.53	0.48
1916 ..	0.39	0.37	1.04	0.60	0.55	0.21	4.55	0.66	0.50
1917 ..	0.39	0.36	1.08	0.60	0.58	0.21	5.34	0.58	0.50
1918 ..	0.37	0.37	1.09	0.59	0.57	0.20	6.58	0.60	0.50

### § 3. Cattle.

1. **Purposes for which Raised.**—In all the States of the Commonwealth, cattle raising is carried out on a more or less extensive scale, the main object in certain districts being the production of stock suitable for slaughtering purposes, and in others the raising of profitable dairy herds. The great impetus which the development of the export trade in Australian butter gave to the dairying industry in the Commonwealth led to a considerable increase in numbers and improvement in quality of the dairy herds of Victoria, New South Wales, and Southern Queensland in particular, the sub-tropical portion of Australia being apparently the best adapted to this industry. On the other hand, by far the finest specimens of beef-producing cattle are those raised in the tropical districts of the Commonwealth, i.e., in the northern parts of Queensland, in the Northern Territory, and in the Kimberley districts in the north of Western Australia.

2. **Distribution throughout Commonwealth.**—Until 1880 New South Wales occupied the leading position in the Commonwealth group as a cattle-raising State, but in that year Queensland forged ahead and obtained a lead which it has since maintained. The extent of this lead has, however, varied considerably, owing principally to the effects produced by the tick fever and droughts, from both of which causes the Queensland herds suffered more severely than those of the other States. In fact, during the period from 1894, when the number of cattle in Queensland attained its maximum of rather more than 7,000,000, to 1903, when the number recorded was less than 2,500,000, an uninterrupted decline was experienced. During the next fifteen years, however, despite recurring droughts, a rapid improvement took place, and the total reached on 31st December, 1918, was 5,786,744, the highest number recorded since 1897.

Considerable increases have been in evidence in all the States during the last three seasons, with the result that the Commonwealth total of 12,738,852 for 1918 represents the greatest number of cattle ever depastured in Australia.

The numbers of cattle in the several States and Territories at decennial intervals from 1860 to 1910 and for each of the last five years are as follows :—

NUMBER OF CATTLE IN STATES, TERRITORIES, AND COMMONWEALTH,  
1860 TO 1918.

Year.	N.S.W.	Victoria. (a)	Q'land.	S. Aust.	W. Aust.	Tas. (a)	Nor. Ter.	Fed. Ter.	C'wealth.
1860	2,408,586	722,332	432,800	278,265	32,476	83,366	..	..	3,957,915
1870	2,195,096	721,096	1,076,830	136,832	45,213	101,459	..	..	4,276,326
1880	2,580,040	1,286,267	3,162,752	283,315	63,719	127,187	619,720	..	7,523,000
1890	2,091,229	1,782,978	5,558,264	359,938	130,970	162,440	214,094	..	10,299,913
1900	1,983,116	1,602,384	4,078,191	214,761	338,590	165,516	257,667	..	8,640,225
1910	3,140,307	1,547,569	5,131,699	384,862	825,040	201,854	513,383	..	11,744,714
1914	2,472,631b	1,362,542	5,455,943	300,579	863,835	176,524	414,558	4,961b	11,051,573
1915	2,400,104b	1,043,604	4,780,893	226,565	821,048	169,575	483,961	5,666b	9,931,416
1916	2,757,713b	1,175,098	4,765,657	288,887b	863,930	179,360	420,362	8,230b	10,459,237
1917	3,148,309b	1,371,049	5,316,558	313,245b	927,086	197,938	541,545	13,408b	11,829,138
1918	3,271,782b	1,590,544	5,786,744	342,708b	943,847	218,234	570,039	8,894b	12,738,852

(a) 1st March year following. (b) 30th June year following. (c) Statistics not collected prior to 1880.

3. Proportion in each State.—Particulars concerning the relative importance of the various cattle-breeding States during the years 1914 to 1918 are as under :—

PERCENTAGE OF CATTLE IN EACH STATE AND TERRITORY ON TOTAL FOR  
COMMONWEALTH, 1914 TO 1918.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Nor. Ter.	Fed. Ter.	C'wealth.
	%	%	%	%	%	%	%	%	%
1914 ..	22.37	12.33	49.37	2.72	7.82	1.60	3.75	0.04	100.00
1915 ..	24.17	10.51	48.14	2.28	8.27	1.71	4.87	0.05	100.00
1916 ..	26.37	11.24	45.56	2.76	8.26	1.71	4.02	0.08	100.00
1917 ..	26.62	11.59	44.94	2.65	7.84	1.67	4.58	0.11	100.00
1918 ..	25.68	12.53	45.43	2.69	7.41	1.71	4.48	0.07	100.00

During the past five years the percentages of cattle in the various States on the Commonwealth total have suffered little change. New South Wales and Northern Territory have exhibited increases at the expense of Queensland, where the percentage has decreased from 49.37 to 45.43.



4. **Imports and Exports of Cattle.**—Although the various products of the cattle-raising industry bulk largely in the export trade of the Commonwealth, the export of live cattle from Australia has never been considerable. The number of cattle imported is also small, consisting, as in the case of horses, mainly of valuable animals for breeding. Details are as follows :—

**COMMONWEALTH IMPORTS AND EXPORTS OF CATTLE,  
1914-15 TO 1918-19.**

Year.	Imports.		Exports.		Net Exports.	
	No.	Value.	No.	Value.	No.	Value.
		£		£		£
1914-15 ..	221	21,090	10,342	40,648	10,121	19,558
1915-16 ..	440	19,169	5,857	29,258	5,417	10,089
1916-17 ..	234	14,254	2,977	18,836	2,743	4,582
1917-18 ..	222	23,570	1,339	12,577	1,117	10,993
1918-19 ..	66	3,373	710	6,940	644	3,567

Note.—The minus sign (—) signifies net imports.

The average value of the cattle imported into the Commonwealth during the last five years was £68 17s. 1d. per head, while the average value of the cattle exported during the same period was £5 2s. 0d. As stated previously, the imported cattle were principally for stud purposes.

The comparatively large exports for the year 1914-15 were due to shipments to Java and Philippine Islands valued at £22,325 and £14,701 respectively. The bulk of these cattle were exported from Western Australia.

5. **Cattle Slaughtered.**—The numbers of cattle slaughtered in the several States and Territories of the Commonwealth during the years 1914 to 1918 are as follows :—

**CATTLE (INCLUDING CALVES) SLAUGHTERED IN STATES, TERRITORIES, AND  
COMMONWEALTH, 1914 TO 1918.**

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	N. Ter. (a)	F. Ter.	C'wealth.
1914	6635,196	470,011	776,869	112,183	63,398	30,064	4,000	6142	2,091,863
1915	6384,947	356,174	653,015	82,070	65,138	28,586	4,000	6 55	1,573,985
1916	6393,400	247,781	578,202	663,167	59,072	26,972	4,000	6122	1,372,716
1917	6377,936	217,480	582,954	669,789	50,781	23,521	22,911	6 87	1,345,459
1918	6437,046	223,340	498,737	673,148	48,707	22,419	31,511	6141	1,335,049

(a) Estimated.

(b) For year ended 30th June of year following.

6. Export of Beef Preserved by Cold Process.—A large export trade in beef preserved by cold process is carried on by the Commonwealth in normal times, mainly with the United Kingdom and the Philippine Islands. The quantities so exported during the five years 1914-15 to 1918-19 are as follows :—

**QUANTITY OF BEEF PRESERVED BY COLD PROCESS EXPORTED FROM THE COMMONWEALTH, 1914-15 TO 1918-19.**

Country to which Exported.	1914-15.	1915-16.	1916-17.	1917-18.	1918-19.	Total for 5 years.
	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.
United Kingdom ..	253,396,440	108,906,118	239,384,893	145,300,631	47,056,554	794,044,636
Egypt ..	4,281,049	109,969	..	30,359,072	68,681,034	103,431,124
Philippine Islands ..	11,352,425	4,089,865	548,398	1,368,713	1,994,336	19,353,737
United States ..	15,974,209	..	..	..	40,086	16,014,295
Straits Settlements ..	2,260,587	1,411,876	1,691,256	1,535,005	1,480,201	8,378,925
Hawaiian Islands ..	1,538,997	..	200,396	502,067	489,640	2,731,100
Malta ..	1,338,439	..	..	..	..	1,338,439
Ceylon ..	210,903	1,330	83,752	203,823	60,854	560,662
Hong Kong ..	216,350	38,859	90,000	98,058	75,791	519,058
Gibraltar ..	487,289	..	..	..	..	487,289
Union of South Africa ..	194,588	..	..	..	..	194,588
Italy ..	170,159	..	..	..	..	170,159
Canada ..	60,540	..	..	..	..	60,540
Other Countries ..	584,514	118,087	82,991	881,932	111,021	1,778,545
Total ..	292,066,489	114,676,104	242,081,686	180,249,301	119,989,517	949,063,097

The value of the beef preserved by cold process exported from the Commonwealth during the same years is as follows :—

**VALUE OF BEEF PRESERVED BY COLD PROCESS EXPORTED FROM THE COMMONWEALTH, 1914-15 TO 1918-19.**

Country to which Exported.	1914-15.	1915-16.	1916-17.	1917-18.	1918-19.	Total for 5 years.
	£	£	£	£	£	£
United Kingdom ..	4,430,370	2,055,045	4,890,927	2,976,301	958,164	15,310,807
Egypt ..	71,040	2,520	..	616,627	1,415,713	2,105,900
Philippine Islands ..	169,327	86,011	11,139	31,449	44,225	342,151
United States ..	209,938	..	..	..	1,023	210,961
Straits Settlements ..	33,447	28,040	34,397	31,819	33,284	160,987
Hawaiian Islands ..	24,498	..	4,353	17,968	14,058	60,882
Malta ..	22,349	..	..	..	..	22,349
Ceylon ..	3,003	25	2,352	4,582	2,130	12,092
Hong Kong ..	2,924	764	1,850	2,032	1,704	9,274
Gibraltar ..	6,691	..	..	..	..	6,691
Union of South Africa ..	2,500	..	..	..	..	2,500
Italy ..	2,130	..	..	..	..	2,130
Canada ..	1,272	..	..	..	..	1,272
Other Countries ..	10,565	3,489	2,047	17,915	2,485	36,501
Total ..	4,990,054	2,175,894	4,947,070	3,698,693	2,472,786	18,284,497

During the five years under review, the largest of Australia's customers for beef preserved by cold process has been the United Kingdom, while the second largest customer has been Egypt; the Philippine Islands, the United States, and the Straits Settlements ranked next in order of importance. Consequent on the war nearly 84 per cent. was absorbed by the United Kingdom. The exporting States and Territories during 1918-19 were :—Queensland, 105,452,182 lbs., valued at £2,147,429; Northern Territory, 11,947,101 lbs., valued at £262,379; New South Wales, 2,392,695 lbs., valued at £58,863; and Victoria, 197,539 lbs., valued at £4,115.

7. Comparison with other Countries.—In the following comparison of the herds of Australia with those of some of the principal cattle-raising countries of the world, the latest available figures have been inserted in each case :—

#### NUMBER OF CATTLE IN VARIOUS COUNTRIES.

Country.	Date.	No. of Cattle. (000 omitted.)	Country.	Date.	No. of Cattle. (000 omitted.)
British India (a) ..	1918	129,872	Rumania (c) ..	1916	2,938
U.S. of America ..	1918	67,866	Sweden ..	1918	2,584
Russian Empire (b) ..	1914	52,052	Denmark ..	1918	2,124
Brazil (c) ..	1916	28,962	Netherlands ..	1918	1,969
Argentine Republic ..	1914	25,867	Chile ..	1915	1,969
Austria-Hungary (d) ..	1910-13	17,648	Belgium ..	1913	1,849
Germany ..	1919	16,424	Bulgaria ..	1910	1,603
Australia ..	1918	12,739	Switzerland ..	1918	1,530
France (e) ..	1917	12,443	Ceylon (c) ..	1915	1,501
United Kingdom ..	1918	12,311	Japan ..	1916	1,343
Canada ..	1918	10,051	Algeria ..	1913	1,108
Uruguay ..	1916	7,803	Norway ..	1918	1,038
Italy ..	1918	6,162	Serbia ..	1910	957
Union of South Africa ..	1911	5,797	Portugal ..	1906	703
Mexico ..	1902	5,142	Philippine Islands ..	1915	534
Cuba ..	1916	3,962	Egypt ..	1916	493
Spain ..	1916	3,071	Tunis ..	1916	240
New Zealand ..	1918	3,035			

(a) Including buffalo calves. (b) Including Poland, Caucasus and Siberia. (c) Including buffaloes. (d) Austria 1910, Hungary 1913, Croatia-Slavonia 1911, and Bosnia-Herzegovina 1911. (e) Exclusive of invaded area.

8. Relation to Population.—The number of cattle per head of population differs considerably in the several States, and is also subject to marked variation from year to year in the same State. Particulars for the past five years are as follows :—

#### NUMBER OF CATTLE PER HEAD OF POPULATION, 1914 TO 1918.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Nor. Terr.	F. Terr.	C'wealth.
1914 ..	1.33	0.95	8.06	0.68	2.67	0.88	104.34	3.57	2.24
1915 ..	1.29	0.74	7.04	0.52	2.58	0.84	106.06	2.30	2.01
1916 ..	1.47	0.84	7.12	0.67	2.80	0.90	88.18	3.70	2.14
1917 ..	1.65	0.97	7.84	0.71	3.09	0.97	110.34	5.42	2.39
1918 ..	1.67	1.12	8.33	0.75	3.01	1.04	119.23	3.77	2.51

For the Commonwealth as a whole the ratio of cattle to population has slightly increased since 1914, and the increase has been in evidence in all the States

### § 4. Sheep.

1. The Founding of the Commonwealth Pastoral Industry.—Fortunately for Australia, the suitability of its climate and general conditions for the production of a high class of wool was, at an early date in the history of its settlement, surmised and tested by Captain Macarthur, one of the pioneer sheep-breeders of New South Wales.

To the energy of this enterprising pastoralist is due in large measure the rapid and extremely satisfactory development of Australia as a producer of fine wool, and though it would appear that the introduction of the Merino sheep into Australia was not due to Macarthur, a great deal of the credit for having successfully established the pastoral industry in Australia must certainly be his.

2. **Distribution throughout Commonwealth.**—With the exception of a short period in the early sixties, when the flocks of Victoria outnumbered those of the mother State, New South Wales has maintained amongst the Commonwealth group the lead in sheep production which naturally attached to it as the portion of the Commonwealth in which settlement was first effected. From 1878 to 1901, the number of sheep in New South Wales represented more than half the total for the Commonwealth, but in later years the proportion has fallen away considerably.

The number of sheep in the several States and Territories at decennial intervals from 1860 to 1910, and for each year from 1914 to 1918, is as follows :—

**NUMBER OF SHEEP IN STATES, TERRITORIES, AND COMMONWEALTH,  
1860 TO 1918.**

Year.	New South Wales.	Victoria. (a)	Queens- land.	South Australia.	Western Australia.	Tasmania. (a)	Nor. Terr.	Fed. Terr.	Total C'wealth.
1860	6,119,163	5,780,896	3,449,350	2,824,811	260,136	1,700,930	..	..	20,135,286
1870	16,308,585	10,761,887	8,163,818	4,400,655	608,892	1,349,775	..	..	41,593,612
1880	35,398,121	10,360,285	6,935,967	6,443,904	1,231,717	1,796,715	c9,318	..	62,176,027
1890	55,986,431	12,692,843	18,007,234	7,004,642	2,524,913	1,619,256	45,902	..	97,881,221
1900	40,020,506	10,841,790	10,339,185	5,235,220	2,434,311	1,683,956	48,027	..	70,602,995
1910	45,560,969	12,882,665	20,331,838	6,267,477	5,158,516	1,788,310	57,240	..	92,047,015
1914	632,874,359	12,051,685	23,129,919	4,208,461	4,456,186	1,674,845	70,200	6134,679	78,600,334
1915	632,498,046	10,545,632	15,950,154	3,674,547	4,803,850	1,624,450	57,827	6102,683	69,257,189
1916	636,086,241	12,576,587	15,524,293	65,091,282	5,529,980	1,702,579	47,520	6110,142	76,663,604
1917	638,482,465	14,760,013	17,204,268	66,229,519	6,384,191	1,711,116	54,709	6133,731	84,965,012
1918	637,243,770	15,773,902	18,220,985	66,625,184	7,183,747	1,841,924	53,620	6133,104	87,086,236

(a) 1st March year following. (b) 30th June of year following. (c) Statistics not collected prior to 1880.

3. **Proportion in the Several States and Territories.**—Particulars concerning the relative positions of the several States and Territories with respect to the total flocks of Australia during the years 1914 to 1918 are as hereunder :—

**PERCENTAGE OF SHEEP IN EACH STATE AND TERRITORY ON TOTAL FOR  
COMMONWEALTH, 1914 TO 1918.**

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	N. Terr.	F. Terr.	C'wealth.
	%	%	%	%	%	%	%	%	%
1914 ..	41.83	15.33	29.43	5.35	5.67	2.13	0.09	0.17	100.00
1915 ..	46.92	15.23	23.03	5.30	6.94	2.35	0.08	0.15	100.00
1916 ..	47.07	16.41	20.25	6.64	7.21	2.22	0.06	0.14	100.00
1917 ..	45.29	17.37	20.25	7.33	7.52	2.01	0.07	0.16	100.00
1918 ..	42.77	18.11	20.92	7.61	8.25	2.11	0.07	0.16	100.00

During the period, the proportion of total Commonwealth flocks declined considerably in the case of Queensland, while in the cases of Victoria, Western Australia, and South Australia substantial advances in proportion were experienced.

4. **Oversea Imports and Exports of Sheep.**—As in the case of cattle, the oversea exports of live sheep from Australia are of comparatively small importance. The principal countries to which such exports have been consigned during recent years are Java, the Philippine Islands, and the Pacific Islands; Western Australia being the principal exporting State. The following are particulars of the imports and exports for the years 1914-15 to 1918-19 :—

**COMMONWEALTH IMPORTS AND EXPORTS OF SHEEP, 1914-15 TO 1918-19.**

Year.	Imports.		Exports.		Net Exports.	
	No.	Value.	No.	Value.	No.	Value.
		£		£		£
1914-15 ..	6,140	23,622	16,889	37,826	10,749	14,204
1915-16 ..	6,597	36,511	7,325	19,004	728	-17,507
1916-17 ..	3,809	24,470	7,007	32,944	3,198	8,474
1917-18 ..	1,719	8,850	10,799	24,899	9,080	16,049
1918-19 ..	607	4,776	18,608	39,783	18,001	35,007

Note.—The minus sign (—) signifies net imports.

5. **Sheep Slaughtered.**—The numbers of sheep slaughtered in the several States during each of the years from 1914 to 1918 are as follows :—

**SHEEP (INCLUDING LAMBS) SLAUGHTERED, 1914 TO 1918.**

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania. (a)	Nor. Ter.	Fed. Ter.	C'wealth.
1914	66,006,190	4,550,272	1,351,145	1,156,957	588,342	312,275	c500	64,351	13,970,032
1915	64,173,511	2,973,803	1,316,152	918,526	564,535	288,419	c500	63,376	10,238,822
1916	63,756,477	2,647,200	909,615	668,612	547,041	283,313	c500	62,975	8,833,233
1917	63,198,465	2,499,002	689,905	6808,914	590,244	259,287	c500	63,713	8,050,030
1918	64,271,396	3,581,460	542,479	61,137,573	630,117	295,844	c500	63,334	10,462,708

(a) Partly estimated. (b) Year ended 30th June year following. (c) Estimated.

6. **Exports of Mutton and Lamb Preserved by Cold Process.**—Australia's export trade in mutton and lamb preserved by cold process has, in recent years, advanced rapidly. In 1903 the value of exports was £492,114, while eleven years afterwards in 1914-15, the value amounted to no less a sum than £3,413,848. During the past four years, consequent on drought and war conditions, the value of the exports fell considerably, averaging for the period only £1,015,351 per annum. In all the States considerable attention is now being paid to the breeding of a class of sheep that will best meet the requirements of consumers. Crosses between the Merino and the Lincoln, or between the Merino and the Leicester breeds, have proved exceedingly valuable, as they furnish both a good quality of wool and an excellent carcase for export purposes. The breeding of Shropshire and Southdown sheep with a view to combining meat production with that of wool is also on the increase. Special attention is being paid to the raising of lambs, as it has become widely recognised that with suitable breeds the export trade in lambs is very profitable.

As in the case of frozen beef, Australia's principal customer in this trade is the United Kingdom, which has absorbed 92 per cent. of the total quantity exported from the Commonwealth during the past five years, while the balance was shipped mainly to Egypt and the Straits Settlements.

**QUANTITY OF MUTTON AND LAMB PRESERVED BY COLD PROCESS EXPORTED FROM THE COMMONWEALTH, 1914-15 TO 1918-19.**

Country to which Exported.	1914-15.	1915-16.	1916-17.	1917-18.	1918-19.	Total for 5 years.
	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.
United Kingdom ..	187,897,976	36,539,660	65,140,182	9,532,577	49,784,705	348,895,100
Egypt ..	902,604	319,156	..	8,071,709	8,464,515	17,757,984
Straits Settlements ..	1,068,164	749,883	964,335	824,406	754,089	4,360,877
Ceylon ..	504,115	302,839	284,130	252,716	189,875	1,333,675
Hong Kong ..	256,068	194,209	272,450	144,789	195,881	1,063,397
Philippine Islands ..	370,296	132,134	35,608	122,963	194,843	855,844
Canada ..	413,013	..	..	199,092	..	612,105
Malta ..	798,996	..	..	..	..	798,996
Gibraltar ..	463,106	..	..	..	..	463,106
Union of South Africa ..	387,006	..	..	..	..	387,006
United States ..	195,225	..	..	..	..	195,225
Other Countries ..	207,308	105,747	116,104	27,058	103,547	559,764
Total ..	193,263,877	38,343,628	66,812,809	19,175,310	59,687,455	377,283,079

The corresponding particulars concerning the values of the exports are :—

**VALUES OF FROZEN MUTTON AND LAMB EXPORTED FROM THE COMMONWEALTH, 1914-15 TO 1918-19.**

Country to which Exported.	1914-15.	1915-16.	1916-17.	1917-18.	1918-19.	Total for 5 years.
	£	£	£	£	£	£
United Kingdom ..	3,321,045	725,255	1,496,658	213,710	1,082,646	6,839,314
Egypt ..	16,577	7,719	..	194,199	176,551	395,046
Straits Settlements ..	18,553	18,713	25,534	23,885	20,796	107,481
Ceylon ..	5,346	7,524	7,250	7,103	5,058	32,281
Hong Kong ..	4,422	4,928	7,210	4,072	5,399	26,031
Philippine Islands ..	6,212	3,039	965	3,425	5,395	19,036
Canada ..	7,507	..	..	5,471	..	12,978
Malta ..	12,920	..	..	..	..	12,920
Gibraltar ..	7,660	..	..	..	..	7,660
Union of South Africa ..	6,538	..	..	..	..	6,538
United States ..	3,066	..	..	..	..	3,066
Other Countries ..	4,002	2,574	2,955	782	2,586	12,899
Total ..	3,413,848	769,752	1,540,572	452,647	1,298,431	7,475,250

7. Comparison with other Countries.—As regards the size of its flocks, and the quantity and quality of wool produced, Australia has long occupied a leading position amongst the sheep-raising countries of the world. From estimates published in the Year Book of the United States Department of Agriculture it would appear that the

approximate number of sheep in the world is in the neighbourhood of 550,000,000, to which total Australia contributes nearly 16 per cent. The following comparison taken mainly from the same source gives the latest available figures relative to the number of sheep in the principal wool-producing countries :—

#### NUMBER OF SHEEP IN VARIOUS COUNTRIES.

Country.	Date.	No. of Sheep. (,000 omitted.)	Country.	Date.	No. of Sheep. (,000 omitted.)
Australia ..	1918	87,086	Brazil ..	1916	7,205
Russian Empire (a) ..	1914	72,273	Germany ..	1919	5,824
U. S. of America ..	1918	49,863	Chile ..	1914	4,545
Argentine Republic ..	1914	43,225	Serbia ..	1910	3,819
Union of South Africa ..	1915	31,434	Greece ..	1914	3,547
Ottoman Empire ..	1912	27,095	Mexico ..	1902	3,424
United Kingdom ..	1918	27,063	Portugal ..	1906	3,073
Uruguay ..	1908	26,286	Canada ..	1918	3,053
New Zealand ..	1918	25,829	Sweden ..	1918	1,409
British India ..	1918	22,895	Finland ..	1910	1,309
Spain ..	1916	16,012	Norway ..	1918	1,185
Austria-Hungary (b) ..	{ 1910 } { 1913 }	12,337	Tunis ..	1916	1,148
Italy ..	1918	11,752	Iceland ..	1914	585
France (c) ..	1917	10,587	Denmark ..	1918	470
Algeria ..	1912	8,338	Netherlands ..	1918	437
Bulgaria ..	1910	8,632	Switzerland ..	1918	225
Rumania ..	1916	7,811	Belgium ..	1910	185

(a) Including Poland, Caucasus, and Siberia. (b) Austria, Croatia-Slavonia and Bosnia-Herzegovina 1910; Hungary 1913. (c) Exclusive of invaded area.

8. Relation to Population.—The relation of the flocks of the several States and Territories to the population at the end of each year from 1914 to 1918 is as follows :—

#### NUMBER OF SHEEP PER HEAD OF POPULATION, 1914 TO 1918.

Year.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	N.T.	F.T.	C'wealth.
1914 ..	17.66	8.42	34.18	9.53	13.79	8.32	17.66	69.42	15.91
1915 ..	17.42	7.43	23.50	8.38	15.11	8.08	12.67	41.64	14.04
1916 ..	19.24	8.99	23.19	11.77	17.91	8.52	9.97	49.55	15.68
1917 ..	20.14	10.46	25.38	14.18	20.63	8.42	11.15	56.10	17.13
1918 ..	18.97	11.02	26.24	14.53	22.92	8.82	12.26	58.59	17.16

A comparison of the ratios of sheep to population for 1918 with those for 1914 discloses increases in all the States excepting Queensland, the Northern Territory, and the Federal Territory, where the proportions have diminished considerably.

### § 5. Wool.

1. Importance of Wool Production.—The chief contributing factor to the pastoral wealth of Australia is the production of wool, the value of the output for the season ended 30th June, 1919, being about £42,490,000. The bulk of the wool produced in the Commonwealth is exported, but with the greater activity of the local woollen mills there has, in recent years, been an increasing quantity used in Australia, although even now the quantity so used represents only about 3 per cent. of the whole clip.

2. **Greasy and Scoured Wool.**—For the purpose of comparing the clips of the several States or of the Commonwealth as a whole for a series of years, it is convenient to have the total production expressed in terms of greasy wool.

The quantity of Australian wool scoured and washed before export during recent years has been on the average about 25 per cent. of the total clip. The loss of weight in scouring varies largely with season, locality, breed, and condition. It seems preferable to express "scoured and washed" wool in terms of "greasy" rather than vice versa, since the absolute error arising from uncertainty as to average loss of weight has thus the less effect.

In the following tables relative to the production of wool, "scoured and washed" wool has been converted into the estimated equivalent amount of "greasy" wool, on the assumption that two pounds of "greasy" wool are on the average required to produce one pound of "scoured and washed" wool.

3. **Total Production.**—The estimated production of wool in the several States, formerly based on the Customs returns, being no longer available from that source, an effort has been made to arrive at approximate figures from data collected by the State Statisticians from growers, fellmongers, &c. Particulars for years prior to 1914–15 will be found in earlier issues (see Year Book No. 6, page 346, and No. 9, page 296). The following table gives the estimates obtained in reference to the five seasons ended 30th June, 1915 to 1919 :—

**ESTIMATED QUANTITY OF WOOL AS IN THE GREASE, SHORN, FELLMONGERED OR ON SKINS SHIPPED DURING THE SEASONS ENDED 30th JUNE, 1915 TO 1919.**

State.	1914-5.	1915-16.	1916-17.	1917-18.	1918-19.
	lbs.	lbs.	lbs.	lbs.	lbs.
New South Wales (a)	318,935,000	262,045,000	270,525,000	284,188,000	305,613,000
Victoria ..	95,406,867	82,330,198	94,845,024	105,424,682	126,647,061
Queensland ..	155,478,740	130,783,277	102,220,125	87,425,558	113,777,272
South Australia ..	38,848,978	33,969,975	35,050,865	46,339,339	55,947,108
Western Australia ..	24,562,110	31,887,888	34,199,682	39,701,357	45,317,271
Tasmania ..	9,103,030	9,212,203	10,441,978	10,284,316	10,279,998
Northern Territory (b)	400,000	350,000	350,000	330,000	330,000
Commonwealth ..	642,734,725	550,578,541	547,632,674	573,693,252	657,911,710

(a) Including Federal Territory. (b) Approximate figures.

It is to be noted that a shortage has apparently occurred in the collection of these statistics, the estimates falling considerably below the approximate totals obtained from oversea shipments of wool and skins, together with the quantity used in local manufactories. For the three seasons ended 30th June, 1914, this average annual shortage amounted to nearly 46,000,000 lbs. of wool. The abnormal conditions of wool shipment obtaining during the last five seasons do not admit of any similar comparisons being made. The appraisalment figures of the Central Wool Committee, however, furnish further evidence of shortage in the figures supplied by the State Statisticians for the past two seasons. During 1917–18 and 1918–19, the total appraisements amounted to 664,310,326 and 704,772,241 lbs. of wool respectively, which figures reveal an average annual deficit of 68,738,803 lbs. in the estimated production for those seasons.



The weight and value of wool per sheep shorn in the past five seasons is shewn in the following table :—

**ESTIMATED WEIGHT AND VALUE OF WOOL PER SHEEP SHORN FOR THE SEASONS ENDED 30th JUNE, 1915 TO 1919.**

Season ended 30th June.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
<b>WEIGHT.</b>							
	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.
1915 .. ..	7.20	5.58	6.75	6.98	5.31	5.00	6.68
1916 .. ..	7.09	5.79	6.37	7.65	6.16	5.29	6.63
1917 .. ..	7.39	6.26	7.00	7.47	5.82	5.79	6.96
1918 .. ..	7.08	6.19	6.91	7.52	6.17	5.38	6.80
1919 .. ..	7.13	6.21	6.30	7.41	6.09	5.09	6.68
<b>VALUE.</b>							
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
1915 .. ..	5 6	4 10	5 3	4 10	3 8	4 6	5 2
1916 .. ..	6 8	6 9	6 1	6 10	5 5	7 2	6 6
1917 .. ..	9 8	8 8	9 2	9 0	6 11	9 3	9 2
1918 .. ..	8 9	8 6	9 7	9 1	7 11	8 5	8 9
1919 .. ..	8 11	8 3	8 10	9 0	7 4	7 9	8 7

4. **Wool Locally Used.**—The quantity of wool used in the manufactories of the several States of the Commonwealth during the past five years was approximately as follows :—

**LOCALLY USED WOOL, ESTIMATED AS "GREASY," STATES AND COMMONWEALTH, 1914 TO 1918.**

State.	1914.	1915.	1916.	1917.	1918.
	lbs.	lbs.	lbs.	lbs.	lbs.
New South Wales .. ..	a2,484,446	b4,173,576	b6,467,800	b6,556,988	b6,118,000
Victoria .. ..	6,118,450	11,052,250	a11,052,250	b8,669,460	b7,344,035
Queensland .. ..	356,553	377,538	358,504	304,091	268,917
South Australia .. ..	389,700	1,065,130	a1,065,130	b995,164	b734,723
Western Australia .. ..					
Tasmania .. ..	1,141,200	1,217,780	1,244,844	1,172,000	1,301,006
Commonwealth .. ..	10,490,349	17,886,274	20,188,528	17,697,703	15,766,681

(a) Previous year's figures. (b) Year ended 30th June.

5. **Bounties on Combed Wool or Tops Exported.**—Under the Bounties Act 1907, bounties were payable on combed wool or tops exported from the Commonwealth, provided they were produced therein. The maximum amount to be paid might not exceed a total of £10,000 per annum; any unexpended sum might be carried forward and be available for the years following. For the three years commencing 1st January, 1909, the rate of bounty granted was 1½d. per lb., and for the two years commencing 1st January, 1912, 1d. per lb. was payable for all combed wool or tops produced; thenceforward to the end of 1915, 1d. per lb. was payable up to 1,000,000 lbs., to any one manufacturer during a year, and ¾d. per lb. in excess of that quantity. No bounties have been paid on combed wool or tops since 1915. During the year 1908-9, an amount of £326 was paid in bounties, in 1909-10, £4,933; in 1910-11, £8,522; in 1911-12, £16,898; in 1912-13, £13,061; in 1913-14, £12,706; in 1914-15, £7,727; and in 1915-16, £5,828. The quantities of wool on which these amounts were paid were 52,085, 789,216, 1,363,555, 3,122,244, 3,134,614, 3,068,170, 3,635,811 and 2,824,436 lbs. respectively.

Figures shewing the exports of wool tops for the years 1914-15 to 1918-19 inclusive will be found on the next page.

6. Exports of Wool.—During the two calendar years prior to the war, about 38 per cent. of the exports of wool from the Commonwealth was despatched to the United Kingdom, whereas the shipments for the same destination during the past five years have averaged 70 per cent. The other leading consignees for the last five years were the United States of America, Japan, Italy, France, and, prior to the war, Germany and Belgium. The following table shews for the years 1914–15 to 1918–19 the quantities of “greasy” wool exported from the Commonwealth and the principal countries to which consigned :—

**COMMONWEALTH EXPORTS OF WOOL IN THE GREASE, 1914–15 TO 1918–19.**

Country to which Exported.	1914–15.	1915–16.	1916–17.	1917–18.	1918–19.	Total for 5 years.
	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.
United Kingdom ..	319,614,694	202,384,381	283,446,361	139,113,437	352,282,063	1,296,841,530
United States of America ..	61,731,511	115,112,628	16,174	57,425,217	71,776,334	306,061,864
Italy ..	18,191,774	43,167,206	25,608,163	17,641,985	10,036,918	114,646,046
Japan ..	22,670,413	34,725,863	16,839,727	2,910,477	5,319,577	82,475,057
France ..	12,787,863	13,746,706	12,254,213	5,675,577	3,719,125	48,183,484
Egypt ..	..	..	..	15,522,281	10,950,893	26,473,174
Canada ..	951,452	453,950	727,923	4,726,317	3,152,424	10,012,066
Germany ..	3,036,083	..	..	..	..	3,036,083
Belgium ..	2,984,856	..	..	..	..	2,984,856
India ..	443,451	198,228	297,218	778,286	795,792	2,512,975
Austria-Hungary ..	829,746	..	..	..	..	829,746
New Zealand ..	541,513	11,059	..	..	..	552,572
Other Countries ..	170,474	1,452,965	32,471	..	..	1,655,910
<b>Total ..</b>	<b>443,953,830</b>	<b>411,252,986</b>	<b>339,222,250</b>	<b>243,802,577</b>	<b>458,033,726</b>	<b>1,896,265,369</b>

Similar particulars concerning the exports of “scoured and washed” wool are as follows :—

**COMMONWEALTH EXPORTS OF “SCOURED AND WASHED” WOOL (a), 1914–15 TO 1918–19.**

Country to which Exported.	1914–15.	1915–16.	1916–17.	1917–18.	1918–19.	Total for 5 years.
	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.
United Kingdom ..	48,171,821	37,569,727	46,917,307	59,247,374	103,261,254	295,167,483
United States of America ..	4,557,800	27,933,634	..	1,446,501	1,460,294	35,398,229
Japan ..	6,141,036	7,499,571	5,081,183	4,779,081	3,447,825	26,948,696
Italy ..	655,302	4,920,545	2,651,922	475,914	..	8,703,683
France ..	2,154,275	1,190,494	1,016,397	62,148	27,239	4,450,553
Germany ..	1,748,008	..	154,172	..	..	1,902,180
Egypt ..	..	..	..	1,074,558	35,780	1,110,338
India ..	135,408	240,663	299,060	51,664	216,326	943,121
Belgium ..	920,506	..	..	..	..	920,506
Austria-Hungary ..	147,864	..	..	..	..	147,864
New Zealand ..	1,879	104,864	..	..	..	106,743
Other Countries ..	315,392	426,553	567,059	299,490	687,271	2,295,765
<b>Total ..</b>	<b>64,940,291</b>	<b>79,886,051</b>	<b>56,687,100</b>	<b>67,436,730</b>	<b>109,135,989</b>	<b>378,095,161</b>

(a) Including “tops.” See preceding page.

The figures for “scoured and washed wool” include tops, amounting in 1914–15 to 4,095,966 lbs., valued at £511,021; in 1915–16, 4,981,975 lbs., valued at £680,656; in 1916–17, 4,869,452 lbs., valued at £1,204,570; in 1917–18, 4,571,357 lbs., valued at £1,510,799; and in 1918–19, 2,822,578 lbs., valued at £935,212. The total exports of

wool tops during the last five years amounted to 21,341,328 lbs., valued at £4,842,258, of which 21,082,038 lbs., or nearly 99 per cent., were shipped to Japan.

The total value of the wool exported from the Commonwealth to the principal countries during the five years under review was :—

**TOTAL VALUE OF WOOL EXPORTED FROM THE COMMONWEALTH,  
1914-15 TO 1918-19.**

Country to which Exported.	1914-15.	1915-16.	1916-17.	1917-18.	1918-19.	Total for 5 years.
	£	£	£	£	£	£
United Kingdom ..	15,413,174	12,608,971	23,431,942	15,648,660	34,563,566	101,666,313
United States of America ..	3,110,301	8,381,302	13,513	4,389,755	4,982,056	20,876,927
Japan ..	1,502,576	2,587,091	2,470,414	1,798,089	1,400,192	9,756,362
Italy ..	716,260	2,115,891	1,845,861	1,005,058	548,142	6,231,212
France ..	694,751	952,026	963,097	372,453	804,410	3,286,737
Egypt ..	..	..	..	939,149	613,814	1,552,963
Canada ..	50,063	53,316	77,267	338,087	238,924	767,657
India ..	30,739	32,442	87,860	60,780	78,336	296,157
Germany ..	295,376	..	..	..	..	295,376
Belgium ..	187,755	..	..	..	..	187,755
Austria-Hungary ..	50,436	..	..	..	..	50,436
New Zealand ..	19,962	4,981	..	..	..	24,943
Other Countries ..	30,789	118,121	63,384	30,833	37,315	280,442
<b>Total ..</b>	<b>22,102,182</b>	<b>26,854,091</b>	<b>28,953,338</b>	<b>24,586,864</b>	<b>42,766,755</b>	<b>145,263,230</b>

7. **Care Needed in Comparing Clips.**—The Customs returns prior to 1914-15 do not furnish a reliable indication of increase or decrease in successive clips, since in each case they relate to the year ended 31st December, and include imports and exports of wool belonging to two distinct clips. A further defect in the comparability of successive clips is due to the circumstance that owing to climatic or other conditions, the time of shearing may be so far delayed that one clip may include almost thirteen months' growth of wool, while the succeeding one may include little more than eleven months' growth.

8. **Wool-producing Countries in Southern Hemisphere.**—The next table, compiled by one of the leading English wool-broking firms, furnishes interesting evidence of the relative importance of the three great wool-producing areas of the Southern Hemisphere. The figures given are the latest available, and represent for the respective years the imports of wool into Europe and North America :—

**IMPORTS OF WOOL INTO EUROPE AND NORTH AMERICA,  
1912 TO 1916.**

Year.	Australia and New Zealand.	Cape Colony.	River Plate.	Total.	Average Value of Australasian and Cape Bales.
	Bales.	Bales.	Bales.	Bales.	£
1912 ..	2,463,000	463,000	497,000	3,423,000	15.0
1913 ..	2,296,000	484,000	437,000	3,217,000	16.5
1914 ..	2,332,000	499,000	406,000	3,237,000	17.0
1915 ..	2,157,000	519,000	378,000	3,054,000	19.0
1916 ..	1,919,000	500,000	344,000	2,763,000	27.0

As the River Plate bale is much larger than the Australasian or Cape bale, a comparison of the number of bales is somewhat misleading. Allowing approximately for the difference in size of the several bales, it may be said that during the five years shewn above the importations from Australia and New Zealand represented about 65 per cent. of the total.

9. **United Kingdom Importation of Wool.**—The quantity and value of wool imported into the United Kingdom during the year 1918 from the principal wool-producing countries furnish evidence of the important position which the Commonwealth occupies in the supply of wool to the mother country. This is shewn in the following table :—

#### IMPORTS OF WOOL INTO THE UNITED KINGDOM, 1918.

Country from which Imported.	Quantity.	Value.	Country from which Imported.	Quantity.	Value.
	lbs.	£		lbs.	£
Australia ..	204,756,535	20,104,417	Iceland and Greenland ..	560,352	52,910
New Zealand ..	89,298,811	7,450,411	Uruguay ..	470,500	24,000
British India ..	61,854,588	3,485,219	China..	184,073	17,915
Union of S. Africa	31,270,561	2,922,604	U.S. of America	10,836	1,626
Argentine Republic ..	6,248,797	654,936	British Possessions, n.e.i. ..	872,595	66,706
Turkey, Asiatic	6,175,014	452,918	Foreign Countries, n.e.i. ..	713,927	63,108
Falkland Islands	5,772,256	442,954			
Peru ..	1,670,383	250,550			
Chile ..	1,372,975	175,363			
Egypt ..	2,221,544	173,839	Total ..	413,453,747	36,339,476

It will be seen that of the total importations of wool into the United Kingdom, Australian wool represented nearly 50 per cent. of quantity and over 55 per cent. of value, and New Zealand nearly 22 per cent. of quantity and 20½ per cent. of value. It is interesting to note that a total of 396,046,890 lbs., valued at £34,646,150 was received from British Possessions, being a little under 96 per cent. of the total weight imported, and 95 per cent. of the total value.

10. **The Wool Market.**—(i) *General.* A résumé of Australian wool market conditions for the seasons 1907–8 to 1912–13 will be found in Year Book No. 7 (pages 296 and 297), for the season 1913–14 in Year Book No. 8 (page 297), and for the seasons 1914–15 and 1915–16 in Year Book No. 10 (page 310).

(ii) *Purchase by British Government.* The purchase by the Imperial Government of the balance of the Australian wool clip, for the season 1916–17, was brought about as a result of war conditions. Owing to the demand for wool for British and Allied military clothing, it was decided to acquire the Australian clip at the flat rate of 15½d. per pound greasy—an increase of 55 per cent. on the prices ruling in the season immediately preceding the war, viz., 1913–14. The control of the scheme was placed in the hands of a body called the Central Wool Committee, assisted by a committee in each State. These committees consisted of representatives of the wool growers, wool sellers, wool buyers, manufacturers, and scourers or fellmongers. In addition the Central Wool Committee had a Government nominee, who acted as chairman. The broad policy laid down was that existing trade conditions were not to be disturbed; this meant that

the carrying out of the details of the scheme was left to the trade itself. The wool was prepared, catalogued and shewn in the usual way, but instead of being sold by public auction, it was valued by duly appointed Government Wool Appraisers, according to a table of limits prepared by a body of experts acting as an Advisory Board to the Central Wool Committee. On appraisal, the wool became the property of the Imperial Government, and was shipped as freight space became available, the allotment of freight being on the basis of the quantity of wool appraised in each State.

The Central Wool Committee, at the request of the Imperial Government, undertook to scour and re-class as much wool as would keep the local industries going to their full capacity.

(iii) *Financial.* Funds received from the Imperial Government were used to effect a payment of 90 per cent. of the appraised price to wool brokers for distribution to the growers within fourteen days from the final date of each series of appraisements. The balance of 10 per cent. was withheld for possible adjustments. The money so retained was placed at interest, the earnings being added to the amount available for final distribution. The average appraised price per pound having worked out less than the purchase price of 15½d., the money retained, amounting to £2,313,461, was paid over on the 14th August, 1917. A dividend—the first—of 10 per cent. was paid on 23rd October, 1917, amounting to £2,312,608. This represents slightly more than the payment in full of the flat rate of 15½d. per pound. A small dividend will follow as soon as final adjustments can be made.

(iv) *Quantity and Value of Wool Appraised, 1916-17.* The quantity of wool appraised under the Imperial Government's purchase of a portion of the clip for the season 1916-17 amounted to 323,752,519 lbs. greasy, and 34,307,991 lbs. scoured, equivalent to 392,368,501 lbs. of wool in the grease. The average appraised price per pound of wool in the grease was 14.72d., the average for scoured wool was 22.86d. per pound, and the average of all wool—greasy, and scoured calculated as greasy—appraised under the scheme was 14.15d. per pound, the difference between this average and the 15½d. basis being equal to 9.5 per cent. on the average appraised price.

(v) *Purchase of 1917-18 Clip.* The organisation for the carrying out of the Imperial Government's purchase of the Australian wool clip 1917-18 was the same as for the balance of the season 1916-17.

With the exception of a few modifications necessary for the better working of the scheme, no alteration was made in the method of appraisal.

Ninety per cent. of the appraised value was paid to wool growers through the wool selling brokers fourteen days after the completion of each series of appraisements, 10 per cent. again being withheld for possible adjustments.

The total quantity of greasy wool appraised was 569,629,520 lbs., and scoured wool 47,340,403 lbs., a total of 616,969,923 lbs., equal to 664,310,326 lbs. greasy.

The average appraised price of the greasy wool was 14.98d. per lb., and of the scoured wool 25.62d. per lb. The average appraised price on the greasy basis works out at 14.68d. per lb. The difference between this and the flat rate of 15½d. is equal to 5.59 per cent. of the appraised price.

The 10 per cent. retention money, together with a dividend of 5 per cent., was distributed in all centres on the 21st August, 1918, involving a sum of approximately £6,094,713. A small further dividend will be payable when outstanding accounts are finally adjusted.

### PARTICULARS OF PURCHASE OF 1917-18 AUSTRALIAN WOOL CLIP.

Purchased by—		Quantity of Wool Appraised.				Values.					
		Bales.	Fadges.	Sacks.	Weight in lbs.	Appraised Value.			Based on Flat Rate Value.		
						£	s.	d.	£	s.	d.
British Govern- ment ..	Greasy	1,627,360	18,136	190,587	553,713,279	34,619,564	19	9	36,555,476	4	11
	Scoured	197,246	697	745	46,196,661	4,956,855	0	7	5,234,040	4	10
	Total	1,824,606	18,833	191,332	599,909,940	39,576,420	0	4	41,789,516	9	9
Woollen Manu- facturers ..	Greasy	37,187	493	15,682	13,185,745	715,302	10	3	755,301	18	6
	Scoured	4,632	16	23	1,132,587	95,444	17	0	100,782	1	8
	Total	41,819	509	15,705	14,318,332	810,747	7	3	856,084	0	2
Wool Top Manu- facturers ..	Greasy	7,936	1	..	2,730,496	242,287	10	4	255,836	2	9
	Scoured	46	..	..	11,155	1,835	18	7	1,938	11	9
	Total	7,982	1	..	2,741,651	244,123	8	11	257,774	14	6
Total Purchased	Greasy	1,672,483	18,630	206,269	569,629,520	35,577,155	0	4	37,566,614	6	2
	Scoured	201,924	713	768	47,340,403	5,054,135	16	2	5,336,760	18	3
	Total	1,874,407	19,343	207,037	616,969,923	40,631,290	16	6	42,903,375	4	5
Grand total in terms of Greasy	..	..	..	..	664,310,326	..	..	..	42,903,375	4	5

Note.—Woollen manufacturers obtained their supplies at the appraised price, but wool top manufacturers were required to pay the flat rate value for all their purchases.

(vi) *Purchase of 1918-19 Clip.* The purchase of the 1918-19 clip and appraisement thereof were virtually carried out on the same lines as for the clip of 1917-18.

The total wool appraised during the 1918-19 season consisted of 599,447,103 lbs. greasy and 52,662,569 lbs. scoured wool, or an equivalent of 704,772,241 lbs. in terms of greasy.

The total greasy wool appraised represented a value of £38,310,763, the average price being 15.34d. per lb., while the scoured value was £5,670,405, or an average per lb. of 25.84d.

Reducing all appraised wool to a greasy basis the average price would be 14.98d. per lb.

The difference between the appraised price and the flat rate of 15½d. was 3.49 per cent. of the appraisement.

A dividend of 3½ per cent., together with the 10 per cent. retained, or a total of 13½ per cent., was accordingly made payable on the 26th August, 1919.

## PARTICULARS OF PURCHASE OF 1918-19 AUSTRALIAN WOOL CLIP.

Purchased by—	—	Quantity of Wool Appraised.				Values.	
		Bales.	Fadges.	Sacks.	Weight in lbs.	Appraised Value. £	Based on Flat Rate Value. £
British Government	Greasy	1,700,290	22,878	235,423	579,168,627	36,975,793	..
	Scoured	217,092	872	668	51,121,844	5,504,575	..
	Total	1,917,382	23,750	236,091	630,290,471	42,480,368	43,963,348
Woollen Manufacturers .. ..	Greasy	37,507	300	10,862	13,189,300	..	..
	Scoured	4,542	10	1	1,108,427	..	..
	Total	42,049	310	10,863	14,297,727	839,756	869,072
Wool Top Manufacturers .. ..	Greasy	21,257	4	..	7,089,176	..	..
	Scoured	1,896	..	..	432,298	..	..
	Total	23,153	4	..	7,521,474	661,044	684,120
Total Purchased ..	Greasy	1,759,054	23,182	246,285	599,447,103	38,310,763	38,714,292
	Scoured	223,530	882	669	52,662,569	5,670,405	6,802,248
	Total	1,982,584	24,064	246,954	652,109,672	43,981,168	45,516,540
Grand total in terms of Greasy .. ..	..	..	..	..	704,772,241	..	45,516,540

Woollen manufacturers again purchased at appraised price, while the wool tops companies paid the flat rate and have contracted to pay in addition a percentage increase equal to that of the final dividend on the whole clip when determined.

Arrangements having been concluded for the purchase by the Imperial Government of the Australian wool clip for the currency of the war, and for one full wool year thereafter, the agreement embraces the 1919-20 season's production, the conditions being on the same lines as for previous seasons. The quantity of appraised wool in the Commonwealth awaiting shipment overseas on 30th June, 1919, was 127,266 bales of the 1917-18 season and 1,211,427 bales of 1918-19 season, or a total of 1,338,693 bales, representing a value of approximately £28,772,000.

(vii) *Average Export Value.* The average values per lb. of Australian greasy wool according to the export returns for the past five years have been as follows:—

## EXPORT VALUE PER LB. OF AUSTRALIAN GREASY WOOL, 1914-15 TO 1918-19.

Year .. .. .	1914-15.	1915-16.	1916-17.	1917-18.	1918-19.
Average value per lb. ..	d. 9.45	d. 11.86	d. 15.81	d. 16.71	d. 16.49

(viii) *Exports of Wool from each State, and Quantity sold Locally.* Over 86½ per cent. of the wool grown in Australia was sold in the local markets prior to export from the Commonwealth during 1913-14. Under normal conditions prior to the war buyers from

the United Kingdom, France, Germany, and other European countries, also from America, Japan, China, and India, attended the sales conducted in Sydney, Melbourne, Geelong, Brisbane, Adelaide, Fremantle, Hobart, and Launceston.

The following table shews the number of bales of wool exported overseas from each State during the season ended 30th June, 1919, and bales appraised or sold for shipment, for use in local woollen mills, for scouring, etc. It must be noted that as considerable quantities of wool grown in some States are sold in or shipped from others, these figures do not shew actual local production, but total overseas shipments and sales. The estimated quantity of wool produced in each State is given on page 333.

**EXPORTS OF WOOL TO PLACES OUTSIDE THE COMMONWEALTH, AND THE QUANTITY APPRAISED OR SOLD IN THE SEVERAL STATES, DURING THE SEASON ENDED 30th JUNE, 1919.**

State.	Overseas Exports.		Sales or Appraisements.	
	Bales.	%	Bales.	%
New South Wales .. ..	827,089	44.71	766,313	37.73
Victoria .. ..	484,660	26.20	602,370	29.66
Queensland .. ..	261,022	14.11	304,583	15.00
South Australia .. ..	182,352	9.86	190,752	9.39
Western Australia .. ..	79,371	4.29	130,596	6.43
Tasmania .. ..	15,362	0.83	36,302	1.79
Commonwealth .. ..	1,849,856	100.00	2,030,916	100.00

(ix) *Exports of Wool from Commonwealth and Quantity sold Locally.* The number of bales of wool exported from the Commonwealth and the number sold at local sales prior to shipment, or taken for local use, during 1895, 1900, 1905, 1910, and the succeeding four seasons is shewn in the following table :—

**EXPORTS OF WOOL FROM THE COMMONWEALTH, AND THE QUANTITY SOLD LOCALLY FROM 1895 TO 1914.**

Year ended 30th June.				Overseas Exports.	Local Sales.(a)	Ratio of Wool sold locally to Exports.
				Bales.	Bales.	%
1895 .. ..	..	..	..	1,595,652	817,333	51.22
1900 .. ..	..	..	..	1,221,163	807,031	66.09
1905 .. ..	..	..	..	1,218,969	926,940	76.04
1910 .. ..	..	..	..	1,921,705	1,624,561	84.54
1911 .. ..	..	..	..	1,975,378	1,642,555	83.15
1912 .. ..	..	..	..	2,020,547	1,700,494	84.16
1913 .. ..	..	..	..	1,718,486	1,518,650	88.37
1914 .. ..	..	..	..	1,966,576	1,703,744	86.64

(a) Including wool absorbed by local woollen mills and wool-scouring establishments.

The steady development of the Australian wool market is clearly shewn in this table. In the nineteen years ended 1914, the quantity sold locally more than doubled, and the ratio of wool sold locally to that exported increased from 51 per cent. in 1895



to over 86½ per cent. in the season ended 30th June, 1914. The abnormal conditions obtaining since the outbreak of war have materially affected the ratios, which in consequence are no longer serviceable as a measure of growth of the local market.

(x) *Quantities of Various Descriptions of Wool Sold or Appraised in each State.* The quantities and ratios of the various descriptions of wool marketed in each State are shewn in the following table:—

**PROPORTIONS OF THE VARIOUS DESCRIPTIONS OF WOOL SOLD OR APPRAISED LOCALLY IN THE SEVERAL STATES OF THE COMMONWEALTH DURING THE SEASON ENDED 30th JUNE, 1919.**

Description of Wool.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	Commonwealth.
	Bales.	Bales.	Bales.	Bales.	Bales.	Bales.	Bales.
Greasy ..	672,265	546,390	237,602	184,710	127,762	36,137	1,804,866
Scoured ..	94,048	55,980	66,981	6,042	2,834	165	226,050
Total ..	766,313	602,370	304,583	190,752	130,596	36,302	2,030,916
Fleece, etc. ..	727,693	554,545	289,120	172,919	117,555	34,928	1,896,760
Lambs' ..	38,620	47,825	15,463	17,833	13,041	1,374	134,156
Total ..	766,313	602,370	304,583	190,752	130,596	36,302	2,030,916
Merino ..	536,419	284,169	296,202	165,734	121,010	13,123	1,416,657
Crossbred and all strong breeds ..	229,894	318,201	8,381	25,018	9,586	23,179	614,259
Total ..	766,313	602,370	304,583	190,752	130,596	36,302	2,030,916
	%	%	%	%	%	%	%
Greasy ..	87.73	90.71	78.01	96.83	97.83	99.55	88.87
Scoured ..	12.27	9.29	21.99	3.17	2.17	0.45	11.13
Total ..	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Fleece, etc. ..	94.96	92.06	94.92	90.65	90.01	96.22	93.39
Lambs' ..	5.04	7.94	5.08	9.35	9.99	3.78	6.61
Total ..	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Merino ..	70.00	47.18	97.25	86.88	92.66	36.15	69.75
Crossbred and all strong breeds ..	30.00	52.82	2.75	13.12	7.34	63.85	30.25
Total ..	100.00	100.00	100.00	100.00	100.00	100.00	100.00

Wool in the grease represented nearly 89 per cent. of the total marketed during 1918-19. Of fleece and lambs' wool, the former represents 93.39, and the latter 6.61 per cent. The class of wool produced is principally merino, which is almost exclusively

grown in the northern, western, and central parts of the continent, the bulk of the merino wool dealt with in Victoria coming from Riverina and other parts of New South Wales. Victoria, the southern parts of South Australia and of New South Wales, and Tasmania, produce nearly the whole of the crossbred and other strong bred wools.

(xi) *Percentages in each State of Various Descriptions of Wool Sold or Appraised.* The following table gives the percentages of each description of wool sold or appraised in the several States during the season 1918-19 :—

**PERCENTAGE OF BALES OF EACH DESCRIPTION OF WOOL SOLD OR APPRAISED IN THE SEVERAL STATES ON THE TOTAL SOLD OR APPRAISED IN THE COMMONWEALTH, 1918-19.**

Description of Wool.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	Commonwealth.
	%	%	%	%	%	%	%
Greasy ..	37.25	30.27	13.17	10.23	7.08	2.00	100.00
Scoured ..	41.61	24.77	29.63	2.67	1.25	0.07	100.00
Fleece, etc. ..	38.36	29.24	15.24	9.12	6.20	1.84	100.00
Lambs' ..	28.79	35.65	11.53	13.29	9.72	1.02	100.00
Merino ..	37.86	20.06	20.91	11.70	8.54	0.93	100.00
Crossbred and all strong breeds ..	37.43	51.80	1.37	4.07	1.56	3.77	100.00

### § 6. Hides and Sheepskins.

1. *Extent of Trade.*—In addition to the hides and sheepskins treated in the tanneries of the several States, a very considerable export trade is carried on, the total value of cattle hides and sheepskins exported from Australia during the five years 1914-15 to 1918-19 being no less than £10,042,762, or an average of £2,008,552 per annum.

2. *Sheepskins with Wool.*—By far the largest item included in the amount mentioned in the preceding paragraph arises from the value of sheepskins with wool exported, which are shipped principally to the United Kingdom and France. Details concerning the number so exported during the five years 1914-15 to 1918-19 are as follows :—

**COMMONWEALTH EXPORTS OF SHEEPSKINS WITH WOOL, 1914-15 TO 1918-19.**

Country to which Exported.	1914-15.	1915-16.	1916-17.	1917-18.	1918-19.	Total for 5 Years.
	No.	No.	No.	No.	No.	No.
United Kingdom	5,844,442	3,506,365	2,152,016	2,172,176	6,005,229	19,680,228
France ..	2,227,714	1,863,904	753,530	..	..	4,845,148
U.S. of America	1,016,958	331,706	..	..	..	1,348,664
Canada ..	206,876	61,103	46,668	..	..	314,647
New Zealand ..	39,083	25,283	..	..	..	64,366
Belgium ..	29,366	..	..	..	..	29,366
Italy ..	..	9,949	..	..	..	9,949
Germany ..	2,578	..	..	..	..	2,578
Other Countries	1,051	24	..	..	62	1,137
<b>Total ..</b>	<b>9,363,068</b>	<b>5,798,334</b>	<b>2,952,214</b>	<b>2,172,176</b>	<b>6,005,291</b>	<b>26,296,083</b>

The next table furnishes corresponding particulars as to value :—

**VALUE OF SHEEPSKINS WITH WOOL EXPORTED FROM THE COMMONWEALTH,  
1914-15 TO 1918-19.**

Country to which Exported.	1914-15.	1915-16.	1916-17.	1917-18.	1918-19.	Total for 5 years.
	£	£	£	£	£	£
United Kingdom	1,021,432	779,615	738,483	732,030	1,845,036	5,116,596
France ..	387,692	283,293	250,783	..	..	921,768
U.S. of America	213,249	97,890	..	..	..	311,139
Canada ..	46,374	12,553	10,869	..	..	69,796
New Zealand ..	9,748	6,268	..	..	..	16,016
Belgium ..	10,877	..	..	..	..	10,877
Italy ..	..	875	..	..	..	875
Germany ..	812	..	..	..	..	812
Other Countries	468	5	..	..	21	494
<b>Total ..</b>	<b>1,690,652</b>	<b>1,180,499</b>	<b>1,000,135</b>	<b>732,030</b>	<b>1,845,057</b>	<b>6,448,373</b>

3. Sheepskins without Wool.—In the case of sheepskins without wool the principal countries to which export takes place are the United States of America and the United Kingdom. Particulars concerning the quantities exported are as follows :—

**COMMONWEALTH EXPORTS OF SHEEPSKINS WITHOUT WOOL,  
1914-15 TO 1918-19.**

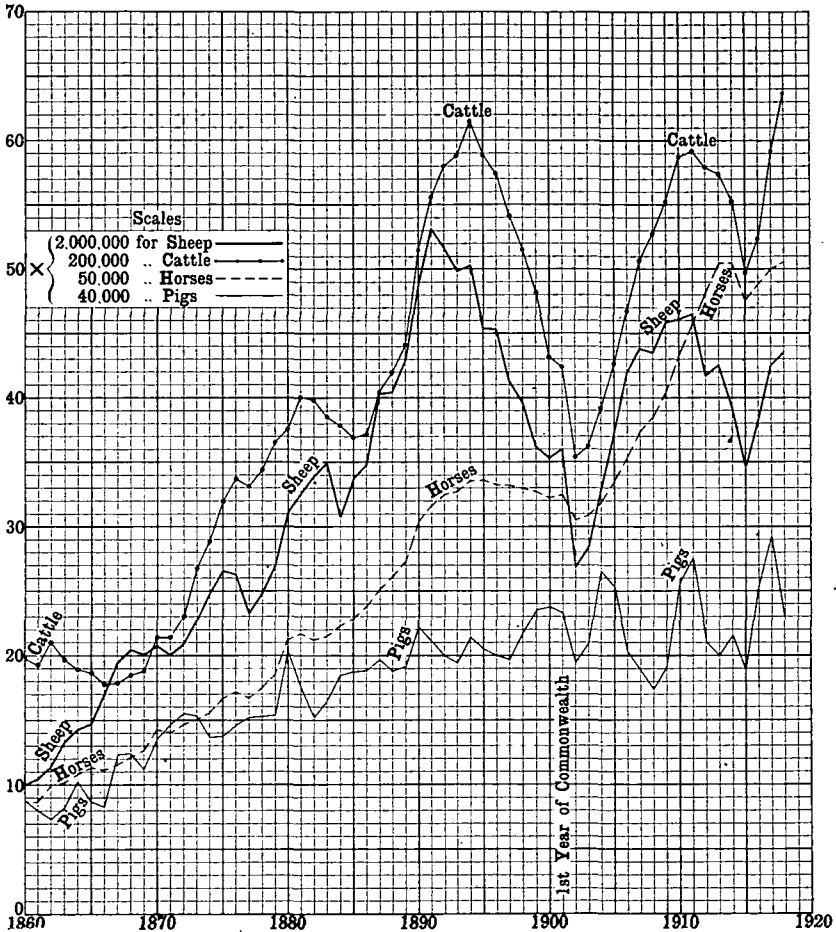
Country to which Exported.	1914-15.	1915-16.	1916-17.	1917-18.	1918-19.	Total for 5 years.
	No.	No.	No.	No.	No.	No.
U.S. of America	640,302	1,815,725	1,618,517	749,570	181,461	5,005,575
United Kingdom	720,417	103,497	155,189	66,996	444,943	1,491,042
Canada ..	3,096	540	184,460	74,710	162,477	425,283
Japan ..	..	1,047	2,949	7,368	216	11,580
France ..	..	..	1,098	..	..	1,098
New Zealand ..	12	..	24	..	4,968	5,004
<b>Total ..</b>	<b>1,363,827</b>	<b>1,920,809</b>	<b>1,962,237</b>	<b>898,644</b>	<b>794,065</b>	<b>6,939,582</b>

Corresponding details concerning value are given hereunder :—

**VALUE OF SHEEPSKINS WITHOUT WOOL EXPORTED FROM THE  
COMMONWEALTH, 1914-15 TO 1918-19.**

Country to which Exported.	1914-15.	1915-16.	1916-17.	1917-18.	1918-19.	Total for 5 years.
	£	£	£	£	£	£
U.S. of America	35,766	86,908	126,612	74,693	21,802	345,781
United Kingdom	37,875	5,243	12,019	9,656	54,669	119,462
Canada ..	233	39	13,750	10,335	19,282	43,639
Japan ..	..	83	337	685	24	1,129
France ..	..	..	89	..	..	89
New Zealand ..	2	..	2	..	279	283
<b>Total ..</b>	<b>73,876</b>	<b>92,273</b>	<b>152,809</b>	<b>95,369</b>	<b>96,056</b>	<b>510,383</b>

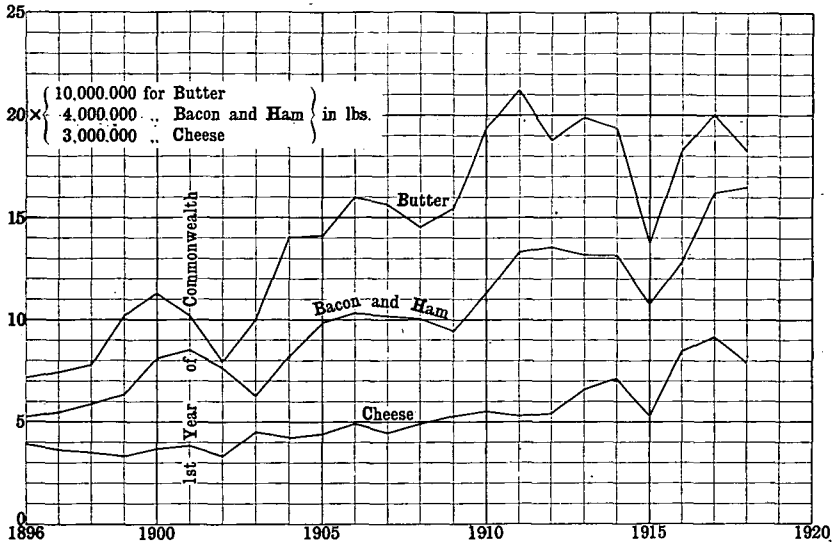
GRAPHS SHEWING NUMBER OF HORSES, CATTLE, SHEEP, AND PIGS IN THE COMMONWEALTH FROM 1860 TO 1918.



(See page 317.)

EXPLANATION OF GRAPH.—The base of each small square represents an interval of one year. The totals of the horses, cattle, sheep, and pigs for the Commonwealth are indicated by the several curves or graphs, the vertical side of a small square representing 2,000,000 in the case of sheep; 200,000 for cattle; 50,000 for horses; 40,000 for pigs.

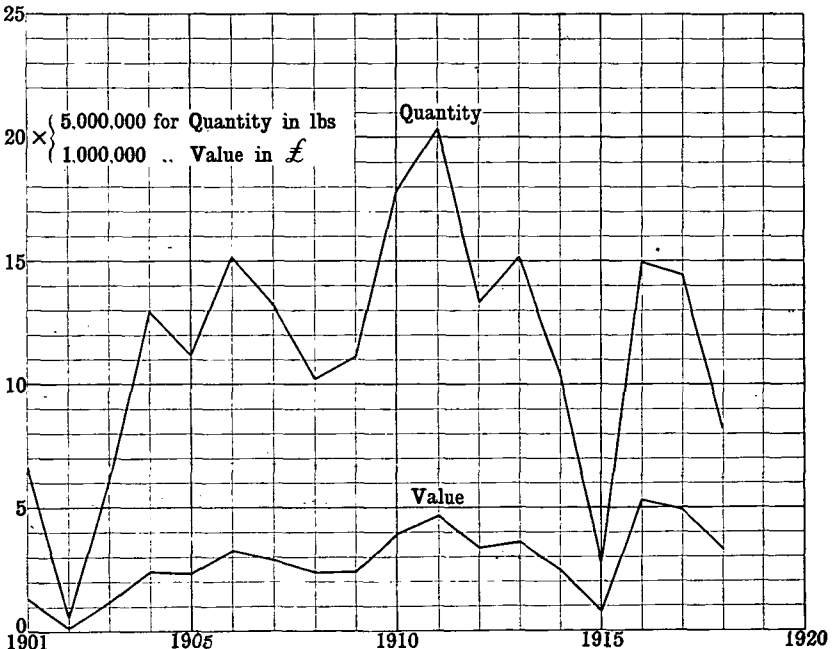
GRAPHS SHEWING THE PRODUCTION OF BUTTER AND CHEESE, AND BACON AND HAM, IN THE COMMONWEALTH, FROM 1896 TO 1918.



(See pages 410 and 413.)

EXPLANATION OF GRAPH.—The base of each small rectangle represents an interval of one year, and the vertical height of each small rectangle denotes in the case of butter 10,000,000 lbs.; in the case of bacon and ham, 4,000,000 lbs.; and in the case of cheese 3,000,000 lbs.

GRAPHS SHEWING THE QUANTITY AND VALUE OF NET EXPORTS OF BUTTER FROM THE COMMONWEALTH, FROM 1901 TO 1918.



(See page 411.)

EXPLANATION OF GRAPH.—The base of each small rectangle represents an interval of one year, and the vertical height of each small rectangle represents 5,000,000 lbs. in weight, or £1,000,000 in value.

4. **Hides.**—The Commonwealth trade in cattle hides has now assumed considerable proportions, and during 1914-15 the total value of such hides exported amounted to £1,303,201. The exports were principally to the United Kingdom, the United States of America and Canada. The disastrous drought of 1914-15 greatly reduced the quantity of hides in the succeeding years. This, in conjunction with the increased demand for leather, more especially for military purposes, resulted in a considerable falling-off in the quantity of hides available for export. To insure against a shortage of supplies for home consumption, on the 28th October, 1914, the Government by proclamation prohibited the exportation of hides unless the consent in writing of the Minister for Trade and Customs was first obtained. The embargo when enforced was in the case of heavy hides only. Large quantities of hides are imported into the Commonwealth, mainly from New Zealand and the Pacific Islands. The total value of cattle hides imported during 1918-19 was £424,339.

Particulars concerning the export of cattle hides during the past five years are as follows :—

**COMMONWEALTH EXPORTS OF CATTLE HIDES, 1914-15 TO 1918-19.**

Country to which Exported.	1914-15.	1915-16.	1916-17.	1917-18.	1918-19.	Total for 5 years.
	No.	No.	No.	No.	No.	No.
United Kingdom ..	472,394	209,219	147,408	136,425	245,517	1,210,963
U.S. of America ..	229,665	..	2,783	4,943	2,734	240,125
Canada ..	142,928	66,890	19,210	3,338	1,302	233,668
Italy ..	9,830	97,038	2,334	..	..	109,202
New Zealand ..	9,067	14,582	11,526	1,218	3,950	40,343
Belgium ..	38,520	..	..	..	..	38,520
Japan ..	6,863	4,006	..	3,300	5,883	20,052
Germany ..	18,255	..	..	..	..	18,255
France ..	8,803	1,129	3,733	..	..	13,665
Union of South Africa	480	2,705	..	..	..	3,185
Austria-Hungary ..	203	..	..	..	..	203
Other Countries ..	216	..	..	..	..	216
<b>Total ..</b>	<b>937,224</b>	<b>395,569</b>	<b>186,994</b>	<b>149,224</b>	<b>259,386</b>	<b>1,928,397</b>

In the next table are given particulars relative to the value of cattle hides exported :—

**VALUE OF CATTLE HIDES EXPORTED FROM THE COMMONWEALTH,  
1914-15 TO 1918-19.**

Country to which Exported.	1914-15.	1915-16.	1916-17.	1917-18.	1918-19.	Total for 5 years.
	£	£	£	£	£	£
United Kingdom ..	666,854	264,517	270,718	335,562	538,012	2,075,663
U.S. of America ..	330,096	..	5,217	10,638	2,078	348,029
Canada ..	170,978	97,950	33,243	5,812	2,823	310,806
Italy ..	12,299	113,924	3,772	..	..	129,995
New Zealand ..	13,003	15,740	24,158	3,456	8,328	64,685
Belgium ..	51,910	..	..	..	..	51,910
Japan ..	13,063	8,479	..	8,929	15,479	45,950
Germany ..	29,927	..	..	..	..	29,927
France ..	13,911	1,780	7,152	..	..	22,843
Union of South Africa	531	3,038	..	..	..	3,569
Austria-Hungary ..	355	..	..	..	..	355
Other Countries ..	274	..	..	..	..	274
<b>Total ..</b>	<b>1,303,201</b>	<b>505,428</b>	<b>344,260</b>	<b>364,397</b>	<b>566,720</b>	<b>3,084,006</b>

The number and value of cattle hides, including calfskins imported into the Commonwealth during the five years 1914-15 to 1918-19 are as follows:—

**CATTLE HIDES IMPORTED INTO THE COMMONWEALTH, 1914-15 TO 1918-19.**

Particulars.			1914-15.	1915-16.	1916-17.	1917-18.	1918-19.	Total for 5 years.
No.	..	..	83,405	146,657	94,065	132,218	260,237	716,582
Value	..	£	145,633	293,052	161,380	151,531	424,339	1,175,935

During the past five years the exports of calfskins amounted to 519,089, valued at £148,533, and of horse hides, 4,525, valued at £3,457; the imports of horse hides during the same period amounting to 6,439, valued at £6,721.

## § 7. Graphical Representation of Pastoral Production.

1. **General.**—As comparatively complete statistics relative to the number of horses, cattle, sheep and pigs are available from 1860, the graphical representation of the fluctuations in numbers for the Commonwealth as a whole, shewn on page 345, covers the period from 1860 to 1918.

2. **Horses.**—With relatively unimportant fluctuations the number of horses in the Commonwealth increased at a fairly consistent rate until 1895, when a decline set in, culminating in the losses of the drought of 1902. At this latter point the number was practically identical with that for 1890. From 1902 onwards a rapid improvement was experienced, the total for 1913 being the highest then recorded. The disastrous drought of 1914-15 was responsible for heavy losses, the number recorded at the close of the latter year being considerably less than in 1912. The substantial increases which have taken place during the last three years have been responsible for the number of horses in Australia attaining its maximum at the end of 1918.

3. **Cattle.**—The graph for cattle furnishes evidence of rapid increase in number, interrupted by four marked periods of decline, of which the first extended from 1862 to 1866, the second from 1881 to 1885, the third from 1894 to 1902. So extensive was this last-mentioned decline that the number receded to that of 1879. From 1902 a rapid recovery took place, and the total for 1911 exceeded that existing at the end of the year 1895, though still short of the 12,311,617 cattle recorded in 1894. The fourth period of decline commenced in 1912, the figures from that year to 1914 shewing a slight decline, while those for 1915 shew a very serious falling-off, the difference between the 1911 and 1915 returns amounting to over 16 per cent. In 1916 the number of cattle commenced to ascend, and, assisted by considerable increases during the next two seasons, reached its highest point in 1918.

4. **Sheep.**—In the case of sheep the graph furnishes evidence of six periods in which the upward movement in number has been arrested or reversed. The first of these occurred between 1868 and 1871, the second between 1875 and 1877, the third during 1884, the fourth, by far the most serious, between 1891 and 1902, the fifth during 1912, and the sixth during 1914-15. From 1902 to 1907 a rapid increase took place succeeded by a slight decline in 1908, and a further advance in 1909, 1910, and 1911, the point reached in the latter year being the highest since 1894. The return for 1912 shews a considerable decrease; this was followed by an increase in 1913, but there was a heavy falling-off in 1914, amounting to 7½ per cent., and a still heavier one in 1915,

amounting to over 11½ per cent., the total number of sheep in the latter year being the lowest since 1904. As in the case of all other live stock, substantial increases in the number of sheep took place during the next three seasons, the number recorded for 1918 being the highest since 1911.

5. Pigs.—The graph for pigs exhibits more numerous fluctuations than that for any of the other classes of live stock represented, and from 1904 to 1908 furnished evidence of a persistent decline. In 1909, however, an upward movement took place; and this was well maintained during the two succeeding years, the 1911 returns exceeding all previous records. There was a considerable decrease in 1912, and a smaller one during 1913. The 1914 returns, however, shew an upward tendency, followed by a sharp decline during 1915, and even sharper increases in 1916 and 1917, the number of pigs in the latter year reaching its maximum. During 1918 the number of pigs in Australia decreased by 255,463, or 22 per cent.



## SECTION VIII.

## AGRICULTURAL PRODUCTION.

NOTE.—Except where otherwise stated, the “agricultural” years hereinafter mentioned are taken as ending on the 30th June.

## § 1. Introductory.

1. **Early Attempts at Agriculture.**—The instructions issued to Captain Phillip on the 25th April, 1787, directed him, amongst other things, to proceed as soon as possible to the cultivation of the soil “under such regulations as may appear to be necessary and best calculated for securing supplies of grain and provisions.” When the settlers landed at Botany Bay, however, it was found that the glowing accounts published in England by members of Captain Cook’s expedition of the fertility of the soil in that locality were considerably overdrawn. Even when Phillip and his company moved round to Port Jackson on the 26th January, 1788, matters were for a time in no better case. The ground in the immediate neighbourhood of the settlement was not suitable for the cultivation of cereal crops, and when the time came to cultivate the soil it was found that there were very few who possessed the slightest acquaintance with the art of husbandry.

2. **The First Sowing.**—In his despatch of the 15th May, 1788, Captain Phillip states that it was proposed to sow eight acres with wheat and barley, although, owing to the depredations of field mice and ants, he was doubtful of the success of the crops.

3. **Discovery of Suitable Agricultural Land.**—A branch settlement was formed at Rosehill, on the Parramatta River, towards the close of 1788, and here grain crops were successfully raised. In his despatch of 12th February, 1790, Phillip refers to the harvest at Rosehill at the end of December, 1789, as consisting of 200 bushels of wheat and 60 of barley, in addition to small quantities of oats, Indian corn, and flax. By the year 1791 there were 213 acres under crop in this locality. In 1792 a new settlement was formed at Toongabbie, about three miles westward of Parramatta, where Phillip states “there are several thousand acres of exceeding good ground.” The Hawkesbury Valley, which probably contains some of the richest land in the world, was first settled in 1794. For a long time agricultural operations in Australia were restricted to the narrow belt of country between the tableland and the east coast of New South Wales, as it was not until the year 1813 that a passage was discovered across the Blue Mountains to the fertile plains of the west.

## § 2. Progress of Agriculture.

1. **Early Records.**—In an “Account of Live Stock and Ground under Crop in New South Wales, 19th August, 1797,” Governor Hunter gives the acreage under crop as follows:—Wheat, 3,361 acres; maize, 1,527 acres; barley, 26 acres; potatoes, 11 acres; and vines, 8 acres.

At a muster taken in 1808 the following was the return of crops:—Wheat, 6,877 acres; maize, 3,389 acres; barley, 544 acres; oats, 92 acres; peas and beans, 100 acres; potatoes, 301 acres; turnips, 13 acres; orchards, 546 acres; and flax and hemp, 34 acres.

By the year 1850 the area under crop had increased to 491,000 acres, of which 198,000 acres were cultivated in what is now the State of New South Wales, and 169,000 acres in Tasmania. At the end of 1850 the area under cultivation in Victoria, which was then the Port Phillip District of New South Wales, was 52,190 acres. .

The gold discoveries of 1851 and subsequent years had at first a very disturbing effect on agricultural progress, the area under crop declining from 491,000 acres in 1850 to 458,000 acres in 1854; the area under cultivation in New South Wales decreased by nearly 66,000 acres, while in Tasmania a falling-off of over 41,000 acres was experienced. The demand for agricultural products occasioned by the large influx of population was, however, soon reflected in the increased area cultivated, for at the end of 1858 the land under crop in Australia totalled over a million acres. The largest increase took place in Victoria, which returned an area of 299,000 acres. For the same year South Australia had 264,000 acres in cultivation, Tasmania 229,000 acres, and New South Wales 223,000 acres.

2. Progress of Cultivation since 1860.—The following table shews the area under crop in each of the Commonwealth States and Territories at decennial intervals since 1860 and during each of the last five seasons. The area under permanent artificially-sown grasses is excluded in all the States, except for the years 1860–79 in the case of New South Wales, where the acreage cannot be separated. During those years, however, the area laid down under permanent grasses could not have been very large :—

AREA UNDER CROP IN AUSTRALIA, 1860 TO 1918–19.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	Nor. Ter.	Fed. Ter.	C'wealth.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1860–1	260,798	387,282	3,353	359,284	24,705	152,860	..	..	1,188,282
1870–1	426,976	692,840	52,210	801,571	54,527	157,410	..	..	2,185,534
1880–1	629,180	1,548,809	113,978	2,087,237	57,707	140,788	..	..	4,577,699
1890–1	852,704	2,031,955	224,993	2,093,515	69,678	157,376	..	..	5,430,221
1900–1	2,445,564	3,114,132	457,397	2,369,680	201,338	224,352	..	..	8,812,463
1910–11	3,386,017	3,952,070	667,113	2,746,334	855,024	286,920	360	..	11,893,838
1914–15	4,807,001	4,622,759	792,568	3,282,364	1,867,547	274,474	391	4,870	15,651,974
1915–16	5,796,376	5,711,265	729,588	3,763,570	2,189,456	333,334	274	4,371	18,528,234
1916–17	5,164,434	4,851,335	885,259	3,627,477	2,004,944	270,526	274	2,131	16,806,380
1917–18	4,461,172	4,110,225	727,958	3,079,778	1,679,772	238,199	134	1,744	14,298,982
1918–19	3,891,823	3,942,899	525,517	3,111,079	1,605,088	254,109	99	1,779	13,332,393

The increase in the area under crop during the past ten years has been most marked in the case of New South Wales, Western Australia, and South Australia, the respective increases being 1,176,517, 1,019,749, and 789,366 acres. During the same period an increase of 481,138 acres was experienced in Victoria, while Tasmania and Queensland suffered decreases of 15,237 and 10,383 acres respectively. The total area under crop in the Commonwealth increased during the period by 3,441,150 acres. The percentage of increase was particularly high in Western Australia, viz., 174 per cent. New South Wales had an increase of 43 per cent., while South Australia and Victoria added to their areas under crop to the extent of 34 and 14 per cent. respectively. The decreases for the ten years represented about 6 per cent. in Tasmania and 2 per cent. in Queensland, while the increase for the whole of the Commonwealth during the same period was 35 per cent.

3. Relation to Population.—From the following table it will be seen that the acreage under crop per 1000 of the population has consistently declined in all the States during the past four years. The decreased areas are particularly noticeable in New South Wales,

Victoria, South Australia, and Western Australia, and are mainly attributable to the decline of wheat growing in Australia since 1915-16. Details for the past five seasons are as follows :—

**TOTAL AREA UNDER CROP PER 1,000 OF POPULATION, 1914-15 TO 1918-19.**

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Nor. Ter.	Fed. Ter.	C'wealth.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1914-15 ..	2,582	3,231	1,171	7,431	5,782	1,363	98	2,486	3,168
1915-16 ..	3,099	4,025	1,075	8,584	6,885	1,658	60	2,390	3,757
1916-17 ..	2,779	3,468	1,322	8,383	6,493	1,353	57	959	3,447
1917-18 ..	2,373	2,913	1,074	7,060	5,429	1,172	27	829	2,897
1918-19 ..	2,016	2,756	757	6,980	5,121	1,217	21	797	2,650

4. **Relation to Total Area.**—The next table furnishes a comparison of the area under crop in the Commonwealth and the several States and Territories, with the respective total areas. For the Commonwealth as a whole, the area under crop in 1918-19 represented only about one acre in every 143. In Victoria the proportion was about one acre in every 14, in New South Wales one in 51, in Tasmania one in 66, in South Australia one in 78, in Western Australia one in 389, in Queensland one in 820, in the Federal Territory one in 338, and in the Northern Territory about one in 3,385,000.

**PERCENTAGE OF AREA UNDER CROP ON TOTAL AREA, 1914-15 TO 1918-19.**

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Nor. Ter.	Fed. Ter.	C'wealth.
	%	%	%	%	%	%	%	%	%
1914-15 ..	2.427	8.219	0.185	1.349	0.299	1.636	0.0001	0.834	0.822
1915-16 ..	2.927	10.154	0.170	1.547	0.351	1.987	0.0001	0.749	0.973
1916-17 ..	2.608	8.625	0.206	1.491	0.321	1.612	0.0001	0.354	0.883
1917-18 ..	2.253	7.308	0.170	1.266	0.269	1.420	..	0.290	0.751
1918-19 ..	1.965	7.010	0.122	1.279	0.257	1.515	..	0.296	0.700

5. **Artificially-sown Grasses.**—In all the States considerable areas are devoted to artificially-sown grasses, mainly sown on uncultivated land after burning off the existing vegetation and consequently not included with "area under crops." Statistics regarding the area under such grasses are as shewn hereunder :—

**AREA UNDER SOWN GRASSES, 1914-15 TO 1918-19.**

Season.	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.	Nor. Ter.	Fed. Ter.	Commonwealth.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1914-15	1,251,383	1,202,130	290,147	24,974	8,025	647,602	..	70	3,424,331
1915-16	1,247,029	1,182,995	305,186	25,443	9,119	675,335	200	70	3,445,377
1916-17	1,357,087	1,292,817	363,876	29,644	8,327	654,072	200	70	3,706,093
1917-18	1,389,557	1,268,310	406,094	20,155	11,769	679,512	460	83	3,775,940
1918-19	1,438,382	1,269,493	418,467	21,987	14,158	666,954	600	83	3,830,124

The considerable increase in the area of the grass lands of the Commonwealth is due in large measure to the great development of the dairying industry which has taken place during recent years, and which is referred to in the succeeding section.

### § 3. Relative Importance of Crops.

1. Various Crops.—In the following table are furnished details concerning the areas in the several States under each of the principal crops for the season 1918–19:—

DISTRIBUTION OF CROPS IN AUSTRALIA, 1918–19.

Crop.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Nor. Ter.	Fed. Ter.	Total for C'wealth.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
Wheat..	2,409,633	2,214,490	21,637	2,186,349	1,146,103	11,917	..	36	7,990,165
Oats ..	86,421	342,867	298	180,823	141,459	36,231	..	53	768,152
Maize ..	114,582	22,559	149,505	112	39	..	15	..	286,812
Barley—									
Malting ..	5,929	52,222	1,082	109,920	3,994	6,039	..	..	179,186
Other ..	2,051	47,976	234	20,437	3,988	997	..	..	75,683
Beans and Peas..	557	12,398	70	7,542	361	35,602	..	..	56,530
Rye ..	1,330	982	2	631	466	475	..	..	3,888
Other Cereals ..	..	..	44	..	29	114	..	..	187
Hay ..	813,379	984,479	54,772	501,731	249,796	87,136	30	1,581	2,692,904
Green Forage ..	331,079	73,641	90,635	56,067	28,141	6,827	..	50	586,440
Grass Seed ..	..	2,152	2,021	102	..	1,278	..	..	5,553
Orchards and other Fruit Gardens	67,432	85,130	24,250	30,085	20,412	37,424	..	18	264,751
Vines—									
Productive ..	6,595	19,618	1,175	26,149	2,350	..	..	..	55,887
Unproductive..	2,145	6,454	112	4,874	586	..	..	..	14,171
Market Gardens..	10,004	11,594	1,814	1,405	2,237	389	..	39	27,482
Sugar-cane—									
Productive ..	4,566	..	111,572	..	..	..	..	..	116,138
Unproductive..	5,924	..	48,962	..	..	..	..	..	54,886
Potatoes ..	20,877	51,620	6,434	3,275	3,936	25,023	2	2	111,169
Onions ..	335	5,512	88	367	75	33	..	..	6,410
Other root crops	761	1,997	2,716	387	120	2,842	2	..	8,825
Tobacco ..	1,680	167	213	..	..	..	..	..	2,060
Broom Millet ..	3,019	1,876	305	..	..	..	10	..	5,210
Pumpkins and Melons ..	2,363	1,161	4,603	287	401	..	40	..	8,855
Hops ..	..	71	..	2	..	1,260	..	..	1,333
All other crops ..	1,161	3,933	2,973	534	595	522	..	..	9,718
Total area ..	3,891,823	3,942,899	525,517	3,111,079	1,605,088	254,109	99	1,779	13,332,393

2. Relative Areas of Crops in States and Territories.—Taking the principal crops, i.e., those in the case of which the cultivation amounts to more than 50,000 acres in the Commonwealth, the proportion of each in the various States and Territories to the total area under crop for the season 1918–19 is shewn in the next table. In four of the States, viz., New South Wales, Victoria, South Australia, and Western Australia, wheat-growing for grain is by far the most extensive form of cultivation, while in the same States, the hay crop is second in importance. In Victoria, South Australia, and Western Australia the oat crop occupies third position, while green forage ranks third in New South Wales followed by maize. In Queensland, on the other hand, the three principal crops in the order of importance are sugar-cane, maize, and green forage, while in Tasmania hay, orchards and fruit gardens, and oats, occupy the leading positions. For the Commonwealth as a whole, the wheat, hay, and oat crops represent nearly 86 per cent of the total area under crop.

## PROPORTION OF AREA UNDER CHIEF CROPS, 1918-19.

Crop.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Nor. Ter.	Fed. Ter.	C'wealth.
	%	%	%	%	%	%	%	%	%
Wheat ..	61.92	56.16	4.12	70.28	71.40	4.69	..	2.03	59.93
Hay ..	20.90	24.97	10.42	16.13	15.56	34.29	30.30	88.87	20.20
Oats ..	2.22	8.70	0.06	5.17	8.82	14.26	..	2.98	5.76
Green Forage...	8.51	1.87	17.25	1.80	1.75	2.68	..	2.81	4.40
Maize ..	2.94	0.57	28.45	0.00	0.00	..	15.15	..	2.15
Orchards and Fruit Gardens	1.73	2.16	4.61	0.97	1.27	14.73	..	1.01	1.99
Barley ..	0.21	2.54	0.25	4.19	0.50	2.77	..	..	1.91
Sugar-cane	0.27	..	30.55	..	..	..	..	..	1.28
Potatoes ..	0.54	1.31	1.22	0.10	0.25	9.85	2.02	0.11	0.83
Vineyards	0.22	0.66	0.25	1.00	0.18	..	..	..	0.53
All other..	0.54	1.06	2.82	0.36	0.27	16.73	52.53	2.19	1.02
Total ..	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

3. Relative Positions of States and Territories in regard to Principal Crops.—The relative proportion of acreage of the several crops for 1918-19 and the position regarding them in each State and Territory is shown in the following table. New South Wales exhibited the largest area under wheat and green forage; Victoria was in the leading position in regard to hay, oats, orchards and fruit gardens, and potatoes; and Queensland was first in sugar-cane and maize and second in green forage. South Australia had the largest area under vineyards and barley, and occupied second position in regard to oats; Western Australia held third position in oats and barley and fourth in wheat, hay, and vineyards; while Tasmania was second in regard to potatoes, and third in orchards and fruit gardens.

## RELATIVE POSITIONS OF STATES AND TERRITORIES IN REGARD TO AREA UNDER EACH OF THE PRINCIPAL CROPS DURING THE SEASON 1918-19.

Crop.	N.S.W.	Victoria	Q'land.	S. Aust.	W. Aust.	Tas.	N. Ter.	F. Ter.	C'w'ith.
Wheat.. .. %	30.16	27.72	0.27	27.36	14.34	0.15	..	..	100.00
position ..	1	2	5	3	4	6	..	..	
Hay .. .. %	30.20	36.56	2.03	18.63	9.28	3.24	..	0.06	100.00
position ..	2	1	6	3	4	5	..	7	
Oats .. .. %	11.25	44.63	0.04	20.94	18.41	4.72	..	0.01	100.00
position ..	4	1	6	2	3	5	..	7	
Green Forage .. %	56.46	12.56	15.45	9.56	4.80	1.16	..	0.01	100.00
position ..	1	3	2	4	5	6	..	7	
Maize .. .. %	39.95	7.86	52.13	0.04	0.01	..	0.01	..	100.00
position ..	2	3	1	4	5	..	6	..	
Orchards and Fruit Gardens .. %	25.47	32.15	9.16	11.36	7.71	14.14	..	0.01	100.00
position ..	2	1	5	4	6	3	..	7	
Barley .. .. %	3.13	39.31	0.52	51.15	3.13	2.76	..	..	100.00
position ..	4	2	6	1	3	5	..	..	
Sugar-cane .. %	6.13	..	93.87	..	..	..	..	..	100.00
position ..	2	..	1	..	..	..	..	..	
Potatoes .. .. %	18.78	46.43	5.79	2.95	3.54	22.51	..	..	100.00
position ..	3	1	4	6	5	2	..	..	
Vineyards .. .. %	12.48	37.21	1.84	44.28	4.19	..	..	..	100.00
position ..	3	2	5	1	4	..	..	..	
All other crops .. %	15.59	30.76	10.91	8.27	3.15	31.25	0.04	0.03	100.00
position ..	3	2	4	5	6	1	7	8	
Total area under crop .. %	29.19	29.57	3.94	23.34	12.04	1.91	..	0.01	100.00
position ..	2	1	5	3	4	6	8	7	

4. **Acreage of Principal Crops, Commonwealth.**—The acreage devoted to each of the principal crops in the whole Commonwealth during the last five seasons is shewn below :—

**ACREAGE OF CHIEF COMMONWEALTH CROPS, 1914-15 TO 1918-19.**

Crop.	1914-15.	1915-16.	1916-17.	1917-18.	1918-19.
	Acres.	Acres.	Acres.	Acres.	Acres.
Wheat .. ..	9,651,081	12,484,512	11,532,828	9,774,658	7,990,165
Hay .. ..	2,628,613	3,597,771	2,671,862	2,212,914	2,692,904
Oats .. ..	774,734	721,644	844,130	615,800	768,152
Green Forage ..	1,352,158	515,561	390,151	373,850	586,440
Maize .. ..	339,781	323,637	360,072	332,057	286,812
Orchards and Fruit Gardens .. ..	232,711	247,008	257,687	262,134	264,751
Barley .. ..	153,656	169,514	230,253	204,870	254,869
Sugar-cane .. ..	172,616	164,285	178,190	186,484	171,024
Potatoes .. ..	151,845	120,993	149,895	136,241	111,169
Vineyards .. ..	60,985	62,124	65,394	67,862	70,058
All other Crops ..	133,794	121,185	125,918	132,112	136,049
Total .. ..	15,651,974	18,528,234	16,806,380	14,298,982	13,332,393

During the period under review the area devoted to the several crops has varied considerably, that under wheat attaining a maximum in the season 1915-16, and a minimum in 1918-19, while hay also reached its maximum area in 1915-16, and its minimum in 1917-18. Of the other crops, green forage and potatoes attained their maximum areas in 1914-15, maize and oats in 1916-17, sugar-cane in 1917-18, and orchards and fruit gardens, barley, and vineyards in 1918-19.

**§ 4. Wheat.**

1. **Progress of Wheat-Growing.**—(i) *Acreage.* The area under wheat for grain is given below for each State at various periods since 1860, and is shewn diagrammatically in the graph hereinafter :—

**AREA UNDER WHEAT, 1860-1 TO 1919-20.**

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Nor. Ter.	Fed. Ter.	C'wealth.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1860-1	128,829	161,252	196	273,672	13,584	66,450	..	..	643,983
1870-1	147,997	284,167	2,892	604,761	26,640	57,382	..	..	1,123,839
1880-1	253,138	977,285	12,632	1,783,542	27,686	50,022	..	..	3,054,305
1890-1	333,233	1,145,163	10,390	1,673,573	33,820	32,452	..	..	3,228,631
1900-1	1,530,609	2,017,321	79,304	1,913,247	74,308	51,825	..	..	5,666,614
1910-11	2,128,826	2,398,089	106,718	2,104,717	581,862	52,242	2	..	7,372,456
1914-15	2,756,343	2,863,535	127,015	2,502,630	1,376,012	23,865	..	1,681	9,651,081
1915-16	4,186,493	3,679,971	93,703	2,739,214	1,734,117	48,642	..	2,372	12,484,512
1916-17	3,805,699	3,125,692	227,778	2,778,357	1,566,608	27,789	..	905	11,532,828
1917-18	3,328,856	2,690,216	127,815	2,355,682	1,249,762	21,812	..	515	9,774,658
1918-19	2,409,633	2,214,490	21,637	2,186,349	1,146,103	11,917	..	36	7,990,165
1919-20a	1,450,540	1,918,269	37,409	1,921,515	1,041,827	10,000	..	..	6,379,560

(a) Preliminary figures except Victorian which are final.

The area devoted in the Commonwealth to the production of wheat for grain was higher for the season 1915-16 than for any previous season, there being an increase in all the States with the exception of Queensland, which shewed a falling-off. The figures for the season 1916-17 shew a reduction in area under wheat for grain throughout the Commonwealth with the exception of Queensland and South Australia, where the acreages for both States are the highest on record. During 1917-18, and again in 1918-19, a serious decline took place in the area under wheat in all the States, the Commonwealth total for the latter year exhibiting a shortage of nearly  $4\frac{1}{2}$  million acres as compared with 1915-16. The average area under wheat in the Commonwealth during the last ten seasons, 1909 to 1919, was 8,944,682 acres, or roughly 1 million acres more than were sown during 1918-19.

Although final figures for 1919-20 for all the States are not yet available, the data to hand indicate the total area under wheat for grain in the Commonwealth at about 6,379,560 acres, representing a decrease of 20 per cent. on the 1918-19 area. This decrease was again in evidence in all the wheat producing States, being most marked in New South Wales, where the area under wheat for grain declined by 959,093 acres. The total for the Commonwealth is lower than for any season since 1908-9, when an area of 5,262,473 acres was reaped.

(ii) *Yield.* The production during the same period for each State and for the Commonwealth as a whole is given below :—

#### PRODUCTION OF WHEAT, 1860-1 TO 1919-20.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	Nor. Ter.	Fed. Ter.	C'wealth.
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bush.	Bush.	Bushels.
1860-1	1,581,598	3,459,914	3,136	3,576,593	208,332	1,415,896	..	..	10,245,469
1870-1	999,595	2,870,409	39,787	6,961,164	316,769	896,881	..	..	12,084,605
1880-1	3,717,355	9,727,369	223,243	8,606,510	332,232	750,040	..	..	23,356,749
1890-1	3,649,216	12,751,295	207,990	9,399,389	467,389	642,980	..	..	27,118,259
1900-1	16,173,771	17,847,321	1,194,058	11,253,148	774,653	1,110,421	..	..	48,355,402
1910-11	27,913,547	34,813,019	1,022,373	24,344,740	5,897,540	1,120,744	20	..	95,111,983
1914-15	12,812,803	3,940,947	1,585,087	3,527,428	2,624,190	384,220	..	17,727	24,892,402
1915-16	66,726,459	58,521,706	414,438	34,134,504	18,236,355	993,790	..	38,451	179,065,703
1916-17	36,585,380	51,162,438	2,463,141	45,745,064	16,103,210	348,330	..	12,620	152,420,189
1917-18	37,704,626	37,737,552	1,035,268	28,692,594	9,303,787	252,383	..	7,374	114,733,584
1918-19	18,324,640	25,239,871	104,509	22,936,925	8,845,337	186,570	..	360	75,638,262
1919-20a	4,296,630	14,858,380	286,925	14,947,413	11,222,950	141,000	..	..	45,753,298

(a) Final figures Victoria, those for remaining States approximate.

The 1915-16 harvest of 179,065,703 bushels was the largest ever reaped in the Commonwealth. The 1916-17 yield of 152,420,189 bushels comes next in order, followed by the yields obtained during 1917-18, 1913-14, 1910-11, 1912-13, and 1909-10, *i.e.*, 114,733,584 ; 103,344,132 ; 95,111,983 ; 91,981,070, and 90,413,597 bushels respectively. These seven seasons represent the only occasions on which a harvest exceeding 90,000,000 bushels was garnered. The harvest for 1914-15 was poor, the prolonged drought having been disastrous to the wheat areas. The yield was 24,892,402 bushels, the lowest since 1902. During the past four seasons the production of wheat in the Commonwealth has declined from 179,065,703 bushels in 1915-16 to 45,753,298 bushels in 1919-20, a decrease of 133,312,405 bushels, or 33,328,101 bushels per annum. While admitting that 1915-16 was a record year, and the yields per acre for 1918-19 and 1919-20 were generally below the average as the result of protracted droughts in the wheat growing States, the seriousness of the position brought about by the abnormal decrease in the acreage and yield of Australia's primary agricultural product in the short space of four seasons cannot be overstated, and every means should be utilized to retard the decline of wheat growing in Australia.

(iii) *Average Yields.* In the next table will be found the average yield of wheat per acre in each of the last five seasons, and for the decennium 1909-19 :—

**YIELD OF WHEAT PER ACRE, 1914-15 TO 1918-19.**

Season.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	N.Ter.	F. Ter.	C'wealth.
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bahls.	Bushels.	Bushels.
1914-15..	4.65	1.38	12.48	1.41	1.91	16.10	..	10.55	2.58
1915-16..	15.94	15.90	4.42	12.46	10.52	20.43	..	16.21	14.34
1916-17..	9.61	16.37	10.81	16.46	10.28	12.53	..	14.06	13.22
1917-18..	11.33	14.03	8.10	12.18	7.44	11.57	..	14.32	11.74
1918-19..	7.60	11.40	4.83	10.49	7.72	15.66	..	10.00	9.47
Average 10 seasons 1909-19	(a)11.41	12.37	10.89	(c)10.53	8.81	18.80	..	(b)14.26	11.17

(a) Including Federal Territory.

(b) Average for eight seasons.

(c) Including Northern Territory.

As the above figures shew, there were considerable variations in the average yields, chiefly due to the vagaries of the seasons. The average of 2.58 bushels for 1914-15 was the lowest ever recorded for the Commonwealth with one exception, viz., the average of 2.40 bushels for 1902-3. Both were the results of exceptionally severe droughts. In both cases the yield per acre for the succeeding season was considerably above the ten-yearly average, being 14.34 bushels per acre for 1915-16 and 13.32 for 1903-4. Owing to droughty conditions prevailing throughout the wheat belt, the yield for 1918-19 was below the ten-yearly average in each of the States.

(iv) *Relation to Population.* During the seasons embraced in the following table, the Commonwealth's production of wheat per head of population has varied between 5 bushels in 1914-15 and 36½ bushels in 1915-16. The State in which wheat-growing occupies the most important position relatively to population is South Australia, which in 1918-19 had a yield averaging over 51 bushels per head. Queensland and Tasmania are the States in which the average production of wheat per head is least, the quantity raised being considerably below that required for local consumption. Particulars for the past five seasons are as follows :—

**AUSTRALIAN WHEAT PRODUCTION PER 1,000 OF POPULATION, 1914-15 TO 1918-19.**

Season.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	N. Ter.	F. Ter.	C'wealth.
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.
1914-15..	6,883	2,755	2,342	7,986	8,124	1,908	..	9,049	5,038
1915-16..	35,675	41,241	611	77,854	57,344	4,944	..	21,023	36,307
1916-17..	19,685	36,574	3,679	105,718	52,147	1,742	..	5,677	31,264
1917-18..	19,943	26,745	1,527	65,776	30,068	1,242	..	3,505	23,247
1918-19..	9,493	17,641	150	51,462	28,220	893	..	161	15,036

The normal annual consumption of wheat in Australia, exclusive of the requirements for seed, poultry and other live stock, is 325 lbs. (5.43 bushels) per head of population.

2. *Australian and Foreign Wheat Yields.*—In the next table will be found a statement of the average return per acre in the principal wheat-growing countries of the world, ranging from Denmark with a maximum of 44.82 bushels per acre to Mexico with a minimum of under 3 bushels per acre. Australia with approximately 9.47 occupies a relatively subordinate position.



## AVERAGE YIELD OF WHEAT PER ACRE IN VARIOUS COUNTRIES, 1918.

Country.	Average Yield in bushels per acre.	Country.	Average Yield in bushels per acre.
Denmark .. ..	44.82	Serbia (1914) .. ..	16.03
Netherlands .. ..	40.42	Rumania (1916) .. ..	15.72
Switzerland .. ..	34.95	United States .. ..	15.52
Belgium (1914) .. ..	34.94	Algeria .. ..	15.45
United Kingdom .. ..	33.35	Spain .. ..	13.27
New Zealand .. ..	31.57	Uruguay .. ..	12.68
Germany .. ..	25.47	Russia in Europe (1916) .. ..	12.27
Egypt .. ..	25.30	Canada .. ..	10.90
Bulgaria (1913) .. ..	23.82	Argentine Republic .. ..	10.86
Sweden .. ..	23.81	India .. ..	10.70
France .. ..	21.55	Portugal (1911) .. ..	9.78
Austria (1913) .. ..	19.89	Australia (a) .. ..	9.47
Japan .. ..	18.27	Union of South Africa .. ..	9.02
Hungary (1915) .. ..	17.89	Russia in Asia (1915) .. ..	6.97
Chile (1916) .. ..	17.12	Tunis .. ..	5.98
Italy .. ..	16.33	Mexico (1914) .. ..	2.97

(a) Average yield per acre for 10 years, 11.17.

3. Wheat Crops of the World.—The latest available official statistics of the production of wheat in various countries are given in the following table :—

## WHEAT YIELD IN VARIOUS COUNTRIES, 1918.

Country.	Yield in bushels.	Country.	Yield in bushels.
United States .. ..	917,100,000	Egypt .. ..	32,555,000
Russia in Europe (1916) .. ..	595,425,000	Japan .. ..	25,372,000
India .. ..	379,831,000	Chile (1917) .. ..	23,330,550
France .. ..	233,785,000	Turkey in Europe (1915) .. ..	17,449,200
Canada .. ..	189,079,000	Persia (1915) .. ..	15,510,400
Argentine Republic .. ..	184,270,000	Uruguay .. ..	12,860,000
Italy .. ..	176,370,000	Serbia (1915) .. ..	9,694,000
Hungary (1915) .. ..	148,254,220	Sweden .. ..	9,002,000
Spain .. ..	135,709,000	Union of South Africa .. ..	8,602,000
United Kingdom .. ..	93,144,000	Tunis .. ..	8,451,000
Russia in Asia (1915) .. ..	91,672,280	Belgium (1915) .. ..	7,755,200
Germany .. ..	90,331,000	Portugal (1916) .. ..	7,118,304
Rumania (1916) .. ..	76,117,288	Switzerland .. ..	7,095,000
Australia (a) .. ..	75,638,000	New Zealand .. ..	6,567,629
Austria (1915) .. ..	54,286,400	Denmark .. ..	6,320,000
Algeria .. ..	49,199,000	Netherlands .. ..	5,780,000
Bulgaria (1916) .. ..	37,070,825	Mexico (1915) .. ..	3,877,600
Turkey in Asia (1915) .. ..	33,929,000		

(a) Average yield for 10 years, 99,924,000.

Various estimates of the total quantity of wheat produced in the world have been made. That furnished by the International Institute of Agriculture, Rome, gives the following figures for the ten years 1907 to 1916:—

## WORLD'S PRODUCTION OF WHEAT, 1907 TO 1916.

Year.	1,000,000 bushels.	Year.	1,000,000 bushels.	Year.	1,000,000 bushels.
1907 .. ..	3,131	1911 .. ..	3,512	1915 .. ..	4,492
1908 .. ..	3,137	1912 .. ..	3,795	1916 .. ..	3,657
1909 .. ..	3,569	1913 .. ..	4,048	Average for 10	
1910 .. ..	3,525	1914 .. ..	3,548	years .. ..	3,641

In this estimate the figures given for Australia and New Zealand relate to the agricultural year ending on 30th June in the year specified.

For the ten years referred to, the Australian production of wheat aggregated 830,113,000 bushels, thus representing 2.3 per cent. of the world's production. The total quantity of wheat produced in the British Empire during the same period of ten years was approximately 7,214 million bushels, so that the Australian production of wheat represented 11.5 per cent. of that of the British Empire, while the British Empire production represented 19.8 per cent. of the world's total.

4. *Prices of Wheat.*—(i) *British Wheat.* Since the United Kingdom is the largest importer of Australian wheat, the price of wheat in the British markets is a matter of prime importance to the local producer. The table below gives the average prices per Imperial quarter realised for British-grown wheat :—

#### PRICES OF BRITISH WHEAT PER QUARTER, 1861 TO 1917.

Year.	Average for Year.	Highest Weekly Average.	Lowest Weekly Average.	Year.	Average for Year.	Highest Weekly Average.	Lowest Weekly Average.
	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>		<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>
1861 ..	55 4	61 6	50 0	1913 ..	31 8	34 3	30 0
1871 ..	56 8	60 0	52 6	1914 ..	34 11	43 3	30 11
1881 ..	45 4	55 2	40 9	1915 ..	52 10	62 0	42 9
1891 ..	37 0	41 8	32 3	1916 ..	58 5	75 10	46 3
1901 ..	26 9	27 8	25 8	1917 ..	75 9	83 10	70 3
1911 ..	31 8	33 4	30 0				

(ii) *Australian Export Values.* In the next table will be found a statement of the export values of Australian wheat during each of the last five years :—

#### EXPORT VALUES OF AUSTRALIAN WHEAT, 1914-15 TO 1918-19.

Year .. .. .	1914-15.	1915-16.	1916-17.	1917-18.	1918-19.
	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>
Price per bushel .. .. .	4 1	5 7	4 10	5 3	5 1

The export values here shown are the average declared values for the successive years at the several ports of shipment in the Commonwealth.

5. *Imports and Exports of Wheat and Flour.*—(i) *Quantities.* The table hereunder shews the imports, exports, and net exports of wheat and flour from 1914-15 to 1918-19. For the sake of convenience, flour has been expressed at its equivalent in wheat, one ton of flour being taken as equal to 50 bushels of grain. During 1914-15 and 1915-16 the Commonwealth imports of wheat and flour were equivalent to 1,646,387 and 5,633,596 bushels of wheat respectively. The severe drought encountered during 1914-15 was responsible for these importations. In ordinary seasons the import of wheat and flour is negligible. During the past five years the export has ranged between 6,886,293 bushels in 1914-15 and 69,810,522 bushels in 1916-17, the net exports for the period averaging 43,159,674 bushels.

#### IMPORTS AND EXPORTS OF WHEAT AND FLOUR, COMMONWEALTH, 1914-15 TO 1918-19.

Year.	Imports.			Exports.			Net Exports.
	Wheat.	Flour.	Total.	Wheat.	Flour.	Total.	
	Bushels.	Eq. Bushels. <i>a</i>	Bushels.	Bushels.	Eq. Bushels. <i>a</i>	Bushels.	
1914-15	1,641,237	5,150	1,646,387	4,210,593	2,675,700	6,886,293	5,239,906
1915-16	5,616,696	16,900	5,633,596	28,621,445	7,347,750	35,969,195	30,335,599
1916-17	40	3,000	3,040	55,278,872	14,531,650	69,810,522	69,807,482
1917-18	20	1,050	1,070	22,981,772	18,704,150	41,685,922	41,684,852
1918-19	50	2,768	2,818	44,563,597	24,169,750	68,733,347	68,730,529

(a) Equivalent in bushels of wheat.

(ii) *Destination of Exported Breadstuffs.* In the next two tables will be found a list of the principal countries to which the Commonwealth exported wheat and flour during each year of the period 1914-15 to 1918-19. The countries are as shown in the Australian Customs returns, but owing to the fact that in normal times wheat ships are frequently instructed to call for orders at various ports, the countries to which these ports belong cannot always be considered as the ultimate destination of the whole of the wheat said to be exported to them.

#### EXPORTS OF WHEAT FROM THE COMMONWEALTH, 1914-15 TO 1918-19.

Country to which Exported.	1914-15.	1915-16.	1916-17.	1917-18.	1918-19.	Total for Five Years.
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.
United Kingdom	1,532,693	14,494,248	22,715,735	5,309,162	9,104,560	53,156,398
Egypt .. ..	..	267,568	4,842,000	..	11,741,477	16,851,045
France .. ..	9,482	2,186,567	8,562,240	5,074,098	674,363	16,506,750
Italy .. ..	157,000	3,258,313	8,154,602	517,962	2,950,015	15,037,892
Union of South Africa ..	1,088,507	2,919,608	6,549,395	1,216,172	541,778	12,315,460
United States ..	..	..	357,643	6,593,878	3,510,762	10,462,283
India .. ..	..	..	..	225,820	4,306,312	4,532,132
Canary Islands (a)	..	2,960,558	884,615	..	..	3,845,173
New Zealand ..	151,042	30,380	225,852	1,295,448	1,452,625	3,155,347
Peru .. ..	290,810	156,302	1,154,355	340,965	660,318	2,602,750
Japan .. ..	223,996	..	..	702,958	1,407,775	2,334,729
Ceylon .. ..	853	..	1,247	392	2,142,212	2,144,704
Sweden .. ..	..	..	..	..	2,134,500	2,134,500
Norway .. ..	..	..	540,482	..	1,369,105	1,909,587
Spain .. ..	72,970	1,550,252	..	..	..	1,623,222
Chile .. ..	650,510	..	..	..	975	651,485
Other Countries	32,730	797,645	1,290,706	1,704,917	2,566,820	6,392,818
Total .. ..	4,210,593	28,621,441	55,278,872	22,981,772	44,563,597	155,656,275

(a) For orders.

The exports of flour during the same period and the principal countries of destination were as follows :—

#### EXPORTS OF FLOUR FROM THE COMMONWEALTH, 1914-15 TO 1918-19.

Country to which Exported.	1914-15.	1915-16.	1916-17.	1917-18.	1918-19.	Total for Five Years.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
United Kingdom .. ..	850	43,604	127,502	145,914	136,254	454,124
Egypt .. ..	3,592	1,345	9,772	13,994	129,992	158,695
Italy .. ..	..	14,142	25,679	6,099	35,804	81,724
Union of South Africa ..	14,075	22,019	25,106	7,330	12,892	81,422
France .. ..	..	14,087	33,320	32,597	..	80,004
Java .. ..	6,003	11,674	13,826	15,573	27,444	74,520
Philippine Islands .. ..	3,313	3,383	..	35,158	27,180	69,034
United States .. ..	..	..	8,131	54,889	3,865	66,885
Straits Settlements ..	3,352	5,023	9,755	23,609	24,386	66,125
India .. ..	158	33	83	..	23,629	23,903
Hong Kong .. ..	140	1,442	648	3,604	17,898	23,732
New Zealand .. ..	5,064	2,190	9,006	5,736	511	22,507
New Caledonia .. ..	3,791	3,566	3,533	3,314	3,804	18,008
Sumatra .. ..	633	1,507	4,072	2,530	4,515	13,257
Fiji .. ..	1,834	1,257	2,199	2,280	2,212	9,782
Japan .. ..	2	53	300	3,702	1,258	5,315
Mauritius .. ..	1,810	..	112	..	1,968	3,890
Portuguese East Africa ..	3,163	216	409	..	..	3,788
China .. ..	545	384	335	923	880	3,067
Ceylon .. ..	2,173	342	20	..	47	2,582
Other Countries .. ..	3,016	20,688	16,825	16,831	28,856	86,216
Total .. ..	53,514	146,955	290,633	374,083	483,395	1,348,580

For the five years under review the export of wheat to the United Kingdom amounted to 53,156,398 bushels, or 34 per cent. of the total export for the period, while the export of flour to the United Kingdom aggregated 454,124 tons, or 33 per cent. of the total export. During the quinquennium the heaviest exports of flour have been to the United Kingdom, Egypt, Italy, South Africa, France, and Java.

(iii) *Exports of Wheat and Flour.* From the foregoing returns it will be seen that the quantity of Australian wheat exported in the form of flour during the past five years represents, on the average, slightly over 30 per cent. of the total equivalent in wheat exported as wheat or flour from the Commonwealth.

A point of some interest in connexion with the export of wheat, and one which bears also on the proportions of wheat and flour exports just referred to, is that concerning the quantity of phosphoric acid which this export has the effect of removing from the Commonwealth, and the necessity which exists for the return to the soil of this substance in some form.

According to an estimate furnished by the chemist to the New South Wales Department of Agriculture (F. B. Guthrie, Esq., F.C.S., etc.), the proportions of milled product from a bushel (60 lbs.) of wheat are, approximately, 42 lbs. of flour, 9 lbs. of bran, and 9 lbs. of pollard, while the percentage of phosphoric acid contained in these products is as follows:—

Flour	..	..	0.32 per cent., or 0.13 lb. per bushel.
Bran	..	..	3.00     "     0.27     "
Pollard	..	..	0.90     "     0.08     "

The total amount of phosphoric acid contained in a bushel of wheat is, therefore, 0.48 lb., of which 0.13 lb. is in the flour and 0.35 lb. in the offal.

During the last ten years the net exports from the Commonwealth of wheat and its milled products have amounted to 358,383,825 bushels of wheat, 2,158,825 tons of flour, and 3,687,110 bushels of bran, pollard, and sharps. On the basis of the figures quoted above this export would contain no less than 186,800,000 lbs. of phosphoric acid, the value of which as a fertilizer would amount to nearly two and a half million pounds sterling.

(iv) *Local Consumption of Wheat.* The estimated consumption of wheat for food and for seed purposes in the Commonwealth during the past ten years is given in the following tables:—

**WHEAT USED FOR HUMAN CONSUMPTION IN THE COMMONWEALTH,  
1909 TO 1917-18.**

Year.	Flour Milled.	Net Exports of Flour.		Net Quantity Available for Home Consumption.		Net Quantity Available per Head of Population.	
		Flour.	Flour in Biscuits Exported.	Flour.	Equivalent in Terms of Wheat.	Flour.	Equivalent in Terms of Wheat.
	Tons.	Tons.	Tons.	Tons.	Bushels.	Tons.	Bushels.
1909 ..	603,688	129,889	1,980	471,819	23,590,950	.1104	5.519
1910 ..	649,282	139,774	2,340	507,168	25,358,400	.1161	5.803
1911 ..	696,301	175,649	2,570	518,082	25,904,100	.1154	5.769
1912 ..	677,053	167,948	2,820	506,285	25,314,250	.1090	5.450
1913 ..	760,613	221,605	2,600	536,408	26,820,400	.1117	5.583
1914 ..	713,845	174,180	2,400	537,265	26,863,250	.1092	5.461
1915 ..	541,810	7,633	2,160	532,017	26,600,850	.1075	5.374
1915-16 ..	577,038	146,618	2,650	427,770	21,388,500	.0867	4.335
1916-17 ..	869,975	290,572	2,885	576,518	28,825,900	.1183	5.913
1917-18 ..	985,761	374,062	9,810	601,889	30,094,450	.1220	6.098
Aggregate 10 years	7,075,366	1,827,930	32,215	5,215,221	260,761,050	.1105	5.525

**ESTIMATED QUANTITY OF WHEAT USED FOR SEED PURPOSES IN THE  
COMMONWEALTH, 1909 TO 1918.**

Year.	Area for Grain and Hay.	Wheat for Seed Purposes.		
		Quantity.	Per Acre.	Per Head of Population.
	Acres.	Bushels.	Bushels.	Bushels.
1909 .. ..	7,582,238	7,322,000	.966	1.713
1910 .. ..	8,527,308	8,332,000	.977	1.907
1911 .. ..	8,859,949	8,282,000	.935	1.844
1912 .. ..	9,112,676	8,484,000	.931	1.827
1913 .. ..	10,661,430	9,747,000	.914	2.029
1914 .. ..	11,012,679	10,059,000	.913	2.045
1915 .. ..	14,414,024	13,041,000	.905	2.634
1916 .. ..	12,894,917	11,523,000	.894	2.348
1917 .. ..	10,910,669	9,713,000	.890	1.968
1918 .. ..	9,428,398	9,054,000	.960	1.800
Aggregate for 10 years ..	103,404,288	95,557,000	.924	2.006

In addition to the above, there is to be taken into consideration grain fed to poultry and other live stock. This, doubtless, varies in quantity from year to year according to the prices current for wheat, and other causes. No data are available on which to base an estimate of actual quantity so consumed. The flour available for human consumption necessarily fluctuates from year to year coincident with stocks being heavy or light. In some years the flour available per head of population, after deducting net exports from quantity milled, shews a substantial increase over the average for the previous year, this, however, being counterbalanced by a decline in the following year. The average quantity of flour consumed per annum for the ten years under consideration was 0.1105 tons per head of population, which, when expressed in equivalent terms in wheat, represents 5.525 bushels. The estimates of quantity of grain used for seed purposes have been based on data supplied by the Agricultural and Statistical Departments of the several States giving average quantities of seed used per acre for wheat sown either for grain or hay. The average annual quantity thus used during the ten years was 2.006 bushels per head of population, and 0.924 bushels or 55½ lbs. per acre sown.

6. **Value of the Wheat Crop.**—The estimated value of the wheat crop in each State and in the Commonwealth during the season 1918-19 is shewn below :—

**VALUE OF THE WHEAT CROP, (a) 1918-19.**

Particulars.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	Fed. Ter.	C'wealth.
	£	£	£	£	£	£	£	£
Aggregate value..	4,447,390	6,309,968	23,515	6,307,654	2,211,347	44,310	90	19,344,274
Value per acre ..	£1/16/11	£2/17/0	£1/1/9	£2/17/8	£1/18/7	£3/14/4	£2/10/0	£2/8/5

(a) Exclusive of the value of straw.

7. **The Australian Wheat Marketing Scheme.**—(i) *General Principles.* Owing to the abnormal conditions prevailing, a Wheat Marketing Scheme was entered into by the Governments of the Commonwealth and of the States of New South Wales, Victoria, South Australia, and Western Australia, for the purpose of realising to the best advantage the 1915-16 wheat harvest of the States named, and of making advances to farmers pending realisation. It was subsequently decided that the 1916-17 harvest, and later, the 1917-18, 1918-19, and 1919-20 harvests, should be dealt with on similar lines to those of the 1915-16 harvest.

The general principles of the scheme may be shortly stated thus :—

1. That all growers should participate equitably in the realisation of the harvest and the proceeds thereof.
2. That the limited freights available should be allotted between the States in accordance with the exportable surplus of each.

The securing and general allotment of freights is under the control of the Chartering Agents, who are responsible to the Commonwealth Government.

The distribution of freights among the States is in charge of the Australian Wheat Board, which also has the duty of realising the crop. This Board consists of Ministerial representatives of the Governments of the Commonwealth and of the States and representatives of the growers, one from each State. It has the assistance of an Advisory Board consisting of well-known wheat shippers. A London Wheat Committee, consisting of the High Commissioner and the Agents-General of the States concerned, acting with the advice of the London representatives of the wheat shippers, arranges overseas sales. Adjustments are to be made between the States so that, having regard to the quantity shipped, each will ultimately receive the average net result of the whole of the overseas realisations.

In certain States the crop is bought by the State Government, and in others the wheat is received from the growers for sale on their behalf.

The Australian Wheat Board fixes all prices at which wheat may be sold, except in the case of poultry feed, which is left to the States to regulate.

Each State has a local Board or Commission to control the operations of the scheme within the State concerned. This Board or Commission effects all local sales, including sales to millers.

(ii) *Advances and Finance.* Under arrangements with the Australian banks made by the Commonwealth and State Governments, advances are made to farmers upon delivery of their wheat at railway stations to representatives of agents appointed by the different State Governments. The following advances per bushel have been made in respect of the five pools for each of the States up to the 2nd August, 1920 :—

#### POOLED WHEAT ADVANCES PER BUSHEL, 1915-16 TO 1919-20.

State.	1915-16. (b)	1916-17.	1917-18. (a)	1918-19. (a)	1919-20. (a)
	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>
New South Wales ..	4 10	3 3	4 0	4 7	6 6
Victoria ..	4 9	(a) 4 0	5 0	5 2	6 10
South Australia ..	4 7½	3 3	4 9	5 4	7 9
Western Australia ..	4 7½	(a) 4 0	4 6	4 10	7 6

(a) Less rail freight.

(b) Less rail freight and handling charges.

Proceeds of wheat as realised are applied in reduction of the bank overdrafts caused by payment of advances and expenses. The rate of interest payable to the banks is five per cent. The Government of each State has undertaken to repay all advances made on account of such State, and the Commonwealth Government has guaranteed repayment by the States. Advances to growers are made by means of certificates issued by the agents appointed by the various States. The certificates are payable at banks named by the growers.

(iii) *Results of the Scheme.* In all the States, certain wheat, particularly seed wheat, has not been brought under the scheme. The quantity of wheat pooled therefore differs from that harvested in each State. In addition, wheat grown in one State may be pooled in another. A considerable quantity of New South Wales wheat is included in Victorian returns, and the Victorian total also includes a small quantity of South Australian wheat.

Deliveries made on account of each harvest to 2nd August, 1920, are as follows :—

#### WHEAT POOLED IN EACH STATE, 1915-16 TO 1919-20.

State in which pooled.	1915-16.	1916-17.	1917-18.	1918-19.	1919-20. (to 2/8/1920).
	<i>Bushels.</i>	<i>Bushels.</i>	<i>Bushels.</i>	<i>Bushels.</i>	<i>Bushels.</i>
New South Wales ..	58,574,000	32,050,000	33,715,000	13,892,000	447,000
Victoria ..	59,923,000	50,407,000	36,233,000	23,029,000	12,152,000
South Australia ..	29,894,000	41,996,000	25,867,000	20,472,000	12,469,000
Western Australia ..	15,004,000	13,822,000	7,529,000	7,625,000	9,602,000
Total ..	163,395,000	138,275,000	103,244,000	65,018,000	34,670,000

On 2nd August, 1920, the total overdraft on all pools amounted to £3,409,000.

The quantities of wheat disposed of and in hand on that date were as follows :—

**POOLED WHEAT DISPOSED OF AND IN HAND IN EACH STATE, 2nd AUGUST, 1920.**

Particulars.	N.S.W.	Vic.	S. Aust.	W. Aust.	Total.
1915-16. (In thousands of bushels.)					
Shipments .. .. .	28,977	37,769	20,503	10,169	97,418
Local sales .. .. .	29,597	22,154	8,314	4,835	64,900
Stocks on hand .. .. .	..	..	1,077	..	1,077
Total .. .. .	58,574	59,923	29,894	15,004	163,395
1916-17. (In thousands of bushels.)					
Shipments .. .. .	7,893	24,390	21,169	2,473	55,925
Local sales .. .. .	21,631	23,094	14,186	11,106	70,017
Stocks on hand .. .. .	..	904	6,642	..	7,546
Adjustment of stocks .. .. .	2,526	2,019	..	243	4,788
Total .. .. .	32,050	50,407	41,997	13,822	138,276
1917-18. (In thousands of bushels.)					
Shipments .. .. .	10,684	19,830	19,237	2,517	52,268
Local sales .. .. .	22,124	16,062	5,562	4,791	48,539
Stocks on hand .. .. .	..	341	1,068	221	1,630
Adjustment of stocks .. .. .	907	..	..	..	907
Total .. .. .	33,715	36,233	25,867	7,529	103,344
1918-19. (In thousands of bushels.)					
Shipments .. .. .	549	6,526	14,287	4,761	26,123
Local sales .. .. .	13,343	12,772	3,645	2,169	31,929
Stocks on hand .. .. .	..	3,731	2,540	695	6,966
Total .. .. .	13,892	23,029	20,472	7,625	65,018
1919-20. (In thousands of bushels.)					
Shipments .. .. .	..	714	7,983	3,578	12,275
Local sales .. .. .	447	5,941	1,761	3,802	11,951
Stocks on hand .. .. .	..	5,497	2,725	2,222	10,444
Total .. .. .	447	12,152	12,469	9,602	34,670

The value realised to 2nd August, 1920 (all pools) is as follows :—

**TOTAL VALUE OF POOLED WHEAT SOLD IN EACH STATE, 2nd AUGUST, 1920.**

Particulars.	N.S.W.	Victoria.	S. Aust.	W. Aust.	Total.
	£	£	£	£	£
Oversea shipments and Australian Wheat Board flour contracts .. .. .	14,599,000	26,452,000	24,301,000	8,755,000	74,107,000
Local sales .. .. .	19,251,000	15,710,000	5,935,000	4,771,000	45,667,000
Total shipments and local deliveries .. .. .	33,850,000	42,162,000	30,236,000	13,526,000	119,774,000

Since the initiation of the "Pool," several sales of magnitude have been made, notably one of 3,000,000 tons to the British Wheat Commission, at a rate of 4s. 9d. per bushel f.o.b., equalling £26,600,000, which is the largest wheat transaction ever recorded, and another of 1,500,000 tons to the same purchaser for £15,400,000, at the rate of 5s. 6d. per bushel.

### § 5. Oats.

1. **Progress of Cultivation.**—Oats came next in importance to wheat amongst the grain crops cultivated last season, but while wheat grown for grain accounted for nearly 60 per cent., oats represented less than 6 per cent. of the area under crop in the Commonwealth. The progress of cultivation of oats since 1860 is shewn in the table hereunder, and more fully in the graphs hereinafter :—

CULTIVATION OF OATS, 1860-1 TO 1918-19.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	Fed. Ter.	C'wealth.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1860-1	6,535	86,337	7	2,273	507	30,303	..	125,962
1870-1	10,683	149,309	122	6,188	2,095	30,946	..	199,343
1880-1	17,923	134,089	116	4,355	1,319	19,853	..	177,655
1890-1	14,102	221,048	411	12,475	1,934	20,740	..	270,710
1900-1	29,383	362,689	385	27,988	4,790	45,073	..	470,308
1910-11	77,991	392,681	2,537	77,674	61,918	63,887	..	676,688
1914-15	43,285	434,815	2,728	140,567	96,085	57,063	191	774,734
1915-16	58,449	353,932	339	126,529	104,086	78,212	97	721,644
1916-17	67,003	441,598	6,564	151,609	122,220	55,028	108	844,130
1917-18	82,512	293,214	3,002	106,556	95,666	34,771	79	615,800
1918-19	86,421	342,867	298	160,823	141,459	36,231	53	768,152

2. **Total Yield.**—The total oat crop of the several States for the same period is furnished in the following table :—

COMMONWEALTH OAT CROP, 1860-1 TO 1918-19.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	F. Ter.	C'wealth.
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.
1860-1	98,814	2,633,693	91	52,989	11,925	926,418	..	3,723,930
1870-1	119,365	2,237,010	1,586	88,383	39,974	691,250	..	3,177,568
1880-1	356,121	2,362,425	2,081	50,070	21,104	439,446	..	3,231,247
1890-1	256,659	4,919,325	8,967	116,229	38,791	519,395	..	5,859,366
1900-1	593,548	9,582,332	7,855	366,229	86,433	1,406,913	..	12,043,310
1910-11	1,702,706	9,699,127	50,469	1,136,618	776,233	2,063,303	..	15,428,456
1914-15	511,759	1,608,419	43,607	368,425	464,943	1,341,800	2,151	4,341,104
1915-16	1,344,138	9,328,894	2,454	2,134,374	1,538,092	2,189,467	1,560	16,538,979
1916-17	1,083,030	8,289,289	108,664	1,839,541	1,689,352	1,006,183	1,950	14,018,009
1917-18	1,452,144	6,141,287	44,688	1,248,529	908,592	589,224	2,967	10,387,431
1918-19	1,272,411	5,274,984	3,632	1,540,603	1,499,689	848,420	1,341	10,441,080

The principal oat-growing State of the Commonwealth is Victoria. During the past five seasons it has produced 55 per cent. of the total quantity of oats grown in the Commonwealth; South Australia, Western Australia, New South Wales, and Tasmania come next in order of importance. In New South Wales and Tasmania, the



highest production of oats for any season was that of 1909-10, while Victoria experienced its maximum yield in 1903-4, South Australia in 1915-16, Queensland in 1916-17, and Western Australia in 1912-13. For the Commonwealth as a whole, the record yield was that of 17,541,210 bushels in the season 1903-4, while the yields of 16,538,979 and 16,248,857 for 1915-16 and 1908-9 respectively rank second and third.

3. **Average Yield.**—The average yield per acre of the oat crop of the Commonwealth varies considerably in the different States, being highest in Tasmania and lowest in South Australia. Particulars as to average yield in each of the last five seasons, and also for the decennium 1909-19, are given in the succeeding table :—

**AVERAGE YIELD OF OATS PER ACRE, 1914-15 TO 1918-19.**

Season.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	Fed. Ter.	C'wealth.
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.
1914-15 ..	11.82	3.70	15.98	2.62	4.84	23.51	11.26	5.60
1915-16 ..	23.00	26.36	7.24	16.87	14.78	27.99	16.08	22.92
1916-17 ..	16.16	18.77	16.55	12.13	13.82	18.28	18.06	16.61
1917-18 ..	17.60	20.94	14.89	11.72	9.50	16.95	37.56	16.87
1918-19 ..	14.72	15.38	12.19	9.58	10.60	23.42	25.30	13.59
Average for 10 seasons 1909-19	(a)18.50	18.31	16.51	11.14	12.43	27.36	(b)19.05	17.02

(a) Including Federal Territory.

(b) Average for eight seasons.

The smallest average yield per acre ever recorded for the Commonwealth was that experienced in the abnormally dry season 1914-15, viz., 5.60 bushels, while the largest in the past ten years was that of the season 1908-9, amounting to 24.03 bushels per acre.

4. **Relation to Population.**—The State in which oat production occupies the most important position in relation to population is Tasmania, the yield for that State representing about 5.89 bushels per head during the last five years under review, as compared with 2.25 bushels per head for the Commonwealth as a whole. Particulars for the seasons 1914-15 to 1918-19 are furnished in the succeeding table :—

**OAT PRODUCTION PER 1,000 OF POPULATION, 1914-15 TO 1918-19.**

Season.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	Fed. Ter.	C'wealth.
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.
1914-15 ..	275	1,124	64	834	1,439	6,662	1,098	879
1915-16 ..	719	6,574	4	4,868	4,837	10,892	820	3,353
1916-17 ..	583	5,926	162	4,251	5,471	5,033	877	2,875
1917-18 ..	768	4,352	66	2,862	2,936	2,900	1,410	2,105
1918-19 ..	659	3,687	5	3,457	4,785	4,062	601	2,076

5. **Value of Oat Crop.**—The estimated value of the oat crop of the several States of the Commonwealth for the season 1918-19 is as follows :—

**VALUE OF OAT CROP, (a) 1918-19.**

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Fed. Ter.	C'wealth.
Aggregate value..	£331,340	£1,252,809	£620	£288,863	£296,813	£159,079	£350	£2,329,874
Value per acre ..	£3/16/8	£3/13/1	£2/1/7	£1/15/11	£2/2/0	£4/7/10	£6/12/1	£3/0/8

(a) Exclusive of the value of straw.

6. **Imports and Exports.**—The production of oats in the Commonwealth has not yet reached such a stage as to admit of a regular export trade in this cereal; in fact in certain years the imports have exceeded the exports, notably in 1903, 1906, 1908, 1910, and in each of the four years prior to 1916–17. The quantities and values of oats imported into and exported from the Commonwealth during the years 1914–15 to 1918–19 are given hereunder:—

**COMMONWEALTH IMPORT AND EXPORT OF OATS, 1914-15 TO 1918-19.**

Year.	Imports.		Exports.		Net Exports.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	Bushels.	£	Bushels.	£	Bushels.	£
1914-15 ..	1,767,490	344,201	38,163	7,904	- 1,729,327	- 336,297
1915-16 ..	2,473,412	501,755	582,055	85,119	- 1,891,357	- 416,636
1916-17 ..	3,700	635	670,985	97,879	667,285	97,244
1917-18 ..	838	219	368,113	53,809	367,275	53,590
1918-19 ..	41,728	9,713	149,413	35,326	107,685	25,613

Note.—The minus sign (—) signifies net imports.

The principal countries from which the Commonwealth imports of oats have been obtained are the Dominion of New Zealand, Chile, Japan, and the United States of America, while the principal countries to which oats were exported during the period under review were New Zealand and the United Kingdom.

7. **Oatmeal, etc.**—Importations of oatmeal, etc., into the Commonwealth take place principally from the United Kingdom, the United States, and New Zealand. The total importations of oatmeal, wheatmeal, and rolled oats during 1918–19 amounted to 94,808 lbs., and represented a value of £2,345, while the exports amounted to 3,897,548 lbs., valued at £52,891, principally to India, New Zealand, and Java.

8. **Comparison with Other Countries.**—A comparison of the Australian production of oats with that of the leading oat-producing countries of the world is furnished in the following table:—

**PRODUCTION OF OATS IN VARIOUS COUNTRIES, 1918.**

Country.	Quantity of Oats Produced.	Country.	Quantity of Oats Produced.	Country.	Quantity of Oats Produced.
	Bushels.		Bushels.		Bushels.
United States..	1,538,359,000	Hungary (1915)	78,449,000	Norway ..	13,268,000
Russia in Europe (1915) (a) ..	758,628,000	Sweden ..	51,814,000	<b>Australia ...</b>	<b>10,441,000</b>
Canada ..	362,363,000	Belgium (1915)	38,776,000	Bulgaria (1916)	7,146,000
Germany ..	257,985,000	Argentine Rep.	35,296,000	New Zealand	6,885,000
United Kingdom	249,568,000	Denmark ..	33,235,000	Union of South	
France ..	151,099,000	Italy ..	33,069,000	Africa (1917)	6,716,000
Austria (1915)	136,685,000	Rumania (1916)	28,050,000	Japan ..	5,462,000
Russia in Asia (1915) ..	82,243,000	Spain ..	24,378,000	Switzerland	4,150,000
		Algeria ..	18,032,000	Tunis ..	3,086,000
		Netherlands..	16,568,000		

(a) Including Poland and Northern Caucasia.

9. Comparison of Yields.—The average yield per acre of oats in Australia is a somewhat low one compared with the results obtained in other countries, where the cultivation of this cereal is more extensively carried on. Arranging the countries contained in the foregoing table according to the magnitude of the average yield of oats for the years specified, the results are as follows :—

YIELD OF OATS PER ACRE, VARIOUS COUNTRIES, 1918.

Country.	Average per Acre.	Country.	Average per Acre.	Country.	Average per Acre.
	Bushels.		Bushels.		Bushels.
Belgium (1914) ..	70.29	Germany ..	31.97	France ..	22.79
Switzerland ..	48.26	Austria (1913) ..	31.35	Russia in Europe	
Netherlands ..	46.54	Hungary (1915) ..	29.45	(1915) ..	21.72
United Kingdom ..	44.54	Sweden ..	29.04	Bulgaria (1914) ..	20.90
New Zealand ..	39.87	Italy ..	27.31	Tunis ..	19.78
Norway ..	38.68	Union of South		Spain ..	16.18
United States ..	34.65	Africa (1917) ..	26.86	Australia ..	13.59
Japan ..	34.57	Rumania (1916) ..	26.26	Russia in Asia	
Denmark ..	33.88	Canada ..	24.50	(1915) ..	13.38
				Argentine Rep.	11.84

10. Price of Oats.—The average wholesale prices of oats in the markets of the several capitals for the year 1918 are given in the following table :—

AVERAGE WHOLESALE PRICE OF OATS PER BUSHEL, 1918.

Particulars.	Sydney.(a)	Melbourne.	Brisbane.	Adelaide.	Perth.	Hobart.
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Average price per bushel ..	4 11½	3 10	3 10	3 2	3 9½	4 8½

(a) Year ended 30th June, 1919.

## § 6. Maize.

1. States Growing Maize.—The only States in which maize is at all extensively grown for grain are those of New South Wales and Queensland, the area so cropped in these two States during the season 1918-19 being 264,087 acres, or 92 per cent. of the total for the Commonwealth. Of the balance, Victoria contributed 22,559 acres, South Australia 112 acres, Western Australia 39 acres, and the Northern Territory 15 acres. The climate of Tasmania prevents the growing of maize for grain in that State. In South Australia, prior to 1908, particulars concerning maize had not been specially asked for on the form used in the collection of agricultural statistics. In all the States, maize is grown to a greater or less extent as green forage, particularly in connexion with the dairying industry.

2. Area under Maize.—The area devoted to the growing of maize for grain in each State, from 1880 onwards, is given in the following table, and the actual fluctuations from year to year are shewn more fully on the graph hereinafter.

The total area under maize in the Commonwealth exceeded 350,000 acres for the first time in the season 1909-10, and although it fluctuated somewhat during the succeeding nine years, it may be considered to have remained at about that figure. The greatest divergence during the period occurred in 1910-11, when a record total of 414,914 acres was harvested. The unfavourable weather conditions resulted in the acreage under maize during 1918-19 being reduced by 45,245 acres as compared with the preceding season.

## AREA UNDER MAIZE, 1880-1 TO 1918-19.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	N. Ter.	F. Ter.	C'wealth.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1880-1 ..	127,196	1,769	44,109	..	32	..	..	173,106
1890-1 ..	191,152	10,357	99,400	..	81	..	..	300,990
1900-1 ..	206,051	9,389	127,974	..	91	..	..	343,505
1910-11 ..	213,217	20,151	180,862	(a)619	46	19	..	414,914
1914-15 ..	143,663	19,433	176,372	189	73	51	..	339,781
1915-16 ..	154,119	22,258	146,474	702	28	45	11	323,637
1916-17 ..	155,373	23,076	181,405	117	51	45	5	360,072
1917-18 ..	145,733	20,987	165,124	70	97	25	21	332,057
1918-19 ..	114,582	22,559	149,505	112	39	15	..	286,812

(a) Particulars for years prior to 1907-8 not available.

3. **Total Yield.**—The average yield for the season 1918-19 was the second lowest since 1887. The 1910-11 crop was a record one, and exceeded 13,000,000 bushels, while the average annual production of maize during the last decade was 8,981,568 bushels. Particulars concerning the yield from 1880 onwards are given hereunder :—

## MAIZE CROP, 1880-1 TO 1918-19.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W.Aust.	N. Ter.	F. Ter.	C'wealth.
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.
1880-1	4,518,897	49,299	1,409,607	..	896	..	..	5,978,699
1890-1	5,713,205	574,083	2,373,803	..	1,526	..	..	8,662,617
1900-1	6,292,745	604,180	2,456,647	..	1,399	..	..	9,354,971
1910-11	7,594,130	982,103	4,460,306	(a)6,375	718	449	..	13,044,081
1914-15	3,174,825	1,018,419	4,260,673	170	999	475	..	8,455,561
1915-16	3,773,405	999,886	2,003,463	15,837	273	450	195	6,793,509
1916-17	4,333,430	1,172,330	3,018,934	993	949	450	50	8,527,136
1917-18	3,499,529	1,152,787	4,188,586	796	701	432	429	8,843,260
1918-19	2,091,921	711,679	4,105,974	1,756	623	200	..	6,912,153

(a) Particulars for years prior to 1907-8 not available.

4. **Average Yield.**—In the following table particulars are given of the average yield per acre of the maize crops of the several States for the seasons 1914-15 to 1918-19, and also for the decennium 1909-19 :—

## AVERAGE YIELD OF MAIZE PER ACRE, 1914-5 TO 1918-19.

Season.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	N. Ter.	F. Ter.	C'wealth.
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.
1914-15 ..	22.10	52.41	24.16	0.90	13.68	9.31	..	24.89
1915-16 ..	24.48	44.92	13.68	22.56	9.75	10.00	17.73	20.99
1916-17 ..	27.89	50.80	16.64	8.49	18.61	10.00	10.00	23.68
1917-18 ..	24.01	54.93	25.37	11.37	7.23	17.28	20.43	26.63
1918-19 ..	18.26	31.55	27.46	15.68	15.97	13.33	..	24.10
Average for 10 seasons 1909-19	27.82	46.64	22.18	14.61	13.46	18.75	14.41	26.35

(a) Including Federal Territory.

(b) Including Northern Territory.

(c) Average for nine seasons.

(d) Average for eight seasons.

The extraordinarily high average yield obtained in Victoria is due, in large measure, to the fact that the area under maize in that State is comparatively small and is situated in districts that are peculiarly suited to the production of this grain. The average yield in New South Wales is appreciably higher than that obtained in Queensland.

5. **Value of Maize Crop.**—The value of the Commonwealth maize crop for the season 1918-19 has been estimated at £2,016,844, made up as follows :—

**VALUE OF MAIZE CROP, 1918-19.**

Particulars.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	N. Ter.	C'wealth.
	£	£	£	£	£	£	£
Aggregate value ..	725,480	263,914	1,026,494	637	249	70	2,016,844
Value per acre ..	£6/6/8	11/14/0	6/17/4	5/13/9	6/7/8	4/13/4	7/0/8

6. **Relation to Population.**—During the past ten seasons the Commonwealth production of maize has ranged between 1.37 bushels per head of population in 1918-19 and 3 bushels per head in 1910-11. The production in Queensland, the State in which the maize yield per head of population is highest, ranged during the same period between 3 bushels per head in 1915-16 and  $7\frac{1}{2}$  bushels per head in 1910-11. Details for the several States during the past five seasons are as follows :—

**MAIZE PRODUCTION PER 1,000 OF POPULATION, 1914-15 TO 1918-19.**

Season.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	N. Ter.	F. Ter.	C'wealth.
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.
1914-15..	1,705	712	6,216	..	3	120	..	1,711
1915-16..	2,017	705	2,952	36	1	99	107	1,377
1916-17..	2,332	835	4,509	2	3	94	32	1,749
1917-18..	1,851	817	6,179	2	2	88	204	1,792
1918-19..	1,084	497	5,913	4	2	42	..	1,374

7. **Australian and Foreign Maize Production.**—The following table gives the production of maize in Australia and in the leading maize-producing countries of the world. The figures shew that the United States of America was responsible for over 72 per cent. of the total production.

**PRODUCTION OF MAIZE IN VARIOUS COUNTRIES, 1918.**

Country.	Production of Maize.	Country.	Production of Maize.
	Bushels.		Bushels.
United States ..	2,582,814,000	Bulgaria (1915) ..	33,929,000
Hungary (1915) ..	175,025,170	Spain ..	24,141,000
Argentine Republic ..	170,660,000	Philippine Islands (1916) ..	13,652,060
Rumania (1915) ..	83,767,793	Serbia (1915) ..	11,632,800
India (British) (1915) ..	79,684,680	Russia in Asia (1913) ..	10,765,860
Russia in Europe (1916) ..	69,786,137	Portugal (1915) ..	8,991,185
Italy ..	66,926,000	France ..	8,744,000
Egypt (1916) ..	66,270,123	Canada ..	6,947,000
Mexico (1915) ..	58,164,000	<b>Australia</b> ..	<b>6,912,153</b>
Austria (1915) ..	40,714,800	Uruguay (1916) ..	4,463,118
Union of South Africa ..	34,644,000	Japan ..	3,756,000

8. **Comparison of Yields.**—The average yield per acre of maize in the Commonwealth during 1918 was 24.10 bushels, and may be regarded as highly satisfactory when compared with that of other maize-producing countries. Egypt, Hungary, Canada, and Japan are

the only countries showing a higher average. The remaining countries shewn in the following table had average yields per acre ranging from 10.09 to 24.03 bushels.

#### AVERAGE YIELD OF MAIZE PER ACRE IN VARIOUS COUNTRIES, 1918.

Country.	Average Yield per Acre.	Country.	Average Yield per Acre.
	Bushels.		Bushels.
Egypt (1916) .. ..	35.82	Russia in Europe (1916) .. ..	19.04
Hungary (1915) .. ..	28.26	Austria (1913) .. ..	18.61
Canada .. ..	27.79	Rumania (1915) .. ..	16.09
Japan .. ..	26.27	Serbia (1913) .. ..	15.85
Australia (a) .. ..	24.10	India (1915) .. ..	13.12
United States of America .. ..	24.03	Uruguay (1915) .. ..	12.95
Spain .. ..	20.65	Philippine Islands (1916) .. ..	12.77
Argentine Republic .. ..	19.58	France .. ..	11.91
Italy .. ..	19.35	Union of South Africa .. ..	11.74
Bulgaria (1914) .. ..	19.07	Russia in Asia (1913) .. ..	10.09

(a) Average yield for 10 years, 26.35 bushels.

9. **Oversea Imports and Exports.**—Except in the years 1902, 1903, 1912, 1914–15 and 1915–16, when many of the maize crops failed, the Commonwealth oversea trade in maize has been practically insignificant. In the first of the years mentioned, nearly two million, and in 1915–16 nearly three and a half million bushels were imported. In 1908, 1909, and 1919 also, owing to the small harvests of the seasons 1907–8, 1908–9, and 1918–19, the imports of maize were largely in excess of the exports. Details of imports and exports for the years 1914–15 to 1918–19 are as follows :—

#### COMMONWEALTH IMPORTS AND EXPORTS OF MAIZE, 1914-15 TO 1918-19.

Year.	Imports.		Exports.		Net Imports.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	Bushels.	£	Bushels.	£	Bushels.	£
1914-15 .. ..	1,457,660	282,461	12,266	2,873	1,445,394	279,588
1915-16 .. ..	3,432,571	712,650	4,237	1,088	3,428,334	711,562
1916-17 .. ..	41,952	8,162	50,296	11,894	— 8,344	— 3,732
1917-18 .. ..	3,226	770	128,988	29,069	— 125,762	— 28,299
1918-19 .. ..	255,605	73,774	84,120	20,804	171,485	52,970

Note.—The minus sign (—) signifies net exports.

The principal countries to which maize has been exported from the Commonwealth are New Zealand and the Pacific Islands, while the principal countries from which importations have taken place are South Africa, Java, and the Pacific Islands.

10. **Prepared Maize.**—A moderate quantity of corn-flour is imported annually into the Commonwealth, the principal countries of supply being the United Kingdom and the United States. During the year 1918–19 these importations amounted to 236,091 lbs., and represented a value of £3,735. The exports of this commodity have been steadily increasing in dimensions during the past five years, ranging from 61,143 lbs., valued at £985, in 1914–15, to 2,465,632 lbs., valued at £47,166 in 1918–19.

11. **Price of Maize.**—The average wholesale price of maize in the Sydney market is given in the following table for each of the last five years :—

#### AVERAGE SYDNEY PRICE OF MAIZE PER BUSHEL, 1914-15 TO 1918-19.

Particulars.	1914-15.	1915-16.	1916-17.	1917-18.	1918-19.
	s. d.	s. d.	s. d.	s. d.	s. d.
Average price per bushel ..	4 6	5 2	3 8	4 8½	6 11½

### § 7. Barley.

1. **Area under Barley.**—The area devoted to barley in the Commonwealth has fluctuated very considerably, though with a tendency to increase during the past few years. Taking a series of years, the principal barley-growing State is Victoria, but for the past five seasons South Australia has attained the lead in regard to acreage, and for 1918-19 accounted for more than 51 per cent. of the Commonwealth area devoted to this crop; Victoria was next in importance with a percentage of about 39½; the remaining 9½ per cent. being represented by Western Australia, New South Wales, Tasmania, and Queensland, in the order named. The figures here given relate to the areas harvested for grain; only small areas are cropped for hay, while more considerable quantities are cut for green forage. These, however, are not included in this sub-section. The area under barley for grain in the several States from 1880 onwards is shewn in the following table:—

COMMONWEALTH AREA UNDER BARLEY, 1880-1 TO 1918-19.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1880-1 ..	8,056	68,630	1,499	13,074	6,363	8,297	105,919
1890-1 ..	4,937	87,751	584	14,472	5,322	4,376	117,442
1900-1 ..	9,435	58,853	7,533	15,352	2,536	4,502	98,211
1910-11 ..	7,082	52,687	5,578	34,473	3,369	5,235	108,424
1914-15 ..	4,861	62,492	7,166	66,315	6,986	5,836	153,656
1915-16 ..	6,369	61,400	1,367	84,900	10,069	5,409	169,514
1916-17 ..	5,195	93,015	12,674	103,627	11,105	4,637	230,253
1917-18 ..	6,370	84,931	7,702	95,654	5,028	5,185	204,870
1918-19 ..	7,980	100,198	1,316	130,357	7,982	7,036	254,869

2. **Total Yield.**—The total production of barley in the Commonwealth for the season 1918-19 amounted to 4,763,721 bushels, giving an average yield of 18.69 bushels per acre as compared with 18.19 for the decennium 1909-19. Particulars concerning the yields of the several States from 1880 onwards are as follows:—

COMMONWEALTH BARLEY CROP, 1880-1 TO 1918-19.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.
1880-1 ..	163,395	1,068,830	31,433	151,886	89,082	169,156	1,673,782
1890-1 ..	81,383	1,571,599	12,673	175,583	85,451	99,842	2,026,531
1900-1 ..	114,228	1,215,478	127,144	211,102	29,189	116,911	1,814,052
1910-11 ..	82,005	1,340,387	83,621	544,471	33,566	142,318	2,226,368
1914-15 ..	46,500	600,599	105,613	447,310	24,090	104,798	1,328,910
1915-16 ..	114,846	1,734,511	8,130	1,697,670	130,870	115,523	3,801,550
1916-17 ..	73,370	1,799,784	250,167	1,734,420	134,055	88,696	4,080,492
1917-18 ..	97,824	1,970,650	143,574	1,651,036	35,761	98,013	3,996,858
1918-19 ..	86,313	2,028,635	8,824	2,417,349	81,451	141,149	4,763,721

3. **Malting and other Barley.**—In recent years the statistics of all the States have distinguished between "malting" and "other" barley. Particulars for 1918-19 season are as follows :—

**MALTING AND OTHER BARLEY, 1918-19.**

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
Malting barley ..	5,929	52,222	1,082	109,920	3,994	6,039	179,186
Other barley	2,051	47,976	234	20,437	3,988	997	75,683
Total ..	7,980	100,198	1,316	130,357	7,982	7,036	254,869
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.
Malting barley ..	65,682	1,081,256	7,069	2,102,157	43,039	120,660	3,419,863
Other barley	20,631	947,379	1,755	315,192	38,412	20,489	1,343,858
Total ..	86,313	2,028,635	8,824	2,417,349	81,451	141,149	4,763,721

Taking the Commonwealth as a whole, over 70 per cent. of the area devoted to this grain in 1918-19 was cropped for malting barley. The proportion varies considerably in the several States.

4. **Total Acreage and Yield.**—The following table sets out the total acreage and yield of malting and other barley in the Commonwealth as a whole during the past five seasons :—

**AREA AND YIELD, MALTING AND OTHER BARLEY, COMMONWEALTH, 1914-15 TO 1918-19.**

Season.	Acres.			Bushels.			Average Bushels per Acre.		
	Malting.	Other.	Total.	Malting.	Other.	Total.	Malting.	Other.	Total.
1914-15 ..	101,930	51,726	153,656	995,413	333,497	1,328,910	9.77	6.45	8.65
1915-16 ..	106,217	63,297	169,514	2,365,126	1,436,424	3,801,550	22.27	22.69	22.43
1916-17 ..	141,846	88,407	230,253	2,505,118	1,575,374	4,080,492	17.66	17.82	17.72
1917-18 ..	136,785	68,085	204,870	2,602,449	1,394,409	3,996,858	19.03	20.48	19.51
1918-19 ..	179,186	75,683	254,869	3,419,863	1,343,858	4,763,721	19.09	17.76	18.89
Average 10 seasons 1909-19	119,393	59,109	178,502	2,179,920	1,067,143	3,247,063	18.26	18.05	18.19

For the past ten seasons the area and production of malting barley have represented approximately twice the corresponding figures for other barley. The average yield per acre differs very little in respect of the two classes of barley, malting obtaining a slight average advantage of 0.21 bushels per acre during the last ten years.



5. **Value of Barley Crop.**—The estimated value of the total barley crop of the Commonwealth for the seasons 1914-15 to 1918-19 was £343,423, £655,917, £734,154, £834,075, and £1,221,863, in the order named. The extent to which the several States have contributed to the latter total is shewn in the following table:—

**VALUE OF BARLEY CROP,(a) 1918-19.**

Particulars.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
Total value ..	£23,620	£507,674	£1,544	£630,830	£22,908	£35,287	£1,221,863
Value per acre ..	£2/19/2	£5/1/4	£1/3/6	£4/16/9	£2/17/5	£5/0/4	£4/15/11

(a) Exclusive of the value of straw.

6. **Relation to Population.**—During the last five seasons the quantity of barley produced in the Commonwealth has averaged under three-quarters of a bushel per head of population. For the season 1918-19 the production ranged from  $5\frac{1}{2}$  bushels per head in South Australia to 0.6 pounds per head in Queensland. Details for the years 1914-15 to 1918-19 are as follows:—

**BARLEY PRODUCTION PER 1,000 OF POPULATION, 1914-15 TO 1918-19.**

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.
1914-15 ..	25	420	156	1,012	75	520	269
1915-16 ..	61	1,222	12	3,872	412	575	771
1916-17 ..	39	1,287	374	4,008	434	444	837
1917-18 ..	52	1,397	212	3,785	116	482	810
1918-19 ..	45	1,418	13	5,424	260	676	947

7. **Commonwealth Imports and Exports.**—The Commonwealth oversea trade in barley is not large, though it shewed signs of extending during the past five years. Owing to the severe drought during 1914-15, the barley crop for that year was very low, and a fairly heavy importation of barley was necessary, the bulk of which came from the United States. During the next four years, however, the Commonwealth exported 900,656 bushels of barley valued at £203,828, principally to New Zealand, United Kingdom, and Japan. Particulars of the Commonwealth overseas imports and exports of barley for the years 1914-15 to 1918-19 are contained in the following table:—

**COMMONWEALTH IMPORTS AND EXPORTS OF BARLEY, 1914-15 TO 1918-19.**

Year.	Imports.		Exports.		Net Exports.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	Bushels.	£	Bushels.	£	Bushels.	£
1914-15 ..	290,226	66,402	103,522	15,245	-186,704	-51,157
1915-16 ..	147,144	27,387	185,122	36,661	37,978	9,274
1916-17 ..	58	9	256,804	52,891	256,746	52,882
1917-18 ..	34	8	282,252	64,703	282,218	64,695
1918-19 ..	456	203	176,478	49,573	176,022	49,370

Note.—The minus sign (—) signifies net imports.

From time to time an export trade in Australian pearl and Scotch barley has been carried on, the total exports for 1918-19 reaching 983,343 lbs., valued at £12,840. The trade for the year was mainly with the Straits Settlements and New Zealand.

8. **Commonwealth Imports and Exports of Malt.**—In normal times the importations of malt into the Commonwealth are fairly extensive, the supply being obtained principally from the United Kingdom. Since the outbreak of the war in 1914, however, imports have continuously declined, and the quantities exported have practically remained negligible, with the exception of 1917-18, when 117,075 bushels, valued at £47,626, were exported mainly to Japan, South Africa, and the Philippines. Details of imports and exports for the years 1914-15 to 1918-19 are given hereunder:—

**COMMONWEALTH IMPORTS AND EXPORTS OF MALT, 1914-15 TO 1918-19.**

Year.	Imports.		Exports.		Net Imports.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	Bushels.	£	Bushels.	£	Bushels.	£
1914-15 .. ..	68,215	23,743	165	87	68,050	23,656
1915-16 .. ..	23,910	9,596	30	13	23,880	9,583
1916-17 .. ..	7,452	4,196	73	35	7,379	4,161
1917-18 .. ..	35	106	117,075	47,626	- 117,040	- 47,520
1918-19 .. ..	..	1	..	..	..	1

Note.—The minus sign (—) signifies net exports.

9. **Comparison with other Countries.**—In comparison with the barley production of other countries of the world, that of Australia appears very small indeed. Particulars for some of the leading countries for the year 1918 are as follows, the Australian figures being added for the sake of comparison:—

**PRODUCTION OF BARLEY IN VARIOUS COUNTRIES, 1918.**

Country.	Production of Barley.	Country.	Production of Barley.
	Bushels.		Bushels.
Russia in Europe (1915) (a)	380,229,700	Russia in Asia (1914) ..	18,855,799
United States .. ..	256,375,000	Sweden .. ..	11,204,000
British India (1917) ..	150,690,321	Egypt .. ..	9,475,000
Germany .. ..	91,033,000	Tunis .. ..	8,818,000
Spain .. ..	86,875,000	Italy .. ..	8,818,000
Japan .. ..	74,750,000	Norway .. ..	5,397,000
Canada .. ..	74,194,000	Australia .. ..	4,764,000
United Kingdom .. ..	62,080,000	Chile (1916) .. ..	4,224,645
Austria (1915) .. ..	61,012,097	Belgium (1915) .. ..	3,877,600
Algeria .. ..	58,422,000	Netherlands .. ..	2,447,000
Hungary (1915) .. ..	54,466,708	Serbia (1915) .. ..	2,181,150
Rumania (1916) .. ..	29,118,837	Argentine Republic (1917)	2,098,751
France .. ..	26,980,000	Union of S'th Africa (1917)	969,400
Denmark .. ..	20,591,000	New Zealand .. ..	710,932

(a) Including Northern Caucasia.

10. **Average Yield of Barley per Acre in various Countries.**—The following table shows the average yield of barley per acre in various countries of the world, ranging from nearly 43 bushels in the Netherlands to  $5\frac{1}{2}$  bushels in the Argentine Republic :—

**AVERAGE YIELD OF BARLEY PER ACRE IN VARIOUS COUNTRIES, 1918.**

Country.	Average yield per Acre.	Country.	Average yield per Acre.
	Bushels.		Bushels.
Netherlands .. ..	42.93	Spain .. ..	20.63
New Zealand .. ..	37.91	Rumania (1916) .. ..	20.03
Chile (1916) .. ..	34.91	France .. ..	19.88
Denmark .. ..	34.72	Hungary (1915) .. ..	19.25
Norway .. ..	34.60	India (1917) .. ..	19.18
United Kingdom .. ..	33.77	Australia .. ..	18.69
Egypt .. ..	28.20	Italy .. ..	17.85
Germany .. ..	26.99	Union of South Africa (1917)	17.01
United States .. ..	26.49	Russia in Asia (1916) ..	16.88
Japan .. ..	26.13	Russia in Europe (1915) ..	14.23
Sweden .. ..	24.79	Tunis .. ..	7.12
Canada .. ..	23.53	Argentine Republic (1917) ..	5.41
Algeria .. ..	20.90		

11. **Average Yield.**—The average yield per acre of barley varies considerably in the different States, being as a rule highest in Tasmania and Victoria, and lowest in Western Australia. Details for each State during the past five seasons, and also for the decennium 1909–19, are given in the following table :—

**AVERAGE YIELD PER ACRE OF BARLEY, 1914–15 TO 1918–19.**

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.
1914–15 .. ..	9.57	9.61	14.74	6.75	3.45	17.96	8.65
1915–16 .. ..	18.03	28.25	5.95	20.00	13.00	21.36	22.43
1916–17 .. ..	14.12	19.35	19.74	16.74	12.07	19.13	17.72
1917–18 .. ..	15.36	23.20	18.64	17.26	7.11	18.90	19.51
1918–19 .. ..	10.82	20.25	6.71	18.54	10.20	20.06	18.69
Average for 10 seasons 1909–19	14.77	20.89	15.57	16.55	11.45	23.23	18.19

12. **Price of Barley.**—The average price of barley in the Melbourne market during each of the past five years is given in the following table :—

**AVERAGE MELBOURNE PRICE OF BARLEY PER BUSHEL, 1914 TO 1918.**

Particulars.	1914.	1915.	1916.	1917.	1918.
	s. d.	s. d.	s. d.	s. d.	s. d.
Malting barley .. ..	3 9 $\frac{1}{2}$	5 4 $\frac{3}{4}$	4 4 $\frac{1}{2}$	4 4 $\frac{3}{4}$	5 9
Cape barley .. ..	2 9 $\frac{1}{4}$	4 4 $\frac{1}{4}$	3 1 $\frac{1}{2}$	3 1 $\frac{1}{2}$	4 0

### § 8. Other Grain and Pulse Crops.

In addition to the grain crops already specified, the only grain and pulse crops at all extensively grown in the Commonwealth are beans, peas, and rye. The total area under the two former crops for the season 1918-19 was 56,530 acres, giving a yield of 814,879 bushels, or an average of 14.41 bushels per acre, being less than the average yield for the decennium ended 1918-19, which was 16.87 bushels per acre. The States in which the greatest area is devoted to beans and peas are Tasmania, Victoria and South Australia. The total area under rye in the Commonwealth during the season 1918-19 was 3,886 acres, yielding 33,076 bushels, and giving an average of 8.51 bushels per acre. This was below the average for the past ten seasons, which was 11.24 bushels per acre. Over 36 per cent. of the rye grown during the season was produced in New South Wales and 22 per cent. in Victoria. In addition to these grain crops a small area of rice has for some years been cultivated in Queensland and the Northern Territory. The results obtained, however, have not up to the present been very satisfactory. Should rice-growing ever be seriously taken up in Australia, it is probable that large tracts of country in the northern parts of Queensland and Western Australia and in the Northern Territory will be found well suited to its cultivation.

### § 9. Potatoes.

1. *Area.*—The principal potato-growing State of the Commonwealth as regards area is Victoria; Tasmania, for some years prior to 1909-10, usually ranking second, and New South Wales third. The relative positions of the two latter States were, however, reversed during the five seasons ended 1913-14, but Tasmania again took the lead over New South Wales in the last five seasons ended 1918-19.

The area under potatoes in each State from 1890 onwards is given hereunder :—

COMMONWEALTH AREA UNDER POTATOES, 1890-1 TO 1918-19.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	F. Ter.	C'wealth.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1890-1 ..	19,406	53,818	6,270	6,626	511	20,133	..	106,764
1900-1 ..	29,408	38,477	11,060	6,628	1,794	23,068	..	110,435
1910-11 ..	44,452	62,904	8,326	7,812	1,791	26,230	..	151,515
1914-15 ..	30,410	65,495	8,385	7,639	4,778	31,613	8	148,328
1915-16 ..	19,582	56,910	5,796	4,341	4,866	29,491	7	120,993
1916-17 ..	22,437	73,618	8,908	4,737	5,838	34,345	12	149,895
1917-18 ..	22,558	66,966	10,738	4,164	4,484	27,309	22	136,241
1918-19 ..	20,877	51,620	6,434	3,275	3,936	25,023	2	a 111,169

(a) Includes 2 acres in Northern Territory.

2. **Total Yield.**—For the season 1918-19, Victoria's production represented about 46½ per cent. of the total for the Commonwealth, Tasmania and New South Wales coming next in order with 22½ and 19 per cent. respectively. The total Commonwealth production for the season 1906-7 viz., 507,153 tons, was the highest ever attained, the yield which most nearly approached it being 449,383 tons in 1903-4. Details as to production in the several States during the period from 1890 onwards are as follows :—

**COMMONWEALTH PRODUCTION OF POTATOES, 1890-1 TO 1918-19.**

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	F. Ter.	C'wealth.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1890-1 ..	52,791	204,155	13,112	23,963	1,900	73,158	..	369,079
1900-1 ..	63,253	123,126	20,014	14,566	4,836	93,862	..	319,657
1910-11 ..	121,033	163,312	15,632	23,920	5,864	70,090	..	399,851
1914-15 ..	40,694	189,225	16,014	18,035	14,724	78,907	15	357,614
1915-16 ..	44,420	173,821	7,439	12,991	14,118	79,890	25	332,704
1916-17 ..	45,296	187,992	19,457	20,343	16,841	67,038	35	357,002
1917-18 ..	49,934	182,195	22,139	11,315	11,320	70,442	50	347,395
1918-19 ..	30,353	137,533	11,083	13,219	11,697	56,528	3	260,416

3. **Average Yield per Acre.**—The suitability of the soil, climate, and general conditions for potato growing is evidenced by the satisfactory yields per acre which are generally obtained in Australia, except in the most northerly portions, the average yield during the past ten seasons being 2.59 tons per acre. The lowest average yield is that obtained in Queensland with an average of 1.83 tons for the same period.

Particulars for each State for the seasons 1914-15 to 1918-19, and also for the past decennium, are given hereunder :—

**AVERAGE YIELD OF POTATOES PER ACRE, 1914-15 TO 1918-19.**

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Fed. Ter.	C'wealth.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1914-15 ..	1.34	2.89	1.91	2.36	3.08	2.50	1.88	2.41
1915-16 ..	2.27	3.05	1.28	2.99	2.90	2.71	3.57	2.75
1916-17 ..	2.02	2.55	2.18	4.29	2.88	1.95	2.92	2.38
1917-18 ..	2.21	2.72	2.06	2.72	2.52	2.58	2.27	2.55
1918-19 ..	1.45	2.66	1.72	4.04	2.97	2.26	1.50	2.34
Average for 10 seasons 1909-19	(a) 2.26	2.78	1.83	3.09	2.99	2.61	(b) 1.88	2.59

(a) Including Federal Territory.

(b) Average for eight seasons.

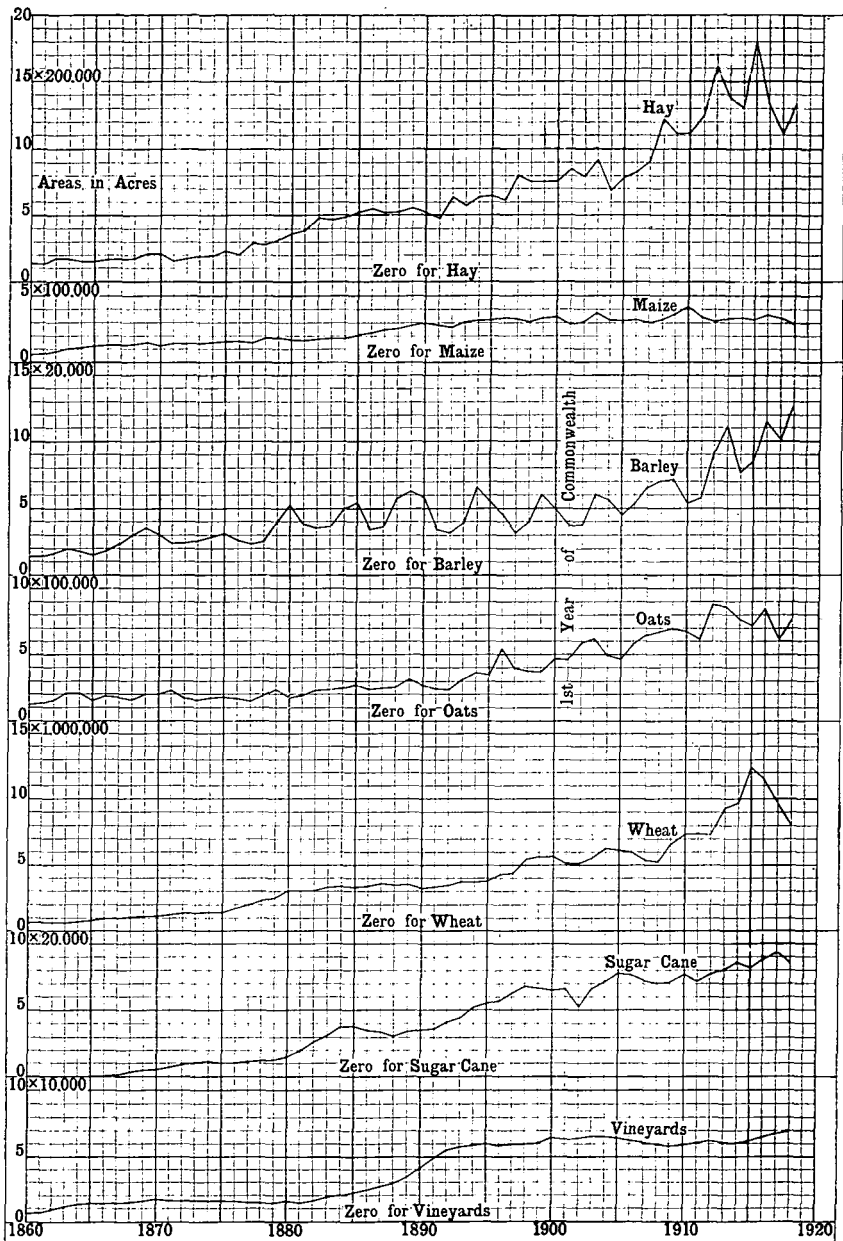
4. **Value of Potato Crop.**—The estimated value of the potato crop of each State for the season 1918-19 is furnished in the following table, together with the value per acre :—

**VALUE OF POTATO CROP, 1918-19.**

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Fed. Ter.	C'wealth.
Total value ..	£368,730	£1,272,180	£102,241	£142,062	£152,061	£339,168	£40	£2,376,400a
Value per acre	£17/13/3	£24/12/11	£15/17/10	£43/7/5	£38/12/8	£13/11/1	£20/0/0	£21/7/7

(a) Includes Northern Territory, £8.

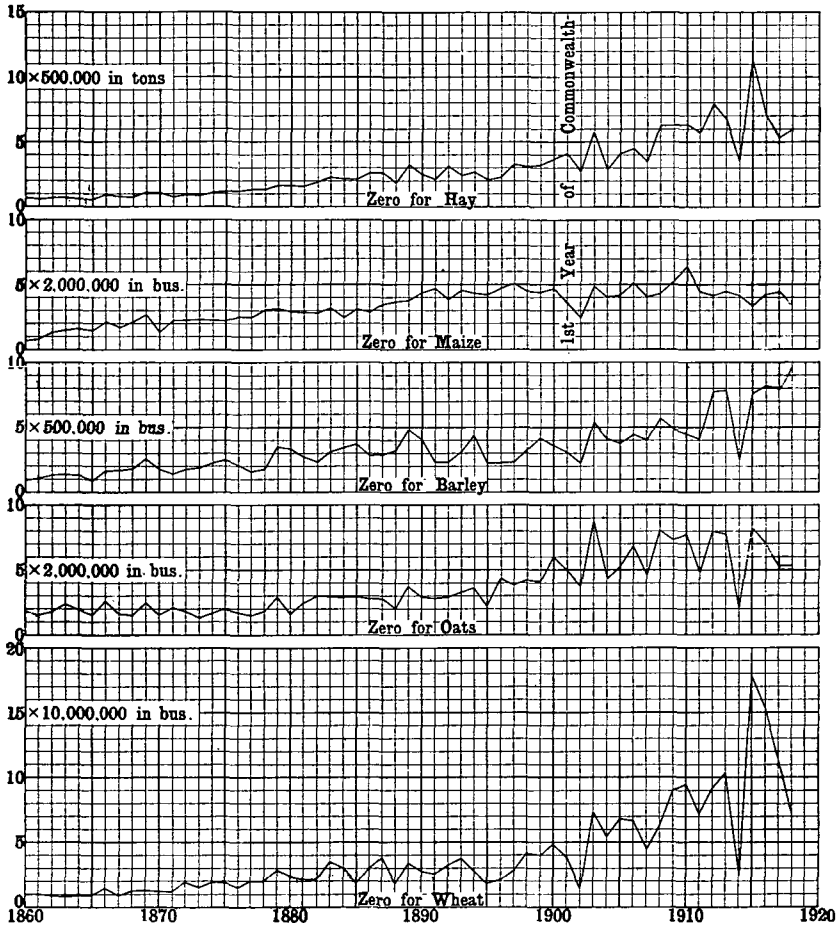
GRAPHS SHEWING THE AREA UNDER THE PRINCIPAL CROPS IN THE COMMONWEALTH FROM 1860-1 TO 1918-19.



(See pages—for wheat, 355; oats, 365; maize, 369; barley, 372; hay, 382; sugar-cane, 386; and vineyards, 390.)

EXPLANATION OF GRAPHS.—The base of each small square represents an interval of one year, while the vertical height represents a number of acres, varying with the nature of the crop in accordance with the scale given on the left-hand of the diagram. The height of each graph above the base line denotes, for the crop to which it relates, the total area under cultivation in the Commonwealth during the successive seasons.

GRAPHS SHEWING THE PRODUCTION OF THE PRINCIPAL CROPS IN THE COMMONWEALTH  
FROM 1860-1 TO 1918-19.



(See pages—for wheat, 356; oats, 365; maize, 369; barley, 372; and hay, 383.)

<sup>a</sup> EXPLANATION OF GRAPHS.—In this diagram a separate base line is provided for each of the crops dealt with. In each instance the base of a small square represents an interval of one year, the vertical height of such square representing in the case of the wheat graph, 10,000,000 bushels; oats, 2,000,000 bushels; barley, 500,000 bushels; maize, 2,000,000 bushels; and hay, 500,000 tons. The height of each graph above its base line denotes the aggregate yield in the Commonwealth of that particular crop during the successive seasons.

5. **Relation to Population.**—The average production of potatoes per annum per head of the population of the Commonwealth for the past five seasons has been approximately 150 lbs. In Tasmania, where this crop is of far greater importance in relation to population than is the case in any other State, the production per head in 1906-7 was nearly a ton, while for the past five seasons it has averaged about 7½ cwt. Details for the seasons 1914-15 to 1918-19 are as follows :—

POTATO PRODUCTION PER 1,000 OF POPULATION, 1914-15 TO 1918-19.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	F. Ter.	C'wealth.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1914-15 ..	22	132	24	41	46	392	8	72
1915-16 ..	24	122	11	30	44	397	14	67
1916-17 ..	24	134	29	47	55	335	16	73
1917-18 ..	26	129	33	26	37	347	24	70
1918-19 ..	16	96	16	30	37	271	1	52

6. **Commonwealth Imports and Exports.**—Under normal conditions there is generally a fairly large export trade in potatoes carried on by the Commonwealth, principally with New Zealand, the Pacific Islands, and the Philippine Islands. On the other hand, when the recurrence of droughts causes a shortage in some of the States, large importations from New Zealand usually take place. The quantities and values of the Commonwealth oversea imports and exports of potatoes during the past five years are shewn in the following table :—

COMMONWEALTH IMPORTS AND EXPORTS OF POTATOES, 1914-15 TO 1918-19.

Year.	Imports.		Exports.		Net Exports.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	Tons.	£	Tons.	£	Tons.	£
1914-15 ..	2,708	15,406	1,803	12,690	— 905	— 2,716
1915-16 ..	17,596	149,488	1,208	13,110	— 16,388	— 136,378
1916-17 ..	91	951	4,492	37,579	4,401	36,628
1917-18 ..	38	367	3,348	23,203	3,310	22,836
1918-19 ..	308	3,570	6,742	50,308	6,434	46,738

Note.—The minus sign (—) signifies net imports.

## § 10. Other Root and Tuber Crops.

1. **Nature and Extent.**—Root crops, other than potatoes, are not extensively grown in Australia, the total area devoted to them for the season 1918-19 being only 15,235 acres. The principal of these crops are onions, mangolds, sugar beet, turnips, and "sweet potatoes" (*Batatas edulis*). Of these, onions, sugar beet, and mangolds are most largely grown in Victoria, turnips in Tasmania, and sweet potatoes in Queensland. The total area under onions in the Commonwealth during the season 1918-19 was 6,410 acres, giving a yield of 28,849 tons, and averaging 4.5 tons per acre. The area devoted in 1918-19 to root crops other than potatoes and onions, viz., 8,825 acres, yielded 65,891 tons, and gave an average of 7.47 tons per acre. The areas and yields here given are exclusive of the production of "market gardens," a reference to which will be made later.

2. **Commonwealth Imports and Exports.**—The only root crop, other than potatoes, in which any considerable oversea trade is carried on by the Commonwealth is that of onions. During the past five years 3,476 tons, valued at £29,737, were imported, principally from New Zealand, Japan, and the United States, while during the same period, the exports totalled 19,603 tons, valued at £173,291, and were shipped mainly to New Zealand, the Pacific Islands, the Philippines, and the United States.



## § 11. Hay.

1. **Nature and Extent.**—As already stated, the most important crop of the Commonwealth is that of wheat grown for grain. Next to this in importance is the hay crop, which for the five seasons ended 1918-19 averaged more than 17½ per cent. of the area under crop in the Commonwealth, and for 1918-19 itself, 20.2 per cent. In most European countries the hay crop consists almost entirely of meadow and other grasses, whilst in Australia a very large proportion of the area under hay comprises cereal crops, mainly wheat and oats. A considerable quantity of lucerne hay is also made, particularly in New South Wales and Queensland. The area under hay of all kinds in the several States from 1860 onwards is given hereunder :—

## AREA UNDER HAY, 1860-1 TO 1918-19.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	N. Ter.	F. Ter.	C'wealth.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1860-1	46,584	90,921	276	55,818	6,626	31,837	..	..	232,062
1870-1	65,404	163,181	3,671	140,316	17,173	33,612	..	..	423,357
1880-1	131,153	249,656	12,022	272,567	19,563	31,615	..	..	716,576
1890-1	175,242	413,052	31,106	345,150	23,183	45,381	..	..	1,033,114
1900-1	466,236	502,105	42,497	341,330	104,254	61,541	..	..	1,517,963
1910-11	638,577	832,669	98,558	440,177	175,432	72,992	..	..	2,258,405
1914-15	783,107	895,755	79,327	445,832	332,037	89,598	120	2,837	2,628,613
1915-16	1,107,228	1,330,455	55,174	709,831	290,036	103,216	140	1,691	3,597,771
1916-17	857,533	897,186	112,964	483,040	240,726	79,274	140	999	2,671,862
1917-18	619,614	748,808	96,431	407,011	265,899	74,107	14	1,030	2,212,914
1918-19	813,379	984,479	54,772	501,731	249,796	87,136	30	1,581	2,692,904

It will be seen from this table that in all the States marked fluctuations occur in the area devoted to the hay crop from year to year. These fluctuations are due to various causes, the principal being the variations in the relative prices of grain and hay, and the favourableness or otherwise of the season for a grain crop. Thus, crops originally sown for grain are frequently cut for hay owing to the improved price of that commodity, or owing to the fact that the outlook for the due development of the grain is not satisfactory. On the other hand, improved grain prices or the prospect of a heavy yield will frequently cause crops originally intended for hay to be left for grain. The area under hay in the Commonwealth for the season 1915-16 was the highest on record, and that for 1912-13 the next.

2. **Kinds of Hay.**—Particulars concerning the kinds of crop cut for hay are furnished in the returns prepared by five of the States. In the case of Tasmania the bulk consists of oat hay; full particulars, however, are not available for that State.

Details for the past five seasons are given in the following table :—

## KINDS OF HAY GROWN, 1914-15 TO 1918-19.

Kind of Hay Crop.	1914-15.	1915-16.	1916-17.	1917-18.	1918-19.
	Acres.	Acres.	Acres.	Acres.	Acres.
NEW SOUTH WALES—					
Wheaten .. ..	568,982	878,881	633,438	434,908	612,771
Oaten .. ..	158,949	175,285	160,898	118,209	152,057
Barley .. ..	1,179	1,348	866	843	1,238
Lucerne .. ..	52,570	50,528	61,584	64,668	46,336
Other .. ..	1,427	1,186	747	986	977
Total .. ..	783,107	1,107,228	857,533	619,614	813,379

KINDS OF HAY GROWN, 1914-15 TO 1918-19—*continued.*

Kind of Hay Crop.			1914-15.	1915-16.	1916-17.	1917-18.	1918-19.
			Acres.	Acres.	Acres.	Acres.	Acres.
<b>VICTORIA—</b>							
Wheaten	..	..	192,562	333,449	195,532	192,478	274,320
Oaten	..	..	677,895	964,318	672,905	532,634	691,808
Lucerne, etc.	..	..	25,298	32,688	28,749	23,696	18,351
Total	..	..	895,755	1,330,455	897,186	748,808	984,479
<b>QUEENSLAND—</b>							
Wheaten	..	..	14,906	14,003	21,047	7,247	1,902
Oaten	..	..	12,573	6,377	30,041	10,901	1,803
Lucerne	..	..	47,785	32,288	55,928	73,347	48,264
Other	..	..	4,063	2,506	5,948	4,936	2,803
Total	..	..	79,327	55,174	112,964	96,431	54,772
<b>SOUTH AUSTRALIA--</b>							
Wheaten	..	..	318,586	476,423	323,633	292,803	358,068
Oaten	..	..	118,505	190,321	148,881	107,284	138,507
Lucerne	..	..	3,976	3,380	2,855	2,123	2,106
Other	..	..	4,765	39,707	7,671	4,801	3,050
Total	..	..	445,832	709,831	483,040	407,011	501,731
<b>WESTERN AUSTRALIA—</b>							
Wheaten	..	..	266,113	225,959	188,272	208,303	190,399
Oaten	..	..	64,037	62,622	51,255	56,002	58,551
Lucerne	..	..	328	258	230	352	137
Other	..	..	1,559	1,197	969	1,242	709
Total	..	..	332,037	290,036	240,726	265,899	249,796

It will be seen that wheaten hay is the principal hay crop in New South Wales, South Australia, and Western Australia, oaten hay in Victoria and Tasmania, and lucerne in Queensland.

3. **Total Yield.**—The Commonwealth hay crop for the season 1915-16 was the highest on record, and amounted to 5,633,988 tons. The second in importance was 3,955,311 tons for the season 1912-13, while the third was 3,507,589 tons for 1916-17. For many years past the State of Victoria has been the largest hay producer in the Commonwealth, and in the five seasons, 1914-15 to 1918-19 inclusive, accounted for nearly 38 per cent. of the total production. The total yields of the several States from 1860 onwards are given hereunder:—

## COMMONWEALTH HAY CROP, 1860-1 TO 1918-19.

Season.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	N.Ter.	F. Ter.	C'wealth.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1860-1	50,927	144,211	414	71,241	8,099	62,318	..	..	337,210
1870-1	69,602	183,708	5,506	197,149	20,833	40,763	..	..	517,561
1880-1	174,194	300,581	23,441	261,371	19,563	35,883	..	..	815,033
1890-1	213,034	567,779	50,116	310,125	25,014	52,021	..	..	1,218,089
1900-1	526,260	677,757	78,758	353,662	103,813	94,198	..	..	1,834,448
1910-11	843,080	1,292,410	151,252	595,064	178,891	115,190	..	..	3,175,887
1914-15	610,559	568,956	102,193	210,437	156,932	81,971	220	2,676	1,733,944
1915-16	1,570,941	2,342,094	53,858	1,100,127	395,172	168,449	350	2,997	5,633,988
1916-17	1,172,078	1,232,721	145,279	615,059	236,989	103,141	350	1,972	3,507,589
1917-18	781,972	949,545	153,895	488,693	267,163	80,405	14	2,234	2,723,921
1918-19	751,247	1,113,861	92,230	567,941	250,014	115,896	30	2,383	2,893,602

4. **Value of Hay Crop.**—The following table furnishes particulars concerning the total value and the value per acre of the hay crop of the several States of the Commonwealth for the season 1918-19 :—

VALUE OF HAY CROP, 1918-19.

Particulars.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	Nor. Ter.	Fed. Ter.	C'wealth.
	£	£	£	£	£	£	£	£	£
Total value ..	5,405,960	5,569,305	530,361	2,214,969	1,412,716	637,428	120	17,940	15,788,799
Value per acre	£6/12/11	£5/13/2	£9/13/8	£4/8/4	£5/13/1	£7/6/4	£4/-/-	£11/6/11	£5/17/3

5. **Average Yield per Acre.**—The States of the Commonwealth in which the highest average yields per acre have been obtained during the last decennium are those of Tasmania and Queensland, these being also the States in which the smallest areas are devoted to this crop. For the same period the lowest yield for the Commonwealth as a whole was that of 13 cwt. per acre in 1914-15; while the highest was that of 31 cwt. in 1915-16. The average for the decennium was 24½ cwt. Particulars for the several States for the seasons 1914-15 to 1918-19, and the average for the last ten years, are given hereunder :—

AVERAGE YIELD OF HAY PER ACRE, 1914-15 TO 1918-19.

Season.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	N. Ter.	F. Ter.	C'with.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1914-15 ..	0.78	0.64	1.29	0.47	0.47	0.91	1.83	0.94	0.66
1915-16 ..	1.42	1.76	0.98	1.55	1.36	1.63	2.50	1.77	1.57
1916-17 ..	1.37	1.37	1.29	1.27	0.98	1.30	2.50	1.97	1.31
1917-18 ..	1.26	1.27	1.60	1.20	1.00	1.08	1.00	2.17	1.23
1918-19 ..	0.92	1.13	1.68	1.13	1.00	1.33	1.00	1.51	1.07
Average for 10 seasons									
1909-19 ..	1.21	1.32	1.40	1.17	0.99	1.41	2.05	1.29	1.23

(a) Including Federal Territory.

(b) Including Northern Territory.

(c) Average for eight

seasons. (d) Average for nine seasons.

6. **Relation to Population.**—During the past five seasons the Commonwealth hay production per head of population has varied between 7 cwt. in 1914-15 and 22½ cwt. in 1915-16; averaging about 13 cwt. per head for the period. The State in which the hay production per head of population is highest is South Australia. Details for the seasons 1914-15 to 1918-19 are given hereunder :—

HAY PRODUCTION PER 1,000 OF POPULATION, 1914-15 TO 1918-19.

Season.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	N. Ter.	F. Ter.	C'wealth.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1914-15 ..	328	398	151	476	486	407	55	1,366	351
1915-16 ..	840	1,651	79	2,509	1,243	838	77	1,639	1,142
1916-17 ..	631	881	217	1,421	767	516	73	887	719
1917-18 ..	414	673	227	1,120	863	396	3	937	552
1918-19 ..	389	779	133	1,274	798	555	6	1,068	575

7. **Oversea Imports and Exports.**—Under normal conditions hay, whether whole or in the form of chaff, is somewhat bulky for oversea trade, and consequently does not in such circumstances figure largely amongst the imports and exports of the Commonwealth. During 1918-19 only 5 tons were imported, while the exports amounted to 1,300 tons, valued at £8,964, the principal purchases being made by India, the Philippines, and the Straits Settlements.

8. **Hay Production in Other Countries.**—As already noted, the hay crops of most European countries consist of grasses of various kinds, amongst which clover, lucerne, sainfoin and rye grass occupy prominent places. The statistics of hay production in these countries are not prepared on a uniform basis, and consequently any attempt to furnish extensive comparisons would be misleading. It may be noted, however, that in the United Kingdom the production of hay from clover, sainfoin, &c., for the year 1918, amounted to 4,393,000 tons from 2,803,413 acres, while from permanent grasses a yield of 7,939,000 tons of hay was obtained from 5,950,352 acres, giving a total of 12,332,000 tons from 8,753,765 acres, or about 28 cwt. per acre.

## § 12. Green Forage.

1. **Nature and Extent.**—In all the States of the Commonwealth a considerable area is devoted to the production of green forage, mainly in connexion with the dairying industry. The total area so cropped during the season 1918-19 was 586,440 acres. Of the total, the New South Wales area represented about 56½ per cent., that of Queensland 15½ per cent., while that of Victoria amounted to 12½ per cent. Under normal conditions the principal crops cut for green forage are maize, sorghum, oats, barley, rye, rape, and lucerne, while small quantities of sugar-cane also are so used. Particulars concerning the area under green forage in the several States from 1890 onwards are furnished in the following table:—

AREA UNDER GREEN FORAGE, 1890-1 TO 1918-19.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	N. Ter.	F. Ter.	C'wealth.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1890-1	37,473	10,091	9,546	7,349	161	1,497	..	..	66,117
1900-1	78,144	18,975	41,445	13,136	1,024	3,749	..	..	156,473
1910-11	179,382	71,826	89,667	20,728	4,545	6,695	19	..	374,862
1914-15	294,539	139,654	184,239	52,656	19,098	6,809	83	80	1,352,158
1915-16	162,808	60,426	236,293	32,664	15,622	7,587	24	137	515,561
1916-17	149,824	49,667	116,449	37,352	28,653	8,133	24	49	390,151
1917-18	152,374	55,903	87,909	41,869	29,856	5,873	47	19	373,850
1918-19	331,079	73,641	90,635	56,067	28,141	6,827	..	50	586,440

(a) Including area fed off.

2. **Value of Green Forage Crops.**—The value of these crops is variously estimated in the several States, and the Commonwealth total for the season 1918-19 may be taken approximately as £1,588,151, or about £2 14s. 2d. per acre.

3. **Relation to Population.**—Particulars concerning the area under green forage per 1,000 of the population of the Commonwealth and the several States for the seasons 1914-15 to 1918-19 are given hereunder:—

AREA UNDER GREEN FORAGE PER 1,000 OF POPULATION, 1914-15 TO 1918-19.

Season.	N.S.W.	Vict.	Q'land.	S. Aust.	W. Aust.	Tas.	N. Ter.	F. Ter.	C'wealth.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1914-15 ..	(a)510	98	272	119	59	34	21	41	274
1915-16 ..	87	43	348	74	49	38	5	75	105
1916-17 ..	81	36	174	86	93	41	5	22	80
1917-18 ..	80	40	130	96	96	29	10	9	76
1918-19 ..	172	51	131	126	90	33	..	22	117

(a) Including area fed off.

## § 13. Sugar-cane.

1. **Area.**—Sugar-cane is grown for sugar-making purposes in only two of the States of the Commonwealth, viz., Queensland and New South Wales, and much more extensively in the former than in the latter. Thus, of the total area of 171,024 acres under sugar-cane in the Commonwealth for the season 1918-19, there were 160,534 acres, or about 94 per cent., in Queensland. Sugar-cane growing appears to have been started in the Commonwealth in or about 1862, as the earliest statistical record of sugar-cane as a crop is that which credits Queensland with an area of 20 acres for the season 1862-3. In the following season the New South Wales records shew that an area of two acres was devoted to the crop in the mother State. The area under cane in New South Wales reached its maximum in 1895-6 with a total of 32,927 acres. From thence onwards with slight variations, it gradually fell to 10,490 acres in 1918-19. In Queensland, on the other hand, although fluctuations in area are in evidence throughout, the general trend has been one of satisfactory increase, the area under cane for the season 1917-18 being the highest on record. The area under sugar-cane in the Commonwealth from 1870 is given in the following table:—

AREA UNDER SUGAR-CANE, 1870-1 TO 1918-19.

Season.	New South Wales.		Queensland.		Commonwealth.		
	Productive.	Unproductive.	Productive.	Unproductive.	Productive.	Unproductive.	Total.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1870-1 ..	1,475	2,607	2,188	4,154	3,663	6,761	10,424
1880-1 ..	4,465	6,506	12,306	7,918	16,771	14,424	31,195
1890-1 ..	8,344	12,102	39,435	11,487	47,779	23,589	71,368
1900-1 ..	10,472	11,642	72,651	35,884	83,123	47,526	130,649
1910-11 ..	5,596	8,167	94,641	47,138	100,237	55,305	155,542
1914-15 ..	6,012	5,409	108,013	53,182	114,025	58,591	172,616
1915-16 ..	6,030	5,228	94,459	58,568	100,489	63,796	164,285
1916-17 ..	5,223	5,746	75,914	91,307	81,137	97,053	178,190
1917-18 ..	5,588	5,134	108,707	67,055	114,295	72,189	186,484
1918-19 ..	4,566	5,924	111,572	48,962	116,138	54,886	171,024

2. **Productive and Unproductive Cane.**—The areas given in the preceding table represent the area on which sugar-cane was grown during the seasons specified for purposes other than green forage. The whole area was not in any case cut for crushing during that season, there being always a considerable amount of young and "stand over" cane, as well as a small quantity required for plants. The season 1917-18 had the highest recorded acreage under sugar-cane, while the greatest area of productive cane was cut for crushing during the 1918-19 season.

**3. Yield of Cane and Sugar.**—Queensland statistics of the production of sugar-cane are not available for dates prior to the season 1897-8. In that season the total for the Commonwealth was 1,073,883 tons, as against 2,879,092 tons for the record season 1917-18. The second highest yield was in the season 1913-14, with a total of 2,271,558 tons. The average production of cane during the decennium ended 1918-19 was 1,818,109 tons. The three highest yields of sugar were in 1917-18, 1913-14, and 1914-15, the quantities being 327,589 tons, 265,029 tons, and 245,876 tons respectively. The decennial average was 209,416 tons of sugar. Particulars relative to the total yields of cane and sugar for a series of years are as follows :—

YIELD OF CANE AND CANE-SUGAR, 1900-1 TO 1918-19.

Season.	New South Wales.		Queensland.		Commonwealth.	
	Cane.	Sugar.	Cane.	Sugar.	Cane.	Sugar.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1900-1 ..	199,118	19,938	848,328	92,554	1,047,446	112,492
1910-11 ..	160,311	20,115	1,840,447	210,756	2,000,758	230,871
1914-15 ..	181,606	20,029	1,922,633	225,847	2,104,239	245,876
1915-16 ..	157,748	19,144	1,152,516	140,496	1,310,264	159,640
1916-17 ..	143,558	16,064	1,579,514	176,973	1,723,072	193,037
1917-18 ..	174,881	19,875	2,704,211	307,714	2,879,092	327,589
1918-19 ..	105,234	12,278	1,674,829	189,978	1,780,063	202,256

Large quantities of molasses are produced as a by-product in the sugar mills; details giving the quantity produced and proportions used for distilling, fuel, manure and other purposes for a series of years will be found in Section XIII.—“Manufacturing Industries,”

**4. Average Yields of Cane and Sugar per Acre.**—The average yield per acre of productive cane is much higher in New South Wales than in Queensland, the average during the last decade being 26.79 tons for the former and 17.53 for the latter State. For some years prior to 1910-11, the yield remained practically constant in New South Wales at about 21 tons per acre. Since that year, the average yield per acre has shewn an upward tendency, reaching 30 tons or over during 1913-14, 1914-15, and 1917-18. The climatic conditions affecting the tremendous length of coastline embracing this industry in Queensland are largely responsible for the great variations in the yields of sugar for that State, which ranged, during the past decennium, from 12.20 tons per acre in 1915-16 to 24.88 tons in 1917-18.

The greatest production of sugar per acre crushed in New South Wales and Queensland during the past quinquennium occurred in 1917-18, when 3.56 and 2.83 tons were respectively obtained. The average yield per acre for the past ten years was 3.13 tons in New South Wales, and 2.02 tons in Queensland.

**5. Quality of Cane.**—The quantity of cane required to produce a ton of sugar varies not only with the district in which the cane is grown but also with the season, and for the decennium ended 1918-19 averaged 8.68 tons, the average production of sugar being approximately 11½ per cent. of the weight of cane crushed. The systematic study of beet culture in European countries has shewn that by suitable methods the sugar

contents of the root can be greatly increased, and it is believed that a similar improvement can be effected in the yield from sugar-cane.

#### AVERAGE YIELD OF SUGAR-CANE AND SUGAR PER ACRE, 1900-1 TO 1918-19.

Season.	New South Wales.			Queensland.			Commonwealth.		
	Cane per acre Crushed.	Sugar per acre Crushed.	Cane to each ton of Sugar.	Cane per acre Crushed.	Sugar per acre Crushed.	Cane to each ton of Sugar.	Cane per acre Crushed.	Sugar per acre Crushed.	Cane to each ton of Sugar.
1900-1 .. ..	Tons. 19.01	Tons. 1.90	Tons. 9.99	Tons. 11.68	Tons. 1.27	Tons. 9.17	Tons. 12.60	Tons. 1.35	Tons. 9.31
1910-11 .. ..	28.65	3.59	7.97	19.45	2.23	8.73	19.96	2.30	8.67
1914-15 .. ..	30.21	3.33	9.07	17.80	2.09	8.51	18.45	2.16	8.56
1915-16 .. ..	26.16	3.17	8.24	12.20	1.49	8.20	13.04	1.59	8.21
1916-17 .. ..	27.49	3.08	8.94	20.81	2.33	8.93	21.24	2.38	8.93
1917-18 .. ..	31.30	3.56	8.80	24.88	2.83	8.79	25.19	2.87	8.79
1918-19 .. ..	23.05	2.69	8.57	15.01	1.70	8.82	15.33	1.74	8.80
Average 10 seasons 1909-19 ..	26.79	3.13	8.56	17.53	2.02	8.69	18.05	2.08	8.68

6. **Relation to Population.**—The sugar production of the Commonwealth during the past five seasons has averaged about 102 lbs. per head of population. In the same period in Queensland, the principal sugar-producing State, the production of sugar per head has ranged between 464 lbs. in 1915-16 and 1,017 lbs. in 1917-18. Details for the period 1914-15 to 1918-19 are as follows:—

#### SUGAR PRODUCTION PER HEAD OF POPULATION, 1914-15 TO 1918-19.

State.	1914-15.	1915-16.	1916-17.	1917-18.	1918-19.
	lbs.	lbs.	lbs.	lbs.	lbs.
New South Wales ..	24	23	19	24	14
Queensland .. ..	748	464	592	1,017	613
Commonwealth .. ..	111	73	89	149	90

7. **Sugar Bounties.**—The provision of bounties or similar aids to the sugar-growers of the Commonwealth early occupied the attention of the Commonwealth Parliament, the object in view being that of assisting the industry, and at the same time diminishing the employment of coloured labour in connexion therewith. An account of the various Acts in connection with sugar bounties and sugar excise tariffs will be found on pages 394 to 396 of Year Book No. 6. In 1912 the Sugar Excise Repeal Act and the Sugar Bounty Abolition Act were passed by the Federal Parliament, conditionally on the Queensland Parliament approving of legislation prohibiting the employment of coloured labour in connection with the industry. The State Sugar Cultivation Act, the Sugar Growers Act, and the Sugar Growers' Employees Act, of 1913, having been approved of, the 1912 Federal Acts, which repeal all previous enactments in regard to excise on sugar and bounty on cane, came into force by proclamation in July, 1913.

8. **Sugar Purchase by Commonwealth Government.**—In June, 1915, the Commonwealth Government assumed control of the Australian sugar output, paying the growers a fixed price of £18 per ton of raw sugar, subsequently raised in 1917 to £21. The

Commonwealth Government disposed of the refined product at an average of £25 10s. per ton in 1915, the object then being to enable the consumer to purchase sugar of 1A grade at 3d. per lb. In January, 1916, however, the wholesale price was raised to £29 5s. per ton, and the retail price to 3½d. per lb. This arrangement was continued from year to year until June 26th, 1920, when an agreement was made with the Queensland Government for a period of three years, covering the seasons of 1920, 1921, and 1922, fixing the price of raw sugar for the first year at £30 6s. 8d. per ton, and making that price the minimum for each of the succeeding seasons, any increase being limited to the extra cost of production, due to higher wages paid to the sugar workers to meet the increased cost of living. In order to recoup the Commonwealth Government for the loss entailed in the purchase at very high prices of large quantities of foreign sugar, owing to the shortage of the Australian crop, the wholesale price of refined sugar was raised on March 25th, 1920, to £49 per ton, and the retail price to 6d. per lb.

**9. Beet Sugar.**—During the past few years an effort has been made to revive the sugar-beet industry in Victoria. The State Government has authorised the inauguration of a comprehensive irrigation scheme at Maffra, where the sugar-beet factory is situated. When completed, this scheme will make available for beet growing large areas of land hitherto unsuitable. The price of beet has been increased from 30s. to 35s. per ton for the 1920-1 season. A fine grade of white sugar is manufactured, and considerable quantities of beet pulp and molasses are distributed for stock feed.

**10. Acreage and Yield of Sugar Beet.**—The following table shews the acreage under sugar beet, and the production in Victoria during the past five seasons :—

**AREA AND PRODUCTION OF SUGAR BEET IN VICTORIA, 1914-15 TO 1918-19.**

Particulars.	1914-15.	1915-16.	1916-17.	1917-18.	1918-19.
Area .. .. acres	990	461	1,320	1,200	1,009
Production .. .. tons	10,343	4,928	15,159	14,487	12,290
Average per acre .. ..	10.45	10.69	11.48	12.07	12.18

**11. Imports and Exports of Sugar.**—The production of sugar in the Commonwealth during the past five years has not been sufficient to supply the growing requirements of Australian consumption. It has been found necessary to annually import on the average some 50,821 tons, valued at £911,850, the principal countries engaged in supplying this commodity being Java and Fiji. Particulars concerning the imports and exports of cane sugar for the past five years are as follows :—

**IMPORTS AND EXPORTS OF CANE SUGAR, 1914-15 TO 1918-19.**

Year.	Oversea Imports.		Oversea Exports.		Net Imports.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	Tons.	£	Tons.	£	Tons.	£
1914-15 ..	13,125	181,020	18,433	319,494	— 5,308	— 138,474
1915-16 ..	116,111	1,869,768	1,103	22,458	115,008	1,847,310
1916-17 ..	81,161	1,639,097	1,033	21,798	80,128	1,617,299
1917-18 ..	15,805	278,985	2,070	45,860	13,735	233,125
1918-19 ..	52,569	1,052,124	2,029	52,136	50,540	999,988

Note.—The minus sign (—) signifies net exports.



## § 14. Vineyards.

1. **Nature and Extent.**—The introduction of the vine into Australia has been set down by different investigators as at various dates, the years 1815 and 1828 being principally favoured. It would seem, however, that the vine was really brought out with the first fleet which initiated the colonisation of Australia in 1788, and that consequently the Australian vine is as old as Australian settlement. As already mentioned, a report of Governor Hunter's gives the area under vines in 1797 as 8 acres. From New South Wales the cultivation spread to Victoria and South Australia, and these States have now far outstripped the mother State in the area which they have devoted to its cultivation. In Queensland and Western Australia also, vine-growing has been carried on for many years, but in neither State has the industry progressed with the rapidity attained in Victoria and South Australia. In Tasmania the climate is not favourable to the growth of grapes. The purposes for which grapes are grown in Australia are three in number, viz.—(i) for wine-making, (ii) for table use, and (iii) for drying. The total area under vines in the several States from 1860 onwards is given in the following table:—

COMMONWEALTH VINEYARDS, 1860-1 TO 1918-19.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
	Acres.	Acres.	Acres.	Acres.	Acres.	There are no vineyards in Tasmania.	Acres.
1860-1 .. ..	1,584	1,138	..	3,180	335		6,237
1870-1 .. ..	4,504	5,466	416	6,131	710		17,227
1880-1 .. ..	4,800	4,980	739	4,337	659		15,515
1890-1 .. ..	8,044	20,686	1,981	9,535	1,024		41,270
1900-1 .. ..	8,441	30,634	2,019	20,158	3,325		64,577
1910-11 .. ..	8,321	23,412	1,634	22,952	2,795		59,114
1914-15 .. ..	7,985	21,801	1,415	26,864	2,920		60,985
1915-16 .. ..	7,883	22,353	1,373	27,764	2,751		62,124
1916-17 .. ..	8,666	23,264	1,256	29,177	3,031		65,394
1917-18 .. ..	8,594	25,236	1,274	29,762	2,996		67,862
1918-19 .. ..	8,740	26,072	1,287	31,023	2,936		70,058

Up till 1917-18 the area devoted to vines in the Commonwealth attained a maximum in the season 1904-5, when a total of 65,673 acres was reached. Each of the five following seasons shewed a decrease, the area in 1909-10 being only 58,151 acres. Since that year, however, the total has risen gradually until in 1917-18 the previous maximum of 1904-5 was passed, while the total reached in 1918-19 was 70,058 acres. South Australia is the only State where a steady annual increase has been recorded.

The wine-growing industry in Australia, more particularly in Victoria and New South Wales, received a severe check by various outbreaks of phylloxera. With a view to the eradication of this disease extensive uprooting of vineyards in the infested areas was undertaken, while further planting within such areas, except with phylloxera-resistant vines, was prohibited.

2. **Wine Production.**—The production of wine in Australia has not increased as rapidly as the suitability of soil and climate would appear to warrant. The cause of this is probably twofold, being in the first place due to the fact that the Australians are not a wine-drinking people and consequently do not provide a local market for the product, and in the second to the fact that the new and comparatively unknown wines of Australia find it difficult to establish a footing in the markets of the old world, owing to the competition of well-known brands. Active steps are being taken in various ways to bring the Australian wines under notice, and it may be confidently expected that when

their qualities are duly recognised the wine production of this country will exhibit a rapid development. Particulars concerning the quantity of wine produced in the several States during the past five seasons are contained in the table given hereunder :—

#### AUSTRALIAN WINE PRODUCTION, 1914-15 TO 1918-19.

Season.	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.	Commonwealth.
	Gallons.	Gallons.	Gallons.	Gallons.	Gallons.	No production of wine in Tasmania.	Gallons.
1914-15 ..	549,140	605,636	51,164	1,507,196	162,190		2,875,326
1915-16 ..	571,000	1,380,367	59,008	3,709,878	166,820		5,887,073
1916-17 ..	628,950	1,302,660	23,171	2,951,048	220,439		5,126,268
1917-18 ..	538,215	800,068	39,125	5,331,166	156,532		6,865,106
1918-19 ..	555,770	1,349,309	44,491	6,544,125	199,142		8,692,837

3. **Relation to Population.**—In relation to population the areas of the vineyards of the several States exhibit an upward tendency during the last five years, the Commonwealth total increasing from 12 to 14 acres per 1,000 of the population during the same period. Details for the seasons 1914-15 to 1918-19 are furnished in the succeeding table :—

#### AREA OF VINEYARDS PER 1,000 OF POPULATION, 1914-15 TO 1918-19.

Season.	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.	Commonwealth.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1914-15 ..	4	15	2	61	9	..	12
1915-16 ..	4	16	2	63	9	..	13
1916-17 ..	5	17	2	67	10	..	13
1917-18 ..	5	18	2	68	10	..	14
1918-19 ..	5	18	2	70	9	..	14

4. **Imports and Exports.**—The principal countries of origin of wine imported into Australia are France, Spain, Portugal, and Italy, the greater portion of the sparkling wines coming from France. Particulars relative to the importations of wine into the Commonwealth during the past five years are given hereunder :—

#### COMMONWEALTH IMPORTS OF WINE, 1914-15 TO 1918-19.

Year.	Quantity.			Value.		
	Sparkling.	Other.	Total.	Sparkling.	Other.	Total.
	Gallons.	Gallons.	Gallons.	£	£	£
1914-15 ..	28,179	71,633	99,812	56,998	32,953	89,951
1915-16 ..	26,744	62,357	89,101	55,573	27,494	83,067
1916-17 ..	18,659	47,741	66,400	39,212	26,497	65,709
1917-18 ..	9,274	31,808	41,082	20,569	20,635	41,204
1918-19 ..	7,551	30,464	38,015	16,226	21,121	37,347

The principal countries to which wine is exported from Australia are the United Kingdom and New Zealand, a small but fairly regular export trade being also carried on with India, Ceylon, Fiji, and the South Sea Islands. Details concerning the exports of wine from Australia during the past five years are given in the following table:—

### COMMONWEALTH EXPORTS OF WINE, 1914-15 TO 1918-19.

Year.	Quantity.			Value.		
	Sparkling.	Other.	Total.	Sparkling.	Other.	Total.
	Gallons.	Gallons.	Gallons.	£	£	£
1914-15 ..	2,325	635,579	637,904	4,106	97,337	101,443
1915-16 ..	3,638	726,113	729,751	7,001	113,598	120,599
1916-17 ..	2,919	603,523	606,442	5,426	106,200	111,626
1917-18 ..	4,976	367,738	372,714	8,269	93,618	101,887
1918-19 ..	7,970	695,536	703,506	16,883	184,285	201,168

The sparkling wine included in the foregoing table consists largely of foreign wine re-exported.

5. Other Viticultural Products.—In addition to grapes for wine-making purposes, large quantities are grown in all the States for table use, while, particularly in Victoria and South Australia, the drying of raisins and currants is also carried on. The quantities of table grapes grown in the several States during the past five seasons are as follows:—

### TABLE GRAPES, 1914-15 TO 1918-19.

Season.	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.	Commonwealth.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1914-15 ..	2,667	3,083	1,191	1,283	1,348	..	9,572
1915-16 ..	2,940	3,524	932	1,608	2,027	..	11,031
1916-17 ..	2,214	2,606	668	758	1,940	..	8,186
1917-18 ..	1,710	1,127	696	984	1,570	..	6,087
1918-19 ..	2,415	2,052	614	1,745	1,892	..	8,718

Statistics of the quantities of raisins and currants dried during each of the past five seasons are given in the following table:—

### RAISINS AND CURRANTS DRIED, 1914-15 TO 1918-19.

Season.	N. S. Wales.		Victoria.		South Aust.		Western Aust.		Commonwealth.	
	Raisins.	Currants.	Raisins.	Currants.	Raisins.	Currants.	Raisins.	Currants.	Raisins.	Currants.
	cwt.	cwt.	cwt.	cwt.	cwt.	cwt.	cwt.	cwt.	cwt.	cwt.
1914-15 ..	2,591	1,252	111,006	28,527	35,305	24,774	989	1,152	149,891	55,705
1915-16 ..	5,539	2,415	180,104	70,556	59,929	66,518	1,496	1,128	247,068	140,617
1916-17 ..	4,239	2,278	142,070	66,449	35,624	50,147	1,332	1,343	184,165	120,715
1917-18 ..	3,508	1,904	104,911	53,799	42,192	51,924	703	1,948	151,314	109,575
1918-19 ..	3,496	2,450	135,060	68,234	29,662	59,834	2,163	2,157	170,381	132,675
Average 10 seasons 1909-19	4,694		116,732	49,859	37,071	47,758	1,228	1,381	257,940	

(a) Average for seven seasons.

6. Imports and Exports.—The following table gives the oversea imports and exports of raisins and currants during each of the past five years :—

**COMMONWEALTH OVERSEA IMPORTS AND EXPORTS OF RAISINS AND CURRANTS,  
1914-15 TO 1918-19.**

Year.	Oversea Imports.		Oversea Exports.		Net Exports.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
<b>RAISINS.</b>						
	lbs.	£	lbs.	£	lbs.	£
1914-15 ..	76,132	2,646	1,184,164	19,506	1,108,032	16,860
1915-16 ..	124,964	3,983	6,952,041	215,270	6,827,077	211,287
1916-17 ..	45,237	1,907	5,621,551	166,341	5,576,314	164,434
1917-18 ..	164,699	4,791	3,957,863	114,510	3,793,164	109,719
1918-19 ..	28,818	927	3,111,055	95,523	3,082,237	94,596
<b>CURRANTS.</b>						
1914-15 ..	29,818	476	929,726	12,583	899,908	12,107
1915-16 ..	1,218,947	17,728	1,168,557	25,316	50,390	7,588
1916-17 ..	2,416	54	6,525,426	165,006	6,523,010	164,952
1917-18 ..	201	5	4,934,822	134,654	4,934,621	134,649
1918-19 ..	19,909	505	3,470,803	100,326	3,450,894	99,821

Note.—The minus sign (—) signifies net imports.

The quantities of raisins and currants imported into Australia were generally greater than the exports for all years prior to 1912, when the increased production in Australia left a surplus available for export. During the last five years the value of the exports exceeded that of the imports by £1,000,837, the average annual excess for the quinquennium being £200,167.

## § 15. Orchards and Fruit Gardens.

1. *Nature and Extent.*—Fruit-growing has made rapid progress in the Commonwealth during recent years, the area devoted thereto having increased in the past ten years by no less than 91,363 acres. The States in which the increase is most marked are :—Victoria, 30,184 acres; New South Wales, 21,570 acres; Tasmania, 14,837 acres; and Queensland, 10,146 acres. During the same period the South Australian fruit-growing area increased by 9,230 acres, while that in Western Australia exhibited an increase of 5,396 acres. The increased areas in Tasmania and Western Australia are mainly due to extensive plantings of apple trees with a view to the possibilities of the London market for fresh fruit. The total area devoted to orchards and fruit gardens in the several States is given hereunder :—

**COMMONWEALTH ORCHARDS AND FRUIT GARDENS, 1914-15 TO 1918-19.**

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	N. Ter.	F. Ter.	C'wealth.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1914-15 ..	53,905	74,302	22,212	25,811	21,378	35,007	50	46	232,711
1915-16 ..	57,515	80,120	22,616	27,576	21,805	37,351	..	25	247,008
1916-17 ..	60,360	83,087	25,293	28,794	21,752	38,380	..	26	257,692
1917-18 ..	64,116	83,818	26,001	29,020	21,137	38,024	..	18	262,134
1918-19 ..	67,432	85,130	24,250	30,085	20,412	37,424	..	18	264,751

The varieties of fruit grown differ materially in various parts of the several States, and range from such fruits as the pineapple, paw-paw, mango, and guava of the tropics, to the strawberry, the raspberry, and the currant of the colder parts of the temperate zone. The principal varieties grown in Victoria are the apple, plum, peach, apricot, cherry, and pear. In New South Wales, citrus fruits (orange, lemon, &c.), occupy the leading position, although apples, pears, peaches, plums, and apricots are also extensively grown. In Queensland the banana, the orange, the pineapple, the apple, the peach, the mango, the cocoanut, and the plum are the varieties most largely grown. In South Australia, in addition to the apple, pear, peach, apricot, plum, orange, and lemon, the almond and the olive are also largely grown. In Western Australia, the apple, orange, peach, pear, plum, fig, and apricot are the sorts chiefly grown, while in Tasmania, although the apple represents over four-fifths of the area in that State devoted to fruit-growing, small fruits, such as the currant, raspberry, and gooseberry, are very extensively grown, and the balance of the area is mainly occupied with the pear, plum, apricot, peach, and cherry. The following table gives the acreage under the principal kinds of fruit grown, and the quantity and value of fruit produced. The acreages shewn are exclusive of young trees not yet bearing. The acreages for each kind of fruit in Victoria are not available :—

**PARTICULARS OF THE PRINCIPAL KINDS OF FRUIT GROWN IN THE SEVERAL STATES OF THE COMMONWEALTH DURING THE SEASON 1918-19.**

Fruit.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	F. Ter.	C'wealth.
Apples .. acres	8,260	..	1,718	8,660	7,492	22,245	11	..
.. bushels	518,538	807,573	74,415	294,474	344,570	1,976,676	789	4,017,035
£	205,340	262,461	37,518	90,143	183,771	494,169	316	1,273,718
Apricots .. acres	1,204	..	104	2,253	463	951	1	..
.. bushels	78,378	127,131	3,445	130,424	32,098	80,703	31	452,210
£	38,780	57,209	1,722	52,918	16,851	32,281	17	199,778
Bananas .. acres	2,485	..	7,817	..	12	..	..	..
.. bunches	259,427	..	1,267,641	..	63,381	..	..	..
£	220,510	..	211,273	..	3,381	..	..	435,164
Lemons .. acres	2,797	..	290	427	218	..	..	..
.. bushels	222,612	80,521	17,740	48,742	32,965	..	..	402,580
£	115,700	36,234	14,192	20,106	12,808	..	..	199,040
Nectarines } acres	8,098	..	1,931	2,260	1,137	60	1	..
and } bshls.	594,211	577,844	80,480	188,197	61,701	4,363	33	1,506,829
Peaches } £	255,020	213,703	32,509	57,667	30,758	1,091	16	590,764
Oranges .. acres	17,677	..	2,611	2,705	1,964	..	..	..
.. bushels	1,388,676	100,553	313,237	237,276	169,653	..	..	2,209,395
£	753,240	50,277	154,008	103,808	89,854	..	..	1,151,187
Pineapples .. acres	34	..	4,026	..	..	..	..	..
.. dozen	3,825	..	859,948	..	..	..	..	863,773
£	1,210	..	111,077	..	..	..	..	112,287
Pears .. acres	2,074	..	263	1,578	912	1,284	1	..
.. bushels	137,228	756,688	5,010	125,891	88,471	173,828	34	1,287,150
£	48,040	217,548	7,765	26,010	33,822	26,074	12	359,271
Plums .. acres	1,725	..	616	1,503	689	431	2	..
.. bushels	126,212	220,546	12,388	99,081	43,267	53,908	85	555,487
£	46,050	65,245	11,046	34,321	21,453	16,172	33	194,320
Other fruits .. acres	2,495	..	2,767	3,470	820	1,854	2	..
£	123,920	166,939	84,542	83,710	29,551	76,184	56	564,902
Total .. acres	46,849	60,091	22,143	22,856	13,707	26,825	18	192,489
£	1,807,810	1,069,616	665,652	468,683	422,249	645,971	450	5,080,431

(a) Cases.

(b) Bushels.

**2. Relation to Population.**—The acreage of orchards and fruit gardens of the Commonwealth in relation to population has increased during the last seventeen years to an extent which more than compensates for the decline experienced in the case of

vineyards. Taking the two in conjunction, the relative area under vineyards and orchards has, during the period, considerably increased, averaging 55 acres per 1,000 of population in 1901-2, and 67 in 1918-19. Details for orchards and fruit gardens for the years 1914-15 to 1918-19 are as follows:—

**AREA OF ORCHARDS AND FRUIT GARDENS PER 1,000 OF POPULATION,  
1914-15 TO 1918-19.**

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	N. Ter.	F. Ter.	C'wealth.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1914-15..	29	52	33	58	66	174	13	23	47
1915-16..	31	57	33	63	69	186	..	14	50
1916-17..	32	59	38	67	70	192	..	12	53
1917-18..	34	59	38	67	68	187	..	9	53
1918-19..	35	59	35	67	65	179	..	8	53

**3. Commonwealth Imports and Exports.**—A considerable fruit trade, both import and export, is carried on by the Commonwealth with overseas countries, the major portion of the importations consisting of fresh fruits, while dried fruits, principally raisins and currants, bulk largely in the exports. The principal fresh fruits imported during the past five years were bananas, apples, oranges, and lemons, the bananas coming from Fiji, while the apples and citrus fruits were supplied by the United States. The fresh fruits exported during the same period consisted largely of apples consigned to the United Kingdom, and citrus fruits to New Zealand. Many varieties of dried fruits were imported into the Commonwealth since 1914-15, but the bulk of those exported consisted of currants and raisins, which were shipped mainly to the United Kingdom, New Zealand, and Canada.

Particulars concerning the overseas imports and exports of dried fruits for the last five years are as follows:—

**COMMONWEALTH OVERSEA IMPORTS AND EXPORTS OF DRIED FRUITS, (a)  
1914-15 TO 1918-19.**

Year.	Oversea Imports.		Oversea Exports.		Net Imports.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	lbs.	£	lbs.	£	lbs.	£
1914-15 ..	4,071,250	58,451	2,313,768	35,691	1,757,482	22,760
1915-16 ..	11,857,787	159,398	8,254,878	244,069	3,602,909	84,671
1916-17 ..	6,058,769	89,006	13,460,274	372,712	7,401,505	283,706
1917-18 ..	1,587,451	42,856	9,427,669	266,297	7,840,218	223,441
1918-19 ..	1,806,333	53,594	8,524,587	253,040	6,718,254	199,446

Note.—The minus sign (—) signifies net exports.

(a) Including raisins and currants referred to under Vineyards, § 14, 6.

Similar information with regard to the Commonwealth oversea trade in fresh fruits for the same period is contained in the table given hereunder:—

**COMMONWEALTH OVERSEA IMPORTS AND EXPORTS OF FRESH FRUITS,  
1914-15 TO 1918-19.**

Year.	Oversea Imports.		Oversea Exports.		Net Exports.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	lbs.	£	lbs.	£	lbs.	£
1914-15 ..	36,999,600	344,466	26,031,400	176,024	-10,968,200	-168,442
1915-16 ..	43,281,700	374,174	64,554,800	415,305	21,273,100	41,131
1916-17 ..	46,304,700	299,360	16,294,800	141,583	-30,009,900	-157,777
1917-18 ..	25,635,100	160,899	4,648,900	46,481	-20,986,200	-114,418
1918-19 ..	13,656,500	90,034	20,809,100	188,381	7,152,600	98,347

Note.—The minus sign (—) signifies net imports.

4. **Jams and Jellies.**—A considerable oversea trade in jams and jellies is now carried on by the Commonwealth, the value of the imports for the year 1918-19 amounting to £2,294, and of the exports to £1,847,970. The destinations of the exports were principally the United Kingdom, Egypt, United States of America, France, and India. Particulars relative to imports and exports during each of the last five years are as follows:—

**COMMONWEALTH OVERSEA TRADE IN JAMS AND JELLIES,  
1914-15 TO 1918-19.**

Year.	Oversea Imports.		Oversea Exports.		Net Exports.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	lbs.	£	lbs.	£	lbs.	£
1914-15 ..	438,756	11,824	4,770,117	90,909	4,331,361	79,085
1915-16 ..	288,165	9,087	22,849,553	437,144	22,561,388	428,057
1916-17 ..	152,260	6,210	45,074,352	949,112	44,922,092	942,902
1917-18 ..	16,658	521	64,891,116	1,410,548	64,874,458	1,410,027
1918-19 ..	78,329	2,294	79,277,560	1,847,970	79,199,231	1,845,676

5. **Preserved Fruit.**—Details concerning the quantities and values of preserved fruit imported into and exported from the Commonwealth cannot readily be obtained, owing to the fact that in the Customs returns particulars concerning fruit and vegetables are in certain cases combined. The total value of fruit and vegetables, other than fresh fruits, dried fruits, potatoes, and onions, imported into Australia during 1918-19 was £67,521, and the corresponding value of exports was £477,421.

## § 16. Minor Crops.

1. **Nature and Extent.**—In addition to the leading crops which in the foregoing pages have been dealt with in some detail, there are many others which, owing either to their nature, or to the fact that their cultivation has advanced but little beyond the experimental stage, do not occupy so prominent a position. Some of the more important of these are included under the headings—Market Gardens, Pumpkins and Melons, Nurseries, Grass Seed, Tobacco, Flax, Hops, and Millet. Cotton-growing has in recent years received some attention in the tropical portions of the Commonwealth, although the industry cannot yet be said to be beyond the experimental stage. The total area in the Commonwealth during the season 1918-19 devoted to crops not dealt with in previous sections was 60,211 acres, of which market gardens accounted for 27,482 acres, or more than 45 per cent.

2. **Market Gardens.**—Under this head are included all areas on which mixed vegetables are grown. Where considerable areas are devoted to the production of one vegetable, such for instance as the potato, the onion, the melon, the tomato, etc., the

figures are usually not included with market gardens, but are shewn either under some specific head, or under some general head as "Other Root Crops," or "All Other Crops." The area under market gardens in the several States of the Commonwealth during each of the last five seasons is given in the table hereunder :—

COMMONWEALTH MARKET GARDENS, 1914-15 TO 1918-19.

Season.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	N. Ter.	F. Ter.	C'wealth.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1914-15 ..	10,475	12,935	2,648	1,830	2,785	628	60	27	31,388
1915-16 ..	10,940	11,379	2,330	1,712	2,787	435	..	27	29,610
1916-17 ..	10,683	10,746	2,305	1,522	2,153	448	..	27	27,884
1917-18 ..	10,100	11,362	1,991	1,502	2,334	447	..	39	27,775
1918-19 ..	10,004	11,594	1,814	1,405	2,237	389	..	39	27,482

The area of market gardens has consistently declined in each of the States during the past five years, the total area for the Commonwealth decreasing by 3,906 acres since 1914-15.

3. **Grass Seed.**—The total area under this crop during 1918-19, exclusive of New South Wales, for which State no figures as to area are available, was 5,553 acres, of which 2,152 acres were in Victoria, 2,021 acres in Queensland, and 1,278 acres in Tasmania. The total yield for 1918-19, including New South Wales, was 83,504 bushels, valued at £34,238.

4. **Tobacco.**—Tobacco-growing is an industry which has experienced marked fluctuations, although at one time it promised to occupy an important place amongst the agricultural industries of the Commonwealth. Thus, as early as the season 1888-9 the area under this crop amounted to as much as 6,641 acres, of which 4,833 were in New South Wales, 1,685 in Victoria, and 123 in Queensland. This promise of importance was, however, not fulfilled, and after numerous fluctuations, in the course of which the Victorian area rose in 1895 to over 2,000 acres, and that in Queensland to over 1,000 acres, the total area for the season 1918-19 had declined to 2,060 acres, distributed as follows :—New South Wales, 1,680 acres ; Victoria, 167 acres ; and Queensland, 213 acres. This decline in production appears to have been due to the comparatively small demand which existed in Australia for the locally-produced leaf, and to the fact that the cost of production and preparation in the Commonwealth prevented the Australian leaf from obtaining a footing in outside markets. Possibly under more favourable circumstances, and with greater attention given to the production of leaf of the best quality only, the industry may eventually assume considerable proportions. In all the States in which its cultivation has been tried, the soil and climate appear to be very suitable for the growth of the plant, and the enormous importations of tobacco in its various forms into the Commonwealth furnish an indication of the extensive local market which exists for an article grown and prepared in such a manner as to meet the requirements of consumers. The value of the net importations of tobacco into the Commonwealth during the year 1918-19 amounted to £1,577,057, comprising unmanufactured tobacco £1,592,222, cigarettes £87,265, and snuff £704, while manufactured tobacco and cigars shewed balances in favour of exports amounting to £99,831 and £3,303 respectively.

5. **Pumpkins and Melons.**—The total area under this crop in the Commonwealth during 1918-19 was 8,855 acres, of which 2,363 acres were in New South Wales, 1,161 acres in Victoria, 4,603 acres in Queensland, 401 acres in Western Australia, and 287 in South Australia. The production for the Commonwealth amounted to 28,567 tons.

6. **Hops.**—Hop-growing in the Commonwealth is practically confined to Tasmania and some of the cooler districts of Victoria, the total area for the season 1918-19 being 1,333 acres, of which 1,260 acres were in Tasmania, and 71 acres in Victoria ; a small area of 2 acres was also grown in South Australia. The Tasmanian area, though still small, has increased considerably during the past seventeen years, the total for the season 1901-2 being only 599 acres. On the other hand, the Victorian area, which in 1901-2 was 307 acres, had diminished to 71 acres in 1918-19. The cultivation of hops was much



more extensive in Victoria some thirty years ago than at present, the area devoted to this crop in 1883-4 being no less than 1,758 acres. During the year 1918-19 the imports of hops exceeded the exports by 402,507 lbs., the excess value being £19,175.

7. **Flax.**—For the past twenty years flax has been grown intermittently in the Gippsland district of Victoria, and attempts have also been made to introduce its cultivation into Tasmania and New South Wales, but without success. The chief reason for this failure was the dominant position held by Russia in the European fibre markets. That country produced 80 per cent. of the world's output of fibre, and the low standard of wages resulted in a correspondingly low price for fibre. Consequently the price the Australian farmer received for his flax rendered its cultivation unattractive compared with that of other agricultural products. In 1907, the Commonwealth Government, with a view to foster the industry, provided for the payment of a bounty of 10 per cent. of the market value of all flax products, but the low returns for fibre, about £45 per ton, prevented the extension of flax growing to any appreciable degree, and on 1st July, 1917, the bounty provisions expired. At the end of that year, however, the shortage of flax fibre in Europe had become very acute owing to the occupation of the Baltic Provinces by Germany, and at the suggestion of the Advisory Council of Science and Industry, and with a view primarily to assisting the Imperial Government, the Commonwealth Government formulated a scheme to encourage the cultivation of flax. A Flax Industry Committee, consisting of representatives of the Department of Agriculture of Victoria, the flax growers, and the cordage manufacturers, was appointed with executive powers under War Precautions Regulations. At the same time, a guarantee was given by the Commonwealth Government of £5 per ton for flax of specified standard grown in 1918.

The area was increased from 400 acres in 1917 to 1,420 acres in 1918, and the fibre from the latter crop has been sold to the Imperial Government at £170 per ton c.i.f., its pre-war value having been about £45 per ton. Owing to the disorganisation of Russian industries, and the depletion of the world's stocks of linens, there is every indication that the present high values of flax products will be retained for many years. The value of the products of the Australian 1918 crop is estimated as follows:—Fibre £12,800, linseed £5,700, and tow £1,500, or a total of £20,000. A further guarantee has been given by the Commonwealth Government of £6 per ton for the 1919 flax crop. About 2,200 acres were planted in 1919, and with a normal season the return from flax products is estimated at about £33,000. In order to encourage farmers to take advantage of this unprecedented opportunity of firmly establishing the flax industry, the Commonwealth Government has guaranteed a price for the flax grown in Australia during the next three years. With a three years' guarantee of remunerative prices, there is every incentive to farmers in suitable districts not only to grow flax, but to co-operate in the erection of flax-mills for the treatment of the flax straw. The guarantee for 1920 is £6 per ton, and for 1921 and 1922 £5 per ton for raw flax. Australia imports annually flax products to the value of £1,800,000, and as it has been demonstrated that flax can be grown to perfection in many parts of the Commonwealth it would appear that there is a good prospect of successfully establishing a local industry. There are five mills operating in Gippsland, and the erection of additional mills is anticipated. The whole of the commercial flax crop is grown in Victoria, but a grant of £1,000 has been made by the Commonwealth Government for experimental work, and in all the States experiments are being carried out to determine the suitability of the soil and climate for the cultivation of this crop. Experiments have also been carried out with a view to improve the methods of treatment at the mills.

8. **Millet.**—Millet appears in the statistical records of three of the Commonwealth States. The total area devoted thereto in 1918-19 was 5,210 acres, of which 3,019 acres were in New South Wales, 1,876 in Victoria, 305 in Queensland, and 10 in the Northern Territory. The particulars here given relate to millet grown for grain and fibre. That grown for green forage is dealt with in the section relating thereto.

9. **Nurseries.**—In all the States somewhat extensive areas are devoted to nurseries for raising plants, trees, etc. Statistics concerning the area so occupied for flowers, fruit trees, etc., are available for New South Wales, Victoria, South Australia, and Western Australia. During 1918-19 the areas in those States were 674, 1,020, 166, and 94 acres respectively. Statistics so far as they relate to forestry are given elsewhere.

10. **Cotton.**—Cotton-growing on a small scale has been tried in Queensland, but so far without very marked success. In 1902, 8 acres were devoted to this crop, in 1907, 300 acres were under cultivation, and in 1911 the maximum either in regard to area or production was reached, an area of 605 acres producing 186,894 lbs. of unginned cotton. A gradual falling-off has since been experienced, and in 1918 the area was only 203 acres with a production of 101,445 lbs. of cotton. Special efforts have recently been made to encourage cotton-growing in Queensland, and hopes are entertained that with the invention of a mechanical device for the picking of the cotton the industry will become firmly established, since the soil and conditions appear eminently suitable for the growth of this crop. Small areas in the Northern Territory have also been planted with cotton. The tropical portions of Western Australia have also long been regarded as suitable for its cultivation.

11. **Coffee.**—Queensland is the only State of the Commonwealth in which coffee-growing has been at all extensively tried, and here the results have up to the present time been far from satisfactory. The total area devoted to this crop reached its highest point in the season 1901-2, when an area of 547 acres was recorded. The area then continuously declined to 1906-7, when it was as low as 256 acres. In subsequent seasons the area fluctuated somewhat, but on the whole with a downward tendency, and in 1918-19 only 29 acres were recorded, with a yield of 13,129 lbs.

12. **Other Crops.**—Miscellaneous small crops are grown in the several States, amongst which may be mentioned tomatoes, rhubarb, artichokes, arrowroot, chicory, and flowers.

### § 17. Bounties on Agricultural Products.

1. **General.**—The Bounties Act of 1907, passed by the Federal Parliament in order to encourage the manufacture and production of certain articles in the Commonwealth, included among the items on which bonuses were payable several agricultural products. Under an Act passed in 1912 the provisions of the 1907 Act in respect of certain items were renewed. During 1918 an Apple Bounty Act was passed, which provided for the payment of a bounty on the export of apples grown and evaporated in Australia and sold to the Imperial Government for delivery between 1st April and 31st August, 1918. Products of the soil on which these bounties were payable are as follows:—

#### BOUNTIES ON AGRICULTURAL PRODUCTS.

Article.	Period dating from 1st July, 1907, during or in respect of which Bounty may be paid.	Rates of Bounty.	Maximum amounts which may be assigned in any one year.
			£
Cotton, ginned .. ..	8 years	10 % on market value	6,000
Fibres—			
New Zealand flax .. ..	10 "	10 " "	3,000
Flax and hemp .. ..	10 "	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 "	10 " "	1,000
Linseed (flax seed) .. ..	10 "	10 " "	5,000
Rice, uncleaned .. ..	10 "	20s. per ton	1,000
Coffee, raw, as prescribed .. ..	8 "	1d. per lb.	1,500
Tobacco leaf for the manufacture of cigars, high grade, of a quality to be prescribed .. ..	10 "	2d. "	4,000
Fruits—			
Dates (dried) (a) .. ..	15 "	1d. "	1,000
Dried (except currants and raisins) or candied, and exported .. ..	10 "	10% on market value	6,000
Evaporated apples .. ..	..	7½d. per lb. . . .	12,000

(a) Any unexpended amount assigned in any year to be available for the years following.

At the present time the only one of these bounties still in force is that relating to dates.

2. **Bounties Paid.**—Although the rate of bonus on the several articles was fairly liberal, the bounties were not availed of to any great extent, as will be seen from the following table, which gives particulars as to the quantity of the articles raised and the amounts paid as bounties in respect thereto for the five financial years ended 1918-19. The sum of £4,054 paid on the export of evaporated apples was the total amount of money distributed as bounties during 1918-19.

**PARTICULARS OF BOUNTIES PAID ON AGRICULTURAL PRODUCTS (OTHER THAN SUGAR), 1914-15 TO 1918-19.**

Article.	Quantity produced on which Bounties were paid.					Amount paid as Bounties.				
	1914-15.	1915-16.	1916-17.	1917-18.	1918-19.	1914-15.	1915-16.	1916-17.	1917-18. (a)	1918-19.
Cotton, ginned lbs.	..	13,751	..	..	..	£	£	£	£	£
Fibres—	..	..	..	..	..	..	22	..	..	..
Flax and hemp tons	34	238	122	..	..	77	634	267	..	..
Sisal hemp ..	..	2,250	..	5	..	..	2	..	19	..
Oil materials supplied to an oil factory for the manufacture of oil—	..	..	..	..	..	..	..	..	..	..
Cottonseed lbs.	..	22,400	..	..	..	..	10	..	..	..
Linseed (flax seed) cwt.	..	..	..	..	..	..	..	..	..	..
Coffee, raw, as prescribed lbs.	17,022	732	..	..	..	71	3	..	..	..
Tobacco leaf for the manufacture of cigars, high grade, of a quality to be prescribed lbs.	41,891	17,423	57,795	1,577	..	349	145	488	13	..
Fruits—	..	..	..	..	..	..	..	..	..	..
Dried (except currants and raisins) or candied, and exported lbs.	41,212	6,000	579,334	131,432	..	98	16	2,063	342	..
Evaporated apples lbs.	..	..	..	..	1,388,577	..	..	..	..	4,054

(a) Bounties paid on goods produced during 1916-17.

## § 18. Fertilizers.

1. **General.**—In the early days of settlement and cultivation in the Commonwealth, scientific cultivation was in a comparatively undeveloped state. The early farmers were neither under the necessity, nor in fact aware of the necessity, of supplying the constituents to the soil demanded by each class of crop. The widely divergent character of the soils in the Commonwealth, their degeneration by repeated cropping, the limitations of climatic conditions, the difficulties of following any desired order of rotation of crops, all rendered it essential to give attention to artificial manuring. The introduction of the modern seed-drill, acting also as a fertilizer distributor, has greatly facilitated the use of artificial manures, and much land formerly regarded as useless for cultivation has now been made productive. There is reason to believe that this feature will be even more strikingly characteristic of the future.

2. **Fertilizers Acts.**—In order to protect the interests of users of artificial manures legislation has been passed in each of the States, regulating the sale and preventing the adulteration of fertilizers. A list of these Acts and their main features will be found in Year Book No. 12 (page 378).

3. Imports.—The local production of artificial manures has assumed large proportions during the last few years, though considerable quantities are still imported. The importation of fertilizers has increased over 100 per cent. since 1901. The chief items, as regards both quantity and value, are those relating to phosphates, a fertilizer which has proved itself to be very suitable for the growing of cereals in Australian soils. During 1918-19 the quantities of rock phosphates imported represented 87 per cent. of the total importation of fertilizers. The colony of Gilbert and Ellice Islands, with 39 per cent., was the largest contributor, Pleasant Island coming next with 38 per cent., while the bulk of the remainder was supplied by Christmas Island. The whole of the soda nitrate came from Chile.

The imports of artificial manures during the last five years are given in the following table. It will be noticed that the quantities of rock phosphates imported have been consistently large, representing over 82 per cent. of the total importation of fertilizers during the period. No importations of manufactured superphosphates were made during 1917-18 and 1918-19, though considerable quantities were imported during 1914-15.

## COMMONWEALTH IMPORTS OF FERTILIZERS, 1914-15 TO 1918-19.

Fertilizer.		1914-15.	1915-16.	1916-17.	1917-18.	1918-19.
Bonedust .. ..	cwt.	10,901	..	40	..	2,004
" .. ..	£	3,136	..	18	..	785
Guano .. ..	cwt.	2,053	1,800	264,581	..	137,008
" .. ..	£	814	792	30,772	..	17,304
Superphosphates .. ..	cwt.	502,382	57,790	200	..	..
" .. ..	£	79,889	10,308	61	..	..
Rock phosphates .. ..	cwt.	3,464,547	3,813,788	3,556,561	3,643,038	2,811,812
" .. ..	£	397,284	440,434	444,984	433,940	334,036
Soda nitrate .. ..	cwt.	67,508	112,203	165,472	53,800	38,483
" .. ..	£	34,059	49,463	107,977	43,264	30,767
Other .. ..	cwt.	108,291	5,109	1,202	397	520
" .. ..	£	31,644	3,509	1,494	909	488
Total .. ..	{ cwt.	4,155,682	3,990,690	3,988,056	3,697,235	2,989,827
	{ £	546,826	504,506	585,306	478,113	383,380

4. Exports.—The subjoined table shews the exports of artificial manures for the years 1914-15 to 1918-19. Practically the whole of these fertilizers are manufactured locally, and are shipped mainly to New Zealand, Java, Japan, and the Pacific Islands :—

## COMMONWEALTH EXPORTS OF FERTILIZERS, 1914-15 TO 1918-19.

Fertilizer.		1914-15.	1915-16.	1916-17.	1917-18.	1918-19.
Bonedust .. ..	cwt.	148,229	71,795	37,337	17,252	34,722
" .. ..	£	45,707	22,563	12,832	7,221	18,516
Guano .. ..	cwt.	2,800	..	4,455	840	8,669
" .. ..	£	470	..	1,061	234	2,775
Superphosphates .. ..	cwt.	311,067	823,361	483,552	699,784	345,493
" .. ..	£	64,224	156,862	105,492	179,691	95,623
Rock phosphates .. ..	cwt.	22,340	75,839	66,010	70,004	44,032
" .. ..	£	3,429	10,695	8,464	9,810	6,773
Soda nitrate .. ..	cwt.	1,500	2,619	7,339	18,888	60
" .. ..	£	897	1,835	5,678	16,741	84
Ammonia sulphate .. ..	cwt.	113,801	129,651	109,248	118,147	196,954
" .. ..	£	75,379	102,821	111,794	211,322	350,098
Other .. ..	cwt.	224,309	86,964	72,572	30,037	21,486
" .. ..	£	38,972	28,059	20,925	14,532	11,008
Total .. ..	{ cwt.	824,046	1,190,220	780,513	954,952	651,416
	£	229,078	322,835	266,246	439,551	484,877

5. **Statistics of Use of Fertilizers.**—Statistics of the use of manures in the Commonwealth during the past five years are available for all the States with the exception of Queensland, where the particulars were first collected in 1915–16. Particulars concerning New South Wales are given hereunder :—

#### FERTILIZERS USED IN NEW SOUTH WALES, 1914–15 TO 1918–19.

Season.	Total Area of Crops.	Area Manured.		Manure Used.	
		Aggregate.	Percentage on Total Area of Crops.	Natural (Stable-yard, etc.).	Artificial.
	Acres.	Acres.	%	Loads.	Tons.
1914–15 .. ..	4,807,001	2,329,819	48.47	168,450	55,169
1915–16 .. ..	5,796,376	2,753,301	47.50	177,788	56,621
1916–17 .. ..	5,164,434	2,352,180	45.55	166,374	50,704
1917–18 .. ..	4,461,172	1,974,620	44.26	181,052	44,883
1918–19 .. ..	3,891,823	1,780,254	45.74	180,734	42,804

Particulars for Victoria for the past five seasons are as follows :—

#### FERTILIZERS USED IN VICTORIA, 1914–15 TO 1918–19.

Season.	Total Area of Crops.	Farmers Using Manure.	Area Manured.		Manure Used.	
			Aggregate.	Percentage on Total Area of Crops.	Natural (Stable-yard, etc.).	Artificial.
	Acres.	No.	Acres.	%	Tons.	Tons.
1914–15 .. ..	4,622,759	31,874	3,728,279	80.65	209,534	117,935
1915–16 .. ..	5,711,265	33,378	4,336,252	75.92	187,602	128,667
1916–17 .. ..	4,851,335	33,165	3,870,742	79.79	181,268	117,812
1917–18 .. ..	4,110,225	30,109	3,336,418	81.17	167,114	106,119
1918–19 .. ..	3,942,899	32,589	3,222,822	81.74	162,165	104,993

The following table gives particulars of the use of manures in Queensland since 1915–16 :—

#### FERTILIZERS USED IN QUEENSLAND, 1915–16 TO 1918–19.

Season.	Total Area of Crops.	Area Manured.		Manure Used.	
		Aggregate.	Percentage on Total Area of Crops.	Natural (Stable-yard, etc.).	Artificial.
	Acres.	Acres.	%	Loads.	Tons.
1915–16 .. ..	729,588	25,166	3.45	43,483	7,608
1916–17 .. ..	885,259	22,145	2.50	34,811	6,869
1917–18 .. ..	727,958	17,862	2.45	42,779	4,833
1918–19 .. ..	525,517	18,932	3.60	45,328	6,679

The figures relating to the use of fertilizers in South Australia are shewn in the table below :—

### FERTILIZERS USED IN SOUTH AUSTRALIA, 1914-15 TO 1918-19.

Season.	Total Area of Crops.	Area Manured.		Manure Used.	
		Aggregate.	Percentage on Total Area of Crops	Natural (Stable-yard, etc.).	Artificial.
	Acres.	Acres.	%	Loads.	Tons.
1914-15 .. ..	3,282,364	2,722,349	82.94	103,537	97,421
1915-16 .. ..	3,763,570	3,112,462	82.70	90,142	98,258
1916-17 .. ..	3,627,477	2,872,571	79.19	101,032	96,893
1917-18 .. ..	3,079,778	2,553,713	82.92	87,550	90,795
1918-19 .. ..	3,111,079	2,587,648	83.19	92,063	90,302

Corresponding particulars relative to Western Australia for the seasons 1914-15 to 1918-19 are given in the following table :—

### FERTILIZERS USED IN WESTERN AUSTRALIA, 1914-15 TO 1918-19.

Season.	Total Area of Crops.	Area Manured.		Manure Used.	
		Aggregate.	Percentage on Total Area of Crops	Natural (Stable-yard, etc.).	Artificial.
	Acres.	Acres.	%	Loads.	Tons.
1914-15 .. ..	1,867,547	1,808,503	96.84	54,245	67,839
1915-16 .. ..	2,189,456	2,117,166	96.70	53,257	70,523
1916-17 .. ..	2,004,944	1,903,026	94.92	49,216	70,326
1917-18 .. ..	1,679,772	1,586,748	94.46	49,578	58,989
1918-19 .. ..	1,605,088	1,547,144	96.39	49,900	57,276

Statistics relating to the use of manures in Tasmania for the past five seasons are as follows :—

### FERTILIZERS USED IN TASMANIA, 1914-15 TO 1918-19.

Season.	Total Area of Crops.	Area Manured.		Manure Used.	
		Aggregate.	Percentage on Total Area of Crops	Natural (Stable-yard, etc.).	Artificial.
	Acres.	Acres.	%	Tons.	Tons.
1914-15 .. ..	274,474	144,732	52.73	31,572	13,065
1915-16 .. ..	333,334	182,374	54.71	30,486	15,232
1916-17 .. ..	270,526	144,532	53.43	30,990	13,886
1917-18 .. ..	238,199	120,476	50.58	28,006	11,472
1918-19 .. ..	254,109	135,558	53.35	25,032	11,367

6. **Local Production of Fertilizers.**—Statistics relative to the local production of fertilizers are incomplete, and detailed returns for fertilizer factories other than bone mills are not available. The number of firms engaged in the manufacture of artificial manures in the Commonwealth at latest available date was 94, made up as follows:—New South Wales, 21; Victoria, 29; Queensland, 22; South Australia, 10; Western Australia, 4; and Tasmania, 8.

7. **Benefits Derived from the Use of Fertilizers.**—There is little doubt that the increasing use throughout the Commonwealth of fertilizers, natural and artificial, combined with the greater attention being devoted to fallowing and to the combination of sheep-farming with agriculture, is having the effect of improving the prospects of those dependent for a livelihood on the products of the soil. Reference has previously been made to the loss to the soil of phosphoric acid which the Commonwealth export of wheat and its milled products involves, and the necessity which thus arises for returning this ingredient in some form. Similarly, other staple products exported impose their respective tolls upon the soil, and the increased use of fertilizers furnishes evidence that producers are alive to the necessity for making good the deficiency so arising.

## § 19. Ensilage.

1. **Value to Stockowners.**—The use of ensilage as a substitute for green fodder during periods of drought or spells of dry weather, or for winter use, is less extensive in Australia than the circumstances would appear to warrant. There is, however, a growing disposition on the part of dairy farmers to make silos on their holdings, as they find that dairy cattle eat ensilage greedily, and that by its means the output of milk, both in regard to quantity and quality, may be kept up long after the supply of ordinary green food is exhausted. Sheepbreeders are also recognising the fact that during protracted periods of dry weather the silo enables them to keep their stock in good condition, and that lambing can take place satisfactorily. Ensilage thus obviates the expense of travelling or trucking sheep for hundreds of miles to get beyond the drought area, or the equally costly and even ruinous alternative of providing chaff for food at high prices and costly freight. In the rearing of lambs for the London market, ensilage appears to be destined to play an important part, as the lambs thrive upon it much better than upon dry food. By the judicious economising of the surplus growth of green food with the use of the silo, farmers and squatters can carry more stock on their holdings than they otherwise would be justified in doing. Not only is the great waste of superabundant food thus avoided, but it becomes possible to change into a succulent and nutritious food much growth that in any other state would not be eaten by stock. Thus such vegetation as marsh mallows, thistles, weeds of all sorts, and even the swamp reed (*Arundo phragmites*), which grows in great quantities in lagoons, billabongs, and swamps, are all eaten with avidity when offered to stock in the form of ensilage. The pit and stack silos are rapidly being superseded by those built of red gum and hardwood or concrete. This is found to a great extent to obviate the loss sustained by mould, at the same time reducing the risk of fire. A portable silo made of iron has been devised in sections of such size and weight as to admit of ready handling. These silos can be increased in diameter or height by the addition of further sections.

2. **Government Assistance in the Production of Ensilage.**—The Government of Victoria, recognising that defective methods of making ensilage have often been adopted, has for some years been making special efforts to educate the farming community, by the issue of bulletins, lectures, etc., so that mistakes may be avoided, and the conditions essential for the production of good ensilage may be better appreciated. These conditions vary with the climate and with the locality. The Government also undertakes the erection of different types of silos on very liberal terms, repayment extending over a series of years. Experts erect the silos and give practical lessons as to packing them, etc. The New South Wales Government has, by giving advice in the "Agricultural Gazette," and by the issue of special bulletins, taken steps towards the education of the farmers. Silos also have been erected on the various experimental farms with a view to demonstrating the value of ensilage. No financial assistance is, however, given in New South Wales in this connexion.

3. *Quantity Made.*—Particulars concerning the number of silos and the quantity of ensilage made in the several States of the Commonwealth in the seasons 1914-15 to 1918-19 are furnished in the following table :—

#### ENSILAGE MADE IN COMMONWEALTH, 1914-15 TO 1918-19.

State or Territory.	1914-15.		1915-16.		1916-17.		1917-18.		1918-19.	
	Holdings.	Ensilage Made.	Holdings.	Ensilage Made.	Holdings.	Ensilage Made.	Holdings.	Ensilage Made.	Holdings.	Ensilage Made.
	(a)		(a)		(a)		(a)		(a)	
	No.	Tons.	No.	Tons.	No.	Tons.	No.	Tons.	No.	Tons.
New South Wales ..	83	10,963	130	18,511	119	16,336	116	14,789	60	6,292
Victoria ..	161	9,055	269	16,356	179	10,974	117	9,852	95	8,249
Queensland ..	52	3,363	37	3,012	70	5,115	60	4,556	45	3,541
South Australia ..	6	681	43	1,688	20	1,795	13	921	16	1,083
Western Australia ..	11	403	12	518	12	278	11	325	11	441
Tasmania ..	10	231	17	849	7	114	38	518	7	180
Federal Territory ..	..	..	..	..	..	..	..	..	..	..
Northern Territory ..	..	..	..	..	1	55	1	50	1	50
Commonwealth ..	323	24,696	508	40,934	408	34,667	356	31,011	235	19,836

(a) No. of holdings on which ensilage was made.

Following the drought of 1902-3 greater attention was paid to ensilage than was previously the case, and during the four seasons ended 1909-10 a continuous and fairly rapid increase was in evidence in all the States, both in the number of holdings on which ensilage was made, and in the quantity produced. The following five seasons, however, shewed a falling-off, but the reduction cannot be accepted as an indication of a lessening of appreciation of the benefits of ensilage, but rather of the fact that stocks had not been drawn upon to any great extent during the previous seasons. The accumulated stocks proved of very great value during the 1914 drought, though far below what would have been the case if more attention had been paid to ensilage-making during the previous years of surplus green food. A very substantial increase took place in 1915-16, both in the holdings on which ensilage was made and in the quantity produced, but during the last three years the number of holdings and the quantity of ensilage made declined considerably, the falling off in New South Wales and Victoria being particularly heavy.

## § 20. Agricultural Colleges and Experimental Farms.

1. *Introduction.*—In most of the States, agricultural colleges and experimental farms have been established with a view to promoting agriculture and to establishing improved and more scientific systems of stock-breeding and dairying. In these colleges, and on some of the farms, provision is made for the accommodation of pupils, to whom both practical and theoretical instruction is given by experts in various branches of agriculture. Analyses of soils and fertilizers are made, manures are tested, and elementary veterinary science, etc., is taught, while general experimental work is carried on with cereal and other crops, not merely for the purpose of shewing that it is practicable to produce certain crops in a given place, but also to shew how it is possible to make farming pay best in that locality. Opportunities are afforded for practice in general agricultural work, and instruction is given in the conservation of fodder; in cheese and butter making; in the management, breeding, and preparation for the market of live stock; in the eradication of pests and weeds; and in carpenters', blacksmiths', and other trades.

Travelling expert lecturers are sent to the various agricultural and dairying centres, and there is a wide distribution of periodical agricultural gazettes and bulletins on matters of importance at special seasons.

2. *Particulars of Agricultural Colleges and Experimental Farms.*—In previous issues detailed information is given in respect of agricultural colleges, experimental farms and agricultural education generally. See Year Book No. 11, pp. 393-5.



## § 21. Government Loans to Farmers.

1. **Introduction.**—All the Australian States have established systems under which financial aid is rendered to agriculturists by the Government. The principle upon which such aid is founded was probably first practically applied in Germany, in the year 1770, when the *Landschaften Bank* was created. The establishment of the *Crédit Foncier* nearly a century later in France was a creation of a similar character. This latter institution was designed to enable house and land owners to raise money on mortgage at a low rate of interest, with facility for repayment by annual instalments including redemption of the capital. It dates from 1852, but the mortgage bank known as the *Caisse Hypothécaire*, which, after a struggling existence, was finally liquidated in 1864, was based essentially on the same principle. Over the operations of the *Crédit Foncier*, created under governmental patronage and invested with such special privileges as to virtually constitute it a monopoly, the Government exercised a direct control, by appointing its governor and its two deputy-governors. The *Crédit Foncier* was empowered to lend money only on a first mortgage, and to the amount of one-half of the estimated value of houses and farms, and one-third that of vineyards, woods, and other plantations, and the commission charged could not exceed six-tenths per cent. The system developed and adopted in the Commonwealth, with the object of assisting farmers to make improvements or to develop or utilise the agricultural or pastoral resources of the land, is analogous. Particulars of advances made under the Closer Settlement and similar Acts are dealt with in the section on Closer Settlement.

2. **Aggregate of Transactions in each State, 1916 to 1919.**—The subjoined table gives aggregates of transactions in reference to advances to farmers in each State during the past four years:—

### STATE GOVERNMENT ADVANCES DEPARTMENTS—AGGREGATE OF LOANS TO FARMERS, 1916 TO 1919. (a)

State.	Total Advanced to 30th June—				Balance Due at 30th June—			
	1916.	1917.	1918.	1919.	1916.	1917.	1918.	1919.
	£	£	£	£	£	£	£	£
N.S.W. ..	4,119,842	4,281,697	4,514,157	4,774,412	2,513,332	2,522,674	2,544,054	2,599,751
Victoria ..	3,866,952	4,040,582	4,204,542	4,337,542	1,833,988	1,920,737	1,957,694	1,949,023
Q'land. . .	1,517,040	1,810,910	2,026,823	2,245,474	1,186,895	1,428,530	1,525,649	1,633,936
S. Aust.(b) ..	2,831,631	2,847,017	2,956,859	3,140,711	1,300,877	1,232,705	1,223,897	1,284,795
W. Aust. . .	3,533,493	3,626,658	3,700,488	3,798,146	2,695,550	2,753,559	2,789,388	2,835,631
Tasmania ..	97,776	117,027	124,319	129,018	87,106	103,152	105,965	107,437
Commonwealth	15,966,734	16,723,891	17,527,188	18,425,303	9,617,748	9,961,357	10,146,647	10,410,573
	Profits for Year ended 30th June—				Accumulated Profits at 30th June—			
	£	£	£	£	£	£	£	£
N.S.W. ..	16,633	17,477	17,446	15,276	88,374	104,898	120,085	135,107
Victoria(c) ..	14,000	15,623	14,284	16,615	126,411	142,064	156,348	172,904
Q'land. . .	6,674	(d)	(d)	(d)	29,328	(e)29,328	(e)29,328	(e)29,328
S. Aust.(b) ..	11,670	11,400	11,454	11,128	91,069	102,469	113,923	125,052
W. Aust. . .	7,706	2,894	2,371	7,142	82,351	85,245	88,239	95,381
Tasmania ..	1,278	1,238	1,224	1,096	2,787	4,025	5,249	6,346
Commonwealth	57,961	48,632	46,779	51,257	420,320	(e)468,029	(e)513,172	(e)564,118

(a) Compiled from figures furnished by the Government Savings Bank of Victoria. (b) Includes loans to farmers and other producers and to local bodies on the security of their own rates. (c) Including profits in connexion with house and similar loans. (d) Not shewn since amalgamation with Government Savings Bank. (e) See note (d).

3. **Legislation in each State.**—An account of the initial legislation in each State in reference to advances to settlers; subsequent legislation; security on which, and objects for which advances were made; amount of advances and repayments up to the end of 1917-18, etc., will be found in previous issues of the Year Book (see No. 12, pages 384 to 389).

4. **Particulars Respecting Agricultural and Stock Departments.**—In Year Book No. 7, 1901-1913, on pages 364 to 369, will be found particulars respecting Agricultural and Stock departments of the several States of the Commonwealth as on 30th June, 1913. The main features of organisation are set out under their respective headings, and will be found to embrace such items as the number on staffs, expenditure, facilities for agricultural education and work undertaken in agricultural colleges, technical schools, experimental farms, and orchards and vineyards. The nature of lectures and other forms of agricultural instruction by experts is dealt with, as well as the extent of distribution of plants, and the special steps taken by the departments to disseminate information amongst agriculturists, and also to facilitate placing the products of the State on the market.

## § 22. Graphical Representation of Crops.

1. **Areas of Principal Crops.**—A graphical representation of the areas devoted to each of the principal crops in the Commonwealth since 1860 will be found on page 379. The crops so represented are as follows :—Wheat, hay, oats, maize, sugar-cane, barley, and vines.

2. **Production.**—On page 380 will be found a graphical representation of the aggregate yields in the Commonwealth since 1860 of wheat, oats, barley, maize, and hay.

## SECTION IX.

## FARMYARD AND DAIRY PRODUCTION.

## § 1. Introductory.

1. **General.**—The introduction of cattle into Australia, and the early history of the dairying industry are referred to in some detail in earlier issues of this work (see Official Year Book No. 6, p. 430). It may here be noted that the original stock has been crossed with specially imported stud cattle, while further judicious crossing of strains has resulted in an increased and improved milk supply. In Australia, dairy cattle thrive in the open throughout the year, local climatic conditions demanding no protection other than tree plantations for shelter, and rugging in the coldest weather. Indigenous and imported grasses furnish food during the greater part of the year, and winter fodder, when necessary, is given to the cattle in the fields. With the adoption of scientific methods in the treatment of animals and pasturage and in the processes of manufacture, coupled with effective State supervision, the dairying industry has shewn rapid expansion.

2. **Official Supervision of Industry.**—Dairy experts, under the supervision of the various State Agricultural Departments, give instruction in approved methods of production, and inspect animals, buildings, and marketable produce. A high standard of cleanliness, both of *personnel* and *matériel*, prevails. Financial assistance of a temporary nature is also given, advances made being generally repaid with promptitude.

The export trade is regulated by the terms of the Commonwealth Commerce Act 1905 and regulations thereunder. The provisions of this Act are set out in detail in Official Year Book No. 6, pp. 431–2. It will be sufficient to note here that the true trade description, etc., must be marked on all produce intended for export, while official inspection ensures the maintenance of purity and quality. Upon request of the exporter the goods are certificated by the inspector.

3. **Mixed Farming.**—Dairying is not now, as formerly, wholly confined to farmers, since many graziers in a large way of business have lately given it their attention. In non-coastal regions it is generally carried on in conjunction with agriculture and sheep-raising, sufficient fodder being grown to carry the cattle through the winter months. Local wants are thus met, and in many places remote from the metropolis well-equipped factories have been established.

4. **Factory System.**—Cream separation and butter-making are often carried on together under the co-operative system. The creation of large central butter factories, supplied by numerous separating establishments or “creameries,” has resulted in a considerable reduction in the cost of manufacture, since improved appliances, such as refrigerators, may be profitably worked at the larger establishments. The product is also of a more uniform quality. The number of farmers who adhere to hand processes is rapidly diminishing. Formerly the average quantity of milk used per pound of hand-made butter was about 3 gallons, but separator butter requires less than 2½ gallons.

5. **Butter and Cheese Factories.**—The factories in the Commonwealth for the manufacture of butter, cheese, and condensed milk numbered 557 in 1918. These were distributed in the various States as follows :—New South Wales, 159; Victoria, 181; Queensland, 137; South Australia, 44; Western Australia, 5; Tasmania, 31.

## § 2. Milk, Butter, and Cheese.

1. **Dairy Herds.**—Following the drought year 1902 there was up to 1911 a general increase in the number of dairy cows; the returns for 1912 and the three years following, however, shew a decrease in all the States, with the exception of Western Australia. Satisfactory increases were again noted in 1916 and 1917, followed by a slight decline during 1918. In New South Wales, Victoria, South Australia, and Tasmania—as will be seen from the table given below—the proportion of dairy cattle to all cattle is high. In Queensland, the Northern Territory, and Western Australia there is a greatly preponderating number of other cattle, dairying not being firmly established in the tropical regions of the Continent. In southern Queensland, however, the industry has developed remarkably during the last decade. The figures for the Northern Territory are rough estimates only :—

CATTLE AND DAIRY CATTLE, COMMONWEALTH, 1914 TO 1918.

State.	1914.	1915.	1916.	1917.	1918.
New South Wales	2,472,631	2,400,104	2,757,713	3,148,309	3,271,782
Victoria	1,362,542	1,043,604	1,175,098	1,371,049	1,596,544
Queensland	5,455,943	4,780,893	4,785,657	5,316,558	5,786,744
South Australia	863,835	821,048	863,930	957,086	943,847
Western Australia	28,106	28,342	33,788	37,979	42,133
Tasmania	176,524	168,575	179,960	197,938	218,234
Northern Territory	414,558	483,961	428,862	638,431	570,039
Federal Territory	4,961	5,666	8,230	13,408	8,894
	870	537	719	728	598
Commonwealth	11,051,573	9,931,416	10,467,737	11,956,024	12,738,852
	1,938,834	1,684,393	1,747,351	1,904,906	1,902,036

2. **Milk.**—The annual quantity of milk produced per dairy cow varies greatly with locality and season, probably reaching as high as 500 gallons, but averaging for the whole of Australia, for all dairy cows and for all seasons, prior to 1916, considerably under 300 gallons per annum. During 1916 and 1917 the average yield exceeded that quantity, amounting to 320 and 333 gallons respectively, but, owing to adverse weather conditions it again failed to reach the 300 gallons mark in 1918, the average being only 293 gallons per cow. The best yields over a series of years appear to be in Victoria, South Australia and New South Wales, while Queensland and Tasmania in normal years are above Western Australia. In the following table the annual average yields per cow for the last five years are taken from the number of dairy cows which were in milk during any part of the year. The average given is considerably below that for cows which were yielding during the greater part of the year. The highest averages obtain in those States which have most extensively adopted scientific methods of dairying, such as systematic breeding, culling of herds, milk testing, etc.

## PRODUCTION OF MILK, COMMONWEALTH, 1914 TO 1918.

Heading.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	Fed. Terr.	C'wealth. <i>b</i>
1914—								
Dairy Cows <i>a</i> .. No.	779,512	633,298	389,375	99,530	29,393	55,305	792	1,987,205
Production 1,000 gals.	237,856	193,653	100,190	22,220	5,589	11,568	74	571,150
Aver. per cow .. gals.	305	306	257	223	190	209	93	287
1915—								
Dairy cows <i>a</i> .. No.	756,304	530,802	361,277	84,848	28,224	49,385	704	1,811,544
Production 1,000 gals.	183,935	142,115	70,094	22,185	6,059	10,300	79	434,767
Aver. per cow .. gals.	243	268	194	261	215	209	113	240
1916—								
Dairy cows <i>a</i> .. No.	742,801	469,587	339,277	82,413	31,065	50,031	628	1,715,802
Production 1,000 gals.	225,920	186,593	86,938	29,954	6,826	13,364	84	549,679
Aver. per cow .. gals.	304	397	256	363	220	267	134	320
1917—								
Dairy cows <i>a</i> .. No.	759,603	511,237	371,410	91,486	35,883	55,716	724	1,826,059
Production 1,000 gals.	247,398	199,738	105,384	32,309	7,550	14,843	131	607,353
Aver. per cow .. gals.	326	391	284	353	210	266	182	333
1918—								
Dairy Cows <i>a</i> .. No.	747,286	563,234	390,507	99,945	40,056	61,710	663	1,903,401
Production 1,000 gals.	206,925	207,102	87,580	32,243	8,544	15,796	170	558,360
Aver. per cow .. gals.	277	368	224	323	213	256	256	293

*a* Mean for the year.*b* Exclusive of Northern Territory.

3. **Butter and Cheese.**—The butter output shews, in general, a tolerably steady increase since the drought year 1902, the most marked development being in Queensland. During the past five years the annual production of butter, after allowing for seasonal fluctuations, has practically remained constant, the average for the period amounting to nearly 180,000,000 lbs., which is considerably less than the record yield of 211,573,745 lbs. in 1911.

The manufacture of cheese has been steadily increasing throughout the Commonwealth during recent years, and the production for 1917 was the highest yet recorded. Droughty conditions were responsible for the considerable decline in 1918. For the five years from 1914 to 1918 the figures are :—

## PRODUCTION OF BUTTER AND CHEESE, COMMONWEALTH, 1914 TO 1918.

State.	1914.	1915.	1916.	1917.	1918.
<b>BUTTER.</b>					
New South Wales .. ..	lbs. a84,126,893	lbs. a59,623,885	lbs. a79,355,639	lbs. a80,460,225	lbs. a65,991,738
Victoria .. ..	62,421,288	42,345,113	a59,568,771	a84,405,711	a66,240,403
Queensland .. ..	37,230,240	25,456,714	28,967,279	38,980,690	32,371,575
South Australia .. ..	6,252,961	6,317,614	a9,798,142	a10,482,895	a10,444,789
Western Australia .. ..	451,112	716,408	1,080,466	1,361,484	1,789,390
Tasmania .. ..	3,480,581	3,204,922	3,691,649	4,848,227	4,947,560
Federal Territory .. ..	a7,387	a7,658	a8,832	a7,782	a17,220
Commonwealth .. ..	193,970,412	137,672,313	182,470,778	200,497,014	181,802,675
<b>CHEESE.</b>					
New South Wales .. ..	lbs. a6,356,627	lbs. a5,979,636	lbs. a7,830,239	lbs. a7,799,676	lbs. a5,982,120
Victoria .. ..	4,395,502	3,497,278	a5,869,562	a5,285,003	a6,055,964
Queensland .. ..	7,931,869	4,383,410	8,495,825	11,142,114	8,636,700
South Australia .. ..	2,000,547	1,412,692	a2,476,081	a2,449,716	a2,412,388
Western Australia .. ..	1,675	835	665	100	200
Tasmania .. ..	554,191	555,375	736,500	754,196	702,868
Commonwealth .. ..	21,240,411	15,829,226	25,408,872	27,430,805	23,790,240

*a* For year ended 30th June of year following.

4. **Concentrated Milk.**—"Condensed" or "concentrated" milk denotes milk the bulk of which is reduced by evaporation. Small quantities of such milk were made prior to 1911, in which year the output for the Commonwealth was nearly doubled. Increasing quantities were annually manufactured till 1915, when a substantial falling off was in evidence in each of the three contributing States. During the next three years however the condensed milk industry developed considerably, particularly in Victoria, where the output for 1918 was nearly 28,500,000 lbs. greater than that for 1915. There is still a considerable import of milk, as will be seen from the tables hereunder; but in each year, with the exception of 1915-16, there was an excess of exports. No condensed or concentrated milk is made in South Australia, Western Australia, or Tasmania. In New South Wales, Victoria, and Queensland the following are the returns for the last five years:—

## CONDENSED AND CONCENTRATED MILK MADE, 1914 TO 1918.

Year.	N.S.W.	Victoria.	Queensland.	Commonwealth.
	lbs.	lbs.	lbs.	lbs.
1914 .. .. .	5,991,458 <i>a</i>	19,093,750	6,967,486	32,052,694
1915 .. .. .	4,918,064 <i>a</i>	16,690,426	5,368,510	26,977,000
1916 .. .. .	5,829,990 <i>a</i>	33,280,635 <i>a</i>	6,584,272	45,694,897
1917 .. .. .	8,973,916 <i>a</i>	37,805,070 <i>a</i>	9,409,059	56,188,045
1918 .. .. .	11,192,325 <i>a</i>	45,251,710 <i>a</i>	6,845,610	63,289,645

*a* For year ended 30th June of year following.

5. **Oversea Trade in Milk, Butter, and Cheese.**—The following tables give the imports, exports, and net exports or imports of butter, cheese, and milk. In each of the five years exports of butter exceeded imports, but there was a net import of cheese and milk in 1915-16.

## IMPORTS, EXPORTS, AND NET EXPORTS OF BUTTER, CHEESE AND MILK, COMMONWEALTH, 1914-15 TO 1918-19.

Products.	1914-15.	1915-16.	1916-17.	1917-18.	1918-19.
IMPORTS.					
Butter .. .. . lbs.	2,378,893	4,577,332	517,091	8,610	16,439
" .. .. . £	189,557	349,110	38,749	592	1,087
Cheese .. .. . lbs.	230,348	1,532,336	86,035	45,976	13,903
" .. .. . £	10,554	66,936	5,536	2,940	1,098
Milk—concentrated and preserved <i>a</i> lbs.	2,596,964	4,191,493	1,607,445	772,987	575,934
" .. .. . £	90,146	152,051	63,713	42,458	30,802
EXPORTS.					
Butter .. .. . lbs.	54,105,777	18,036,317	75,361,869	72,277,526	41,114,764
" .. .. . £	2,664,975	1,117,629	5,338,848	4,904,417	3,193,086
Cheese .. .. . lbs.	2,547,857	159,003	10,586,456	8,427,098	2,303,308
" .. .. . £	72,828	9,347	420,600	350,819	118,855
Milk—concentrated and preserved <i>a</i> lbs.	5,066,169	939,660	16,453,839	25,690,663	27,962,938
" .. .. . £	126,556	31,340	553,993	1,029,424	1,092,911
NET EXPORTS. <i>b</i>					
Butter .. .. . lbs.	51,726,884	13,458,985	74,844,778	72,268,916	41,098,325
" .. .. . £	2,484,418	768,519	5,300,099	4,903,825	3,191,999
Cheese .. .. . lbs.	2,317,509	-1,373,333	10,500,421	8,381,122	2,289,405
" .. .. . £	62,274	-57,589	415,064	347,879	117,757
Milk—concentrated and preserved <i>a</i> lbs.	2,469,205	-3,251,833	14,846,394	24,917,676	27,387,004
" .. .. . £	36,410	-120,711	490,280	986,966	1,062,109

Note.—The minus sign (—) signifies net imports.

*a* See definition above. *b* Excess of exports over imports.

6. **Local Consumption of Butter and Cheese.**—The total production of butter and cheese, with the net export or import for the corresponding period subtracted or added, gives approximately the quantity available for consumption in the Commonwealth. In the period considered hereunder, with the exception of the year 1915, the local supply of cheese was adequate:—

#### BUTTER AND CHEESE FOR LOCAL CONSUMPTION, 1914 TO 1918.

Products.	1914.	1915.	1916.	1917.	1918.
	lbs.	lbs.	lbs.	lbs.	lbs.
Butter .. Total ..	137,820,074	124,213,328	107,628,000	128,228,098	140,704,350
„ .. Per head of population ..	27.89	25.19	22.08	25.98	27.97
Cheese .. Total ..	19,194,818	17,202,559	14,908,451	19,049,683	21,500,835
„ .. Per head of population ..	3.88	3.49	3.06	3.86	4.27

The quantity available for consumption in 1918 averaged 28 lbs. of butter and about 4½ lbs. of cheese per head of population, an amount probably unsurpassed anywhere. The consumption of butter and cheese in the United Kingdom in normal times is given as about 20 lbs. per head per annum.

### § 3. Pigs, Bacon, etc.

1. **Pigs.**—Attention has been paid, both privately and by the various State Governments, to improving the breed, and consequently the market value of pigs. The number of pigs in the Commonwealth from 1914 to 1918 is shewn below:—

#### NUMBER OF PIGS, COMMONWEALTH, 1914 TO 1918.

State.	1914.	1915.	1916.	1917.	1918.
New South Wales <i>b</i> ..	286,478	280,869	359,504	395,639	294,338
Victoria <i>a</i> ..	243,196	192,002	254,436	323,159	267,819
Queensland ..	166,638	117,787	129,733	172,699	140,966
South Australia ..	69,893	66,237	118,542 <i>b</i>	110,353 <i>b</i>	79,078 <i>b</i>
Western Australia ..	59,816	58,231	90,756	111,844	85,863
Tasmania <i>a</i> ..	34,960	37,778	53,033	54,653	44,328
Northern Territory ..	1,240	500	500	500	1,200
Federal Territory <i>b</i> ..	226	289	259	518	310
Commonwealth ..	862,447	753,693	1,006,763	1,169,365	913,902

*a* As on 1st March of year following.

*b* As on 30th June of year following.

An examination of the returns of pigs shews remarkable fluctuations. There was a heavy falling off in 1915, followed by substantial increases during 1916 and 1917 in which latter year the number of pigs was the highest ever recorded in Australia. The figures for 1918 reveal considerable decreases in practically all the States, the number of pigs in the Commonwealth being reduced by 255,463. The number of pigs per head of population, and the number per square mile, will be found in the tables of live stock, pages 318 and 319.

2. **Bacon and Ham.**—During the past five years, the production of bacon and ham has increased in all the States, with the exception of Tasmania and the Federal Territory, the Commonwealth total of 66,171,428 lbs. for 1918 being the greatest quantity ever made in Australia.

PRODUCTION OF BACON AND HAM, COMMONWEALTH, 1914 TO 1918.

State.	1914.	1915.	1916.	1917.	1918.
	lbs.	lbs.	lbs.	lbs.	lbs.
New South Wales ..	a15,323,528	a13,569,022	a15,779,369	a18,544,053	a16,801,370
Victoria ..	18,774,497	13,659,974	a18,115,028	a21,311,876	a22,202,605
Queensland ..	13,339,131	12,363,939	10,427,649	14,791,540	16,476,480
South Australia ..	3,409,372	2,432,485	a3,993,137	a6,591,064	a6,567,394
Western Australia ..	b112,421	b202,824	c2,058,027	c2,362,604	c2,813,650
Tasmania ..	1,612,433	895,020	992,779	1,298,819	1,309,633
Federal Territory ..	a3,520	a7,619	a8,787	a11,091	a296
Commonwealth ..	52,574,902	43,130,883	51,374,776	64,911,047	66,171,428

a For year ended 30th June of year following. b Made on farms only. c A portion only from pigs slaughtered in the State, balance imported and subsequently cured.

3. Oversea Trade in Pig Products.—The oversea trade in pigs and pig products is shewn in the following tables :—

IMPORTS, EXPORTS, AND NET EXPORTS OF BACON AND HAM, FROZEN PORK, PIGS, AND LARD, COMMONWEALTH, 1914-15 TO 1918-19.

Particulars.	1914-15.	1915-16.	1916-17.	1917-18.	1918-19.
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BACON AND HAM.

Imports ..	lbs.	107,520	425,277	90,626	5,097	42,624
" ..	£	5,412	20,643	4,787	353	2,169
Exports ..	lbs.	1,220,426	590,788	1,006,431	5,068,952	5,637,565
" ..	£	58,900	35,278	60,414	321,635	378,723
Net Exports ..	lbs.	1,112,906	165,511	915,805	5,063,855	5,594,941
" ..	£	53,488	14,635	55,627	321,282	376,554

FROZEN PORK.

Imports ..	lbs.	74,337	862,768	73,294	121	..
" ..	£	2,601	32,249	2,680	3	..
Exports ..	lbs.	48,791	2,783	32,681	262,503	839,557
" ..	£	1,400	108	1,341	11,915	40,325
Net Exports ..	lbs.	- 25,546	- 859,985	- 40,613	262,382	839,557
" ..	£	- 1,201	- 32,141	- 1,339	11,912	40,325

PIGS.

Imports ..	No.	52	12	6	20	4
" ..	£	535	63	23	438	102
Exports ..	No.	168	64	19	36	60
" ..	£	511	582	146	209	479
Net Exports ..	No.	116	52	13	16	56
" ..	£	- 24	519	123	- 229	377

Note.—The minus sign (—) signifies net imports.



IMPORTS, EXPORTS, AND NET EXPORTS OF BACON AND HAM, FROZEN PORK, PIGS, AND LARD, COMMONWEALTH, 1914-15 TO 1918-19—*continued.*

Particulars.	1914-15.	1915-16.	1916-17.	1917-18.	1918-19.
<b>LARD.</b>					
Imports.. .. lbs.	268,043	3,873,248	408,552	7,208	29,575
" .. .. £	7,433	108,985	12,225	380	1,475
Exports.. .. lbs.	1,491,149	342,593	1,796,821	1,466,703	6,016,825
" .. .. £	31,542	13,736	59,205	56,353	205,694
Net Exports .. lbs.	1,223,106	- 3,530,655	1,388,269	1,459,495	5,987,250
" .. .. £	24,109	- 95,249	46,980	55,973	204,219

Note.—The minus sign (—) signifies net imports.

From 1901 to 1903 there was a considerable net import of bacon and ham, but for the following years, up to 1918-19, with the exception of 1915-16 when the figure was small, there was a large net export. The local production of pork and lard for each of the years 1911 to 1913 was more than sufficient for the local demand; during 1914-15, 1915-16, and 1916-17, however, the imports of frozen pork exceeded the exports by 25,546 lbs., 859,985 lbs., and 40,613 lbs. respectively, while in 1915-16 the net import of lard amounted to 3,530,655 lbs.

The net exports of pig products have fluctuated considerably during the past five years. In 1914-15 the net exports amounted to 2,310,466 lbs. The 1915-16 figures shewed the heavy net import of 4,225,129 lbs., while during each of the next three years the net exports amounted to 2,463,461, 6,785,732, and 12,421,748 lbs. respectively.

4. **Local Consumption of Bacon and Ham.**—From 1904 to 1918 the production of bacon and ham was sufficient to meet the local demand, and there was a surplus for export.

**BACON AND HAM AVAILABLE FOR LOCAL CONSUMPTION, 1914 TO 1918.**

Particulars.	1914.	1915.	1916.	1917.	1918.
	lbs.	lbs.	lbs.	lbs.	lbs.
Total .. ..	51,181,876	42,965,372	50,458,971	59,847,192	60,576,487
Per head of population ..	10.36	8.71	10.35	12.13	12.04

5. **Total Dairy Production.**—The total dairy production of the Commonwealth in 1918 is shewn below:—

**TOTAL DAIRY PRODUCTION, COMMONWEALTH, 1918.**

Where Produced.	N.S.W. <i>a</i>	Victoria. <i>a</i>	Q'land.	S. Aust. <i>a</i>	W. Aust.	Tasmania.	Fed. Terr. <i>a</i>	C'wealth.
<b>MILK.</b>								
Used for—	gallons.	gallons.	gallons.	gallons.	gallons.	gallons.	gallons.	gallons.
Butter ..	150,764,533	152,560,290	68,502,150	23,280,367	4,301,443	11,319,787	43,460	410,772,030
Cheese ..	6,189,514	5,997,700	8,545,705	2,363,364	450	722,368	..	23,819,101
Condensing and concentrating ..	3,110,700	11,276,120	1,222,375	..	..	..	..	15,609,195
Other purposes ..	46,860,382	37,267,600	9,309,868	6,599,032	4,241,902	3,754,005	126,411	6108,169,200
Total ..	206,925,129	207,101,710	87,580,098	32,242,763	8,543,795	15,796,160	169,871	6558,369,526

**BUTTER.**

	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.
In Factories On Dairy and other Farms ..	61,943,210	61,123,670	30,669,112	6,875,351	888,741	3,739,688	..
..	4,048,528	5,116,733	1,702,463	3,569,438	900,649	1,207,872	17,220
Total ..	65,991,738	66,240,403	32,371,575	10,444,789	1,789,390	4,947,560	17,220
							181,802,675

*a* For year ended 30th June, 1918.    *b* Including 10,000 gallons, Northern Territory.

TOTAL DAIRY PRODUCTION, COMMONWEALTH, 1918—*continued*.

Where Produced.	N.S.W. <i>a</i>	Victoria. <i>a</i>	Q'land.	S. Aust. <i>a</i>	W. Aust.	Tasmania	F. Ter. <i>a</i>	C'wealth.
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## CHEESE.

	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.
In Factories ..	4,560,294	5,024,450	8,573,270	2,411,277	..	426,108	..	20,995,399
On Dairy & other Farms ..	1,421,826	1,031,514	63,430	1,111	200	276,760	..	2,794,841
Total ..	5,982,120	6,055,964	8,636,700	2,412,388	200	702,868	..	23,790,240

## CONDENSED OR CONCENTRATED MILK.

	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.
In Factories ..	11,192,325	45,251,710	6,845,610	..	..	..	..	63,289,645

## BACON AND HAM.

	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.
In Factories ..	13,929,061	18,343,400	15,703,072	5,275,514	62,335,012	909,403	..	56,495,462
On Dairy & other Farms ..	2,872,309	3,859,205	773,408	1,291,880	478,638	400,230	296	9,675,966
Total ..	16,801,370	22,202,605	16,476,480	6,567,394	2,813,650	1,309,633	296	66,171,428

*a* For year ended 30th June, 1918.      *b* A portion only from pigs slaughtered in the State, the balance being imported and subsequently cured.

## § 4. Poultry Farming.

1. *Development of the Industry.*—Poultry stocks are largely maintained by farmers, and production therefrom furnishes a considerable addition to the annual agricultural or dairying returns. During recent years, however, poultry-keeping has assumed an independent position among rural industries, while it is also carried on in conjunction with pig farming. Special poultry farms have been instituted for scientific breeding, and poultry experts engaged by the State Governments give lectures and instruction. Poultry for consumption is extensively reared, and the egg-producing qualities of the birds have also been greatly improved by careful breeding. Co-operative egg-collecting circles have been formed in some districts; eggs are also delivered with the milk and cream to the local butter factories, and thence forwarded to market.

2. *Poultry Products.*—There is some difficulty in obtaining correct figures for the yield of poultry products. The following values are returned:—

## ESTIMATED VALUE OF POULTRY AND EGGS, COMMONWEALTH, 1914-15 TO 1918-19.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania, <i>a</i>	C'wealth.
	£	£	£	£	£	£	£
1914-15 ..	1,598,180	1,743,860	234,994	524,347	204,591	230,000	4,535,972
1915-16 ..	2,146,000	1,747,000	107,370	518,808	184,360	200,000	4,903,538
1916-17 ..	1,908,000	1,714,770	324,958	618,441	201,284	250,000	5,017,453
1917-18 ..	2,082,000	2,160,650	295,882	669,105	188,982	250,000	5,646,619
1918-19 ..	2,501,000	2,738,620	319,602	690,539	189,471	300,000	6,739,232

*a* Estimated.

3. **Oversea Trade in Poultry Products.**—The imports and exports of eggs shew a considerable balance on the side of imports in each of the years 1914-15 to 1916-17. During the next two years, however, the exports exceeded the imports, the value of the excess amounting to £1,028 and £577 respectively.

The number of eggs imported into the Commonwealth since 1914-15 amounted to 760,030 dozen. Of this number China has supplied 621,281 dozen; Japan, 99,372 dozen; United States of America, 19,504 dozen; Straits Settlements, 12,112 dozen; and United Kingdom, 3,195 dozen.

There is at present only a small oversea trade in either live or frozen poultry, the values of the net exports during 1918-19 being £353 and £4,933 respectively.

### IMPORTS, EXPORTS, AND NET EXPORTS OF EGGS AND OF LIVE AND FROZEN POULTRY, COMMONWEALTH, 1914-15 TO 1918-19.

Particulars.		1914-15.	1915-16.	1916-17.	1917-18.	1918-19.
Eggs.						
Imports ..	doz.	63,065	649,399	35,762	9,171	2,633
" ..	£	2,431	27,791	1,485	434	169
Exports ..	doz.	12,119	3,541	8,651	16,136	8,409
" ..	£	735	262	585	1,462	746
Net Exports ..	doz.	— 50,946	— 645,858	— 27,111	6,965	5,776
" ..	£	— 1,696	— 27,529	— 900	1,028	577
EGG CONTENTS.						
Imports ..	lbs.	9,665	37,421	20,452	8,669	344
" ..	£	1,138	4,486	3,480	1,708	94
Exports ..	lbs.	a	a	a	a	a
" ..	£	31	481	14,259	1,508	1,823
Net Exports ..	lbs.	a	a	a	a	a
" ..	£	— 1,107	— 4,005	10,779	— 200	1,729
LIVE POULTRY.						
Imports ..	No.	1,262	931	480	753	693
" ..	£	1,857	1,107	1,127	383	878
Exports ..	No.	1,164	1,959	3,105	988	1,699
" ..	£	603	781	3,523	823	1,231
Net Exports ..	No.	— 98	1,028	2,625	235	1,006
" ..	£	— 1,254	— 326	2,396	440	353
FROZEN POULTRY.						
Imports ..	lbs.	1,193	6,643	3,096	931	3,752
" ..	£	53	293	137	39	208
Exports ..	pair	14,765	2,155	5,400	6,541	8,298
" ..	£	12,496	1,050	3,904	3,549	5,141
Net Exports ..	a	a	a	a	a	a
" ..	£	12,443	757	3,767	3,510	4,933

Note.—The minus sign (—) signifies net imports. a Quantity not available.

### § 5. Bee Farming.

1. **The Bee-farming Industry.**—Bee farming, like poultry farming, is ordinarily an adjunct to agricultural or dairying industries. The returns of honey from productive hives during 1918-19 gave an average of 49 lbs. per hive, while the average quantity of wax was  $\frac{3}{4}$  lb. per hive.

2. Production of Honey and Beeswax.—The particulars of honey and beeswax production are as given in the following table :—

**NUMBER OF HIVES AND PRODUCTION OF HONEY AND BEESWAX,  
SEASON 1918-19.**

State.	Bee Hives.			Honey Produced.		Beeswax Produced.	
	Pro- ductive.	Unpro- ductive.	Total.	Quantity.	Value.	Quantity.	Value.
	No.	No.	No.	lbs.	£	lbs.	£
New South Wales ..	27,625	16,227	43,852	879,356	19,694	19,231	1,843
Victoria ..	29,952	22,830	52,782	1,644,447	41,111	25,286	2,634
Queensland ..	10,061	5,223	15,284	410,182	6,547	9,099	741
South Australia ..	24,176	3,293	27,469	1,683,725	33,324	14,653	1,389
Western Australia ..	7,548	1,578	9,126	415,616	6,073	6,621	465
Tasmania ..	7,100	2,119	9,219	151,605	3,790	3,087	231
Federal Territory ..	4	3	7	420	9	..	..
Commonwealth ..	106,466	51,273	157,739	5,185,351	110,548	77,977	7,303

**QUANTITY OF HONEY AND BEESWAX PRODUCED, 1914-15 TO 1918-19.**

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	Fed. Ter.	C'wealth.
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**HONEY.**

	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.
1914-15	1,138,925	700,672	542,679	1,033,556	344,054	37,858	4,680	3,802,424
1915-16	1,585,634	933,933	460,599	358,469	122,125	56,468	4,750	3,521,978
1916-17	1,660,518	1,547,023	352,099	961,723	184,910	84,121	4,780	4,795,174
1917-18	3,863,430	4,974,888	771,015	1,279,433	353,019	124,482	12,081	11,383,348
1918-19	879,356	1,644,447	410,182	1,683,725	415,616	151,605	420	5,185,351

**BEESWAX.**

	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.
1914-15	26,483	20,017	10,859	14,365	5,471	1,354	193	78,742
1915-16	29,874	18,707	8,890	7,410	4,584	1,397	45	70,907
1916-17	29,387	22,131	7,042	9,793	3,985	2,059	47	74,444
1917-18	53,314	64,980	11,519	12,942	5,459	2,857	28	151,099
1918-19	19,231	25,286	9,099	14,653	6,621	3,087	..	77,977

The quantity of honey and beeswax produced from year to year naturally varies according to the conditions of the seasons. During the last five years New South Wales has produced 9,127,863 lbs. of honey and 158,289 lbs. of beeswax, while the Victorian figures amounted to 9,800,963 lbs. and 151,121 lbs. respectively for honey and beeswax. These two States together accounted for 66 per cent. of the total production of honey, and 68 per cent. of that of beeswax. The States following next in order of importance were South Australia, Queensland, and Western Australia.

**3. Oversea Trade in Bee Products.**—In normal years honey is produced in the Commonwealth in sufficient quantities to supply all local requirements, and a considerable quantity is sent oversea. During the past five years the value of the exports amounted to £341,070, or an annual average of £68,214. It is believed that this export could be considerably increased. Australian honey exhibited at the Franco-British Exhibition in London in 1908 obtained the highest award. The more general use of frame hives in recent years has affected the production of wax, and as a result the quantity imported has exceeded that exported during each of the past five years.

**IMPORTS, EXPORTS, AND NET EXPORTS OF HONEY AND BEESWAX,  
COMMONWEALTH, 1914-15 TO 1918-19.**

Particulars.	1914-15.	1915-16.	1916-17.	1917-18.	1918-19.
<b>HONEY.</b>					
Imports .. .. lbs.	1,790	59,324	491	382	150
" .. .. £	51	692	18	12	4
Exports .. .. lbs.	151,405	25,162	333,407	3,199,691	8,747,760
" .. .. £	2,589	1,045	9,526	79,225	248,685
Net Exports .. .. lbs.	149,615	- 34,162	332,916	3,199,309	8,747,610
" .. .. £	2,538	353	9,508	79,213	248,681
<b>BEESWAX.</b>					
Imports .. .. lbs.	13,048	38,807	19,195	54,686	36,136
" .. .. £	1,013	2,868	1,544	4,842	3,493
Exports .. .. lbs.	2,173	3,506	7,234	1,471	7,269
" .. .. £	154	234	548	134	598
Net Exports .. .. lbs.	- 10,875	- 35,301	- 11,961	- 53,215	- 28,867
" .. .. £	- 859	- 2,634	- 996	- 4,708	- 2,895

Note.—The minus sign (—) signifies net imports.

Of the exports of honey in 1918-19 the United Kingdom took 7,164,394 lbs., while 630,793 lbs. were sent to Canada, and 308,923 lbs. to New Zealand.

**§ 6. Summary of Australian Farmyard and Dairy Products.**

The value of the principal farmyard and dairy products raised in the Commonwealth in 1918 was as follows:—

**VALUE OF THE PRINCIPAL FARMYARD AND DAIRY PRODUCTS RAISED  
IN THE COMMONWEALTH DURING THE YEAR 1918.**

Produce.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	N.T.	Fed. Ter.	C'wealth.
	£	£	£	£	£	£	£	£	£
Milk, consumed as such .. ..	2,303,969	1,832,324	457,735	324,452	208,560	184,572	492	6,215	5,318,319
Butter .. ..	5,043,618	4,867,846	2,320,117	772,100	133,565	328,354	..	1,316	13,466,916
Cheese .. ..	277,205	256,789	347,209	97,068	8	24,446	..	..	1,002,725
Condensed and con- centrated milk	289,374	1,301,920	194,844	..	..	..	..	..	1,786,138
Bacon and ham ..	878,052	1,172,501	941,896	279,038	124,560	67,679	..	15	3,463,741
Poultry and eggs	2,501,000	2,738,620	319,602	690,539	189,471	300,000	..	..	6,739,232
Honey and wax	21,537	43,745	7,288	34,713	6,538	4,021	..	9	117,851

### § 7. Summary of Australian Farmyard and Dairy Products Exported, 1914-15 to 1918-19.

The quantities and values of Australian farmyard and dairy products exported from the Commonwealth during each of the last five years are shown below:—

#### QUANTITIES OF AUSTRALIAN FARMYARD AND DAIRY PRODUCTS EXPORTED FROM THE COMMONWEALTH DURING EACH OF THE YEARS 1914-15 TO 1918-19.

Products.	1914-15.	1915-16.	1916-17.	1917-18.	1918-19.
Beeswax .. .. . lbs.	2,173	3,506	7,234	1,450	7,269
Butter .. .. . "	54,021,523	16,722,010	74,878,634	72,277,526	41,114,764
Cheese .. .. . "	2,542,478	123,229	10,569,279	8,426,641	2,303,308
Egg albumen and yolk .. .. . "	"	"	"	"	"
Eggs .. .. . doz.	12,119	3,469	8,386	15,922	8,409
Feathers, undressed .. .. . "	"	"	"	"	"
Honey .. .. . lbs.	151,381	25,162	333,407	3,199,691	8,747,760
Lard .. .. . "	1,487,536	342,569	1,681,918	1,465,352	6,016,825
Meats—					
Bacon and ham .. .. . "	1,219,103	556,251	1,005,171	5,067,946	5,637,565
Frozen poultry .. .. . pair	14,765	2,131	5,400	6,541	8,298
Frozen pork .. .. . lbs.	48,791	2,783	32,681	262,503	839,557
Milk, concentrated and preserved .. .. . "	4,907,395	708,643	15,777,333	25,581,708	27,962,938
Pigs, living .. .. . No.	168	64	19	36	60
Poultry, living .. .. . "	1,154	1,939	3,105	983	1,699

a Quantity not available.

#### VALUE OF AUSTRALIAN FARMYARD AND DAIRY PRODUCTS EXPORTED FROM THE COMMONWEALTH DURING THE YEARS 1914-15 TO 1918-19.

Products.	1914-15.	1915-16.	1916-17.	1917-18.	1918-19.
	£	£	£	£	£
Beeswax .. .. . "	154	234	548	133	598
Butter .. .. . "	2,659,030	1,022,742	5,301,273	4,904,417	3,193,086
Cheese .. .. . "	72,527	7,915	419,628	350,791	118,855
Egg albumen and yolk .. .. . "	"	4	8,327	854	1,823
Eggs .. .. . "	735	259	573	1,450	746
Feathers, undressed .. .. . "	607	45	"	"	61
Honey .. .. . "	2,588	1,045	9,526	79,225	248,685
Lard .. .. . "	31,433	13,735	56,126	56,292	205,694
Meats—					
Bacon and ham .. .. . "	58,823	33,583	60,358	321,573	378,723
Frozen poultry .. .. . "	12,496	1,033	3,904	3,549	5,141
Frozen pork .. .. . "	1,400	108	1,341	11,915	40,325
Milk, concentrated and preserved .. .. . "	122,613	24,589	531,976	1,025,895	1,092,911
Pigs, living .. .. . "	511	582	146	209	479
Poultry, living .. .. . "	591	766	3,523	819	1,231
Total .. .. . "	2,963,508	1,106,640	6,397,249	6,757,122	5,288,358

### § 8. British Imports of Dairy Products.

1. Value of Britain's Imports of Dairy Products.—In the following table are given the quantities and values of the principal dairy products imported into the United Kingdom during the years 1914 to 1918:—

#### PRINCIPAL DAIRY PRODUCTS IMPORTED INTO THE UNITED KINGDOM, 1914 TO 1918.

Products.	1914.	1915.	1916.	1917.	1918.
Butter .. .. . cwt.	3,984,204	3,853,855	2,175,415	1,806,516	1,578,658
" .. .. . £	24,014,276	27,022,745	18,964,002	18,895,707	19,769,738
Cheese .. .. . cwt.	2,433,864	2,726,536	2,604,124	2,946,066	2,357,103
" .. .. . £	7,966,162	11,107,100	12,945,765	19,462,390	15,905,858
Milk—Concentrated and preserved .. .. . cwt.	1,281,341	1,661,321	1,752,292	1,700,511	2,707,761
" .. .. . £	2,270,945	3,551,592	5,120,879	6,623,066	13,472,544
Bacon and ham .. .. . cwt.	5,936,910	8,003,835	8,990,791	7,747,740	12,028,505
" .. .. . £	21,288,646	30,721,776	41,223,147	48,769,759	103,410,221
Pork (a) .. .. . cwt.	230,605	238,459	334,284	184,177	111,345
" .. .. . £	356,091	650,783	1,301,209	899,346	763,484

(a) Frozen, chilled, and salted.

2. **Butter.**—Australia has for many years past contributed large quantities of the butter annually imported into the United Kingdom. During the past five years the value of the imports from Australia has considerably increased, amounting in 1918 to £6,722,621, which was the largest sum paid by Great Britain to any country for butter during the year.

#### IMPORTS OF BUTTER INTO THE UNITED KINGDOM, 1918.

Country from which Imported.	Quantity.	Value.	Country from which Imported.	Quantity.	Value.
	Cwt.	£		Cwt.	£
Australia ..	540,072	6,722,621	France ..	4,770	73,989
New Zealand ..	372,572	4,599,166	British India ..	4,935	51,485
Argentine Republic	313,143	3,797,050	Foreign Countries		
United States ..	196,593	2,436,265	n.e.i. ..	1,238	13,830
Canada ..	61,971	774,150	British Possessions		
Denmark ..	40,327	771,291	n.e.i. ..	4	25
Union of S. Africa	33,148	365,549			
Netherlands ..	9,885	164,317	Total ..	1,578,658	19,769,738

The average price of the best quality Australian butter in London during the past ten years is shewn in the following table:—

#### AVERAGE PRICE OF AUSTRALIAN BUTTER IN LONDON, 1910 TO 1919.

Year.	Average Top Price per Cwt.		Year.	Average Top Price per Cwt.	
	s.	d.		s.	d.
1910	112	0	1915	144	6
1911	114	0	1916	169	6
1912	119	0	1917	(a) 206	0
1913	114	6	1918	(b) 252	0
1914	119	0	1919	(b) 252	0

(a) Proclaimed price.

(b) Flat rate for all imported butter.

The British Government under contract purchased the surplus output of Australian butter during the period from 1st July, 1918, to 31st July, 1920. The price paid was 175s. per cwt. for butter scoring 90 points, a shilling per cwt. being added or deducted as the grading score exceeded or came below that standard. On the 1st August, 1920, this contract was extended for a further period of twelve months, the price of butter having been increased to 240s. per cwt., subsequently raised to 272s., the grading price being likewise increased to 1s. 6d. per cwt.

3. **Cheese.**—The value of the United Kingdom cheese imports in 1918 was £15,905,858, of which seven and a half million pounds' worth was received from Canada, and nearly four million pounds' worth from New Zealand. Small experimental shipments from Australia were made in 1908 and following years, fair prices being realised. The value of the imports from Australia has increased from £57,584 in 1914 to £285,525 in 1918.

4. **Bacon and Ham.**—Of a total import of bacon and ham valued in 1918 at £103,410,221, the United Kingdom received imports to the value of £86,439,948 from the United States, and £15,884,698 from Canada. The import from Australia was small, experimental shipments only having been made during recent years.

5. **Pork.**—The total value of the United Kingdom imports of pork (including refrigerated, frozen, and salted) was £763,484 in 1918. There was no import from Australia, the chief supplying country being the United States, £492,382.

6. **Other Products.**—There is practically no United Kingdom import from Australia of beeswax, poultry, game, lard, or eggs, but honey to the value of £201,868, and frozen rabbits to the value of £1,158,692 were received from the Commonwealth in 1918.

### § 9. Graphical Representation of Dairy Production.

Two graphs shewing respectively the development in dairy production and in the exports of butter will be found on page 346.

## SECTION X.

## FORESTS, FORESTRY, AND FORESTAL PRODUCTS.

## § 1. The Forests of Australia.

1. *Extent of Forests.*—Although no definite survey of forest lands has been made on a uniform basis for the different States of Australia, the following table gives the results of careful estimates made for each State :—

## FOREST RESERVES AND FOREST AREAS, STATE AND COMMONWEALTH, 1918.

State.	Area of Forest Reserves.		Total Forest Area.	Percentage of State Area.		Percentage of Commonwealth Area.	
	Permanent. (a)	Temporary. (b)		Specially Reserved.	Total Forest.	Specially Reserved.	Total Forest.
	Acres.	Acres.	Acres.	%	%	%	%
c New South Wales	5,043,800	1,846,927	11,000,000	3.48	5.55	0.36	0.57
Victoria ..	4,149,035	125,500(f)	11,800,000	7.60	20.98	0.22	0.62
Queensland ..	1,122,129	2,671,139	40,000,000	0.88	9.32	0.20	2.10
South Australia	159,992	18,700(f)	3,800,000	0.07	1.56	0.01	0.20
Western Australia	10,008	1,612,000(f)	15,907,000(d)	0.26	2.55	0.09	0.84
Tasmania ..	..	1,028,000	10,000,000	6.13	59.60	0.05	0.53
(e) Commonwealth	10,484,964	7,302,266	92,507,000	..	..	0.93	4.86

(a) Reservations in perpetuity. (b) Reservations which may be cancelled at any time.  
(c) Inclusive of Federal Area. (d) S.W. Division only. (e) Exclusive of Northern Territory and portion of Western Australia. (f) Figures uncertain.

In the case of Victoria, the figures for area of permanent reserves included 3,381,905 acres reducible only by Act of Parliament, and 746,401 acres by resolution of both Houses of Parliament.

The actual area of wooded land is probably in all cases much greater than that shewn above. For example, that of Western Australia is estimated at 97,900,000 acres; Queensland has probably 143,000,000 acres; and Victoria has a considerable extent of "Mallee" country not included in the above estimate. The basis of estimation for each State in any case cannot be regarded as quite identical. Considerable areas not included as forest lands possess timber of local value.

The absolute and relative forest areas of Australia and other countries are shewn in the table on the next page.



## RELATIVE AREAS OF FOREST LANDS, AUSTRALIA AND OTHER COUNTRIES.(a)

Country.	Total Wooded Area.	Per- centage of Total Area.	Country.	Total Wooded Area.	Per- centage of Total Area.
	Sq. Miles.	%		Sq. Miles.	%
Australia .. ..	144,542	4.86	Rumania .. ..	10,836	21.36
New Zealand ..	26,562	25.63	Sweden .. ..	90,241	52.20
United Kingdom ..	4,740	3.82	Norway .. ..	26,685	21.50
France .. ..	38,620	18.65	Russia in Europe ..	859,375	39.00
Algeria .. ..	10,249	2.98	United States ..	860,000	24.08
Germany .. ..	54,015	25.90	Canada .. ..	625,000	17.34
Switzerland ..	3,290	20.60	Cape of Good Hope ..	537	0.19
Italy .. ..	17,613	15.92	British India ..	249,867	22.85
Austria .. ..	37,700	31.66	Japan .. ..	71,890	48.33
Hungary .. ..	34,750	29.30			

(a) Areas as before the war.

2. **Distribution of Timber.**—The characteristics of the forest areas are given in some detail for each State in Official Year Book No. 6, pp. 446–9. The more conspicuous timber regions of Australia as a whole are the eastern and southern portions, including Tasmania, and, again, the south-western portion northwards and eastwards from Cape Leeuwin. In regard to distribution, on the eastern side of the continent the largest timber is found on the crests and coastal slopes of the mountain ranges, but in the south-west, in addition to the vegetation between mountains and sea, a large area of forest stretches inland from the coastal ranges. The hills encircling Adelaide and Yorke and Eyre Peninsulas also bear good forest. The Kimberley district is timbered, and in the Northern Territory and round the shores of the Gulf of Carpentaria there are considerable forest areas. In the coastal regions of parts of West and North-West Australia, and along the shores of the Great Australian Bight and Encounter Bay, there is little forest. The areas in the centre of the continent are thinly timbered.

Special articles relating to Australian Eucalyptus timbers will be found in Official Year Book No. 10, pp. 85–98.

## § 2. Forestry.

1. **Objects.**—Economic forestry, aiming at the conservation of forestal wealth by safeguarding forests against inconsiderate destruction, and by the suitable re-forestation of denuded areas, is essential to the preservation of industries dependent upon an adequate supply of timber, and to the perpetuation of a necessary form of national wealth. Though in Australia large areas of virgin forests still remain, the inroads made by timber getters, by agriculturists, and by pastoralists—who have destroyed large areas by “ring-barking”—are considerable, and it is not unlikely that climatological changes are caused thereby. It is stated that beneficial consequences follow on the planting of trees on denuded lands, or along eroding coasts, and that a forest covering beneficially regulates the effects of rainfall.

Successful planting of exotics in various parts of the Commonwealth has demonstrated that the Australian climate is suitable for the cultivation of a large number of the most valuable and beautiful of the world's timber trees.

2. **Forestry Departments.**—Each State of the Commonwealth has organised a separate forestry department or branch of service specially charged with forestal matters. Forest improvement work is carried on, areas of young forest being cleaned up by the felling and removal of stunted, diseased and suppressed growth, the burning of debris and the making of fire breaks. Provision is made for effective patrols in forest districts to check the ravages caused by fires, often due, it is believed, to carelessness.

3. **Sylvicultural Nurseries and Plantations.**—Recognition of the necessity for systematic sylviculture has led to the creation in most of the States of a number of sylvicultural nurseries and plantations. The locality of these establishments, together with a brief statement of the nature of their activities, is given in previous issues of the Year Book. (Reference may be made to Official Year Book No. 6, pp. 451-3.) Details regarding forest nurseries and plantations are as follows :—

#### FOREST NURSERIES AND PLANTATIONS, 1918.

Particulars.	New South Wales. (a)	Victoria.	Q'land.	South Australia.	Western Australia.	Tasmania.	Commonwealth.
State Forest Nurseries—							
Number .. ..	1	6	5	7	1	1	21
Area .. (acres)	126	40	3	7	17	20	213
Plantations—							
Number .. ..	(b)	23	24	..	2	..	49(c)
Area .. ..	(b)	21,740	305	..	624	..	22,669(c)
Number of persons employed in Forestry Departments—							
Administrative .. ..	41	8	35	1	1	1	87
Professional .. ..	12	5	2	1	1	2	23
General .. ..	139	110	39	125	47	7	467

(a) Year ended 30th June.

(b) Not available.

(c) Exclusive of New South Wales.

4. **Revenue and Expenditure.**—The revenue and expenditure of the State Forestry Departments from 1914-15 to 1918-19 are given below :—

#### REVENUE OF STATE FORESTRY DEPARTMENTS, 1914-15 TO 1918-19.

State.	1914-15.	1915-16.	1916-17.	1917-18.	1918-19.
	£	£	£	£	£
New South Wales .. ..	87,386	68,107	67,273	70,969	97,592
Victoria .. ..	70,834	59,189	50,615	55,917	57,731
Queensland .. ..	75,318	70,691	60,865	66,660	71,985
South Australia .. ..	5,583	5,981	10,259	14,279	23,880
Western Australia .. ..	53,904	45,726	19,058	23,866	41,015
Tasmania .. ..	4,224	3,615	3,860	3,860	3,860
Commonwealth .. ..	297,254	253,309	211,930	235,582(a)	296,063

(a) Including Northern Territory, £31.

#### EXPENDITURE OF STATE FORESTRY DEPARTMENTS, 1914-15 TO 1918-19.

State.	1914-15.	1915-16.	1916-17.	1917-18.	1918-19.
	£	£	£	£	£
New South Wales .. ..	47,207	50,531	73,762	77,688	121,162
Victoria .. ..	65,219	65,142	53,551	68,557	60,193
Queensland .. ..	7,654	7,416	9,516	13,930	21,877
South Australia .. ..	24,217	24,892	22,571	21,381	21,968
Western Australia .. ..	12,068	8,870	9,807	10,363	23,656
Tasmania .. ..	1,204	683	682	1,204	1,204
Commonwealth .. ..	157,569	157,534	169,889	193,123	250,060

5. **Instruction in Scientific Forestry.**—Several schools have been established in which, while general scientific instruction is imparted, special attention is paid to forestry. In the classes, theoretical forestry, botany, geology, physics, land surveying, etc., are taught; while in outside work trainees receive practical instruction in the preparation of seed-beds, seed-sowing, propagation, planting out, pruning, the general care and improvement of plantations and natural forests, and the employment of timber to the best advantage. The desire is to give the prospective forester a thorough training in all branches of the work. Courses of lectures are also given at various centres, and, at some of the higher technical schools, members of the forest staffs are afforded opportunities of qualifying in special subjects. Methods of training, etc., are not uniform in the various States, and one of the prime objects of a Conference held in 1916 was the evolution of a system which, while aiming at uniformity, would be sufficiently elastic to provide for special needs in any State.

6. **Forest Congresses.**—Interstate Conferences on Forestry were held in 1911 and 1912, chiefly with a view of securing uniformity of management. An International Forest Congress was held at Paris in June, 1913, when a Professor of South Kensington Imperial College represented the Commonwealth Government. The papers and reports dealt chiefly with the threatened shortage of timber, and the measures necessary to avert the danger. An Imperial Forestry Conference was held in London in the summer of 1920, at which also Australia was represented. Important Interstate Forestry Conferences were held at Adelaide in May, 1916; at Perth in November, 1917; and at Hobart in April, 1920.

### § 3. Commercial Uses of Principal Australian Timbers.

1. **General.**—The uses of the more important of Australian timbers are many and various, and are indicated in previous issues of this work. (See Official Year Book No. 6, pp. 454–6; and Official Year Book No. 10, Section III, § 7 and 8.)

The Commonwealth Government utilises Australian woods for rifle stocks, telephone switch boards, aeroplane parts, etc. Queensland maple (*Flindersia chatawaiana*) is largely used for rifle stocks, and supplies of coachwood are being accumulated at Lithgow for the same purpose. Money has also been made available for the seasoning and storing of Australian timber, and depots have been established at Canberra and Newington in New South Wales, and at Maribyrnong in Victoria. Timber seasoning depots have also been established by State Governments at the principal centres. Other timber seasoning works have been established by private enterprise.

2. **Uniformity in Nomenclature.**—Unfortunately the vernacular names applied to the gums, ironbarks, etc., in the various States, and even in different parts of the same State, do not always refer to identical timbers. The resulting confusion has not only been productive of loss, but it has, to some extent, prejudicially affected the timber trade. This subject is referred to at some length in the special article, "Australian Eucalyptus Timbers," in Section III, § 7 and 8, in Official Year Book No. 10. At the 1916 Forestry Conference alluded to above, the matter came up for special consideration, and a resolution was passed affirming the desirability of establishing a uniform nomenclature. It was further resolved that committees should be appointed in each State to take the necessary steps to give practical effect to that resolution.

### § 4. Forestal Industries and Production.

1. **Timber.**—Estimates of the quantity and value of local timber sawn and hewn in each State are given hereunder:—

#### QUANTITIES OF LOCAL TIMBER SAWN OR HEWN IN EACH STATE OF THE COMMONWEALTH DURING THE YEARS 1914 TO 1918.

State.	1914.	1915.	1916.	1917.	1918.
	sup. feet.	sup. feet.	sup. feet.	sup. feet.	sup. feet.
New South Wales .. ..	164,888,000 <sup>a</sup>	140,940,000 <sup>b</sup>	115,201,000 <sup>b</sup>	125,243,000 <sup>b</sup>	128,745,000 <sup>b</sup>
Victoria .. ..	84,374,000	62,589,000	62,589,000 <sup>a</sup>	70,038,000	78,984,000 <sup>b</sup>
Queensland .. ..	168,456,000	144,950,000	121,851,000	111,663,000	118,438,000 <sup>b</sup>
South Australia .. ..	2,617,000	2,348,000	2,348,000 <sup>a</sup>	3,729,000 <sup>b</sup>	3,425,000 <sup>b</sup>
Western Australia .. ..	227,297,000	123,494,000	100,356,000	85,218,000	94,990,000
Tasmania .. ..	52,182,000	47,890,000	52,019,000	44,986,000	49,814,000
Commonwealth .. ..	699,814,000	522,211,000	454,364,000	440,952,000 <sup>c</sup>	472,394,000

(a) Figures for previous year. (b) Year ended 30th June. (c) Including Northern Territory, 75,000 sup. feet.

2. **Other Forest Produce.**—(i) *General.* No satisfactory estimates of the total value of forest production are available. Large returns are credited to firewood, but these are subject to a wide range of uncertainty.

(ii) *Eucalyptus Oil.* A considerable quantity of eucalyptus oil is produced each year, chiefly in Victoria, the product being used as a drug and also in connexion with ore flotation processes. Complete information regarding local production and consumption is not available. Oversea exports amounted in 1914–15 to £21,000, in 1915–16 to £36,000, in 1916–17 to £60,000, in 1917–18 to £77,000, and in 1918–19 to £84,000, the bulk of the product being forwarded to the United Kingdom. Large quantities have also been exported to the United States.

(iii) *Tan Barks.* In addition to the wattle bark, mentioned at the close of this section, a valuable tan bark is obtained from the mallet (*E. occidentalis*) of Western Australia. Its exploitation has, however, been so rapid that the available supply is now comparatively small.

### § 5. Oversea Trade.

1. **Imports.**—The quantity and value of timber imports during the four years 1915–16 to 1918–19 inclusive are shewn according to countries of origin in the following tables. The figures in the first table are exclusive of a few items such as veneers, etc. :—

#### IMPORTS OF DRESSED TIMBER, COMMONWEALTH, 1915–16 TO 1918–19.

Country of Origin.	Quantity.				Value.			
	1915–16.	1916–17.	1917–18.	1918–19.	1915–16.	1916–17.	1917–18.	1918–19.
	sup. ft.	sup. ft.	sup. ft.	sup. ft.	£	£	£	£
United Kingdom .. ..	265	1,109	100	20	23	51	18	3
New Zealand .. ..	117,929	70,317	163,979	9,135	1,663	1,070	2,064	206
Other British Coun- tries .. ..	78,622	22,230	40,975	31,564	718	252	461	358
Norway .. ..	16,858,100	3,245,724	400		145,895	32,711	2	
Sweden .. ..	7,690,606			532,845	66,729			9,900
United States .. ..	717,003	481,603	107,323	73,459	7,295	8,023	2,658	2,621
Other Foreign Countries .. ..	2,711	20,727	10,838	13,294	73	398	207	641
Total .. ..	25,465,236	3,841,710	323,615	660,317	222,396	42,505	5,410	13,729

The bulk of the imports of dressed timbers normally comes from Norway, Sweden, and the United States. War conditions caused some dislocation of trade during the period covered by the table. Practically the whole of this timber consists of softwoods—deal and pine—used for lining, weatherboards, flooring, shelving, doors, box-making, etc.

### IMPORTS OF UNDRESSED TIMBER, INCLUDING LOGS, COMMONWEALTH, 1915-16 TO 1918-19.

Country of Origin.	Quantity.				Value.			
	1915-16.	1916-17.	1917-18.	1918-19.	1915-16.	1916-17.	1917-18.	1918-19.
	sup. ft.	sup. ft.	sup. ft.	sup. ft.	£	£	£	£
United Kingdom	91,707	56,459	6,144	800	1,336	438	116	3
Canada ..	73,166	752,571	11,737,562	2,204,774	532	4,479	74,959	22,250
India ..	831,939	228,601	109,486	89,436	17,924	6,618	5,113	3,687
New Zealand ..	75,138,381	77,557,933	69,305,936	59,027,859	479,454	536,608	571,599	632,613
Straits Settlements ..	217,450	282,300	254,325	201,323	1,203	1,586	2,211	1,376
Other British Countries ..	8,719	766,230	275,623	186,607	158	4,135	1,339	1,382
Japan ..	12,796,031	7,178,349	1,988,267	2,927,688	83,876	115,930	40,843	68,377
Java ..	48,599	4,683	7,495	13,399	1,345	136	84	173
Norway ..	1,557,451	69,695	..	10,140	12,279	570	..	90
Russia ..	211,931	..	..	..	1,212	..	..	..
Sweden ..	1,653,468	36,500	..	..	14,119	604	..	..
United States ..	138,033,305	109,620,926	85,877,463	79,013,943	792,888	680,077	637,960	1,023,391
Other Foreign Countries ..	951,732	51,382	94,774	106,666	6,140	955	1,331	3,397
<b>Total ..</b>	<b>231,613,879</b>	<b>196,604,729</b>	<b>169,657,075</b>	<b>143,782,637</b>	<b>1,412,466</b>	<b>1,352,136</b>	<b>1,335,555</b>	<b>1,756,739</b>

By far the larger proportion of the undressed timber imports also consists of softwoods such as yellow pine, redwood, and oregon from the United States and Canada; kauri, rimu, and white pine from New Zealand; pine from Japan, and (prior to the war) red deals from Russia, Norway, and Sweden. Amongst the hardwoods imported the principal are oak from the United States and Japan, and teak from India.

2. Exports.—The quantity and value of undressed (sawn) timber exported from 1914-15 to 1918-19 are given below, the countries of destination being also shewn :—

### EXPORTS OF UNDRESSED TIMBER (SAWN), COMMONWEALTH, 1914-15 TO 1918-19.

Country to which Exported.	Quantity. (a)					Value.				
	1914-15.	1915-16.	1916-17.	1917-18.	1918-19.	1914-15.	1915-16.	1916-17.	1917-18.	1918-19.
	sup. ft.	sup. ft.	sup. ft.	sup. ft.	sup. ft.	£	£	£	£	£
United Kingdom	1,000	1,000	1,000	1,000	1,000	143,698	45,286	10,118	428	4,458
Canada ..	20,185	5,741	1,478	27	539	990	321	3,796	6,504	2,364
Union of S. Africa ..	67	19	260	316	103	241,139	162,788	83,598	43,012	75,314
Ceylon ..	34,403	23,100	11,944	6,154	10,925	36,142	203	36,041	..	..
Egypt ..	5,307	30	5,444	..	..	49	3,638	..	..	..
Fiji ..	7	413	..	..	..	17,238	5,830	8,415	12,614	4,338
India ..	13,130	..	..	..	100	87,260	..	..	..	650
Mauritius ..	655	655	..	277	..	4,366	4,368	..	2,310	..
New Zealand ..	25,517	15,912	12,666	5,993	5,374	202,398	140,507	109,323	63,802	80,498
Ocean Island ..	241	197	..	..	..	1,690	1,873	..	..	..
Papua ..	192	205	277	132	98	2,026	2,412	5,278	1,720	1,861
Straits Settlements ..	12	10	2	59	20	118	100	34	899	135
Other British Countries ..	504	599	510	310	459	4,714	4,987	6,211	3,920	6,354
Belgium ..	202	..	..	..	..	1,378	..	..	..	..
China ..	2,582	..	..	..	..	17,764	..	..	..	..
Germany ..	177	..	..	..	..	1,365	..	..	..	..
Japan ..	7	1	70	704	105	73	15	702	11,827	2,276
Kaiser Wilhelm L.	28	..	1	..	..	297	3	10	..	..
Marshall Islands	6	5	2	4	15	81	59	22	53	250
Bismarck Archipelago ..	282	41	188	99	41	3,258	580	2,024	1,378	868
New Caledonia ..	96	33	25	298	92	800	417	300	3,710	1,502
Portuguese E. Africa ..	24	606	..	..	..	239	4,039	..	..	..
U.S. of America ..	294	469	1,433	4,050	2,189	3,891	6,826	21,354	75,074	41,867
Uruguay ..	668	..	..	..	..	4,518	..	..	..	..
Other Foreign Countries ..	256	124	193	170	275	2,581	1,398	2,512	2,222	4,495
<b>Total ..</b>	<b>106,376</b>	<b>48,940</b>	<b>35,332</b>	<b>19,509</b>	<b>20,750</b>	<b>778,073</b>	<b>385,650</b>	<b>289,738</b>	<b>230,073</b>	<b>227,230</b>

(a) Exclusive of timber not measured in super. feet.

As the table shews, the bulk of the exports of undressed timber was consigned to South Africa, New Zealand, and (except for latest years) the United Kingdom, and consisted of Australian hardwoods, which have earned an excellent reputation for such purposes as railway sleepers, harbour works, wood paving, etc. There was a notable increase in the quantity supplied to the United States in the later war years.

The quantities of timber imported and exported during the last five years are given in the next table:—

**QUANTITIES OF TIMBER IMPORTED INTO AND EXPORTED FROM THE  
COMMONWEALTH, 1914-15 TO 1918-19.**

Description.	1914-15.	1915-16.	1916-17.	1917-18.	1918-19.
<b>IMPORTS.</b>					
Veneers .. sup. feet	1,438,272	430,060	499,514	459,307	509,855
Dressed .. "	62,789,849	28,653,427	8,014,939	536,124	1,139,401
Undressed .. "	255,897,777	223,278,433	195,830,413	169,378,755	143,754,858
Logs .. "	10,432,526	8,335,446	774,316	278,320	27,779
Palings .. No.	..	..	..	..	..
Pickets .. "	923,155	808,342	611,399	688,822	261,886
Shingles .. "	1,067,060	2,677,620	2,083,408	2,391,326	567,200
Staves—					
Dressed, etc. ..	73,609	67,380	12,764	8,964	2,752
Undressed ..	2,535,831	591,750	152,283	575,300	666,036
Laths for blinds ..	(a)	(a)	(a)	(a)	..
" other ..	18,544,270	17,629,168	11,419,145	17,568,419	6,610,148
Spokes, rims, felloes ..	(a)	(a)	(a)	(a)	(a)
Doors .. "	1,611	1,925	300	666	78
Architraves, mouldings, etc. .. lin. feet	2,313	6,202	..	..	..
Other .. "	(a)	(a)	(a)	(a)	(a)
<b>EXPORTS.</b>					
Veneers .. sup. feet	742,844	498,074	322,058	297,341	251,041
Dressed .. "	106,375,692	48,939,938	35,332,403	19,807,434	20,750,023
Undressed .. "	411,204	226,400	197,721	298,460	184,398
Logs .. "	462,705	232,240	603,569	121,506	60,365
Palings .. No.	1,350	800	..	..	..
Pickets .. "	..	..	..	160,000	7,090
Shingles .. "	..	..	..	..	..
Staves—					
Dressed, etc. ..	..	..	..	1,230	..
Undressed ..	840	..	..	..	..
Laths for blinds ..	(a)	(a)	(a)	(a)	(a)
" other ..	284,521	111,600	63,000	92,160	2,111
Spokes, rims, felloes ..	(a)	(a)	(a)	(a)	(a)
Doors .. "	(a)	(a)	(a)	(a)	(a)
Architraves, mouldings, etc. .. lin. feet	99,152	41,673	40,768	48,265	80,186
Other .. "	..	..	..	..	..

(a) Quantity not available.

QUANTITIES OF TIMBER IMPORTED AND EXPORTED, ETC.—*continued.*

Description.	1914-15.	1915-16.	1916-17.	1917-18.	1918-19.
EXCESS OF IMPORTS OVER EXPORTS.					
Veneers .. sup. feet	1,438,272	430,060	499,514	459,307	509,855
Dressed .. "	62,047,005	28,155,353	7,692,881	238,783	888,360
Undressed .. "	149,522,085	174,338,495	160,498,010	149,869,781	123,004,835
Logs .. "	10,021,322	8,109,046	576,595	— 20,140	— 156,619
Palings .. No.	— 462,705	— 232,240	— 603,569	— 121,506	— 60,365
Pickets .. "	921,805	807,542	611,399	688,822	261,886
Shingles .. "	1,067,060	2,677,620	2,083,408	2,291,326	560,110
Staves—					
Dressed, etc. .. "	73,609	67,380	12,764	7,734	2,752
Undressed .. "	2,534,991	591,750	152,283	575,300	666,036
Laths for blinds .. "	(a)	(a)	(a)	(a)	(a)
" other .. "	18,259,749	17,517,568	11,356,145	17,476,259	6,608,037
Spokes, rims, felloes .. "	(a)	(a)	(a)	(a)	(a)
Doors .. "	(a)	(a)	(a)	(a)	(a)
Architraves, mouldings, etc. .. lin feet	— 96,839	— 35,471	— 40,768	— 48,265	— 80,186
Other .. "	(a)	(a)	(a)	(a)	(a)

(a) Quantity not available. Note.—The minus sign (—) signifies excess of exports over imports.

The values of the timber imports and exports during the last quinquennium are shewn hereunder :—

## VALUE OF TIMBER IMPORTED INTO AND EXPORTED FROM THE COMMONWEALTH, 1914-15 TO 1918-19.

Description.	1914-15.	1915-16.	1916-17.	1917-18.	1918-19.
IMPORTS.					
Veneers .. ..	£ 43,625	£ 20,610	£ 25,670	£ 21,613	£ 33,540
Dressed .. ..	468,025	243,155	74,477	6,672	21,309
Undressed .. ..	1,534,188	1,383,140	1,346,497	1,333,382	1,754,592
Logs .. ..	44,813	29,326	5,639	2,173	2,147
Palings .. ..	..	..	..	..	..
Pickets .. ..	3,406	4,030	2,174	4,040	3,037
Shingles .. ..	1,654	3,487	3,132	4,569	1,476
Staves—					
Dressed, etc. ..	1,607	1,907	337	260	53
Undressed, ..	16,440	11,164	3,538	3,516	6,836
Laths for blinds ..	..	..	..	..	..
" other .. ..	24,676	14,809	9,230	20,729	10,119
Spokes, rims, felloes ..	12,186	11,239	6,001	6,125	4,234
Doors .. ..	591	910	103	201	256
Architraves, mouldings, etc. ..	31	22	..	..	..
Other .. ..	156	90	2,030	1,246	938
Total value ..	2,151,398	1,723,889	1,478,828	1,404,526	1,838,537

VALUE OF TIMBER IMPORTED AND EXPORTED, ETC.—*continued.*

Description.	1914-15.	1915-16.	1916-17.	1917-18.	1918-19.
EXPORTS.					
Veneers .. ..	£	£	£	£	£
Dressed .. ..	9,327	7,190	4,804	5,314	6,659
Undressed .. ..	778,073	385,650	289,738	230,073	227,230
Logs .. ..	4,020	1,716	1,648	2,345	1,159
Palings .. ..	2,403	1,225	4,176	889	717
Pickets .. ..	20	7	..	..	..
Shingles .. ..	..	..	..	139	41
Staves—					
Dressed, etc. .. ..	..	..	..	127	..
Undressed .. ..	22	..	..	..	..
Laths for blinds .. ..	367	152	29	..	92
" other .. ..	246	245	147	308	12
Spokes, rims, fellows ..	6,769	6,570	4,333	5,259	3,562
Doors .. ..	482	554	354	..	307
Architraves, mouldings, etc. .. ..	457	152	164	257	608
Other .. ..	..	..	..	..	..
Total value .. ..	802,186	403,461	305,393	244,711	240,387
EXCESS OF IMPORTS OVER EXPORTS.					
Veneers .. ..	43,625	20,610	25,670	21,613	33,540
Dressed .. ..	458,698	235,965	69,673	1,358	14,650
Undressed .. ..	756,115	997,490	1,056,759	1,103,309	1,527,362
Logs .. ..	40,793	27,610	3,991	- 172	988
Palings .. ..	- 2,403	- 1,225	- 4,176	- 889	- 717
Pickets .. ..	3,386	4,023	2,174	4,040	3,037
Shingles .. ..	1,654	3,487	3,132	4,430	1,435
Staves—					
Dressed, etc. .. ..	1,607	1,907	337	133	53
Undressed .. ..	16,418	11,164	3,538	3,516	6,836
Laths for blinds .. ..	- 367	- 152	- 29	..	- 92
" other .. ..	24,430	14,564	9,083	20,421	10,107
Spokes, rims, fellows ..	5,417	4,669	1,668	866	672
Doors .. ..	109	356	- 251	201	- 51
Architraves, mouldings, etc. .. ..	- 426	- 130	- 164	- 257	- 608
Other .. ..	156	90	2,030	1,246	938
Total value .. ..	1,349,212	1,320,428	1,173,435	1,159,815	1,598,150

Note.—The minus sign (—) signifies excess of exports over imports.

A fair amount of sandalwood is exported each year, principally from Western Australia, and to a smaller extent from Queensland. The largest proportion of this product is consigned to Hong Kong, China, and the Straits Settlements.

## EXPORTS OF SANDALWOOD, 1914-15 TO 1918-19.

Country to which Exported.	Quantity.					Value.				
	1914-15.	1915-16.	1916-17.	1917-18.	1918-19.	1914-15.	1915-16.	1916-17.	1917-18.	1918-19.
	cwt.	cwt.	cwt.	cwt.	cwt.	£	£	£	£	£
Hong Kong .. ..	98,600	96,949	130,314	102,325	124,500	48,338	51,087	71,460	76,093	92,518
Straits Settlements ..	15,985	10,620	10,308	19,578	33,980	9,854	6,410	6,504	12,236	22,063
Other British Possessions ..	11,333	8,576	7,100	2,000	2,440	6,426	4,602	4,429	1,275	1,588
China .. ..	50,845	18,850	9,660	14,785	29,480	27,544	9,316	5,554	9,857	18,767
Other Foreign Countries ..	386	120	120	1,842	5,420	273	78	102	4,481	4,009
Total .. ..	177,149	135,115	157,502	140,528	195,820	92,435	71,493	88,049	103,942	138,945



Tanning bark figures both as an export and import in the Commonwealth trade returns, as the following tables shew:—

EXPORTS OF TANNING BARK, 1914-15 TO 1918-19.

Country to which Exported.	Quantity.					Value.				
	1914-15.	1915-16.	1916-17.	1917-18.	1918-19.	1914-15.	1915-16.	1916-17.	1917-18.	1918-19.
	cwt.	cwt.	cwt.	cwt.	cwt.	£	£	£	£	£
United Kingdom	218	3,018	6,797	..	1,220	102	1,434	3,103	..	860
New Zealand ..	57,873	51,138	41,098	95,192	27,320	24,604	23,574	20,703	45,007	13,801
Other British Possessions ..	1,006	714	205	208	..	382	371	107	72	..
Belgium ..	7,256	..	..	..	..	2,688	..	..	..	..
Germany ..	3,256	..	..	..	..	1,109	..	..	..	..
Other Foreign Countries ..	8,049	39,598	11,199	1,745	60	3,140	16,354	5,001	611	14
Total ..	77,658	94,468	59,299	97,145	28,600	32,025	41,733	28,914	45,690	14,675

Prior to the war there was a fairly considerable export of tan bark to Germany and also to Belgium. The exports westward have naturally dwindled away, and at the present time New Zealand receives the largest share of the available export, while there is also trade with Japan and Java. During recent years the largest proportion of the exports consisted of wattle bark from Tasmania and Victoria.

A comparison of the imports and exports of tanning bark during the last five years is given in the next table:—

TANNING BARK IMPORTED INTO AND EXPORTED FROM THE COMMONWEALTH, 1914-15 TO 1918-19.

Particulars.	1914-15.	1915-16.	1916-17.	1917-18.	1918-19.
QUANTITIES—	cwt.	cwt.	cwt.	cwt.	cwt.
Imports .. .. .	66,136	122,188	148,206	71,133	102,480
Exports .. .. .	77,658	94,468	59,299	97,145	28,600
Excess of exports over imports	11,522	- 27,720	- 88,907	26,012	- 73,880
VALUES—	£	£	£	£	£
Imports .. .. .	24,924	47,698	51,461	24,711	43,319
Exports .. .. .	32,025	41,733	28,914	45,690	14,675
Excess of exports over imports	7,101	- 5,965	- 22,547	20,979	- 28,644

Note.—The minus sign (—) denotes excess of imports.

The imports consist almost exclusively of wattle bark from the plantations in South Africa. One variety of Australian wattle was found to flourish in the sandy belts near the coast, but it is the *Acacia decurrens*, var. *mollis*, which is chiefly relied upon for the production of wattle bark in the South African plantations. Seed has been tried from New South Wales, Tasmania, and Victoria, but it is stated that most of the seed is obtained from the best wattle bark areas in eastern Tasmania and western Victoria.

Two reasons have been given to account for the success of the industry in South Africa. (i) It was found that the treeless, grassy highlands of Natal were specially suitable for wattle culture, and the trees could therefore be grown in rows and economically attended to, while the necessary bark sheds and other appurtenances could be placed in the most advantageous positions. (ii) There was an abundance of cheap and efficient Hindoo labour available for employment on the plantations.

## SECTION XI.

## FISHERIES AND PISCICULTURE.

## § 1. Commercial Fisheries.

1. **Fish Stocks.**—Australasia possesses an abundant and varied fish fauna, which embraces both tropical and temperate varieties and includes destructive as well as valuable species. In rivers and lakes both indigenous and imported varieties thrive. The latter have been introduced and acclimatised for industrial and sporting purposes by Governments and angling societies. Exploitation of the fishing areas—for some classes of fish for the whole year, for others during the breeding season only, or until a certain size is attained—is, where necessary, expressly forbidden; proclaimed localities are closed against net-fishing, and a minimum size of mesh for nets is fixed. The sea-fishermen in some districts have made regulations in their own interests for the purpose of controlling the market supply, and these they rigorously observe.

2. **Economic Fisheries.**—Although Australia's food fishes are abundant, the development of the industry has been slow. It has been authoritatively stated that the marine fisheries, properly fostered, will develop into an industry of national importance. Local catches of lake and river fishes furnish, in the aggregate, a not inconsiderable amount of food supply. (See also § 5 and 6 hereinafter.)

3. **Distribution of Supplies.**—Present methods of distribution impose serious difficulties on the development of fishing generally, since there is a wide divergence between the price paid by the consumer and the return received by the producer. States and municipalities are interesting themselves in the direction of more economic distribution. Good markets are assured in the chief cities for regular deliveries of fresh fish. (See also § 5 and 6 hereinafter.)

4. **Oyster Fisheries.**—Natural oyster beds, whose ample product is of excellent quality, exist on the foreshores in the shallow waters of inlets and estuaries in several parts of Australia. By husbanding the natural crop, and by judicious transplanting, the oyster output has been very materially augmented, and it is believed that there is a great future for the industry. The areas are leased by the Government to private persons, lengths of foreshore being taken up and profitably exploited. In New South Wales and Queensland particularly, the industry has developed; and small yields have been obtained in South Australia and Victoria.

5. **Pearl-shelling, Bêche-de-Mer, etc.**—(i) *General.* Pearl-shelling is carried on in the tropical waters of Queensland, the Northern Territory, and Western Australia. The pearl oyster inhabits the northern and western coastal waters from Cape York to Shark Bay, a length of shore of over 2,000 miles. The shells are marketed in considerable quantities, and pearls also are obtained in Queensland and Western Australia. The fishing is generally conducted with the aid of diving apparatus, in water varying from 4 to 20 fathoms in depth. In Queensland and the Northern Territory the bêche-de-mer

industry is carried on, and tortoise-shell is obtained on the coasts. Experiments have been made in cultivating the pearl oyster on suitable banks. In October, 1911, a pearl weighing 178 grains, and valued at £3,000, was obtained at Broome. Further details regarding pearl-shelling are given in Official Year Book No. 6, p. 463. Trochus-shell to the value of £12,000, £23,000, £21,800, and £37,886 was raised in Queensland during 1915, 1916, 1917, and 1918 respectively.

(ii) *Royal Commission on Pearl-shelling Industry.* In accordance with the "White Australia" policy, it was originally determined that the employment of Asiatic labour in the pearl-shelling industry should be restricted, and ultimately cease, and it was proposed that after 31st December, 1913, permits to indent Asiatics for the pearling fleet should no longer be issued. In view, however, of the disorganisation of the industry occasioned by the war, the time was extended to the 30th June, 1918, after which date permits to introduce Asiatic labour were to be granted only in cases where the diver and tender of a boat were Europeans. Since the receipt of the Report of the Royal Commission, referred to hereunder, this proviso was, however, revoked. In March, 1912, a Royal Commission to inquire into the pearling industry was appointed by the Commonwealth Government, and after visits to the Queensland and Western Australian waters, various sittings, and the issue of a progress report, presented its final report in 1916. The Commissioners stated that, though it might be practicable, they did not consider it desirable or profitable to attempt by any drastic methods to transfer the industry from Asiatics to Europeans. They further stated that, while the labour now employed is almost entirely Asiatic, they did not consider that the "White Australia" policy would be weakened or imperilled by allowing the industry to continue as at present conducted. At Thursday Island the pearling industry is almost monopolised by Japanese.

## § 2. Fisheries Statistics.

1. *Estimates for the Commonwealth.*—The returns given below have been furnished by the State departments. Estimates and approximations, where shewn, are official. The data do not generally lend themselves to presentation on a uniform scheme, but the principal facts have as far as possible been compiled for the Commonwealth.

### GENERAL FISHERIES (EXCLUDING EDIBLE OYSTERS, PEARL-SHELL, AND BÊCHE-DE-MER), COMMONWEALTH, 1918.

State.	No. of Boats Engaged.	Value of Boats and Equip- ment.	No. of Men Em- ployed.	Total Take of—		Value of Take.	
				Fish.	Lobsters.	Fish.	Lobsters.
	No.	£	No.	cwt.	doz.	£	£
New South Wales ..	895	52,388	3,062	176,786 <i>b</i>	5,468 <i>c</i>	250,241 <i>b</i>	4,101
Victoria (f) ..	798	74,789	981	99,292	15,160	149,457	12,973
Queensland ..	546	32,091	1,062	54,060	..	76,174	..
South Australia ..	800	30,000	900	132,000	9,000 <i>e</i>	200,000	12,000
Western Australia	245	19,614	504	28,124	6,352	78,749	3,176
Tasmania (a) ..	..	..	..	..	..	..	..
Northern Territory	3	200	6	350	..	438	..
Commonwealth (d)	3,287	209,082	6,515	490,612	(a)	755,059	32,250

(a) Not available. (b) Including 27,238 cwt. fish, valued at £50,843, obtained by State trawlers. (c) Also 139 dozen crabs. (d) Exclusive of Tasmania. (e) Cwt. (f) Year ended 30th June, 1919.

The available returns from the Commonwealth oyster fisheries appear in the next table. Edible oysters are not found in Western Australia. There is no information available in regard to the small consumption of local oysters in Tasmania.

## EDIBLE OYSTER FISHERIES, COMMONWEALTH (a), 1918.

State.	Number of Boats Engaged.	Value of Boats and Equipment.	Number of Men Employed.	Number of Leases.	Oysters Taken.	
					Quantity.	Value.
	No.	£	No.	No.	cwt.	£
New South Wales .. ..	405	13,345	364	3,241	38,819	55,740
Victoria .. ..	60	5,200	113	1	18,365	10,548
Queensland .. ..	84	9,591	119	586	21,116	25,743
South Australia .. ..	1	60	2	..	368	230
Commonwealth .. ..	550	28,196	598	3,828	78,668	92,261

(a) Practically no oyster fisheries in Western Australia, Tasmania, and Northern Territory.

The pearling industry is carried on in the tropical waters of Queensland, Western Australia, and the Northern Territory. During the last few years the return from the pearling industry has been adversely affected by labour conditions, coupled with the restriction in the market consequent on the war. Some of the pearling fleets have transferred their operations to Dutch waters. Bêche-de-mer is obtained in Queensland and the Northern Territory, the product being exported to China.

## PEARL, PEARL-SHELL, AND BÊCHE-DE-MER FISHERIES, COMMONWEALTH (a), 1918.

State.	Number of Boats Engaged.	Value of Boats and Equipment.	Number of Men Employed.	Quantity of Pearl-shell obtained.	Value of Pearl-shell obtained.	Value of Pearls obtained.	Value of Bêche-de-mer obtained.	Value of Trochus-shell obtained.
	No.	£	No.	Tons.	£	£	£	£
Queensland (b) .. ..	138	70,000	1,085	250	44,196	155	46,593	50
Western Australia .. ..	239	113,876	1,745	1,326	167,919	63,332	..	..
Northern Territory .. ..	24	14,400	105	40	12,000	..	2,340	300
Commonwealth .. ..	401	198,276	2,935	1,616	224,115	63,487	48,933	350

(a) No pearl-shelling industry in New South Wales, Victoria, South Australia, and Tasmania.

(b) Also trochus-shell to the value of £37,886.

For obvious reasons the returns in regard to the value of pearls obtained can be regarded as rough approximations only. The trochus-shell raised in Queensland is used principally in the manufacture of "pearl" buttons. The next table gives the revenue from fisheries in each State :—

## PUBLIC REVENUE FROM FISHERIES, COMMONWEALTH, 1918.

State.	Licenses.	Leases.	Fines and Forfeitures.	Other Sources.	Total.
	£	£	£	£	£
New South Wales .. ..	1,389	8,007	196	348	9,940
Victoria .. ..	450	1	110	10	571
Queensland .. ..	2,305	3,268	51	..	5,624
South Australia .. ..	830	..	..	..	830
Western Australia .. ..	3,080	1,370	..	217	4,667
Tasmania (a) .. ..	803	..	81	..	884
Northern Territory .. ..	46	..	..	..	46
Commonwealth .. ..	8,903	12,646	438	575	22,562

(a) Returns incomplete; refer mainly to Fisheries Board of Hobart.

A summary of the main items of information available in regard to General and Oyster Fisheries in the Commonwealth is given hereunder for the five years 1914-18 :—

**GENERAL AND OYSTER FISHERIES, COMMONWEALTH, 1914 TO 1918.**

Particulars.	1914.	1915.	1916.	1917.	1918.
General Fisheries—					
No. of boats engaged ..	3,321	3,374	3,581	3,401 (b)	3,287 (b)
No. of men employed ..	7,363	7,355	7,102	6,773 (b)	6,515 (b)
Fish obtained—					
Quantity .. cwt.	563,543	466,040 (b)	469,574 (b)	463,839 (b)	490,612 (b)
Value .. £	519,723	709,176	742,535 (b)	695,718 (b)	755,059 (b)
Lobsters obtained—Value £	33,111	30,722	33,582 (b)	28,603 (b)	32,250 (b)
Edible Oyster Fisheries(a)—					
No. of boats engaged ..	398	503	547	577	550
No. of men employed ..	453	618	618	640	598
Oysters obtained—					
Quantity .. cwt.	60,199	71,122	85,740	74,313	78,668
Value .. £	62,153	76,160	94,884	86,550	92,261
Public Revenue from Fisheries—					
Licenses .. £	9,664	7,717	8,673	9,080	8,903
Leases .. £	12,823	13,004	14,065	12,420	12,646
Fines and forfeitures .. £	427	713	764	358	438
Other sources .. £	662	218	255	999	575
Total revenue .. £	23,576	21,652	23,757	22,857	22,562

(a) There are practically no oyster fisheries in Western Australia, Tasmania, and Northern Territory.

(b) Exclusive of Tasmania.

The following table gives in summarised form for the years 1914-18 the details available in regard to pearling and bêche-de-mer fishery for the States where these industries are carried on, i.e., Queensland, Western Australia, and the Northern Territory. The low production of pearl-shell in 1915 was, of course, due to the loss of market occasioned by the war. For obvious reasons, figures regarding value of pearls obtained can be taken as rough approximations only.

**PEARL, PEARL-SHELL, AND BÊCHE-DE-MER FISHERIES, COMMONWEALTH, 1914 TO 1918.**

Particulars.	1914.	1915.	1916.	1917.	1918.
No. of boats engaged ..	581	346	429	471	401
No. of men employed ..	4,137	2,561	3,336	3,615	2,935
Pearl-shell obtained—					
Quantity .. tons	1,823	1,180	1,538	2,192	1,616
Value .. £	297,776	143,407 (b)	229,255 (b)	264,295 (b)	224,115 (b)
Pearls obtained(a)—					
Value .. £	97,535	14,894	27,190	39,333	63,487
Bêche-de-mer obtained—					
Quantity .. tons	531	770	513	624	468
Value .. £	27,847	40,078	30,222	42,064	48,933
Tortoise-shell obtained—					
Quantity .. lbs.	870	327	982	942	695
Value .. £	625	155	262	378	350

(a) Incomplete; but as returned. (b) Also trochus shell valued at £12,000 in 1915; at £23,000 in 1916; at £21,800 in 1917; and at £37,886 in 1918.

## § 3. Oversea Trade in Fish.

That the development of the fishing industry in Australia leaves much to be desired is evident from the fact that the import of preserved fish into the Commonwealth is very large. The figures for the imports for the last five years were as follows :—

## IMPORTS OF FISH, COMMONWEALTH, 1914-15 TO 1918-19.

Classification.		1914-15.	1915-16.	1916-17.	1917-18.	1918-19.
Fresh (oysters) ..	{ cwt. £	6,353 4,187	4,736 3,040	3,059 2,157	1,583 1,098	2,321 1,617
Fresh, or preserved by cold process	{ cwt. £	27,015 65,741	25,771 68,676	18,363 48,191	11,080 26,306	5,383 15,144
Potted .. ..	{ cwt. £	(a) 38,552	(a) 54,414	(a) 44,268	(a) 1,300	(a) 10,075
Preserved in tins	{ cwt. £	194,005 660,693	213,347 755,286	174,145 715,741	148,421 788,728	62,426 345,918
Smoked, dried, and n.e.i.	{ cwt. £	15,477 37,141	10,403 32,868	10,015 37,239	7,320 35,602	2,313 15,863
Total ..	{ cwt. (b) £	242,850 806,314	254,257 914,284	205,582 847,596	168,404 853,034	72,443 388,617

(a) Not available. (b) Exclusive of potted fish.

Tinned fish constitutes by far the largest proportion of the imports, the bulk of it consisting of salmon from the United States, Canada, Japan, and Alaska. The potted fish comes chiefly from the United Kingdom. New Zealand supplies the largest proportion of the fresh fish, the bulk of the remainder coming from the United Kingdom and Canada. The small import of oysters consists entirely of New Zealand produce.

The exports of local fish produce for the five years 1914-15 to 1918-19 are given hereunder :—

EXPORTS OF FISH (AUSTRALIAN PRODUCE), COMMONWEALTH,  
1914-15 TO 1918-19.

Classification.		1914-15.	1915-16.	1916-17.	1917-18.	1918-19.
Fish, fresh, smoked, or preserved by cold process	{ cwt. £	1,919 9,532	918 2,806	764 3,089	983 4,048	530 2,591
Preserved, in tins, dried, salted, etc.	{ cwt. £	10,655 29,337	11,044 40,441	12,222 39,839	13,413 57,254	7,072 45,342
Total ..	{ cwt. £	12,574 38,869	11,962 43,247	12,986 42,928	14,396 61,302	7,602 47,933

The quantity of fresh fish exported from the Commonwealth is trifling, and the amount of £2,591 shewn in the table above consists chiefly of cured bêche-de-mer exported to Hong Kong from the Northern Territory. The bulk of the amount of £45,342 consists of an export of salt fish also to Hong Kong from Queensland.

The exports of pearl-shell and tortoise-shell are given hereunder for the five years 1914-15 to 1918-19:—

**EXPORTS OF PEARL-SHELL AND TORTOISE-SHELL, COMMONWEALTH,  
1914-15 TO 1918-19.**

Article.			1914-15.	1915-16.	1916-17.	1917-18.	1918-19.
Pearl-shell ..	{ cwt.		26,276	50,124	70,030	59,598	49,300
	{ £		179,430	194,052	363,669	347,964	316,154
Tortoise-shell ..	{ lbs.		1,244	570	1,283	1,241	478
	{ £		822	333	802	609	402

Most of the pearl-shell exported during 1918-19 was consigned to the United States, the United Kingdom, and Japan, values being £126,000, £120,000, and £66,000 respectively.

#### § 4. Development of the Fishing Industry.

**1. Transport and Marketing.**—Up to the present the question of adequate transport and marketing of the proved supplies of fish has not been satisfactorily dealt with in all the States. In New South Wales, as shewn in § 6 hereinafter, the matter of exploiting and marketing trawlable fish has been undertaken by the State Government, which has also taken steps to improve the conditions under which the ordinary coastal fishing is carried on. In Queensland, also, State trawling was developed in 1919, and some good trawling bottoms have been located and charted between Cape Moreton and Caloundra.

**2. Experiment and Culture.**—In many respects the fishing industry is capable of modification and development. Although some valuable work has been done by the State Governments in the way of experiment and culture, a uniform policy of development for Australia is desirable, and recommendations have been made that the Fisheries Departments of the various States should co-operate with the Federal Government with a view to increasing the productiveness of the Commonwealth waters; and that uniform fisheries laws should be adopted by adjacent States.

All live fish imported into Australia are examined on shipboard in order to prevent the importation of undesirable fish.

With the object of ascertaining something of the movements of oceanic fishes, as well as of those estuarine fishes which make periodical oceanic migrations, reports are furnished regarding the various kinds of fishes, etc., and their movements along the coast.

Fuller details regarding the activities of the States in fish-culture are given in Official Year Book No. 6, pp. 471-2.

By arrangement with the Commonwealth Fisheries Department, members of the staff of the Australian Museum, Sydney, accompanied the F.I.S. *Endeavour* on various cruises. Specimens were collected, mounted for scientific purposes, and distributed to other Australian Museums, a considerable number being put aside for the Commonwealth Fishery Museum.

**3. Consumption of Fish.**—Despite the circumstance that numerous varieties of valuable food fishes abound in the coastal waters of Australia, while the freshwater rivers and lakes yield abundant supplies of natural and acclimatised species, the fishing industry has not developed to the extent that might reasonably be expected. It has been said that the Australians are not an "ichthyophagous race." The annual consumption of fish per head of population in Great Britain is 42 lbs.; in Australia it has been estimated at 10 lbs. The comparatively heavy import of dried and preserved fish would appear to indicate that there is great scope for the development of the industry, which now seems to be ill-managed, the price to the consumer being high, while the fisherman's gain is uncertain, and the system of distribution lacks method. Considerable improvement has, however, been effected in recent years, particularly in New South Wales (*vide* § 6 herein).

## § 5. The Commonwealth Department of Fisheries.

1. **The Federal Council of Australasia.**—The Federal Council had power to legislate with regard to fisheries in Australasian waters beyond territorial limits. In its second session (opened 16th January, 1888) an Act was passed to regulate pearl-shell and bêche-de-mer fisheries in Australasian waters adjacent to Queensland; and in the third session, opened shortly afterwards, the Act was made applicable to Western Australia. Upon the passing of the Commonwealth Constitution Act of 1900, however, the Federal Council ceased to exist.

2. **Commonwealth Investigations.**—In 1907 the Commonwealth Government decided to demonstrate what might be attained commercially by the application of modern methods. A Federal Investigation Ship, the *Endeavour*, was constructed specially for the work, and a Director of Fisheries was appointed. Experimental cruises were immediately undertaken. These shewed that the Commonwealth possesses an asset of considerable value in her sea fisheries. The scope and results of the inquiries are set out in the reports issued by the late Director.

3. **Scope of the Inquiry.**—The immediate scope laid down for the investigation was, shortly, as follows:—

- (i) By various means of capture to ascertain what marketable food-fishes may be found in ocean waters adjacent to Australia.
- (ii) In what quantity they may be taken.
- (iii) To what extent they migrate, and whither.
- (iv) How they may be conveniently and economically captured.
- (v) By systematic survey to find out and chart suitable fishing grounds.

In addition to the work which was thus carried on in the various recognised methods of capture (including long-line and drift-net fishing, etc.), hydrographic survey work, etc., was carried out for the purpose of ascertaining the nature of the sea bottom, depth of water, currents, and sea temperature.

4. **The F.I.S. "Endeavour."**—The construction of the investigation vessel was undertaken in the Commonwealth, and was upon the lines shewn by the most recent European experience to be of greatest advantage, with necessary modifications to suit the Australian climate. A description of the vessel, which was the first Commonwealth-owned seagoing ship, is given in Official Year Book No. 6, p. 473. Up to the end of 1913, 85 cruises had been made in eastern and southern waters. In 1914, 13 more cruises were successfully undertaken; but the vessel with all on board, including the Director, was lost on her 99th cruise, which was commenced on 20th November, 1914.

5. **Trawling Grounds Discovered by the "Endeavour."**—According to information supplied by the Commonwealth Department of Trade and Customs, it would appear from the experiments carried out by the *Endeavour* on the shelf of the east coast of Australia, that the best trawling grounds extend from near Port Stephens, in New South Wales, past Sydney to Gabo Island, continuing across the eastern slope of Bass Strait past Flinders Island to Tasmania. These trawling grounds cover an area of approximately 6,000 square miles, and are within easy access to two markets—Sydney and Melbourne. Extensive operations have been carried out on these grounds, and fish in payable quantities have been obtained.

A very rich trawling ground has also been located in the centre of the Great Australian Bight, estimated to cover an area of about 4,000 square miles. The depth varies from 80 to 300 fathoms, but the greater portion of the trawlable area is situated between 100 and 200 fathoms. Excellent results were obtained by the *Endeavour* in this locality, fine rock ling and flathead being among the many choice varieties caught. This ground is situated about half-way between Adelaide and Albany, and about two days' steaming from either place.

In both of the trawling areas referred to above, considerable quantities of prime edible fish have been caught by the *Endeavour*, thus demonstrating the potential value of Australia's deep-sea fisheries.

6. **The Continental Shelf.**—In addition to the primary duty of locating payable trawling grounds, extensive hydrographic surveys were carried out by the *Endeavour* along the coast from the north of Queensland to the west coast of Western Australia. Soundings, samples of the sea bottom, sea temperatures, etc., were taken, principally



within the hundred-fathom line, in order to determine the suitability or otherwise of the localities for trawling. These observations were, in most instances, taken prior to the casting of the trawl net, which was the principal means of capture used by the *Endeavour* for ascertaining the richness of areas so far as the abundance of fish food was concerned. Most of the soundings have been charted and are available for public information.

The late Mr. H. C. Dannevig, formerly Director of Fisheries for the Commonwealth, in his "Report on the Continental Shelf on the East Coast of Australia" (Fisheries—Volume III., Part 6), explained how systematic surveys were carried out by him on the *Endeavour* and information obtained as to the nature of the continental shelf which surrounds the Australian continent.

The shelf consists of a narrow submerged ledge, varying in width from 10 miles to more than 100 miles, covered by a depth of less than 100 fathoms. From the outer edge of this ledge or shelf the bottom slopes away more or less abruptly towards the great ocean depths. It is within the area of the shelf that trawling grounds may be looked for.

On the east coast of Australia, the typical shelf commences at Sandy Cape in Queensland, and continues southwards. For about 360 miles, or south of Smoky Cape in latitude 31° S., the shelf presents peculiarities which gradually disappear further south. One of these peculiarities is that the shallow portion of the shelf continues seawards for a considerable distance, so that, for instance, at Double Island, the depth is only 50 fathoms. At this depth the shelf may here be said to terminate, as, at depths from 60 to 100 fathoms, apart from being narrow and rocky, the sea floor is frequently so steep as to form part of the general slope downwards to abyssal depths. Another peculiarity is that northwards from Cape Moreton the shallow portion of the ledge is mainly covered with coral sand, which southwards gives way to a somewhat yellow sand, occasionally interspersed, in localities where the currents are strong, with gravelly beds.

Southwards from Smoky Cape the relative proportion between the inner and outer areas becomes reversed. At the Cape itself the shelf is narrow and divides into two equal belts; the shallow area of less than 50 fathoms, and a deeper stratum with an average depth of 70 fathoms. From here southwards the outer stratum becomes gradually wider at the expense of the inshore or secondary ledge, a maximum width of which is found in the Newcastle Bight, where the inshore ledge is seven to eight miles wide, while the outer ledge extends for another twenty-one miles before breaking off into the deep. Simultaneously with the appearance of the outside ledge at Smoky Cape the depth of the "break off" increases quickly to about 100 fathoms, and remains so for the remainder of the coast south to Gabo Island.

Southwards from Gabo Island the shelf widens out considerably, and consists entirely of the outward or deeper stratum, which, between 50 and 300 fathoms, is many miles wide. The edge gradually bends westward parallel with the coast until opposite the mouth of the Snowy River, where at a distance of about thirty miles from land it turns abruptly to the south. On approaching the bend, the shallow area (of less than 50 fathoms) has gradually extended at the expense of the outer ledge, and while the former continues westward through Bass Strait and connects Victoria and Tasmania, the latter extends as a relatively narrow belt along the eastern slope past Flinders Island and along the east coast of Tasmania.

The hundred-fathom line from the south of Tasmania to the western end of the Great Australian Bight was also surveyed by the *Endeavour*. On that portion of the coast it was found that the continental shelf was considerably wider than on the east coast, and the slope of the shelf more gradual.

7. Publications of the Commonwealth Fisheries Department.—New and rare species of fish and marine forms secured by the *Endeavour* have been preserved, examined and described by various scientists, recognised as authorities on the subject of marine life. The following monographs have been published by the Department of Trade and Customs, the names of the authors being appended :—

Subject.	Author.
<i>Mollusca</i> (2 parts) .. ..	Charles Hedley, F.L.S. (Assistant Curator and Conchologist, Australian Museum, Sydney).
<i>Fishes</i> (4 parts) .. ..	Allan R. McCulloch (Zoologist, Australian Museum).

Subject.	Author.
<i>Sponges</i> .. .. .	E. F. Hallmann, B.Sc. (Australian Museum).
<i>Assymetron</i> .. .. .	Miss Janet W. Raff, B.Sc. (Melbourne University).
<i>Globigerina Ooze</i> .. .. .	F. Chapman, B.A., A.L.S. (Palæontologist, National Museum, Melbourne).
<i>Hydroida</i> (3 parts) .. .. .	W. M. Bale, F.R.M.S.
<i>Foraminifera and Ostræoda</i> .. .. .	F. Chapman, B.A., A.L.S.
<i>Algæ</i> .. .. .	A. H. Lucas, M.A. (Sydney Grammar School).
<i>Polychæta</i> (2 parts) .. .. .	William Benham, M.A., D.Sc., F.R.S. (Professor of Biology at the University of Otago, N.Z.).
<i>Gephyrean Priapulus</i> .. .. .	Do. do. do.
<i>Sea Lilies, Star Fishes, Brittle Stars and Sea Urchins</i> .. .. .	Hubert Lyman Clark (Curator of Echinoderms, Museum of Comparative Zoology, Cambridge, Mass., U.S.A.).
<i>Cephalopoda</i> .. .. .	S. Stillman Berry.
<i>Spider Crabs</i> .. .. .	Miss Mary J. Rathbun (United States National Museum, Washington, D.C.).

The following papers were, in addition, prepared by the Director of Fisheries, the late Mr. H. C. Dannevig :—

First and Second Preliminary Reports on the Fishing Experiments carried out by the F.I.S. *Endeavour*.

Notes on Australia's Fisheries, with a summary of the results obtained by the F.I.S. *Endeavour*.

Paper on the Continental Shelf of the East Coast of Australia.

Paper on the Physiography of Bass Strait.

## § 6. The State Trawling Industry—New South Wales.

As far back as the year 1898, the New South Wales Government equipped a small vessel called *Thetis* for the purpose of investigating the potentialities of the State coastal waters in regard to the supply of edible fish. The knowledge gained from the cruises of this vessel was, of course, considerably augmented by that obtained since 1907 by the more modern methods adopted by the Commonwealth vessel *Endeavour*. In view of the favourable outlook, the State Government determined to exploit the fishing industry. The necessary vessels and equipment were ordered, and by the middle of the year 1915, three steam trawlers built of steel and equipped in accordance with the most up-to-date methods had commenced operations in the coastal waters. Other vessels have also been built for trawling and surface fishing. It was not long before these vessels had proved the existence of highly valuable trawling grounds within a day's steam of Sydney Heads, and what is believed to be one of the most prolific areas in the world has been located within three hours' steam of the home wharf. The ample product has been landed and sold to the public at extremely low rates in the State retail depots, of which several have been established, as well as at occasional sales in markets and in country districts.

Moreover, in connexion with the undertaking, arrangements have been made for the collection and distribution of fish taken by coastal and estuarine fishermen. With this end in view, large refrigerating stations have been built at Newcastle, Clarence River, and Port Stephens. The scheme has proved a great boon to fishermen by obviating the losses caused by the uncertain supply of ice and the absence of facilities for marketing.

There is a strong feeling that it is desirable for either the Government or the City Council to take over the entire control of the fishing industry.

## § 7. Fish Preserving.

Bounties were provided for ten years by the Federal Government for fish preserving, the rate payable being  $\frac{1}{4}$ d. per lb. The amounts paid were £27 in 1907-8; £1,727 in 1908-9; £311 in 1909-10; £115 in 1910-11; £168 in 1911-12; £103 in 1912-13; £80 in 1913-14; £156 in 1914-15; £106 in 1915-16; £177 in 1916-17. In 1917-18, £35 was paid in satisfaction of a claim made in the preceding year. Up to the present but little development has taken place, the establishments which claimed bounty for fish preserving numbering only one in 1917-18, as compared with five in 1916-17, two in 1915-16, and five in 1914-15. No bounties were paid in 1918-19.

## SECTION XII.

## MINES AND MINING.

## § 1. The Mineral Wealth of Australia.

1. *Place of Mining in Australian Development.*—The value of production from the mineral industry is now considerably less than that returned by the agricultural or the pastoral industry, nevertheless it was the discovery of gold in payable quantities that first attracted population to Australia, and thus laid the foundation of its nationhood. Prior to 1851, the year when Hargraves' memorable discovery was made, coal and copper had both been mined to some extent, and the existence of deposits of other minerals, including gold, had been proved. But it was the news of the sensational finds of the precious metal in 1851 and the year immediately following that brought about a constant stream of immigration, and caused an increase in population from 221,000 at the end of 1841 to upwards of 1,168,000 at the end of 1861.

2. *Extent of Mineral Wealth.*—The extent of the total mineral wealth of Australia cannot yet be regarded as completely ascertained, as large areas of country still await systematic prospecting. The presence of considerable deposits of valuable minerals has long been known. Thus, coal was discovered in 1797, and a shipload was exported to Bengal in 1799; silver was discovered by Count Strzelecki as early as 1839, and was worked as early as 1864; copper mining dates back to 1844; lead to about 1848; iron to about 1850; while the discovery of gold in payable quantities dates back to 1851. Cobalt, nickel, manganese, chromium, tungsten, molybdenum, mercury, antimony, bismuth, zinc, radio-active ores, etc., have all been found, some in fairly large quantities.

Among the more valuable non-metalliferous substances may be mentioned coke, kerosene shale, graphite, alunite, asbestos, diatomaceous earth, clays, ochres, etc.; in building stones: sandstones, syenites, granites, basalts, augite-andesite, porphyries, serpentines, slates, limestones, and marbles; in precious stones: diamonds, emeralds, rubies, sapphires, amethysts, precious opal, turquoise, topazes, garnets, chrysolites, cairngorm, agates, etc. In general, it may be said that the variety of Australian mineral wealth is very great.

3. *Quantity and Value of Production during 1918.*—The continuance of the war in 1918 naturally had a very serious effect on the mineral industry in Australia, although this was to some extent compensated for by the high prices ruling for industrial metals, particularly copper. In New South Wales, the returns for 1918 shewed an advance of over £2,000,000 on those for the previous year, due principally to the increased return from silver, tin, iron, and coal. In Victoria, owing to the decline in the gold yield, the returns for 1918 shewed a decrease in production of about £192,000. The Queensland production shewed a decrease of £272,000, occasioned principally by the falling-off in the gold yield. South Australia shewed a decrease of about £9,000; the heavy falling-off in copper and ironstone being largely counterbalanced by increases in salt, manganese, gypsum, etc. For Western Australia the falling-off in 1918 amounted to about £363,000, and was due entirely to the reduced gold yield. The Tasmanian production shewed an increase in 1918 of about £15,000 over the return for the previous year, the decline in some of the principal metals being counterbalanced by increases in the yield from osmiridium and scheelite.

The table hereunder and the succeeding one shew respectively the quantity of the various minerals produced during 1918 in each State, and the values apportioned thereto in the form in which the items were reported to the Mines Departments. The quantities and values given represent the amounts which the Departments consider may fairly be taken as accruing to the mineral industry as such. Thus, the item pig iron in New South Wales represents metal produced from locally raised ore only and so reported to the Mines Department. South Australia, as the table shews,

receives credit for ironstone in the crude stage, but the quantity and value of the pig iron produced therefrom in New South Wales cannot be taken as a product of the New South Wales mineral industry. Similarly lead, silver-lead, and zinc are credited in the form reported to the State of origin—chiefly New South Wales—although the actual metal extraction is carried out to a large extent elsewhere. Information in regard to the quantity of *metal* extracted at the various smelting and refining works in the Commonwealth, together with that contained (estimated) in the ores, concentrates, &c., exported or sold for export, is given in §18 hereinafter.

## QUANTITIES OF MINERALS PRODUCED, COMMONWEALTH, 1918.

Minerals.	Unit.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	N.T.†	C'wealth.
Alunite ..	ton	3,406	..	..	..	..	..	..	3,406
Antimony ore ..	..	358	2,960	..	..	..	..	..	3,318
Asbestos ..	..	..	..	..	..	..	2,854	..	2,854
Bismuth ..	cwt.	623	..	2,706*	..	..	92	1	3,422
Brown coal ..	ton	..	66,200	..	..	..	..	..	66,200
Chromite ..	..	369	..	232	..	..	..	..	601
Coal ..	..	9,063,176	439,575	983,193	..	337,039	60,163	..	10,883,146
Coke ..	..	608,492	..	..	..	..	..	..	608,492
Copper (ingot and matte) ..	..	6,510	..	18,980	7,169	478	5,559	..	38,696
Copper ore ..	..	20	140	†	†	1,643	444	619	2,706
Diatomaceous earth ..	..	..	..	..	..	..	..	..	160
Gold ..	fine oz.	87,045	158,827	133,570	6,180	876,512	10,529	525	1,273,188
Gypsum ..	ton	..	731	..	32,013	..	..	..	32,744
Iron (pig) ..	..	68,072	..	..	..	..	..	..	68,072
Iron oxide ..	..	2,153	..	..	..	..	..	..	2,153
Ironstone ..	..	6,322	..	42,782	257,029	..	..	..	306,133
Kaolin ..	..	339	3,251	..	2,513	..	..	..	6,103
Lead and silver lead ..	..	21,922	..	221	..	5,489	§	..	27,632
Lead and silver ore, concentrates, etc. ..	..	295,045	..	†	503	282	7,241	26	303,097
Limestone flux ..	..	103,644	..	97,898	72,209	..	..	..	273,751
Magnesite ..	..	3,365	225	..	440	62	..	..	4,092
Manganese ore ..	..	6,512	..	1,299	1,080	..	..	..	8,891
Molybdenite ..	cwt.	1,859	120	2,204	5	100	..	2	4,290
Phosphate ..	ton	460	3,384	..	8,074	..	..	..	11,918
Platinum ..	oz.	607	..	..	..	..	..	..	607
Pyritie ore ..	ton	..	..	..	..	2,252	5,106	..	7,358
Salt ..	..	..	..	..	88,519	..	..	..	88,519
Scheelite ..	..	117	..	18	..	5	216	2	358
Shale ..	..	32,895	..	..	..	..	..	..	32,895
Silver ..	fine oz.	2,007,037	6,333	152,499	1,608	109,830	..	..	2,277,307
Tin and tin ore ..	ton	1,890	135	1,311	..	415	2,256	246	6,253
Wolfram ..	..	136	4	249	..	..	155	220	764
Zinc and concentrates ..	..	87,019	..	..	..	..	..	..	87,019

\* Including 2,286 cwt. bismuth and wolfram. † Included with metal. ‡ Not available for publication. § Included with ore. || Year ended 30th June, 1918.

The comparative value of the production of minerals raised in each State during 1918 is given in the following table:—

## VALUE OF COMMONWEALTH MINERAL PRODUCTION IN 1918.

Minerals.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	N.T.‡	C'wealth.
	£	£	£	£	£	£	£	£
Alunite ..	17,030	..	..	..	..	..	..	17,030
Antimony ore ..	3,155	24,020	..	..	..	..	..	27,175
Asbestos ..	..	..	..	..	..	5,008	..	5,008
Bismuth ..	16,406	..	18,620*	..	..	1,038	24	36,097
Brown coal ..	..	17,944	..	..	..	..	..	17,944
Chromite ..	912	..	268	..	..	..	..	1,180
Coal ..	4,941,807	349,696	572,305	..	204,319	37,676	..	6,105,803
Coke ..	647,798	..	..	..	..	..	..	647,798
Copper (ingot and matte) ..	696,580	..	2,087,751	828,556	41,269	772,162	..	4,426,318
Copper ore ..	..	..	†	†	24,877	3,944	9,648	38,469
Diamonds ..	1,204	..	..	..	..	..	..	1,204
Diatomaceous earth ..	40	560	..	..	..	..	..	600

\* Including bismuth and wolfram, £18,041. † Included with metal. ‡ Year ended 30th June, 1918.

VALUE OF COMMONWEALTH MINERAL PRODUCTION IN 1918—*continued.*

Minerals.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	N.T.‡	C'wealth.
	£	£	£	£	£	£	£	£
Gems (unspecified) ..	..	..	16,591	..	..	..	..	16,591
Gold ..	369,743	674,655	567,371	26,252	3,723,183	44,724	2,229	5,408,157
Gypsum ..	..	434	..	28,012	..	..	..	28,446
Iron (pig) ..	350,000	..	..	..	..	..	..	350,000
Iron oxide ..	2,255	..	..	..	..	..	..	2,255
Ironstone ..	6,388	..	42,901	277,279	..	..	..	326,568
Kaolin ..	395	3,544	..	4,888	..	..	..	8,827
Lead and silver-lead ..	608,342	..	6,778	..	163,880	‡	..	779,000
Lead and silver-lead ore, concentrates, &c. ..	4,711,669	..	*	10,161	3,045	127,176	200	4,852,251
Limestone flux ..	44,608	..	42,357	34,813	..	..	..	121,778
Magnesite ..	4,812	675	..	666	225	..	..	6,378
Manganese ore ..	6,228	..	4,151	17,876	..	..	..	28,255
Molybdenite ..	41,850	180	48,176	98	97	..	58	90,459
Opal ..	20,600	..	300	7,175	..	..	..	28,075
Phosphate ..	1,400	3,384	..	10,773	..	..	..	15,557
Platinum ..	7,075	..	..	..	..	..	..	7,075
Pyritic ore ..	..	..	..	..	1,629	4,667	..	6,296
Salt ..	..	†	..	177,038	..	..	..	177,038
Scheelite ..	21,078	..	3,664	..	720	39,252	350	65,064
Shale ..	39,676	..	..	..	..	..	..	39,676
Silver ..	419,498	1,319	29,867	331	22,711	..	..	473,726
Tin and tin ore ..	548,876	24,481	251,755	..	76,952	488,798	41,432	1,432,294
Wolfram ..	24,552	828	43,041	..	31	27,239	38,789	134,480
Zinc and concentrates ..	295,413	..	..	..	..	..	..	295,413
Unenumerated ..	55,183	932	5,020	27,580	2,639	46,010	..	137,364
Total ..	13,904,573	1,102,652	3,740,925	1,451,498	4,265,577	1,597,694	92,730	26,155,649

\* Included with metal.

† Not available for publication.

‡ Included with ore.

§ Year ended 30th June, 1918.

It may be pointed out in connexion with the figures given in the above table that the totals are exclusive of returns relating to certain commodities, such as stone for building and industrial uses, sand, gravel, brick and pottery clays, lime, cement, and slates, which might rightly be included under the generic term "mineral." Valuations of the production of some of these may be obtained from the reports of the various Mines Departments, but in regard to others it is impossible to obtain adequate information. In some instances, moreover, the published information is of little value. Thus, the New South Wales Mines' Report supplies the value of exports only in connexion with building stone, and it is obvious that such figures are of little value as regards production, while the Victorian figures are incomplete. It has therefore been considered advisable to discard both totals. By restricting the comparison to items in connexion with which properly comparable information can be obtained for each State, it is believed that a satisfactory estimate of the progress of the mineral industry can be more readily obtained. The items excluded from the total for New South Wales in 1918 consist of—lime, £45,055; marble, £2,415; Portland cement, £433,133, and brick and pottery clays in the "unenumerated" class. Sulphuric acid to the value of £36,640 was produced in New South Wales in 1918. For South Australia the principal items in the unenumerated class are flint pebbles, £11,849; and barytes, £4,059; while the sulphur contents of the copper ores were valued at £9,613.

4. Total Production to end of 1918.—In the next table will be found the estimated value of the total mineral production in each State up to the end of 1918. The figures given in this table are also exclusive of the same items referred to in connexion with the preceding table. Thus the total for New South Wales falls short by £6,338,000 of that published by the State Department of Mines, the principal items excluded being cement, £4,277,000; lime, £534,000; and building stone, £26,000.

## COMMONWEALTH MINERAL PRODUCTION TO END OF 1918.

Minerals.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Nor. Ter.*	C'wealth.
	£	£	£	£	£	£	£	£
Gold ..	62,368,521	299,326,306	82,679,350	1,568,169	137,611,514	8,719,129	2,259,166	594,532,155
Silver and lead ..	86,241,386	256,857	3,029,466	374,855	1,405,350	6,428,615	62,084	97,798,613
Copper ..	14,988,804	216,656	21,634,092	31,898,192	1,600,772	14,498,424	228,581	85,065,521
Iron ..	2,394,147	15,641	413,272	1,514,952	36,695	52,110	..	4,426,817
Tin ..	11,511,880	861,207	9,407,198	..	1,380,838	14,323,583	454,765	37,939,471
Wolfram	246,612	11,130	1,006,418	301	1,426	131,378	126,077	1,523,342
Zinc ..	12,947,150	..	..	15,993	5,437	22,876	..	12,991,456
Coal ..	92,721,419	4,232,118	8,165,649	..	2,053,556	901,264	..	108,074,006
Other ..	10,768,334	594,905	1,849,522	1,738,325	51,553	301,615	18,183	15,322,437
Total ..	294,188,253	305,514,820	128,184,967	37,110,787	144,147,141	45,378,994	3,148,856	957,673,818

\* To 30th June, 1918.

The "other" minerals in New South Wales include alunite, £176,071; antimony, £338,841; bismuth, £168,827; chrome, £107,595; coke, £4,450,428; diamonds, £132,281; limestone flux, £831,859; molybdenite, £175,257; opal, £1,447,032; scheelite, £173,377; and oil shale, £2,464,445. In the Victorian returns antimony ore was responsible for £510,767. Included in "other" in the Queensland production were opal, £178,595; gems, other, £346,888; bismuth, £284,106; molybdenite, £336,698; and limestone flux, £533,789. The chief items in South Australian "other" minerals were salt, £978,949; and limestone flux, £185,554. Considerable values from gypsum and rock phosphates are also included. In the Tasmanian returns limestone flux was responsible for £91,739, and osmiridium for £82,763, while the figures for recent years include values for iron pyrites.

It will be convenient in the succeeding pages to deal first with gold and the various metals, then with non-metallic minerals and precious stones, and finally to furnish some account of the extent of employment in mining generally.

## (A) METALLIC MINERALS.

## § 2. Gold.

1. *Discovery of Gold in Various States.*—The discovery of gold in payable quantities was an epoch-making event in Australian history, for, as one writer aptly phrases it, this event "precipitated Australia into nationhood." A more or less detailed account of the finding of gold in the various States appears under this section in Official Year Books Nos. 1 to 4, but considerations of space preclude its repetition in the present issue.

2. *Production of Gold at Various Periods.*—In the following table will be found the value of the gold raised each year in the several States and in the Commonwealth from the dates when payable discoveries were first reported. Owing to defective information in the earlier years the figures fall considerably short of the actual totals, for during the first stages of mining development, large quantities of gold were taken out of Australia by successful diggers, who preferred to keep the amount of their wealth secret. For South Australia the records in the earlier years are somewhat irregular, and the remark applies to some extent also to the returns for Western Australia and Tasmania.

In New South Wales the yield for 1918 was about 5,000 ozs. higher than in 1917, but was the third lowest recorded since 1851. In Victoria the yield for 1918 shewed a decrease of 43,000 ozs. fine on that for the preceding year. With the exception of the Bendigo district, where there was an increase of about 16,000 ozs., all the gold mining areas shewed a diminished yield as compared with 1917, the falling-off in Castlemaine amounting to about 14,000 ozs., and in Ballarat and Ararat and Stawell to about 9,000 ozs. respectively, and in Maryborough to 12,000 ozs. crude. In Queensland the yield in 1918 was nearly 46,000 ozs. less than in the preceding year. As in the case in other States where there is a diminishing production, the decline is due to the gradual depletion of the mines in the principal fields. The returns for South Australia for 1918 shew a decrease of about 900 ozs. on the previous year's output. For Western Australia the figures shew a decrease of nearly 94,000 ozs. in 1918, as compared

with 1917, diminished returns being recorded in the outputs from all the fields except North Coolgardie, where there was an increase of about 2,000 ozs. For Tasmania there was a decline of about 4,000 ozs., due to cessation of operations at some of the mines.

### VALUE OF GOLD RAISED IN AUSTRALIA, 1851 TO 1918.

Year.	N.S.W.	Victoria.	Queensland.	S. Aust.	W. Aust.	Tasmania.	Nor. Ter.	C'wealth.
	£	£	£	£	£	£	£	£
1851	468,336	851,596	..	..	..	128,737	..	1,318,669
1852	2,660,946	9,146,140	..	..	..	472,615	..	12,279,701
1853	1,781,172	10,976,392	..	..	..	217,538	..	12,975,102
1854	773,209	8,873,932	..	..	..	65,030	..	9,712,171
1855	654,594	11,277,152	..	..	..	..	..	11,931,746
1856	689,174	12,214,976	..	..	..	..	..	12,904,150
1857	674,477	11,320,852	..	..	..	..	..	11,996,475
1858	1,104,175	10,384,924	..	..	..	1,146	..	11,489,949
1859	1,259,127	9,394,812	..	..	..	2,188	..	10,656,127
1860	1,465,373	8,896,276	14,565	..	..	460	..	10,376,674
1861	1,806,172	8,140,692	3,928	..	..	32	..	9,950,824
1862	2,467,780	6,920,804	625	..	..	..	..	9,389,298
1863	1,796,170	6,779,276	14,802	..	..	..	..	8,590,248
1864	1,304,926	6,489,788	83,292	..	..	..	..	7,878,068
1865	1,231,243	6,446,216	92,993	..	..	..	..	7,770,397
1866	1,116,404	6,187,792	85,501	..	..	1,044	..	7,390,991
1867	1,053,578	6,005,784	189,248	..	..	4,382	..	7,252,992
1868	994,665	6,739,672	593,516	..	..	2,536	..	8,330,389
1869	974,149	6,179,024	523,045	..	..	514	..	7,676,732
1870	931,016	5,217,216	469,539	..	..	3,666	..	6,641,437
1871	1,250,485	5,475,768	616,907	*550,000	..	23,467	..	7,916,627
1872	1,644,177	5,325,508	660,396	6,363	..	27,314	..	7,663,758
1873	1,396,375	4,681,588	717,540	293	..	18,390	..	6,814,923
1874	1,041,614	4,390,572	1,356,071	4,175	..	18,491	..	6,810,923
1875	877,694	4,279,668	1,498,433	7,034	..	11,682	..	6,668,811
1876	613,190	3,855,040	1,438,111	9,883	..	44,923	..	5,961,152
1877	471,448	3,235,612	1,317,265	..	..	23,289	..	5,050,614
1878	430,200	3,032,160	1,149,240	1,225	..	100,000	..	4,712,825
1879	407,219	3,035,788	1,034,216	90	..	230,895	\$52,500	4,760,708
1880	444,252	3,416,484	944,869	..	..	201,297	\$26,522	4,933,424
1881	573,582	3,339,512	957,570	880	..	216,901	111,945	5,194,390
1882	526,522	3,458,440	785,868	4,634	..	187,337	80,720	5,043,521
1883	458,530	3,121,012	736,810	10,534	..	176,442	77,195	4,580,523
1884	396,059	3,114,472	1,062,471	15,469	..	160,404	77,985	4,826,810
1885	378,665	2,940,872	1,062,514	18,295	..	155,309	70,414	4,626,069
1886	366,294	2,660,784	1,187,189	32,535	1,148	117,250	63,139	4,428,339
1887	394,579	2,471,004	1,481,990	72,003	18,517	158,533	68,775	4,665,401
1888	317,241	2,500,104	1,690,477	37,205	13,273	147,154	38,802	4,737,256
1889	434,784	2,459,352	2,695,629	37,305	58,871	119,709	47,339	5,852,983
1890	460,285	2,354,240	2,182,563	20,808	86,664	75,888	80,524	5,260,272
1891	559,231	2,305,596	2,030,312	27,380	115,182	145,459	98,149	5,281,309
1892	575,299	2,617,824	2,164,391	26,097	226,284	158,917	108,763	5,877,576
1893	651,286	2,684,504	2,167,794	12,581	421,385	141,326	108,110	6,156,966
1894	1,156,717	2,867,816	2,330,232	33,401	787,099	217,024	109,392	7,501,731
1895	1,315,929	2,960,344	2,150,561	26,080	879,748	206,115	102,734	7,641,491
1896	1,073,360	3,220,348	2,192,979	14,350	1,068,808	237,574	81,178	7,828,597
1897	1,104,315	3,251,064	2,552,668	39,020	2,564,977	296,600	81,024	9,899,728
1898	1,201,743	3,349,028	2,750,348	16,676	3,990,698	291,496	84,467	11,678,456
1899	1,623,320	3,418,000	2,838,446	15,582	6,246,732	327,545	63,459	14,533,084
1900	1,070,920	3,229,628	2,871,578	14,494	6,007,611	316,220	67,694	13,578,145
1901	737,184	3,102,754	2,541,764	16,613	7,235,653	295,176	88,385	14,017,508
1902	684,970	3,062,026	2,720,512	24,828	7,947,661	301,573	70,251	14,811,823
1903	1,080,029	3,259,482	2,859,801	23,665	8,770,719	254,403	69,647	16,302,751
1904	1,146,109	3,252,045	2,714,934	76,025	8,424,226	280,015	41,764	15,935,118
1905	1,165,013	3,175,744	2,517,295	45,853	8,305,654	312,380	51,392	15,571,331
1906	1,078,866	3,280,478	2,313,464	27,000	8,227,749	254,963	48,864	14,626,384
1907	1,050,730	2,954,617	1,978,938	20,540	7,210,749	277,607	21,581	13,514,762
1908	854,854	2,849,836	1,975,554	12,300	6,999,882	242,482	23,942	13,051,822
1909	869,546	2,778,956	1,935,178	30,308	6,776,274	190,201	30,906	12,611,267
1910	802,211	2,422,745	1,874,955	28,000	6,246,844	157,370	25,521	11,557,650
1911	769,353	2,140,855	1,640,323	15,000	5,823,075	132,108	30,910	10,551,624
1912	702,129	2,039,464	1,477,979	28,000	5,448,385	161,800	22,671	9,879,928
1913	635,703	1,847,475	1,128,768	27,800	5,581,701	141,876	13,250	9,376,573
1914	528,873	1,755,236	1,059,674	26,581	5,237,353	111,475	9,754	8,268,766
1915	562,819	1,397,793	1,060,703	25,830	5,140,228	78,784	**3,781	8,269,938
1916	459,370	1,090,194	913,951	33,000	4,508,532	67,072	**3,861	7,075,980
1917	349,038	857,590	761,639	30,334	4,121,645	61,577	**3,677	6,185,410
1918	369,743	674,655	507,371	26,252	3,723,183	44,724	**2,229	5,408,157
Total	62,368,521	299,326,306	82,670,350	1,568,169	137,611,514	8,719,129	2,259,166	594,532,155

\* Mines Department estimate of gold production to 1871. † Including gold dust to the value of £3,920 exported in 1850. ‡ Not available. § Estimate prior to 17th August, 1880. || 17th August to 31st December, 1880. ¶ 1st January to 30th June. \*\* Year ended 30th June.

The amount of gold raised in the Commonwealth in any one year attained its maximum in 1903, in which year Western Australia also reached its highest point. For the other States of the Commonwealth the years in which the greatest yields were obtained were as follows :—New South Wales, 1852; Victoria, 1856; Queensland, 1900; South Australia, 1904, and Tasmania, 1899.

The following table shews the quantity in fine ounces of gold raised in each State and in the Commonwealth during each of the last ten years, the value of one ounce fine being taken at £4 4s. 11½d. :—

**QUANTITY OF GOLD PRODUCED IN THE COMMONWEALTH, 1909 TO 1918.**

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	Nor. Ter.	C'wealth.
	Fine ozs.	Fine ozs.	Fine ozs.	Fine ozs.	Fine ozs.	Fine ozs.	Fine ozs.	Fine ozs.
1909 ..	204,709	654,222	455,580	7,111	1,595,270	44,777	7,323	2,968,992
1910 ..	188,856	570,363	441,402	6,592	1,470,633	37,048	6,008	2,720,902
1911 ..	181,121	504,000	386,165	3,531	1,370,868	31,101	7,277	2,484,063
1912 ..	165,295	480,131	347,946	6,592	1,282,659	37,973	5,337	2,325,933
1913 ..	149,657	434,933	265,735	6,545	1,314,044	33,400	3,119	2,207,433
1914 ..	124,507	413,218	249,468	6,258	1,232,978	26,243	2,296	2,054,968
1915 ..	132,498	329,068	249,711	6,081	1,210,113	18,547	*890	1,946,908
1916 ..	108,145	256,653	215,162	7,769	1,061,399	15,790	†909	1,665,827
1917 ..	82,170	201,873	179,305	7,141	970,318	14,496	†866	1,456,169
1918 ..	87,045	158,827	133,570	6,180	876,512	10,529	†525	1,273,188

\* 1st January to 30th June.

† Year ended 30th June.

3. **Changes in Relative Positions of States as Gold Producers.**—A glance at the figures in the table shewing the value of gold raised will sufficiently explain the enormous increase in the population of Victoria during the period 1851 to 1861, when an average of over 40,000 persons reached the State each year. With the exception of the year 1889, when its output was surpassed by that of Queensland, Victoria maintained its position as the chief gold-producer for a period of forty-seven years, or up to 1898, when its production was outstripped by that of Western Australia, the latter State from this year onward contributing practically half, and so far as recent years are concerned more than half the entire yield of the Commonwealth. New South Wales occupied the second place on the list until 1874, when Queensland returns exceeded those of the parent State, a condition of things that has been maintained ever since. South Australia has occupied the position of lowest contributor to the total gold yield of the Commonwealth since the year 1871. Taking the average of the last ten years, the relative position of each State in regard to the gold production of the Commonwealth was as follows :—

**RELATIVE POSITION OF STATES AS GOLD PRODUCERS, 1909 TO 1918.**

State.	Annual Average of Gold Production, 1909 to 1918.	Percentage on Commonwealth.	State.	Annual Average of Gold Production, 1909 to 1918.	Percentage on Commonwealth.
	Ozs.			Ozs.	
Commonwealth ..	2,110,438	100·0	New South Wales ..	142,400	6·7
Western Australia ..	1,238,480	58·7	Tasmania ..	26,990	1·3
Victoria ..	400,329	19·0	South Australia ..	6,380	0·3
Queensland ..	292,404	13·8	Northern Territory	3,455	0·2

4. **Methods of Gold Mining adopted in Each State.**—(i) *New South Wales.* In New South Wales the earlier "rushes" were to surface alluvial or shallow-sinking grounds. Many of these were apparently soon worked out, but there is reason to believe that in some instances payable results would be obtained by treating the rejected wash-dirt on more scientific principles. With the exhaustion of the surface deposits discoveries were made by sinking to what are called deep alluvial leads, representing the beds of old drainage channels in Pliocene and Pleistocene times. The first of these deep alluvial leads



was discovered at Forbes, in New South Wales, in 1862. The Tertiary deep leads at Gulgong were discovered in 1871. Cretaceous leads occur at Tibbooburra, and detrital gold has been found in permo-carboniferous conglomerates at Tallawang. The method of dredging is at present being extensively used for winning gold from the beds of running streams, and from loose river flats and other wet ground where sinking would be impracticable. The system was introduced from New Zealand, where it was originally applied with great success on the Clutha River, and practically all the auriferous rivers of New South Wales have been worked by dredges. Hydraulic sluicing is employed also in several places, the necessary machinery being fitted to a pontoon for convenience in moving from place to place. The quantity of alluvial gold obtained, other than by dredging, amounted to 2,508 ozs. in 1918, the chief yields being—Hill End, 150 ozs.; Windeyer, 189 ozs.; Major's Creek, 286 ozs.; Sofala, 145 ozs.; Uralla, 127 ozs.; Tumbarumba, 227 ozs.; Corowa, 388 ozs.; Kiandra, 129 ozs. The quantity obtained by dredging was 21,050 ozs.; the largest returns being obtained at Araluen, 6,712 ozs.; Adelong, 8,628 ozs.; Gundagai, 5,178 ozs. The dredges in operation during 1918 numbered 63, of which 17 were of the bucket type and 46 were suction plants. In the recovery of gold 12 bucket dredges and 1 pumping plant were employed, while 5 bucket dredges and 45 pumping plants were engaged in the winning of stream tin. The value of the plants in operation was estimated at £330,764. The quantity of gold won from quartz amounted to 45,345 ozs. At the present time the Cobar district is the chief centre of the production from quartz, the yields from the Cobar and Canbelego fields included therein being respectively 14,630 ozs. and 15,511 ozs. Next come the Wellington field with 4,065 ozs.; Hill Grove, 2,210 ozs.; Hill End, 1,956 ozs.; Wyalong, 1,300 ozs.; and Peak Hill, 1,174 ozs.

The table below shews as far as can be ascertained the yield from alluvial and quartz mining in each of the principal districts during 1918. Owing to the circumstance that it was impossible to obtain complete returns from all the mine and battery owners the total for the State necessarily falls short of that given in preceding pages.

#### GOLD WON IN NEW SOUTH WALES, ALLUVIAL AND QUARTZ, 1918.

District.	Alluvial.		Quartz.	Total.
	Other than by Dredging.	By Dredging.		
	Ozs.	Ozs.	Ozs.	Ozs.
Albert .. .. .	41	..	..	41
Bathurst .. .. .	399	..	2,002	2,401
Clarence and Richmond .. .. .	36	5	162	203
Cobar .. .. .	19	..	30,141	30,160
Hunter and Macleay .. .. .	..	..	304	304
Lachlan .. .. .	15	5,178	2,089	7,282
Mudgee .. .. .	253	..	5,245	5,498
New England .. .. .	45	..	84	129
Peel and Uralla .. .. .	227	174	2,212	2,613
Southern .. .. .	357	6,883	571	7,811
Tambaroora and Turon .. .. .	302	176	1,956	2,434
Tumut and Adelong .. .. .	814	8,634	579	10,027
Total .. .. .	2,508	21,050	45,345	68,903

(ii) *Victoria.* Lode mining predominates in Victoria, although a considerable amount of gold is obtained from alluvial workings, both surface and deep leads. The deepest mines in Australia are found in the Bendigo district, where there are two shafts 4,614 and 4,318 feet deep respectively. Altogether there were some five years ago no less than fifty-three shafts in this district which had reached a depth of over 2,000 feet. A considerable amount of attention is given to dredging and hydraulic sluicing, particularly in the Beechworth, Maryborough, Castlemaine, Ararat, Stawell, Gippsland, and Ballarat districts, the number of plants in operation at the end of 1918 being 67, of which 21

were bucket dredges, 12 pumps, 29 jet elevators, and 5 sluicing by gravitation. The total quantity of gold won by dredging and sluicing in 1918 was 33,983 ozs. Tin to the value of £22,366 was also won. The yields from alluvial workings and quartz reefs, as returned (in crude ounces) from the chief mining districts of the State during last year, were as follows :—

#### GOLD WON IN VICTORIA, ALLUVIAL AND QUARTZ, 1918.

District.	Alluvial.	Quartz.	Total.
	Ozs.	Ozs.	Ozs.
Ararat and Stawell .. .. .	3,503	2,140	5,643
Ballarat .. .. .	4,654	6,327	10,981
Beechworth .. .. .	30,037	13,017	43,054
Bendigo .. .. .	705	80,931	81,636
Castlemaine .. .. .	7,728	17,227	24,955
Gippsland .. .. .	3,133	3,117	6,250
Maryborough .. .. .	11,090	1,526	12,616
Total .. .. .	60,850	124,285	185,135

The largest output from lode mines in 1918 was furnished by the Carlisle (Bendigo) with 10,071 ozs., followed by the A.I. Gaffney's Creek with 9,244 ozs.; the Ajax at Daylesford, with 6,767 ozs.; the Virginia (Bendigo) with 6,057 ozs.; and the North British (Tarrengower) with 5,330 ozs. It is hoped that the consolidation of the mines in the "Central area" at Bendigo will result in a more extended treatment of the low-grade ore. Of the deep alluvial mines the Chiltern Valley (Beechworth) produced 5,685 ozs., and the Duke and Main Leads in the Maryborough area returned 4,593 ozs. In dredging, Cock's Pioneer, at Beechworth, was the most successful, with 8,023 ozs.

(iii) *Queensland.* Operations in Queensland are at present chiefly confined to reefing, and to the production of gold in connexion with the smelting of copper and other ores, the yield from alluvial in 1918 being only 860 ozs., while the quantity produced from stone treated was 46,855 ozs.; from copper and other ores 83,343 ozs.; and from old tailings 2,513 ozs.; making a total production of 133,571 ozs., valued at £587,371. The yields from the principal fields are given below :—

#### GOLD WON IN QUEENSLAND, ALLUVIAL AND QUARTZ, 1918.

District.	Alluvial.	From Stone Treated.	From Copper and other Ores and old Tailings.	Total.
	Fine ozs.	Fine ozs.	Fine ozs.	Fine ozs.
Charters Towers .. .. .	47	17,335	4	17,386
Gympie .. .. .	29	18,081	1,070	19,180
Mount Morgan .. .. .	34	67	78,969	79,070
Ravenswood .. .. .	33	567	85	685
Croydon .. .. .	..	464	329	793
Etheridge, Oaks and Woolgar .. .. .	98	5,027	596	5,721
Cloncurry .. .. .	..	..	3,851	3,851
Gladstone .. .. .	67	63	302	432
Clermont .. .. .	83	84	400	567
Chillagoe .. .. .	..	4,082	93	4,175
Mount Peter .. .. .	..	907	..	907
Other districts .. .. .	469	178	157	804
Total .. .. .	860	46,855	85,856	133,571

Included in the total alluvial gold from "other" districts is an amount of 143 ozs. from the Palmer field, while the Coen and Batavia River fields contributed 118 ozs. and 114 ozs. respectively.

(iv) *South Australia.* In South Australia alluvial gold has been worked for many years in the gullies round Adelaide, while a fair amount of gold has been obtained by this method at Teetulpa, in the northern area. The battery and cyanide returns as published in the *Mining Review* shew that the chief producing centres in 1918 were Deloraine and Tarcoola.

(v) *Western Australia.* The auriferous deposits of Western Australia may be grouped under three headings—(1) superficial deposits, (2) deposits in beds of conglomerate, and (3) lode and vein deposits. The first class includes a number of deposits of alluvial type, either in the beds of existing watercourses or in deep leads, up to 100 feet or more below present surface level. Associated with these are deposits of crystalline gold in "pug," oxide of iron, and soft weathered portions of underlying bed rock. Considerable areas of auriferous surface soil are also found, and these have apparently originated from the denudation by weathering of the bed rock and its associated veins. The shallow surface deposits have been worked by ground sluicing wherever water was available, but most of the ground has been worked by "dry-blowing." The pug and clayey bedrock are usually treated in puddling machines. In regard to (2) it may be noted that in several localities on the Pilbara goldfield and in one on the Yalgoo, gold has been found in conglomerate of the Nullagine series of rocks, now tentatively accepted as of Cambrian age. The gold is crystalline and is confined to the interstitial cementing material. Occasional occurrences of gold are met with in laterite conglomerate of tertiary and post tertiary age, and at Kintore in conglomerate of the same age. Lode and vein deposits alluded to in (3) are found in great variety in Western Australia. The gold is always found associated with iron pyrites in the unoxidised portions of the lodes, and often also with copper pyrites, arsenical pyrites and galena. Tellurides of gold occur at times. The principal auriferous rocks are of very great geological age, most probably pre-Cambrian, and possibly Archæan, and have all been subjected to intense metamorphism. It is found that the rich veins are not restricted to any one particular description of rock—granite, quartz, porphyry, quartz dolerite, diorite, &c., and even metamorphic sedimentary country rock, have been found to carry them in various parts of the State. The total production of gold from all sources during 1918 was 876,512 ounces, of which only about 0.1 per cent. was alluvial. The yields in each district were as shewn below :—

#### GOLD WON IN WESTERN AUSTRALIA, ALLUVIAL, QUARTZ, ETC., 1918.

Goldfields.	Alluvial.	Dollied and Specimens.	Crushed.	Total.
	Fine ozs.	Fine ozs.	Fine ozs.	Fine ozs.
East Coolgardie .. .. .	155	239	524,429	524,823
East Murchison .. .. .	7	353	28,851	29,211
Mount Margaret .. .. .	219	860	84,268	85,347
Murchison .. .. .	140	1,391	61,755	63,286
North Coolgardie .. .. .	42	212	36,576	36,830
Coolgardie .. .. .	124	247	7,592	7,963
Phillips River .. .. .	..	..	4,479	4,479
North-east Coolgardie .. .. .	25	45	3,630	3,700
Yilgarn .. .. .	..	..	70,766	70,766
Broad Arrow .. .. .	190	1,079	2,857	4,126
Peak Hill .. .. .	26	32	1,031	1,089
Pilbara .. .. .	64	3	3,682	3,749
Dundas .. .. .	..	998	14,951	15,949
Yalgoo .. .. .	..	4	4,394	4,398
West Pilbara .. .. .	28	10	82	120
Kimberley .. .. .	15	..	..	15
Other goldfields. .. .. .	..	..	195	195
<b>Total .. .. .</b>	<b>1,035</b>	<b>5,473</b>	<b>849,538</b>	<b>856,046</b>

The figures in the previous table are compiled from returns from the individual mines, and are somewhat incomplete; the total is therefore less than that shewn on page 445, which represents mint and export returns.

(vi) *Tasmania.* The yield from Tasmania in gold mining is chiefly obtained from quartz reefing, and the returns from each district in 1918 are given below :—

#### GOLD WON IN TASMANIA, 1918.

District.		Total.	District.		Total.
		Ozs.			Ozs.
Beaconsfield	.. ..	2,042	Lisle	.. ..	513
Mathinna	.. ..	898	Goleonda	.. ..	
Mt. Victoria	.. ..	1,035	Lilydale	.. ..	
Warrentinna	.. ..		Mt. Claude	.. ..	
Mt. Cameron	.. ..	7	West Coast	.. ..	36
Lefroy	.. ..				6,368
			Total	.. ..	10,899

The total production was valued at £44,724, equal to 10,529 ozs. fine, of which about 2,041 ounces were produced by the Tasmania Gold Mine, at Beaconsfield. During the year 1918, about 6,400 ounces of gold were produced from the ores treated at the reduction works of the Mt. Lyell Mining and Railway Co. Ltd.

(vii) *Northern Territory.* Pine Creek was for some years the chief mining field in the Northern Territory, and operations have for a long period been carried on in a desultory manner, chiefly by Chinese labour. The metal is also worked at Bridge Creek, Union Reefs, Golden Dyke, Fletcher's Gully, Tanami, and Brook's Creek fields.

5. **Remarkable Masses of Gold.**—Allusion has already been made in preceding Year Books to the discovery of "nuggets" and other remarkable masses of gold, but it is not proposed to repeat this information in the present issue. (See Year Book No. 4, page 500.)

6. **Modes of Occurrence of Gold in Australia.**—This subject has been alluded to at some length in preceding issues of the Year Book, but considerations of space will not permit of repetition in the present issue.

7. **Place of the Commonwealth in the World's Gold Production.**—In the table given below will be found the estimated value of the world's gold production, and the share of the Commonwealth therein during the ten years 1909 to 1918. The figures given in the table have been compiled chiefly from returns obtained directly by the Commonwealth Bureau of Census and Statistics from the gold-producing countries of the world.

#### WORLD'S GOLD PRODUCTION, 1909 TO 1918.

Year.		World's Production of Gold.	Gold Produced in Commonwealth.	Percentage of Commonwealth on Total.
		£	£	%
1909	.. ..	93,306,000	12,611,000	13.52
1910	.. ..	93,608,000	11,561,000	12.35
1911	.. ..	95,093,000	10,547,000	11.09
1912	.. ..	96,885,000	9,880,000	10.20
1913	.. ..	93,530,000	9,377,000	10.02
1914	.. ..	90,244,000	8,730,000	9.67
1915	.. ..	95,638,000	8,270,000	8.65
1916	.. ..	93,120,000	7,076,000	7.60
1917	.. ..	87,961,000	6,185,000	7.03
1918	.. ..	78,852,000	5,408,000	6.86

While the production of gold in the Commonwealth shews a considerable decrease during the twenty years from 1897 to 1918, the world's total production increased by nearly 64 per cent. in the same period. The following table will be found interesting as shewing the various foreign countries where the chief increases have taken place during the interval in question :—

#### GOLD YIELD, VARIOUS COUNTRIES, 1897 TO 1918.

Country.	1897.	1900.	1916.	1917.	1918.
	£	£	£	£	£
United States ..	11,787,000	16,269,000	18,715,000	16,912,000	13,841,000
Canada ..	1,240,000	5,742,000	3,952,000	3,138,000	2,972,000
Costa Rica ..	2,000	31,000	202,000	200,000	161,000
Colombia ..	..	..	1,095,000	1,031,000	958,000
Transvaal ..	11,654,000	1,481,000	39,490,000	38,306,000	35,759,000
Rhodesia ..	800	308,000	3,952,000	3,544,000	2,682,000
Gold Coast ..	85,000	38,000	1,630,000	1,549,000	1,338,000
Madagascar ..	8,500	142,000	198,000	126,000	88,000
India ..	1,571,000	1,893,000	2,303,000	2,222,000	2,060,000
Corea ..	208,000	371,000	885,000	691,000	678,000
Japan ..	142,000	290,000	1,274,000	1,150,000	1,155,000
Netherlands East Indies	24,000	112,000	518,000	529,000	431,000

The largest increase amongst the more important producing countries was recorded in the Transvaal, where the production more than trebled itself in the twenty years 1897 to 1918. During the last three years, however, as the table shews, there has been a decline in every instance except in the case of Japan.

The next table shews the average yearly value in order of importance of the yield in the chief gold producing countries for the decennium 1909–18.

#### AVERAGE ANNUAL VALUE, GOLD YIELD, CHIEF PRODUCING COUNTRIES, 1909 TO 1918.

Country.	Value.	Country.	Value.
	£		£
Transvaal ..	36,190,000	Rhodesia ..	3,126,000
United States ..	18,643,000	Canada ..	2,929,000
Australasia ..	10,488,000	India ..	2,250,000
Commonwealth ..	8,965,000	New Zealand ..	1,471,000
Russia ..	5,441,000	Gold Coast ..	1,397,000
Mexico ..	3,458,000	Japan ..	1,028,000

The comparison has been restricted to countries where the average for the period is in excess of a million sterling.

8. **Employment in Gold Mining.**—The number of persons engaged in gold mining in each State in 1901 and during each of the last five years is shewn in the following table :—

#### PERSONS EMPLOYED IN GOLD MINING, 1901 AND 1914 TO 1918.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Nor. Ter.	C'wealth.
	No.	No.	No.	No.	No.	No.	No.	No.
1901 ..	12,064	27,387	9,438	1,000	19,771	1,112	200	70,972
1914 ..	3,443	10,398	2,793	375	12,110	402	180	29,701
1915 ..	2,888	8,755	2,766	200	11,323	215	99	26,246
1916 ..	2,317	6,402	1,900	150	9,824	176	99	20,868
1917 ..	1,823	6,069	1,375	150	8,752	155	92	18,416
1918 ..	2,540	3,547	929	100	7,790	125	84	15,115

### § 3. Platinum and the Platinoid Metals.

1. **Platinum.**—(i) *New South Wales.* The existence of platinum was first noted in New South Wales in 1851 by Mr. S. Stutchbury, who found a small quantity near Orange. Since the year 1878 small quantities of the metal have been obtained from beach sands in the northern coastal district. Platiniferous ore was noted in 1889 at Broken Hill. The deposits at present worked in the State are situated at Platina in the Fifield division, near Parkes, and the production in 1918 amounted to 607 ozs., valued at £7,075, while the total production recorded for the period 1894–1918 amounted to 14,680 ozs., valued at £44,584.

At Platina, gold is found in association with the platinum, and it is estimated that there are 200 acres of metalliferous country sufficiently rich to yield a satisfactory return, provided it were worked on a large scale with an abundant water supply.

(ii) *Victoria.* In Gippsland, Victoria, the metal has been found in association with copper. The production of platinum in 1913 amounted to 127 ozs., and was contained in matte produced by the Gippsland Copper, Platinum, and Gold Mining and Smelting Company, from ores raised from the old mine at Cooper's Creek. There was no production during the last five years.

2. **Osmium, Iridium, etc.** (i) *New South Wales.* Small quantities of osmium, iridium, and rhodium are found in various localities. As far back as 1860, the Rev. W. B. Clarke stated that he found native iridium. Platinum, associated with iridium and osmium, has been found in the washings from the Aberfoil River, about 15 miles from Oban; on the beach sands of the northern coast; in the gem sand at Bingara, Mudgee, Bathurst, and other places. In some cases, as for example in the beach sands of Ballina, the osmiridium and other platinoid metals amount to as much as 40 per cent. of the platinum, or about 28 per cent. of the whole metallic content.

(ii) *Victoria.* In Victoria, iridosmine has been found near Foster, and at Waratah Range, South Gippsland.

(iii) *Tasmania.* For many years osmiridium has been known to exist in the bed of the Savage River, on the West Coast, and in rivulets and creeks in the serpentine country, but it was not until early in 1911 that efforts were made to work the deposits. During that year the price paid for the mineral reached £7 10s. per oz., and about 100 men were engaged in the search for it. The quantity produced amounted to 271 ozs., valued at £1,188. In 1912 the production was 779 ozs., valued at £5,742, or an average of £7 7s. 9d. per oz. The production in 1913 amounted to 1,261 ozs., valued at £12,016, in 1914 to 1,019 ozs., valued at £10,076, in 1915 to 247 ozs., valued at £1,581, in 1916 to 222 ozs., valued at £1,899, in 1917 to 332 ozs., valued at £4,898, and in 1918 to 1,607 ozs., valued at £44,833. A specimen found by a prospector at the Whyte River weighed 2 ozs. 8 dwts. 7 grs. A new and valuable discovery was made in 1917 in a creek between the Mt. Stewart silver mine and the Meredith Range. Nearly the whole of the production in 1918 was obtained from the alluvial diggings at Mt. Stewart. It is stated that the selling price occasionally reached as high as £40 per oz., but this extraordinary value was dependent on causes which were not too well known. Owing to the war, however, the market in 1914 was for a time closed, but a parcel of 13 ozs. forwarded to America was sold at an average of £5 13s. 6d. per oz. The declining production in 1915 and 1916 was due to difficulty in disposing of the metal. In 1917 the price increased from £11 to £18 10s. per oz., and for selected parcels £22 10s. per oz. was paid, while in 1918 the remarkable price of £37 5s. per oz. was reached. Besides a steady and increasing use in the manufacture of fountain pens there is a demand for iridium and osmiridium for hard platinum jewellery.

### § 4. Silver.

1. **Occurrence in Each State.**—Particulars regarding the occurrence of silver in each State will be found in preceding Year Books, Nos. 1 to 5, but considerations of space preclude the repetition of this matter in the present volume.

2. **Development of Silver Mining.**—In illustration of the development of silver mining in Australia the following table has been compiled, shewing the production of silver, silver-lead and ore, and lead from each State during the years 1881, 1891, 1901, and the five years ending 1918 :—

#### PRODUCTION OF SILVER AND LEAD, AUSTRALIA, 1881 TO 1918.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Nor. Ter.	C'wealth.
	£	£	£	£	£	£	£	£
1881 ..	14,651	5,021	13,494	1,182	11,224	50	..	45,622
1891 ..	3,621,614	6,277	50,000	1,787	250	52,284	4,140	3,736,352
1901 ..	1,954,964	6,657	69,234	3,196	7,609	206,228	710	2,248,598
1914 ..	3,611,369	2,188	38,640	529	69,512	96,225	545	3,819,008
1915 ..	3,321,101	1,771	34,610	902	63,629	91,689	..*	3,513,702
1916 ..	4,084,623	3,338	50,588	5,173	109,221	153,796	†1,068	4,407,807
1917 ..	5,110,096	1,406	55,181	12,351	178,872	152,122	†275	5,510,303
1918 ..	5,739,509	1,319	36,645	10,492	189,636	127,176	†200	6,104,977

\* 1st January to 30th June.

† Year ended 30th June.

The figures quoted for New South Wales in the above table represent the *net* value of the product (excluding zinc) of the silver-lead mines of the State. In explanation of the values thus given, it must be noted that the metallic contents of the larger portion of the output from the silver-lead mines in the State are extracted outside New South Wales, and the Mines Department considered, therefore, that the State should not take full credit for the finished product. Hence the *net* value referred to above relates to that of the ore, concentrates, and bullion, as declared by the several companies to the Customs Department at date of export. The real importance of the State as a producer of silver, lead, and zinc is thus to some extent lost sight of. The next table, however, which indicates the quantity of these metals locally produced, and the contents by average assay of concentrates exported during the last five years, will shew the estimated total production and the value accruing to the Commonwealth from the three metals :—

#### TOTAL PRODUCTION FROM SILVER-LEAD MINES OF NEW SOUTH WALES, 1914 TO 1918.

Year.	Metal Produced within Australia.				Contents of Concentrates exported.			
	Silver.	Lead.	Spelter.	Value.	Silver.	Lead.	Zinc.	Value.
	ozs. fine.	tons.	tons.	£	ozs. fine.	tons.	tons.	£
1914 ..	5,481,286	99,925	5,014	2,592,322	7,879,240	88,173	146,400	3,004,248
1915 ..	5,302,199	101,090	5,308	3,267,736	5,222,927	89,455	90,232	3,176,434
1916 ..	6,382,518	128,438	5,277	5,238,276	6,107,280	115,606	98,843	3,861,018
1917 ..	7,562,286	138,006	4,604	5,765,094	7,581,129	129,820	78,722	5,052,237
1918 ..	8,724,018	155,306	5,622	6,744,034	9,838,971	152,369	106,356	5,901,180

The figures given above are quoted on the authority of the Mines Department of New South Wales, which in the year 1918 amended the totals for silver previously published for the years 1915-17.

3. **Chief Centres of Silver Production.**—Broken Hill, in New South Wales, is the great centre of silver production in Australia.

(i) *New South Wales.* (a) *Broken Hill.* A description of the silver-bearing area in this district is given in preceding issues of the Year Book. During 1913 the output of ore from the mines in this division amounted to 1,744,000 tons, the highest recorded in the history of the field, but owing to the dislocation caused by the war the quantity raised in 1914 decreased to 1,442,000 tons. For 1915 the production was returned as 1,505,000 tons, but the British Junction, North Junction Lead and Block 10 mines were closed throughout the year. During 1916, when the Junction North mine remained closed, the production was returned at 1,020,000 tons, but the value of the output was £4,480,000 as compared with £3,342,000 in 1915. For the year 1917 the production of ore was stated at 1,031,000 tons, and for 1918, 1,251,161 tons.

Although the returns are not complete in all cases, the following table relating to the mines at Broken Hill will give some idea of the richness of the field :—

**RETURNS OF BROKEN HILL SILVER MINES TO END OF 1918.**

Mine.	Authorised Capital.	Value of Output to end of 1918.	Dividends and Bonuses Paid to end of 1918.
	£	£	£
Broken Hill Proprietary Co. Ltd. . . . .	3,000,000	*47,477,669	11,554,640
Broken Hill Proprietary Block 14 Co. Ltd. . .	155,000	3,763,616	614,660
British Broken Hill Proprietary Co. Ltd. . .	339,000	4,418,529	821,280
Broken Hill Proprietary Block 10 Co. Ltd. . .	1,000,000	4,737,267	1,400,000
Sulphide Corporation Ltd. (Central Mine) . .	1,050,000	†20,273,422	2,551,875
Broken Hill South Silver Mining Co. . . . .	800,000	9,687,776	2,475,500
North Broken Hill Mining Co. Ltd. . . . .	600,000	6,259,421	1,963,940
Broken Hill Junction Lead Mining Co. . . . .	150,000	1,155,049	87,500
Junction North Broken Hill Mine . . . . .	375,000	2,514,506	133,629
The Zinc Corporation Ltd. . . . .		2,828,677	10,000
Barrier South Ltd. . . . .	168,000	151,517	50,000
Totals . . . . .	7,637,000	103,267,449	21,663,024

\* The value of the ores purchased during the years 1908 to 1914 is not included. † Output understated owing to incomplete returns. ‡ Not available.

(b) *Yerranderie.* The mines in the Yerranderie division in the Southern Mining District produced 317,459 ozs. of silver in 1918, besides 670 ozs. of gold, and 883 tons of lead, the total production being valued at £88,000.

(c) *Cobar.* A considerable quantity of silver is obtained from the Great Cobar Mine and attached properties, the production in 1914 amounting to 24,305 ozs. Owing to the dislocation of the industry caused by the war the yield in 1915 fell to 1,838 ozs., but it rose again in 1916 to nearly 48,000 ozs., and in 1918 to 98,000 ozs.

(d) *Sunny Corner.* In this division of the Bathurst Mining District ore to the estimated value of £28,000 was raised during 1918.

(e) *Other Areas.* Small quantities were produced during the year in the Condobolin Division of the Lachlan District, in the Hillgrove, Tingha, and Glen Innes Divisions of the Peel and Uralla Mining District, and in the New England Mining District.

(ii) *Tasmania.* The production of silver-lead ore in 1918 was 7,241 tons, valued at £127,176, to which the Zeehan Mines contributed 1,964 tons, valued at £39,000. In the Mt. Farrell District the North Mt. Farrell contributed 2,000 tons, valued at £26,000,



while the Magnet Mines returned a yield of 2,000 tons, valued at £49,000, and the Round Hill, Mt. Claude, about 500 tons, valued at £7,000. The silver contents of the copper ores treated at the Mt. Lyell works amounted in 1918 to 314,000 ozs.

(iii) *Queensland.* The yield for the chief silver-producing centres in 1918 was as follows:—Charters Towers, silver £1,128, lead £306; Cloncurry, silver £5,777; Etheridge, silver £3,145, lead £4,841; Mt. Morgan, silver £5,003; Herberton, silver £6,558, lead £332; Chillagoe, silver £1,166; Stanthorpe, silver £4,800, lead £643.

(iv) *South Australia.* Rich specimens of silver ore have been discovered at Miltalie and Poonana, in the Franklin Harbour district, also at Mount Malvern and Olivaster, near Rapid Bay, and in the vicinity of Blinman and Farina. The surrounding district is highly mineralized, but, so far, has not been thoroughly prospected. The production of silver and silver-lead ore in 1918 was valued at £10,000.

(v) *Western Australia.* The quantity of silver obtained as a by-product and exported in 1918 was 109,830 ozs., valued at £22,711. In addition, lead and silver-lead to the value of £3,045, and 5,489 tons of pig lead, valued at £163,880, were exported.

(vi) *Northern Territory.* Silver-lead ores are found near Pine Creek, and at Mount Shoebridge near Brock's Creek railway station.

4. **World's Production of Silver.**—The world's production of silver during the last ten years for which particulars are available is estimated to have been as follows:—

#### WORLD'S PRODUCTION OF SILVER, 1909 TO 1918.

Year .. ..	1909.	1910.	1911.	1912.	1913.	1914.	1915.	1916.	1917.	1918.
World's production in 1,000 fine ozs.*	227,291	240,223	254,214	250,979	214,391	171,429	185,443	168,693	172,640	177,453

\* Add 000 to figures for fine ounces.

The Commonwealth's share in the world's silver production in 1918 was estimated at 11,000,000 ounces, or about 6 per cent. on the total production. The figures, which are given on the authority of "The Mineral Industry," have been considerably amended since the last issue.

According to returns furnished by the secretary of the Australian Metal Exchange silver to the amount of 9,920,000 ozs. was extracted in Australia during 1918, while concentrates exported or sold for export were estimated to contain 5,667,000 ozs.

5. **Prices of Silver.**—As the production of silver is dependent to a very large extent on the price realised, a statement of the average price per standard ounce in the London market at various periods and during the last seven years is given below:—

#### PRICE OF SILVER, 1881 TO 1918.

Year .. ..	1881.	1891.	1901.	1911.	1913.	1914.	1915.	1916.	1917.	1918.
Pence per standard oz. ..	51 $\frac{1}{2}$	45 $\frac{1}{2}$	27 $\frac{1}{2}$	24 $\frac{1}{2}$	27 $\frac{1}{2}$	25 $\frac{1}{2}$	23 $\frac{1}{2}$	31 $\frac{1}{2}$	40 $\frac{1}{2}$	47 $\frac{1}{2}$

During the month of November, 1906, owing to the small sales in New York, and also to the fact that the Indian, American, and Mexican Governments were all buying silver, the price rose to 33  $\frac{1}{2}$ d., the highest realised since 1893, when the average stood at 36  $\frac{1}{2}$ d. The high average in 1917 was succeeded by a further rise to 47  $\frac{1}{2}$ d. in 1918, the monthly averages ranging from 43.2d. in March to 49  $\frac{1}{2}$ d. in September and October. Prices in 1919 shewed a sensational rise. Beginning with an average of about 48d. per ounce during each of the first four months of the year, prices rose rapidly until in September the high average of 61.9d. was reached, followed by 63.4d. in October, 70d. in November, and 75.7d. in December.

6. **Employment in Silver Mining.**—The number of persons employed in silver mining in 1901 and during each of the last five years is given below :—

**NUMBER OF PERSONS EMPLOYED IN SILVER MINING, 1901 AND 1914 TO 1918.**

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	Nor. Terr.	C'wealth.
	No.	No.	No.	No.	No.	No.	No.	No.
1901 ..	6,298	..	40	150	..	2,414*	†	8,902‡
1914 ..	8,242	..	130	25	100	491	10	8,998
1915 ..	5,564	..	49	25	70	519	86	6,313
1916 ..	6,461	..	62	25	\$244	555	86	7,433
1917 ..	7,619	..	71	..	\$328	646	33	8,697
1918 ..	7,585	..	98	..	\$382	631	10	8,706

\* Including copper miners. † Included in South Australia. ‡ Including copper miners in Tasmania.  
§ Lead ore.

As the table shews, the bulk of the employment was in New South Wales and Tasmania, the quantity of silver raised in the other States, excepting Queensland, being unimportant.

## § 5. Copper.

1. **Production of Copper.**—The production of copper in the various States of the Commonwealth has been influenced considerably by the ruling prices, which have undergone extraordinary fluctuations. The quantity and value of the local production as reported and credited to the mineral industry in earlier years and for 1914 to 1918 are shewn in the following tables :—

**PRODUCTION OF COPPER, AUSTRALIA, 1881 TO 1918.**

State.	1881.	1891.	1901.	1908.	1914.	1915.	1916.	1917.	1918.
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**QUANTITY.**

	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
N.S.W. { Ingot & Matte	4,124	2,363	6,087	8,679	5,081	2,463	5,617	6,576	6,510
{ Ore .. ..	1	347	645	392	1,526	4,510	554	..	..
Victoria { Ore .. ..	583	60	..	983	..	..	..	..	..
Q'land { Ingot & Matte	331	85	3,087	14,698	18,436	19,704	19,520	19,062	18,980
{ Ore .. ..	..	35	1,997	..	..	..	..	..	..
S. Aust. { Ingot & Matte	3,824	3,592	9,741	5,628	6,881	7,725	7,279	7,213	7,169
{ Ore .. ..	21,638	13,035	1,869	..	..	..	..	..	..
W. Aust. { Ingot & Matte	..	..	880	479	183	946	457	535	478
{ Ore .. ..	..	263	2,661	2,503	3,913	737	650	966	1,643
Tasmania { Ingot & Matte	..	..	9,981	8,833	7,509	7,901	6,305	5,845	5,559
{ Ore .. ..	..	..	10,029	1,185	3,288	66	97	771	444
Northern { Ingot & Matte	..	..	..	100	..	..	..	..	..
Territory { Ore .. ..	..	257	483	424	528	831*	950†	48†	619

**VALUE.**

	£	£	£	£	£	£	£	£	£
N.S.W...	267,884	119,195	412,292	502,812	598,733	234,437	586,127	814,154	696,580
Victoria	8,186	216	..	1,994	2,829	..	..	..	..
Q'land ..	19,637	4,064	182,256	882,901	1,660,178	1,428,793	2,265,422	2,208,232	2,087,751
S. Aust.	418,296	235,817	491,617	338,000	488,986	561,247	822,527	902,495	828,556
W. Aust.	..	4,462	110,769	57,091	142,363	91,169	64,833	85,738	66,146
Tasmania	..	..	1,010,037	609,651	375,664	709,534	886,454	847,754	776,106
Nor. Terr.	..	3,619	8,460	7,968	482	7,000*	8,162†	5,517†	9,648
C'wealth	714,003	367,373	2,215,431	2,400,417	3,269,235	3,032,180	4,633,525	4,863,890	4,464,787

\* 1st January to 30th June. † Year ended 30th June.

A short account of the discovery of copper in the different States is given in the earlier Year Books.

**2. Sources of Production.**—(i) *New South Wales.* The principal seat of the copper-mining industry at the present date is in the Cobar district, the value of the deposits there being first recognised in 1869. The value of the output from this district in 1918 was £501,685, out of a total for the State of £696,580. During the year the Great Cobar Limited produced 2,415 tons of copper valued at £217,350, the C.S.A. Mines Ltd. in the same division 2,232 tons valued at £223,200. The most important yields from other areas included 182 tons valued at £16,000 from Mount Royal Mines, Tottenham, 300 tons valued at £30,000 from the Abercrombie Mines at Burruga, and from the Mount Hope Ltd. 299 tons valued at £32,000.

(ii) *Queensland.* The yield in this State amounted in 1918 to 18,980 tons, valued at £2,087,751, to which the Cloncurry field contributed 11,625 tons, valued at £1,278,786. Next in order were Mount Morgan with 6,655 tons, valued at £732,050; Herberton, 206 tons, £22,660; Gladstone, 187 tons, £20,570; Etheridge, 112 tons, £12,320; and Chillagoe, 61 tons, £6,710.

The Cloncurry district—reckoned the richest and most extensive cupriferous area in Australia—produces more than half the copper output of the State, and its yield far exceeds in value the total gold output.

(iii) *South Australia.* Taking the entire period over which production extended, the yield of copper in South Australia easily outstrips that of any other State in the Commonwealth. In recent years, however, Queensland, Tasmania, and New South Wales have come to the front as copper producers, as the table on the preceding page will shew. Deposits of copper ore are found over a large portion of South Australia. A short account of the discovery, etc., of some of the principal mining areas, such as Kapunda, Burra Burra, Wallaroo, and Moonta, is given in preceding issues of the Official Year Book. During 1918 the output amounted to 7,169 tons, valued at £828,556, the bulk of the production being from the Wallaroo and Moonta Company which employs over 1,900 hands. Recently a discovery of rich ore was made at Dome Rock near Boolcoomatta Station.

(iv) *Western Australia.* The value of copper and ore exported from this State in 1918 was £66,146. According to the returns, the production in the West Pilbara field was 1,844 tons, valued at £28,961, while the Phillips River field shewed a production of 2,902 tons, valued at £42,978. The Peak Hill district shewed a production of 76 tons, valued at £2,480, and small quantities were produced on the East Murchison and Murchison fields.

(v) *Tasmania.* The quantity of blister copper produced in Tasmania during 1918 was 5,559 tons, valued at £772,162 (exclusive of gold contents), and of copper and copper ore, 444 tons, valued at £3,944, the bulk of the production being due to the Mount Lyell Mining and Railway Co. Ltd. This Company treated 216,770 tons of ore in 1918, and produced 5,559 tons of blister copper, containing copper, 5,490 tons; silver, 314,058 ozs.; and gold, 6,367 ozs., the whole being valued at £793,010. The employees in 1918 numbered 1,548, of whom 725 were miners, 658 were engaged in the reduction works, and 165 in the railway department.

(vi) *Northern Territory.* Copper has been found at various places, including Copperfield, 5 miles south-east of Pine Creek, Mount Diamond and Burns Wolfram, 45 miles east of Pine Creek, at Coronet Hill, Daly River, Maude Creek, Kilgour Creek, Woolagorang, and Borroloola.

**3. Prices of Copper.**—The great variation in price that the metal has undergone is shewn in the following table, which gives the average price in London and New York during 1901 and in each of the last five years. The figures are given on the authority

of *The Mineral Industry*. No quotations were recorded for the months August, September and October in the London price for 1914, and the average for that year is based on the returns for the remaining nine months.

#### FLUCTUATION IN VALUE OF COPPER, 1901 AND 1914 TO 1918.

Year.				London Price per Ton Standard Copper.	New York Price In Cents per lb. Electrolytic Copper.
				£	Cents.
1901	..	..	..	66.79	16.11
1914	..	..	..	61.52	13.60
1915	..	..	..	72.53	17.28
1916	..	..	..	116.03	27.20
1917	..	..	..	124.89	27.18
1918	..	..	..	115.53	24.63

4. *World's Production of Copper.*—The world's production of copper in 1901 and during the five years 1914–18, is estimated to have been as follows :—

#### WORLD'S PRODUCTION OF COPPER, 1901 AND 1914 TO 1918.

Year	..	..	..	1901.	1914.	1915.	1916.	1917.	1918.
World's production— (short tons)	..	..	..	583,517	1,018,395	1,206,793	1,552,347	1,582,595	1,537,884

The Australasian production is estimated at about 3 per cent. of the total.

5. *Employment in Copper Mining.*—The number of persons employed in copper mining during 1901 and in each of the last five years was as follows :—

#### PERSONS ENGAGED IN COPPER MINING, 1901 AND 1914 TO 1918.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Nor. Ter.	C'wealth.
	No.	No.	No.	No.	No.	No.	No.	No.
1901	2,964	4	814	4,000	321	*	†	8,103‡
1914	1,357	..	2,578	3,000	192	2,099	88	9,314
1915	914	..	2,149	2,000	144	1,758	97	7,062
1916	1,661	..	2,922	2,000	113	1,719	97	8,512
1917	2,074	..	3,154	2,000	154	1,671	92	9,145
1918	1,529	..	3,209	2,000	158	1,597	60	8,553

\* Included with silver miners. † No returns. ‡ Excluding Tasmania and Northern Territory.

## § 6. Tin..

1. **Production of Tin.**—The development of tin mining is, of course, largely dependent on the price realised for the metal, and as in the case of copper, the production has been subjected to somewhat violent fluctuations. The tables below shew the quantity and value of the production as reported to the Mines Departments in each of the Commonwealth States during the years 1881, 1891, 1901, and 1914 to 1918 :—

## TIN PRODUCED IN AUSTRALIA, 1881 TO 1918.

State.	1881.	1891.	1901.	1914.	1915.	1916.	1917.	1918.
QUANTITY.								
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
New South Wales { Ingots	5,824	1,454	649	650	857	909	1,109	1,182
Ore	609	203	11	1,607	1,331	1,220	963	738
Victoria .. { Ingots	70	..	..	..	..	..	..	..
Ore	20	1,678	77	53	96	122	139	135
Queensland { Ingots	479	193	477	†	†	†	†	†
Ore*	2,977	2,043	1,184	2,085	2,125	1,707	1,177	1,311
Western Australia { Ingots	..	..	97	..	..	..	..	..
Ore	..	204	507	363	429	463	383	415
Tasmania .. { Ingots	4,120	3,236	1,789	1,784	2,103	2,219	2,637	2,256
Ore	4	56	79	†	†	†	†	†
Northern Territory Ore	..	29	80	165	\$58	147	270	246
VALUE.								
	£	£	£	£	£	£	£	£
New South Wales ..	568,705	133,963	76,544	267,130	266,780	306,497	373,696	548,876
Victoria ..	7,620	5,092	4,181	4,955	9,447	12,955	19,709	24,481
Queensland ..	193,699	116,387	93,723	176,197	183,472	181,401	160,600	251,755
Western Australia ..	..	10,200	52,102	35,649	41,391	49,101	45,288	76,952
Tasmania ..	375,775	292,090	216,186	259,300	292,306	350,852	427,917	488,798
Northern Territory ..	..	1,870	5,498	15,200	\$5,545	14,700	27,120	41,432
Total ..	1,145,889	560,502	448,234	758,431	798,941	915,506	1,054,330	1,432,294

\* Dressed tin ore, about 70 % tin. † Included with ore. ‡ Included with ingots. § 1st January to 30th June. || Year ending 30th June.

2. **Sources of Production.**—(i) *New South Wales.* A large proportion of the output in New South Wales was obtained by dredging, the quantity so won in 1918 being valued at £282,388. In the Tingha division the yield amounted to 690 tons, valued at £152,000, the yield from dredging being estimated at £102,322. The Emmaville division in the New England district shewed a yield of 873 tons, valued at £192,115, of which dredging produced 504 tons, valued at £110,880. In the Wilson's Downfall division, 155 tons, valued at £34,440, were raised, principally by dredging. The Glen Innes division, also in the New England district, returned a yield of 143 tons, valued at £31,303. The Ardlethan field, in the Lachlan division, produced ore and concentrates to the value of £77,383.

(ii) *Victoria.* In Victoria lode tin has been discovered at Mt. Wills, Beechworth, Eldorado, Chiltern, Stanley, and other places in the north-eastern district; and stream tin has been found in a large number of places, including those just mentioned in the north-eastern district. The bulk of the production in 1918 was obtained by dredging and sluicing, the Cock's Pioneer Gold and Tin Co. in the Eldorado district contributing 110 tons valued at £19,890. About £3,000 worth was won in the Beechworth District, and small yields were recorded from Toora, Mount Cudgewa, and Koetong.

(iii) *Queensland.* The chief producing districts in Queensland during 1918 were Herberton, 714 tons, valued at £133,387; Stanthorpe, 170 tons, £36,768; Cooktown, 152 tons, £34,112; Chillagoe, 193 tons, £25,602; and Kangaroo Hills, 67 tons, £13,743. The production of tin was to some extent adversely affected in 1916 by the lack of skilled miners, and by the high prices offered for several of the other industrial metals, but the high prices realised for tin at the close of 1917 and during the greater part of 1918

resulted in the yield from the Herberton field—the largest tin-producing area in the State—showing a substantial increase in 1918 over that for 1917, while it also exceeded the average of the preceding two years.

(iv) *Western Australia.* The export of tin ore for the State during 1918 amounted to 415 tons, valued at £76,952. The production from the Greenbushes field amounted to 296 tons, valued at £57,653, and from the Pilbara field 99 tons, valued at £20,984. There was no production from the other fields in 1918.

(v) *Tasmania.* The tin ore raised in 1918 amounted to 2,256 tons, valued at £488,798, as compared with the year 1913, when the production was returned as 4,010 tons, valued at £531,983. The bulk of the production in 1918 came from the North-Eastern Division with 952 tons of ore, valued at £216,129. Of the total yield in this division, 428 tons were contributed by the Pioneer and Gladstone districts, 496 tons by the Ringarooma, Derby, and Branhholm districts, and small quantities from Moorina district and Straits Islands. The next highest output was returned from the North-Western Division with 652 tons, to which the celebrated Mt. Bischoff contributed 458 tons, and the Mt. Bischoff Extended, 155 tons. In the Eastern Division, the Avoca mines produced about 196 tons out of a total of 335 tons. The mines in the Western Division produced 254 tons of tin ore in 1918.

(vi) *Northern Territory.* Mount Wells, in the Burrundie district, has yielded a fair output of tin since 1886, and recent developments have proved that the lodes are increasing in size and quality. Copper, silver-lead and tin shows occur abundantly in the district, but little work has been done on them. At the recently discovered tin field at Maranboy, about 40 miles east of the Katherine telegraph station, it is stated that rapid and systematic development of the ore bodies is greatly retarded by lack of capital. A fairly extensive deposit has been located at Hayes Creek, about 12 miles from Brock's Creek, and only 6 miles from the railway line. Efficient prospecting would probably reveal the existence of other deposits. Two batteries for the treatment of tin ore have been erected by the Government, one at Maranboy, costing £20,163, and one at Hayes Creek, at an expense of £3,294.

3. *World's Production of Tin.*—According to *The Mineral Industry* the world's production of tin during each of the last five years was as follows:—

#### WORLD'S TIN PRODUCTION, 1914 TO 1918.

1914.	1915.	1916.	1917.	1918.
Tons. 111,506	Tons. 113,319	Tons. 114,108	Tons. 124,283	Tons. 118,877

The yields from the chief producing countries in each of the last three years were as follows:—

	1916.	1917.	1918.
Malaya ..	43,900 ..	39,800 ..	37,300
Bolivia ..	21,100 ..	27,800 ..	27,700
Banka ..	14,600 ..	13,200 ..	12,400
Siam ..	7,800 ..	8,800 ..	9,100
Cornwall ..	4,700 ..	3,900 ..	4,000 (a)
Billiton ..	5,000 (a) ..	5,500 (a) ..	4,500 (a)
Nigeria ..	5,000 ..	6,500 ..	6,000 (a)
China ..	3,800 (a) ..	11,000 (b) ..	11,000 (a)
Australia ..	5,000 (a) ..	4,000 (a) ..	4,300 (a)
South Africa ..	2,000 ..	1,600 ..	1,200
India ..	900 ..	1,200 ..	1,000 (a)

(a) Estimate. (According to returns furnished by the Australian Metal Exchange the figures for Australia for the three years were 3,800, 4,000, and 4,600 tons respectively.) (b) Shipments to Europe and U.S.A.

Based on the results for the last three years, Australia's share of the world's tin production would appear to be about 3 per cent.

4. Prices of Tin.—The average price of the metal in the London market for the year 1897 and from 1909 to 1918 was as follows :—

PRICE PER TON OF TIN, 1897 TO 1918.

Year.	Price per Ton.	Year.	Price per Ton.
	£ s. d.		£ s. d.
1897 .. ..	61 8 0	1913 .. ..	206 5 7
1907 .. ..	172 12 9	1914 .. ..	156 12 7*
1909 .. ..	134 15 6	1915 .. ..	164 4 0
1910 .. ..	155 6 2	1916 .. ..	182 3 5
1911 .. ..	192 7 0	1917 .. ..	237 13 1
1912 .. ..	209 8 5	1918 .. ..	329 11 2

\* Quotations incomplete.

According to *The Mineral Industry* the monthly average in December, 1917, reached £298 10s. 3d. per ton. Conditions in 1917 were, however, quite abnormal, and, instead of London prices ruling the market, each consuming country tended to fix its own rates, with the result that widely different quotations were recorded from London, New York, France, and Italy.

Owing to various causes such as shortage of labour, plant, and supplies, increases in wages, difficulty of obtaining information as to the relative position in the producing centres, interference with the ordinary course of trade, &c., prices in 1918 mounted to phenomenal heights. Quotations in January averaged £293 6s. 1d. per ton and increased rapidly until May when the price reached £364 7s. 8d. A falling-off in the next two months was succeeded by a rise to the sensational figure of £380 16s. 8d. in August. Thenceforward a sharp decline was experienced, and for the closing month of the year the average was recorded as £267 14s. 3d.

5. Employment in Tin Mining.—The number of persons employed in tin mining in 1901 and during the last five years is shewn below :—

PERSONS ENGAGED IN TIN MINING, COMMONWEALTH, 1901 AND 1914 TO 1918.

Year.	N.S.W.	Victoria.	Qld.	W. Aust.	Tas.	Nor. Ter.	C'wealth.
	No.	No.	No.	No.	No.	No.	No.
1901 .. ..	1,428	..	1,148	413	1,065	..	4,054
1914 .. ..	2,168	65	1,570	217	1,523	186	5,729
1915 .. ..	1,648	27	1,218	188	1,221	154	4,456
1916 .. ..	1,938	135	1,093	235	1,217	154	4,772
1917 .. ..	1,779	42	878	211	1,311	151	4,372
1918 .. ..	2,352	52	1,110	292	1,260	190	5,256

## § 7. Zinc.

1. Production of Zinc.—The production of zinciferous concentrates is practically confined to the Broken Hill district of New South Wales, where zincblende forms one of the chief constituents in the enormous deposits of sulphide ores. During the earlier years of mining activity on this field a considerable amount of zinc was left unrecovered in tailings, but from 1909 onwards improved methods of treatment resulted in the profitable extraction of the zinc contents of the accumulations at the various mines.

As the metallic contents of the bulk of the concentrates, etc., raised in the Broken Hill District are extracted outside New South Wales, the mineral industry of that State

cannot be credited with the value of the finished product. The figures given hereunder, therefore, refer to the quantity and value of the zinc concentrates actually exported during the years specified.

#### NEW SOUTH WALES.—EXPORTS OF ZINC CONCENTRATES, ETC., 1889 TO 1918.

Year.	Quantity of Zinc Concentrates, &c., Exported.	Value.	Year.	Quantity of Zinc Concentrates, &c., Exported.	Value.
	Tons.	£		Tons.	£
1889	97	988	1915	190,916	1,111,569
1891	219	2,622	1916	209,741	931,849
1899	49,879	49,207	1917	113,531	441,486
1914	359,310	1,020,711	1918	87,019	295,413

A statement of the quantity of zinc locally extracted, and the estimated zinc contents of concentrates exported or sold for export during the three years 1916-18, will be found in § 18 hereinafter.

At the Silver Spur mine at Texas, in the Stanthorpe division in Queensland, part of the ore is high in zinc and lead, but low in silver. Profitable extraction of the zinc and lead depends, however, on railway connection with the mine. Zinc sulphide is produced by the Mount Garnet Mine in the Herberton district, and during 1916 several hundred tons of good quality ore were raised, but until a suitable treatment plant has been erected, it is stated that production cannot be economically undertaken.

During the year 1916, a small quantity of zinc, valued at £630, was produced in Western Australia, but there was no production in 1917 and 1918.

The Tasmanian mineral returns for 1918 included an item of 3,822 tons of zinc valued at £152,880, but as the metal was produced at the Electrolytic Zinc Co.'s works at Risdon from concentrates sent from Broken Hill, the item has been excluded from the totals shewn herein.

**2. Prices of Zinc.**—During the four years 1911 to 1914, the price of zinc averaged £23 15s. per ton, ranging from £21 in 1914 to £26 3s. 4d. in 1912. Owing to the heavy demand and other circumstances arising out of the war, the prices in 1915 and 1916 reached the very high average of £67 11s. 1d. and £72 1s. 5d. per ton respectively. For 1917 the average recorded was £52 8s. 3d. and for 1918, £54 3s. 7d. per ton.

### § 8. Iron.

**1. General.**—The fact that iron-ore is widely distributed in the Commonwealth has long been known, and extensive deposits have been discovered from time to time at various places throughout the States. It will appear, however, from what is stated below, that until quite recently, little has been done in the way of converting these deposits into a marketable commodity.

(i) *The Manufactures Encouragement Act 1908-14.* It was hoped that the passing by the Commonwealth Parliament of the Manufactures Encouragement Act, which came into force on the 1st January, 1909, would assist in firmly establishing the iron industry in Australia on a remunerative basis, both in the smelting of pig iron and in the production of bar iron and steel from Australian ore. The Act referred to, together with its amendment in 1912, provided for the payment up to June, 1914, of bounties of 12s. per ton on Australian pig iron, puddled bar iron, and steel, and of 10 per cent. on the value of galvanised sheet or plate, wire netting, wire, and iron or steel pipes and tubes. During the period from 30th June, 1909, to 30th June, 1915, a sum of £173,671 was paid in connexion with these bounties. (For details see Official Year Book No. 11, p. 452.)

(ii) *The Iron Bounty Act 1914-15.* This Act repealed the Manufactures Encouragement Act 1908-14, and provided for a bounty on Australian pig iron up to the end of 1916. The rate of bounty was 8s. per ton, and the total amount authorised £60,000. Provision was made for transfer, if required, to the State, of lands, buildings, etc., used in the manufacture of pig iron. During the three years 1915 to 1917 the respective bounties amounted to £19,808, £24,465, and £11,454, and the corresponding tonnages of pig iron to 49,520, 61,162, and 28,635 tons. New South Wales is the only State where bounty has been claimed.



2. **Production of Iron.**—(i) *New South Wales.* Reference to the extent of the deposits of iron ore in the State, and the events leading up to the establishment of iron-works at Lithgow, will be found in earlier issues of the Year Book (see No. 3., p. 508). During 1918 the following materials were received at the blast furnace at the Eskbank Iron Works, Lithgow :—Iron ore, 110,169 tons ; limestone, 55,160 tons ; and coke, 124,095 tons. The iron ore was raised from quarries at Tallawang, Breadalbane, Cadia, and Carcoar, and the output was 68,072 tons of pig iron.

The following table shews the quantity and value of pig iron, produced in New South Wales during the last seven years from locally-raised ores only :—

**NEW SOUTH WALES.—PRODUCTION OF IRON (LOCAL ORE), 1912 TO 1918.**

Particulars.	1912.	1913.	1914.	1915.	1916.	1917.	1918.
Quantity .. Tons	32,677	46,563	75,150	76,318	52,556	45,025	68,072
Value .. £	130,708	186,252	254,257	267,000	197,085	247,637	350,000

The figures quoted above refer to production from *local* ores only, and as such credited to the New South Wales mineral industry. They do not, of course, represent the total production of pig iron in New South Wales, since, as shewn in the succeeding paragraph, a considerable quantity of ore raised in South Australia and credited therefore to the mineral returns of that State is treated in New South Wales.

The Broken Hill Proprietary Company established works for the manufacture of iron and steel on a large scale at Newcastle, and operations were started early in 1915. The Company is utilising the immense deposit of iron ore at the Iron Knob quarries in South Australia, which are connected with the seaboard at Hummock Hill, a distance of about 36 miles, by the Company's tramway. The ore quarried for the year ending December, 1919, amounted to 248,428 tons. Extensive limestone works and loading bin at Devonport, Tasmania, as well as quarries in New South Wales for dolomite, magnesite, etc., are also owned by the Company. The steel works consist of two blast furnaces of a nominal daily producing capacity of 350 tons each, and a third furnace of 100 tons for the production of foundry iron. Another furnace with a capacity of 350 tons is in course of erection. The output of pig iron for the year from the two blast furnaces and small foundry furnace, which is now used extensively for the production of ferro-manganese, amounted to 152,754 tons. The seven 65-ton open-hearth steel furnaces already in operation are being extended by the addition of two others of equal capacity. With seven furnaces, the present output is over 3,400 tons weekly. The actual output of steel ingots during 1919 was 176,843 tons. The works are supplied with a 28-in. bloom and rail-rolling mill, able to deal with 500 tons of finished rails daily. There are also in operation an 18-in., 12-in., and 8-in. mill for merchant steel, as well as a rod mill for production of rods for wire drawing capable of an output of 350 to 400 tons of rods per week down to size No. 5 (.212 of an inch). The output from the mills during the twelve months ending 1919 was as follows :—

Rails .. ..	85,139 tons
Billets .. ..	31,003 „
Fishplates and Splice Bars ..	8,483 „
Structural Steel .. ..	13,772 „
Round and Octagon Steel ..	7,904 „
Flat Steel .. ..	5,434 „
Plates .. ..	2,128 „
Blooms .. ..	2,085 „
Square Steel .. ..	1,639 „
Rods .. ..	8,316 „
<b>Total .. ..</b>	<b>165,903 tons</b>

The Company is producing its own coke for the furnaces, having already 132 by-products ovens in operation and 29 in course of construction. The tar and sulphate of ammonia produced during 1919 amounted to 1,616,345 gallons and 2,378 tons respectively.

A quantity of iron oxide is purchased by the various gasworks for use in purifying gas, the output in New South Wales being drawn chiefly from the deposits at Port Macquarie, while smaller quantities are obtained from Mittagong, Goulburn, and Murrumburrah. During 1918 the iron oxide raised amounted to 2,153 tons, valued at £2,255. Up to the end of 1912 a certain amount of ironstone was raised each year for fluxing purposes, but as the smelting companies obtained suitable ores for treatment there was no subsequent production till 1916, when 1,472 tons, valued at £1,083, were raised. In 1918 the quantity raised was 6,322 tons, valued at £6,388.

(ii) *Victoria.* Iron ore has been located at various places in Victoria, particularly at Nowa Nowa, in the Gippsland district, and at Dookie. A blast furnace was erected in 1881 near Lal Lal, on the Moorabool River, and some very fair quality iron was produced, which was used for truck wheels and stamper shoes at the Ballarat mines. The fall in the price of the metal, however, led to the closing of the works. In his report for 1905 the Secretary for Mines states that without special assistance to the industry there does not seem to be any prospect of the deposits being profitably worked.

(iii) *Queensland.* Queensland possesses some extensive deposits of iron ore, which are mined chiefly for fluxing purposes in connection with the reduction of gold and copper ores. During the year 1918, 42,782 tons of ironstone flux, valued at £42,901, were raised, of which 32,028 tons, valued at £34,748, came from the Rockhampton district, and about 10,600 tons, valued at £8,000, from the Cloncurry field. In 1917 satisfactory tests were made in connexion with the smelting of ore from the extensive lode of magnetic iron at Biggenden, and the Government Geologist has recommended the establishment of a State ironworks to make pig iron from this ore.

(iv) *South Australia.* South Australia possesses some rich deposits of iron ore capable of being mined for an indefinite period. The best known deposit is the Iron Knob, a veritable hill of iron ore of high percentage, situated about 40 miles W.S.W. from Port Augusta. The estimated quantity of iron ore in sight at the Iron Knob and Iron Monarch has been set down at 21,000,000 tons. The Broken Hill Company utilises ore from this quarry at its ironworks at Newcastle, New South Wales, and the amount raised for the year 1918 was 257,029 tons, valued at £277,279.

(v) *Western Australia.* This State has some very rich deposits of iron ore, but owing to their geographical position, the most extensive fields at the present time are practically unexploited, the production in the State being confined chiefly to that needed for fluxing purposes. The Murchison field possesses some extensive deposits of high-grade ore. There are also deposits on Koolan Island at Yampi Sound. The production of pyritic ore reported in 1918 amounted to 2,252 tons, valued at £1,629.

(vi) *Tasmania.* (1) *Dial Range.*—The deposits in this locality are situated on the western flank of the range about 6 miles from the sea-coast at Penguin, and consist largely of red hematite. Exploitation of the area is being undertaken by the present owners. (2) *Blythe River.*—It is reported that the quality of the ore in these deposits is excellent. Although the area has not been exhaustively examined it has been estimated that there is sufficient ore available to enable a production of 3,000 tons of finished steel per week to be furnished therefrom for many years. (3) *Natone.*—This lode is situated about 2 miles S.W. from the most southerly exposure of the Blythe River lode, of which it is apparently a continuation. Excellent ore outcrops at intervals throughout the lease. The limited dimensions of the occurrence are against its development as a self-contained centre, but it may prove convenient to work it in conjunction with the Blythe, or with operations at the Dial Range and Penguin. The total production of iron ore in 1908 was 3,600 tons, valued at £1,600, and was all raised by the Tasmanian iron mine at Penguin, but owing to the closing down of that mine in 1909 there has been no further production. Iron pyrites for the manufacture of sulphuric acid and of manures is produced on the West Coast, the quantity raised in 1918 being 5,106 tons, valued at £4,667.

(vii) *Northern Territory.* Large bodies of rich ironstone have been discovered in various parts of the Territory, particularly between the Adelaide River and Rum Jungle. Owing to the lack of local coal, however, the deposits possess no immediate value.

(viii) *World's Production of Iron, 1916.* The quantity of iron produced in Australia is but a very small proportion of the world's production, which in 1916, the latest year for which complete estimates are available, amounted to 73,596,000 metric tons (pig iron). The leading position for magnitude of production is held by the United States, which in 1916 produced 40,000,000 tons, compared with Germany's 13,314,000 tons, and the United Kingdom's 9,194,000 tons. The position of the three countries named is similar to what it has been for several years past. The world's production of steel for 1916 is given as 83,000,000 metric tons.

## § 9. Other Metallic Minerals.

1. **Antimony.**—This metal is widely distributed in the north-eastern portion of New South Wales, between the 148th meridian and the coast, and has been found native at Lucknow, near Orange. Dyscrasite, a silver antimonide, has been found in massive blocks in the Broken Hill lodes. The production of antimony (metal and ore) in 1918 amounted to 358 tons, valued at £3,155. The ore is raised mainly in the Hillgrove division, where it is found in association with scheelite and gold, but the production in 1918 amounted to only 127 tons valued at £1,250. A portion of this was smelted on the field. At the Black Lode mine at Metz, 216 tons of ore, valued at £1,800, were raised in 1918, the output being smelted in Sydney. The total quantity of antimony (metal and ore) raised in New South Wales up to the end of 1918 was 18,620 tons, valued at £338,841. The production of antimony concentrates in Victoria during 1918 amounted to 1,201 tons, valued at £24,020. The whole of the production came from ore raised by a company operating at Costerfield. In Queensland extensive deposits were discovered at Neerdie, in the Wide Bay district, during 1872, also at Wolfram Camp, on the Hodgkinson field, on the Palmer River, in the Ravenswood district, and on the Mitchell River in the Herberton district. Ore has also been obtained in the Dividing Range near Herberton, and adjacent to some of the central tributaries of Emu Creek. Production in 1916 amounted to 192 tons, valued at £3,965, but owing to the low price quoted for antimony ore the deposits were not worked in 1917 and 1918. In Western Australia lodes of stibnite carrying gold have been found in the Roeburne district. During 1917, 12 tons of antimony, valued at £258, were exported, but there was no production in 1918.

2. **Arsenic.**—In New South Wales, deposits have been located in the divisions of Tumut, Uralla, Glen Innes, and elsewhere, but there was no record of production in 1918. During 1917 the high price ruling for arsenic, and the urgency of the need for supplies in connection with the destruction of prickly pear, led to the reservation by the Queensland Mines Department of an extensive area of arsenic-bearing deposits at Jibbinbar, in the Stanthorpe District. Operations have been commenced, and it is hoped to produce the article at pre-war prices. The Beecroft mine at Sundown, in the Stanthorpe district, produced in 1918 the bulk of the output, which was valued at £2,980, and investigation is being made into the possibilities of other districts. In South Australia attention is being devoted to arsenic-bearing minerals at Woodside, at Westward Ho, near Mannahill, and on Kangaroo Island. In the form of arsenopyrite, arsenic is of wide distribution in Victoria, but the deposits are worked to a limited extent only. At Ballarat a small quantity of the oxide is obtained from the flues of roasting furnaces.

3. **Bismuth.**—This metal has been found in New South Wales, near Glen Innes, in the Deepwater division, and also at Whipstick, in the Pambula division, its discovery dating from 1877. The production at Kingsgate, in the former division, where bismuth occurs in association with molybdenite, was valued in 1918 at £3,480, while that at Whipstick was valued at £4,700. Deposits of bismuth ores are also found in the Oberon, Deepwater, Tenterfield, Young, and Gundaroo divisions. About 31 tons of metal and ore, valued at £16,406, were exported from New South Wales during 1918; the total quantity exported to the end of that year was 665 tons, valued at £168,827. In Queensland wolfram and bismuth have been found in various districts, but the chief centres of production in 1918 were the Herberton and Chillagoe fields. The total

production for the year was valued at £61,839, of which 249 tons, valued at £43,041, was returned as wolfram, 21 tons, valued at £588, as bismuth, and 114 tons, valued at £18,041, as bismuth and wolfram. There was also a small production returned as scheelite-wolfram, valued at £169. In South Australia, deposits are found at Balhannah, at Mount Macdonald, and at Murninnie, on the shores of Spencer's Gulf. In Tasmania 5 tons, valued at £1,038, were raised in 1918, principally from the Shepherd and Murphy mine at Middlesex.

4. **Chromium.**—In New South Wales chromium is found at Bowling Alley Point, on the Peel River, at Barraba, at Manilla, at Gordon Brook, in the Clarence River district, at Bingara, Wallendbeen, and near Gundagai. The production during recent years has been small, the quantity raised in 1918 being 368 tons, valued at £911, of which 256 tons were raised near Wallendbeen, in the Murrumburrah division, and 112 tons at Bingara. Chrome iron ore is found in Queensland in the Rockhampton district, the total output in 1918 being 232 tons, valued at £268.

5. **Carnotite.**—A discovery of carnotite ore was made in 1906 20 miles E.S.E. from the Olary railway station in South Australia. (See also "Radium.")

6. **Cobalt.**—This metal was found at Carcoar in New South Wales in 1889, and subsequently at Bungonia, Port Macquarie, and various other places. There was no export of cobalt since 1911, and the total produced since 1860 amounted in value to only a little over £10,000. Deposits have been noted in South Australia near Bimbourie and South Blinman; in Western Australia at Norseman and Kanowna; and at various places in Victoria.

7. **Lead.**—This metal was first noted in New South Wales in 1849, when small specimens of native metal were found by the Rev. W. B. Clarke. At present lead mining *per se* is not practised to any extent in the Commonwealth, the supply of the metal being chiefly obtained in conjunction with silver. In New South Wales, lead in the form of pig, carbonate, and chloride, exported in 1918, amounted to 21,922 tons, valued at £608,342. The total lead exported to the end of 1918 was 286,000 tons, valued at £5,451,000. As stated previously, the metallic contents of the major portion of the silver lead ores are extracted outside New South Wales, and these figures refer only to lead values assigned as the produce of the State. In Victoria, oxides, sulphides, and carbonates of lead are found in the reefs of most of the goldfields. The deposits are not, however, of sufficient extent to repay the cost of working. In Queensland the deposits are worked chiefly for the silver, copper or gold contents of the ore, the lead produced in 1918 amounting to 221 tons, valued at £6,778, of which 158 tons were produced in the Etheridge district, while small quantities were recorded from Stanthorpe, Herberton, Charters Towers, and other areas. Pig lead to the value of £163,880 was exported from Western Australia in 1918. Complete information is not available as to the lead contents of Tasmanian silver-lead ores. At one time South Australia produced a fair amount of lead, £22,303 worth being raised in 1902, but the production rapidly decreased, and no output has been recorded since 1910.

8. **Manganese.**—Ores of this metal occur in widely separated districts in New South Wales, but the low price of the metal in past years precluded mining to any great extent, and the production to date has been small. During 1917, 3,768 tons, valued at £4,504, were raised chiefly in the Grenfell division. Small quantities were also raised in the Rockley and Bathurst divisions. In Queensland there are extensive deposits at Mount Miller, near Gladstone, in the country to the west and south-west of Gympie, and in the Stanthorpe district, the production in 1918 being 1,299 tons, valued at £4,151, of which over 1,000 tons were raised in the Gympie area. Small quantities of manganese ore were raised in Victoria during 1916 from mines in the vicinity of Heathcote. Extensive deposits of the ore were mined at Booloonda in South Australia some years ago. Deposits are being actively worked at the present time at Pernatty, Hawker, and Gordon. The production in 1918 was valued at £17,876. In Western Australia ores of the metal are found widely scattered, the black oxide being especially plentiful in the Kimberley district.

9. **Mercury.**—In New South Wales mercury was first recorded by the Rev. W. B. Clarke in 1841. Cinnabar has been found in lodes and impregnations at various places, such as Bingara, Clarence River, etc. Up to the present the production of quicksilver

has been small, the total being only about 3,000 lbs. During 1916 the Pulganbar Company raised 200 tons of ore from their mine at Ewengar in the Drake division. The mercury produced was valued at £180. There was no production recorded in 1917 and 1918. In Victoria native mercury and cinnabar have been found at Silver Creek, a tributary of the Jamieson River. Lodes of cinnabar have been found in Queensland at Kilkivan, and at Black Snake, in the Wide Bay district; about four tons were produced between 1874 and 1891. Between O.K. and Mungana several shows have been prospected with encouraging results. Small quantities have been found disseminated over a large area near Willunga in South Australia, and it is also found in New Guinea.

**10. Molybdenum.**—In New South Wales molybdenite (associated with bismuth) is obtained at Kingsgate, near Glen Innes, at Deepwater, at Rocky River in the Tenterfield division, in the Bathurst division, and at Whipstick in the Pambula division, the export in 1918 being 93 tons, valued at £41,850, as compared with 70 tons, valued at £31,608 in the previous year. In Victoria 6 tons of molybdenite, valued at £180, were raised in 1918 at Heathcote. The production in Queensland for 1918 was 110 tons, valued at £48,176, of which 90 tons, valued at £39,603, were produced by the Chillagoe field, and 18 tons, valued at £7,817 from the Mount Perry area. A small quantity was produced in 1914 from the mines in the Moonta district in South Australia, and the occurrence of the metal is reported from various other localities. At the Yelta mine bunches of the ore are scattered through the copper ore, and the molybdenite is picked out during the dressing of the copper ore. The yields for 1917 and 1918 were, however, trifling. Molybdenite occurs in small quantities at various localities in Western Australia. In the Northern Territory, molybdenite is found at Yenberrie, where it is stated that the ore increases in richness as the workings become deeper.

**11. Radium.**—(i) *General.* It is reported that there have been several definite discoveries in Australia of the occurrence of minerals containing radium. The discovery at Olary, in South Australia, of carnotite, which is an alteration product of pitchblende, the compound from which radium is obtained, has already been referred to. In 1910 pitchblende was identified in portion of the workings at Olary, and a specimen exhibiting a high degree of radio-activity was obtained. This is the first authentic discovery of the mineral pitchblende in Australia. The deposits of radio-active uranium ores found at Radium Hill were mined during the last few years, and the concentrates forwarded to Sydney for treatment at the company's works at Woolwich. As noted in (ii) below, operations are at present at a standstill. Monazite from Pilbara, Western Australia, has been shewn to give off radium emanations. The mineral has been called "pilbarite." Lastly, it is stated that the ores obtained at the Moonta mines, South Australia, contain from one-tenth to one-fifteenth of the amount of radium found in high-grade pitchblende, and that a product having a fairly high degree of radio-activity can be extracted therefrom with comparative ease. During 1918 radio-active ore to the value of £686 was raised in South Australia.

(ii) *Production of Radium Bromide.* At the end of November, 1912, a small quantity of radium bromide was produced at the Radium Hill Co.'s works at Woolwich, Sydney, this being the first occasion on which a marketable amount of this salt has been obtained outside of Europe. It was estimated by the chemist in charge that the plant at the works was capable of providing £600 worth of radium weekly. From the 30th June, 1913, to the end of May, 1914, the works produced 239 milligrams of high-grade radium preparation. The industry, however, has since remained inactive.

**12. Tungsten.**—Wolfram and scheelite, the principal ores of tungsten, are both mined to some extent in New South Wales. During 1918 the production of wolfram was 136 tons, valued at £24,552, and of scheelite 117 tons, valued at £21,078. Wolfram was mined chiefly at Torrington, in the Deepwater division, and scheelite in the Hillgrove area. In Victoria the production of wolfram was returned in 1918 as  $4\frac{1}{2}$  tons, valued at £828, the bulk of the production coming from Benambra, Marysville, and Koetong. In Queensland, tungsten ores are found in several districts, the chief centres of production in 1918 being Chillagoe and Herberton. (See also "Bismuth.") A deposit of wolfram was discovered near Yankalilla, in South Australia, as far back as 1893, but the production up to date has been small. It is believed that careful examination will lead to increased production from the deposits at Callawonga Creek. In the Northern Territory wolfram

to the value of £38,788 was obtained in 1917-18, chiefly from the Burns Wolfram mine, 40 miles east of Pine Creek, and from Hatches Creek, about 800 miles south-east of Darwin. Deposits have also been located at Wauchope Creek, 80 miles west of Hatches Creek, and at Yenberrie, south of Pine Creek. Numerous samples of good wolfram ore have been obtained at the Frew River in Central Australia.

In Western Australia a deposit of wolfram was discovered in the West Kimberley district about 70 miles to the north-east of Derby. The export in 1916 and succeeding years was, however, very small. Wolfram is mined at various points in Tasmania, the production for 1918 being 155 tons, valued at £27,239, obtained chiefly at Avoca and from the Shepherd and Murphy mine at Middlesex. Scheelite has been discovered on King Island in Bass Strait, and as a result of operations in 1918 216 tons of concentrates of an estimated value of £39,252 were produced.

13. **Tantalum.**—Tantalite in small quantities has been found in the Greenbushes mineral field of Western Australia for some time past, but recently a lode of fairly extensive proportions was located at the Wodgina tinfield. Up to the end of 1905 the production of this mineral in Western Australia amounted to 73 tons, valued at about £10,000, but early in 1906 it was found that the supply exceeded the demand, and production was temporarily stopped; in 1908 a small quantity valued at £400 was exported. About £327 worth was reported as having been raised in the Greenbushes and Pilbara fields during 1909, but none was exported owing to the entire absence of any market. No further production was recorded until 1916, when 47 tons, valued at £9,375, were exported, consisting of ore which had been raised some years previously at Wodgina, in the Pilbara field. The export in 1917 amounted to 17 tons, valued at £2,513, but there was no record of production in 1918. Small quantities of the mineral are also found in the Northern Territory.

14. **Uranium.**—This mineral has been discovered in South Australia in the country between Mount Painter and Mount Pitts, about 80 miles east from Farina. The uranium ores occur most frequently in the form of torbernite and autunite, and are found over a considerable area. The discovery is therefore of considerable importance, since ores of this mineral are found to a very limited extent in other parts of the world, and radium is regarded as one of the products of disintegration of uranium.

In addition to the metals enumerated above there is a large number of others occurring in greater or less degree, while fresh discoveries are being constantly reported.

## (B) NON-METALLIC MINERALS.

### § 10. Coal.

1. **Production in each State.**—(i) *Historical.* A historical account of the discovery of coal in each State will be found in preceding issues of the Year Book. (See No. 3, pp. 515-6.)

(ii) *New South Wales.* The production in 1918 amounted to 9,063,176 tons, valued at £4,941,807, or an increase of about 770,000 tons in quantity, and £519,000 in value, as compared with the output in 1917. The increase in the Northern district amounted to 586,000 tons; in the Southern to 143,000 tons; and in the Western district to 41,000 tons.

(iii) *Victoria.* During 1918, 505,775 tons of coal were raised, valued at £367,640. Of this total 389,794 tons, valued at £302,311, were raised by the State coal mine at Wonthaggi, and 62,517 tons, valued at £17,192, from the State brown coal mine at Morwell. The total production for 1918 was only slightly in excess of that in the preceding year.

(iv) *Queensland.* The quantity of coal raised in 1918 was 983,193 tons, valued at £572,305, this production being about 65,000 tons less than in the preceding year. The decrease was due to the lessened demand for general purposes, coupled with the enforced closing down of one of the principal collieries in the Ipswich district. Twenty-six collieries were working in the Ipswich district, six on the Darling Downs, four in the Maryborough district, one at Mount Mulligan in the Chillagoe district, and seven at

Blair Athol and Bluff. The industry is at present in a very satisfactory position in the northern State, and owing to the wide area over which the deposits stretch, practically no limit can be set to its possibilities of extension.

(v) *Western Australia.* Five collieries were in operation on the Collie field during 1918, and the output for the year was 337,039 tons, the largest on record, and about 10,000 tons more than in 1917.

(vi) *Tasmania.* The principal collieries in Tasmania are the Cornwall and Mount Nicholas, the former producing 27,000 and the latter 29,000 tons out of a total yield in 1918 of 60,000 tons.

The quantity and value of coal produced in each State and in the Commonwealth at various periods since 1881 are shown in the following table :—

### PRODUCTION OF COAL, AUSTRALIA, 1881 TO 1918.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
QUANTITY.							
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1881 .. ..	1,769,597	3	65,612	..	..	11,163	1,846,375
1891 .. ..	4,037,929	29,156	271,603	..	..	43,256	4,381,944
1901 .. ..	5,968,426	209,479	539,472	..	117,836	45,438	6,880,651
1914 .. ..	10,390,622	620,251	1,053,990	..	319,210	60,794	12,444,867
1915 .. ..	9,449,008	590,968	1,024,273	..	286,066	64,536	11,415,451
1916 .. ..	8,127,161	420,098	907,727	..	361,526	55,575	9,812,087
1917 .. ..	8,292,867	505,364	1,048,473	..	326,550	63,412	10,236,666
1918 .. ..	9,063,176	505,775	983,193	..	337,039	60,163	10,949,346
VALUE.							
	£	£	£	£	£	£	£
1881 .. ..	603,248	3	29,033	..	..	5,581	637,865
1891 .. ..	1,742,796	21,404	128,198	..	..	21,628	1,914,026
1901 .. ..	2,178,929	147,228	189,877	..	68,561	18,175	2,602,770
1914 .. ..	3,737,761	289,099	416,292	..	148,684	27,853	4,619,689
1915 .. ..	3,424,630	275,343	409,342	..	137,859	30,418	4,277,592
1916 .. ..	3,336,419	216,875	389,348	..	147,823	27,736	4,118,201
1917 .. ..	4,422,740	345,830	597,360	..	191,822	38,673	5,596,425
1918 .. ..	4,941,807	367,640	572,305	..	204,319	37,676	6,123,747

The Victorian figures for 1918 include about 66,000 tons of brown coal, valued at £18,000, of which 62,000 tons were produced at the State mine at Morwell.

2. *Distribution and Quantity of Coal in each State.*—(i) *New South Wales.* Estimates have from time to time been made as to the total quantity of coal available for working in the deposits in New South Wales, and while these naturally differ to some extent, they agree in placing the amount at well over a thousand million tons, without taking into consideration the deposits existing below a depth of 4,000 feet. According to Mr. E. F. Pittman, the coal-bearing rocks of New South Wales may be classified as follows :—

### COAL-BEARING ROCKS OF NEW SOUTH WALES.

Geological Age.	Maximum Thickness of Coal-bearing Strata.	Locality.	Character of Coal.
I. Tertiary—Eocene to Pliocene ..	Approx. 100 ft.	Kiandra, Gulgong, and Chouta Bay	Brown coal or lignite
II. Mesozoic—Triassic or Trias-Jura	2,500 „	Clarence and Richmond Rivers	Coal suitable for local use only
III. Palæozoic—Permo-Carboniferous	13,000 „	Northern, Southern, and Western Coalfields	Good coal, suitable for gas, household and steaming
IV. Palæozoic—Carboniferous ..	10,000 „	Stroud, Bullah Dellah	Very inferior coal, with bands; of no value

In regard to the Tertiary deposits, it may be noted that no serious attempt has been made to use the coal as fuel in New South Wales. At Kiandra a deposit of lignite was found to possess a maximum thickness of 30 feet, but as a general rule the seams vary from 3 to 4 feet in thickness. The Triassic or Trias-Jura deposits in the Clarence and Richmond districts contain numerous seams, but the coal is largely intersected by bands, while its large percentage of ash renders it unfit for use as fuel for industrial purposes. These beds extend under the great western plains, but the presence of artesian water precludes the possibility of their being worked. The Clarence basin extends into Queensland, and at Ipswich thick and valuable seams of coal are worked. It is in the Permo-Carboniferous division that the great productive coal seams of the State are found, the area which they cover being estimated at about 16,550 square miles. The deepest part of the basin is somewhere in the vicinity of Sydney, where the "Sydney Harbour Colliery" worked the top seam at a depth of 2,834 feet. Towards the north, south and west the seams rise towards the surface, and outcrop in the neighbourhood of Newcastle, Bulli and Lithgow. The coal from the various districts embraced in this division differs considerably in quality—that from the Newcastle district being especially suitable for gas-making and household purposes, while the product of the Southern (Illawarra) and Western (Lithgow) is an excellent steaming coal. At the present time the Greta coal seams are being extensively worked between West Maitland and Cessnock, and this stretch of country, covering a distance of 15 miles, is now the most important coal mining district in Australasia. The Permo-Carboniferous measures have in various places been disturbed by intrusions of volcanic rocks, which in some instances have completely cindered the seams in close proximity to the intrusive masses, while in other instances the coal has been turned into a natural coke, some of which has realised good-prices as fuel.

The table hereunder gives the yields from the various divisions at intervals from 1881 to 1918 :—

#### COAL RAISED IN NEW SOUTH WALES, 1881 TO 1918.

District.	1881		1901.		1911.		1918.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	Tons.	£	Tons.	£	Tons.	£	Tons.	£
Northern ..	1,352,472	437,270	3,909,252	1,669,519	5,793,646	2,320,673	5,966,926	3,481,418
Southern ..	253,283	115,505	1,544,454	407,196	2,066,621	636,163	1,934,573	978,449
Western ..	163,842	50,473	424,720	102,214	831,337	210,329	1,111,672	481,940
Total ..	1,769,597	603,248	5,963,426	2,178,929	8,691,604	3,167,165	9,063,176	4,941,807

*Sydney Harbour Colliery.* This colliery possesses considerable interest from the circumstance that its workings are amongst the deepest in the world. Extended reference to the history of its opening will be found in preceding Year Books. (See No. 6, p. 504.)

(ii) *Victoria.* The deposits of black coal in Victoria occur in the Jurassic system, the workable seams, of a thickness ranging from two feet three inches to six feet, being all in the Southern Gippsland district. Deposits of brown coal and lignite of immense extent occur in gravels, sands, and clays of the Cainozoic period throughout Gippsland, Mornington Peninsula, Werribee Plains, Gellibrand, and Barwon and Moorabool basins. In the Latrobe Valley, the beds reach a thickness of over 800 feet. When dried, the material makes good fuel, but owing to its excessive combustibility and friability requires to be consumed in specially constructed grates. Its steaming value is equal to about half that of the Wonthaggi coal. Some large factories already have adopted brown coal for firing boilers, and there is also a fair demand for the product by householders. In 1917 an Advisory Committee appointed to report on the brown coal deposits of Victoria recommended the establishment of an open-cut mine at Morwell in connexion with a comprehensive scheme for electrical power generation and transmission, as well as for the supply of brown coal for other requirements. The recommendations of this Committee were incorporated in the "Electricity Commissioners Act" of 1918.



The output of coal from the chief Victorian collieries during the last ten years was as follows :—

### PRODUCTION OF COAL IN VICTORIA, 1909 TO 1918.

Year.	State Coal Minc.	Outtrim Howitt Company.	Jumbunna Coal Company.	Coal Creek.	Austral Coal.	Other.	Total Pro- duction.	Value.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	£
1909 ..	2,946	44,156	65,945	3,265	10,631	1,730	128,673	76,945
1910 ..	201,053	46,832	61,954	10,968	36,052	13,050	369,909	189,254
1911 ..	506,059	28,359	57,397	4,589	34,607	28,987	659,998	301,141
1912 ..	455,659	24,326	53,306	4,829	31,506	23,529	593,155	259,321
1913 ..	486,238	22,460	38,795	6,218	33,462	9,723	596,896	274,940
1914 ..	550,107	16,597	24,236	5,887	20,034	3,390	620,251	289,099
1915 ..	528,922	7,500	28,160	6,338	16,229	3,819	590,968	275,343
1916 ..	354,146	..	31,792	5,688	10,885	17,587	420,098	218,875
1917 ..	405,498	..	22,236	1,958	13,888	61,784	505,364	345,830
1918 ..	389,794	..	16,533	2,378	15,419	81,651	505,775	367,640

Included in the total for "other" is an amount of 11,975 tons raised by the Powlett North Woolamai, and 3,475 tons raised by the Sunbeam Colliery. The figures also include about 62,000 tons of brown coal raised by the State mine at Morwell, and about 4,000 tons raised by the Altona Beach Estates.

(iii) *South Australia.* The coal from Leigh's Creek in South Australia is subject to similar disabilities to those of the Victorian brown coal, and until some means are devised of overcoming them, production will probably languish. The deposit is situated about 370 miles by rail from Adelaide, and 160 from Port Augusta, the total extent of coal-bearing country being set down as 42 square miles. The main seam has a thickness of over 45 feet.

(iv) *Queensland.* In Queensland the coal-bearing strata are of vast extent and wide distribution, being noted under the greater portion of the south-eastern districts, within 200 miles of the sea, as far north as Cooktown, and under portions of the far western interior. The Ipswich beds are estimated to occupy about 12,000 square miles of country, while the Burrum fields occupy a considerably larger area. At Callide, fifty miles west of Gladstone, a seam of coal free from bands has been struck in a shaft only 60 feet deep, and borings have proved the deposit to be of considerable magnitude. The beds in the Cook district are estimated to comprise rather more than 1,000 square miles, but coal measures extend to the south-west far beyond Laura and to the north of the railway. Extensive beds occur in the basin of the Fitzroy River, in the Broomsound district, and at the Bowen River. Amongst other places where the mineral is found may be enumerated Clermont, the Palmer River, Tambo, Winton, Mount Mulligan, and the Flinders River. Boring operations have proved the existence of seams of workable coal for some distance on both sides of the Dawson River. A bituminous coal is yielded by the Ipswich seams, those of the Darling Downs yield a cannel, while anthracite of good quality is furnished by the Dawson River beds.

The quantity and value of coal raised in Queensland at various periods since 1861 were as shewn below :—

### PRODUCTION OF COAL IN QUEENSLAND, 1861 TO 1918.

Year .. ..	1861.	1871.	1881.	1891.	1901.	1918.
Quantity .. Tons	14,212	17,000	65,612	271,603	539,472	983,193
Value.. .. £	9,922	9,407	29,033	128,198	189,877	572,305

The distribution of production during the last three years was as follows :—

QUEENSLAND COLLIERIES, 1916, 1917, AND 1918.

Districts.	1916.	1917.	1918.
	Tons Raised.	Tons Raised.	Tons Raised.
Ipswich .. .. .	583,692	728,605	678,931
Darling Downs .. .. .	99,511	97,797	94,242
Wide Bay and Maryborough .. .. .	79,726	72,282	62,948
Rockhampton (central) .. .. .	5,034	6,410	7,955
Clermont .. .. .	124,483	132,664	122,812
Mount Mulligan (Chillagoe) .. .. .	15,281	10,715	16,305
Total .. .. .	907,727	1,048,473	983,193

It is estimated that about one-third of the production from Ipswich was shipped at Brisbane, about 60 per cent. being for bunker purposes and the remainder going to northern ports for railways, gasworks, meatworks, etc.

(v) *Western Australia.* The coal seams in Western Australia belong to the Carboniferous, Mesozoic, and Post-tertiary ages. Most of the coal contains a large proportion of moisture, and belongs partly to the hydrous bituminous and partly to the lignite class. The only coalfield at present worked is at Collie, in the Permo-Carboniferous beds. The coal produced is bright and clean, but very fragile when free from moisture. The increased output up to 1914 is partly due to the establishment of a bunkering trade at Bunbury and Fremantle, and partly to the employment of improved machinery. Difficulties with an inflow of water on the Scottish Collieries and a falling-off in the bunkering trade were responsible for the diminished returns in 1915. The production from this field since 1901 was as follows :—

PRODUCTION OF COAL IN WESTERN AUSTRALIA, 1901 TO 1918.

Year ..	1901.	1911.	1913.	1914.	1915.	1916.	1917.	1918.
Quantity Tons	117,836	249,899	313,818	319,210	286,666	301,526	326,550	337,039
Value £	68,561	111,154	153,614	148,684	137,859	147,823	191,822	204,319

In 1918 a discovery of coal was made near Wilga on the Donnybrook-Katanning railway.

(vi) *Tasmania.* In Tasmania, coal occurs in the following geological periods :—  
 (1) Permo-Carboniferous : Lower Coal Measures. (2) Mesozoic : Upper Coal Measures.  
 (3) Tertiary : Brown Coal and Lignite deposits. Permo-Carboniferous coal is found at Avoca, Mt. Nicholas and Fingal, Thomson's Marshes, Langloh, Seymour, York Plains, Mike Howe's Marsh, Longford, Colebrook, Schouten Island, Spring Bay and Prosser's Plains, Compton and Old Beach, Lawrenny, Longhole, Sandfly, Ida Bay, Hastings and Southport, Recherche and South Coast, Tasman's Peninsula. Deposits of lignite and brown coal are plentiful in beds of Tertiary age, but they have not been exploited to any extent. An estimate gives the approximate quantity of coal available as sixty-five

million tons, of which eleven millions are in the Lower Coal Measures and fifty-four millions in the Upper Measures, exclusive of an unknown quantity in strata fringing the Central Tiers.

#### PRODUCTION OF COAL IN TASMANIA, 1901 TO 1918.

District.	1901.	1910.	1911.	1914.	1915.	1916.	1917.	1918.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
North-western ..	2,952	1,720	1,496	1,074	270	673	350	1,353
North-eastern ..	37,239	71,115	54,296	58,743	63,507	54,284	61,910	56,461
Midland ..	1,536	721	635	847	691	598	399	1,161
South-eastern ..	..	8,899	640	130	68	20	753	1,188
South-western ..	3,711							
Total ..	45,438	82,455	57,067	60,794	64,536	55,575	63,412	60,163

The bulk of the output in 1918 was raised from the Cornwall and Mt. Nicholas mines in the North-eastern Division, which produced 26,900 and 29,403 tons respectively.

**3 Production of Coal in Various Countries.**—The total known coal production of the world in 1912 amounted to about 1,100 million tons (exclusive of brown coal or lignite), towards which the Commonwealth contributed 11 million tons, or about 1 per cent. The following table shews the production of the British Empire and the chief foreign countries in units of 1,000 tons in 1901 and during each of the years from 1911 to 1917 where the returns are available :—

#### COAL PRODUCTION, BRITISH EMPIRE, 1901 AND 1911 TO 1917.

Year.	United Kingdom.	British India.	Canada.	Australian C'wealth.	New Zealand.	Union of S. Africa.
	1,000 tons.	1,000 tons.	1,000 tons.	1,000 tons.	1,000 tons.	1,000 tons.
1901 ..	219,047	6,636	5,791	6,881	1,228	712
1911 ..	271,892	12,716	11,908	10,550	2,066	6,933
1912 ..	260,416	14,706	15,237	11,730	2,178	7,248
1913 ..	287,430	14,708	13,404	12,418	1,888	7,858
1914 ..	265,665	16,446	12,176	12,445	2,276	7,570
1915 ..	253,206	17,104	11,846	11,415	2,209	7,394
1916 ..	256,375	17,254	12,931	9,812	2,257	8,935
1917 ..	248,499	17,326	11,846	10,237	2,068	9,270

#### COAL PRODUCTION, FOREIGN COUNTRIES, 1901 AND 1911 TO 1917.

Year.	Russian Empire.	Sweden.	German Empire.	Belgium.	France.	Spain.	Japan.	United States.
	1,000 tons.	1,000 tons.	1,000 tons.	1,000 tons.	1,000 tons.	1,000 tons.	1,000 tons.	1,000 tons.
1901 ..	16,215	268	106,795	21,856	31,126	2,609	8,885	240,789
1911 ..	28,414	355	172,065	22,603	38,602	3,853	17,632	443,188
1912 ..	30,646	360	174,875	22,972	40,648	3,626	19,640	477,202
1913 ..	32,206	364	190,109	22,474	40,192	4,293	21,316	508,893
1914 ..	33,113	367	161,535	16,445	29,311	3,600	19,372	458,504
1915 ..	..	412	159,000	13,949	19,590	3,722	22,293	474,660
1916 ..	47,073	415	144,354	16,592	21,132	4,277	22,534	526,873
1917 ..	..	443	..	14,690	28,494	4,961	25,937	581,609

The United States returns include a large proportion of anthracite, the quantity averaging for the last five years about 82 million tons.

Including New Zealand the production from Australasia takes second place amongst the possessions of the British Empire, British India coming first in order.

**4. Export of Coal.**—The exports of coal from the Commonwealth are practically confined to New South Wales.

The total quantity of coal of Australian production (exclusive of bunker coal) exported from the Commonwealth to other countries in 1918 was 398,332 tons, valued at £290,378, of which amount 397,536 tons, valued at £289,580, were exported from New South Wales. Owing to the war the figures are, of course, considerably below those of normal years.

In the following table will be found the quantity and value of the exports from New South Wales, at decennial intervals since 1881 and during the last five years. The figures are given on the authority of the Mines Department of that State, and include both bunker coal and coal exported from New South Wales to other States of the Commonwealth :—

#### EXPORTS OF NEW SOUTH WALES COAL, 1881 TO 1918.

Year .. .. .	1881.	1891.	1901.	1911.	1914.	1915.	1916.	1917.	1918.
Quantity, 1,000 tons ..	1,030	2,514	3,471	5,024	5,868	4,668	3,434	3,264	3,422
Value, £1,000 ..	417	1,307	1,682	2,664	3,159	2,485	1,873	2,384	2,525

The principal oversea countries to which coal was exported from New South Wales during the year 1918-19 are as shewn hereunder. The quantity and value refer strictly to exports, and exclude bunker coal :—

#### DESTINATION OF NEW SOUTH WALES OVERSEA EXPORTS OF COAL, 1918-19.

Country.	Quantity.	Value.	Country.	Quantity.	Value.
	Tons.	£		Tons.	£
Chile .. ..	18,420	13,523	Java .. ..	40,940	36,533
Society Islands ..	11,953	8,320	Papua .. ..	5,201	3,932
Straits Settlements	32,652	25,174	New Caledonia ..	31,057	22,542
Fiji .. ..	20,605	15,339	Gilbert and Ellice Islands ..	2,175	1,503
New Zealand ..	290,847	208,432	Solomon Islands	1,445	1,498
Hawaii .. ..	25,700	19,142	Pleasant Island ..	2,177	1,302
India .. ..	19,250	14,438	Hong Kong ..	8,105	6,079
Tonga .. ..	730	674	France .. ..	934	701
Peru .. ..	3,487	3,138	Guam .. ..	1,769	1,062
Philippine Islands	10,172	8,568			

The quantity of bunker coal taken from New South Wales by oversea vessels was about 491,000 tons.

The distribution of the total output from New South Wales collieries during the last five years was as follows; the particulars given of quantity exported include coal shipped as bunker coal :—

#### DISTRIBUTION OF TOTAL OUTPUT OF NEW SOUTH WALES COAL, 1914 TO 1918.

Year.	Exports to Australasian Ports.	Exports to other Ports.	Local Consumption.	Total.
	Tons.	Tons.	Tons.	Tons.
1914 .. ..	2,581,810	3,286,223	4,522,589	10,390,622
1915 .. ..	2,601,070	2,067,324	4,780,614	9,449,008
1916 .. ..	2,203,659	1,230,439	4,693,063	8,127,161
1917 .. ..	2,225,228	1,038,569	5,029,070	8,292,867
1918 .. ..	2,697,033	724,643	5,641,500	9,063,176

The figures quoted above are given on the authority of the New South Wales Mines Department. Owing to the abolition of the record of interstate trade it is impossible to give the quantities forwarded to each of the States of the Commonwealth.

5. **Consumption of Coal in Australia.**—An estimate of the consumption of coal in the Commonwealth may be arrived at by adding the imports to the home production, and deducting the exports (including bunker coal taken by oversea vessels). The following table shews the consumption of coal in Australia, computed in the manner specified, for the last five years :—

#### CONSUMPTION OF COAL IN AUSTRALIA, 1914 TO 1918.

Year.				Quantity of Coal Consumed.		
				Home Produce.	Produce of Other Countries.	Total.
				Tons.	Tons.	Tons.
1914	..	..	..	8,944,867	23,066	8,967,933
1915	..	..	..	9,250,592	6,580	9,257,172
1916	..	..	..	8,266,215	11,068	8,277,283
1917	..	..	..	8,985,599	65,112	9,051,111
1918	..	..	..	9,866,323	22,334	9,888,657

The bunker coal taken away in 1918 is estimated at 685,000 tons.

6. **Price of Coal.**—(i) *New South Wales.* The price of coal in New South Wales has been subject to considerable fluctuation since the date of first production. Up to the end of 1857 the average value of the total output was 11s. 10d. per ton. Next year the value had risen to nearly 15s., declining thereafter until in 1871 the price realised was 7s. From 1872 to 1879 there was a rise in value to 12s. Between 1882 and 1891 the price ranged between 8s. and 10s. From 1891 onwards there was a steady decline until 1898, when the average was 5s. 4d. Henceforward prices rose again until 1902, when 7s. 5d. was the average. A decline then set in until 1905, when the price stood at a little over 6s., followed by a rise of one penny in 1906, and a further rise of eightpence in 1907. In 1908 the average was 7s. 4d., in 1916, 8s. 2d., while in 1917 the price advanced to 10s. 8d. per ton, the highest recorded since 1879. In 1918 there was a further rise to 10s. 11d. The price of New South Wales coal depends on the district from which it is obtained, the northern (Newcastle) coal always realising a much higher rate than the southern or western product. The average rate in each district during the last five years was as follows :—

#### PRICE OF COAL, NEW SOUTH WALES, 1914 TO 1918.

Year.				Northern District.	Southern District.	Western District.
				Per ton. s. d.	Per ton. s. d.	Per ton. s. d.
1914	..	..	..	7 8.26	6 4.12	5 6.33
1915	..	..	..	7 7.24	6 11.23	5 6.08
1916	..	..	..	9 0.72	7 1.77	5 6.90
1917	..	..	..	11 5.14	9 11.89	7 11.92
1918	..	..	..	11 8.03	9 10.32	8 8.04

(ii) *Victoria.* In Victoria the average price of coal up to the 31st December, 1890, was 19s. 3d. per ton. In 1895 the price was still as high as 12s. 2d., but in the following five years there was a serious decline, the value in 1900 being quoted at 9s. 7d. per ton. In 1901, however, there was an astonishing rise, the figure being as high as 14s. 7d. Since that year, however, the price again declined up to 1916, the average for 1905 being 10s. 2d.; for 1909, 12s.; for 1912, 8s. 9d.; for 1913, 9s. 3d.; for 1914 and 1915, 9s. 4d.; and for 1916, 10s. 4d. In 1917, however, the price rose to 14s. 5d., and in 1918 to 15s. 11d. per ton. These averages are exclusive of brown coal, the production of which in 1918 was valued at 5s. 5d. per ton.

(iii) *Queensland.* Prices in the principal coal-producing districts during the last five years were as follows:—

PRICE OF COAL, QUEENSLAND, 1914 TO 1918.

District.	Value at Pit's Mouth.				
	1914.	1915.	1916.	1917.	1918.
	Per ton. s. d.	Per ton. s. d.	Per ton. s. d.	Per ton. s. d.	Per ton. s. d.
Ipswich .. ..	7 1	7 3	7 11	10 8	11 0
Darling Downs .. ..	8 9	8 11	9 10	12 9	13 5
Wide Bay and Maryborough	11 4	11 10	12 2	15 10	16 9
Rockhampton .. ..	8 9	8 6	9 6	11 10	12 4
Clermont .. ..	8 5	7 8	7 9	11 5	10 5
Mount Mulligan (Chillagoe)	17 2	12 7	13 4	15 6	16 6
Average for State ..	7 11	8 0	8 7	11 5	11 8

The readjustment of prices and wages in the industry was responsible for the high averages in 1917 and 1918.

(iv) *Western Australia.* The average price of the Collie (Western Australia) coal up to the end of 1901 was 9s. 4d. per ton, the price in 1901 being 11s. 7d. In 1902 the average stood at 12s. 3d., and from that time the price fell steadily until 1906, when it was 7s. 7½d. per ton. In 1907, the average price was 7s. 8½d.; in 1908, 8s. 7½d.; in 1909, 8s. 5½d.; in 1910, 8s. 8d.; in 1911, 8s. 10d.; in 1912, 9s. 2d.; in 1913, 9s. 9d.; in 1914, 9s. 4d.; in 1915, 9s. 8d.; in 1916, 9s. 9d.; in 1917, 11s. 9d.; and in 1918, 12s. 1d. per ton.

(v) *Tasmania.* The average price per ton of coal at the pit's mouth in Tasmania was 8s. in 1901. In 1902 it was 8s. 7d.; in 1903, 8s. 9d.; in 1904 and 1905, 9s. 8d.; in 1906, 9s. 9d.; in 1907, 1908, and 1909, 8s.; in 1910, 11s. 9d.; in 1911 and 1912, 9s. 2d.; in 1913, 9s. 3d.; in 1914, 9s. 2d.; in 1915, 9s. 5d.; in 1916, 9s. 9d.; in 1917, 12s. 2d.; and in 1918, 12s. 6d. per ton.

7. *Price of Coal in the United Kingdom.*—During the five years 1914–18 the average value of coal at the pit's mouth in the United Kingdom has risen rapidly, the price in 1914 being 10s.; in 1915, 12s. 6d.; in 1916, 15s. 7d.; in 1917, 16s. 9d.; and in 1918, 20s. 11d. per ton.

8. *Employment and Accidents in Coal Mining.*—The number of persons employed in coal mining in each of the States during the year 1918 is shewn below. The table also shews the number of persons killed and injured, with the proportion per 1,000 employed, while further columns are added shewing the quantity of coal raised for each person killed and injured, this being a factor which must be reckoned with in any consideration of the degree of risk attending mining operations.

Returns published by the Board of Trade, England, some years ago, gave the total known number of persons engaged in coal mining in the principal countries of the world as 3½ millions, the number in the United Kingdom being 1,068,000; the United States, 723,000; Germany, 628,000; France, 199,000; Russia, 169,000; Belgium, 146,000; Austria, 75,000; India, 133,000; and Japan, 145,000.

The latest available returns shew the rate in the United Kingdom in respect of deaths through accidents in coal mines as 1.40, and for the British Empire 1.48 per 1,000 persons employed in coal mines. For France the rate is given as 1.17, for Germany 2.30, and the United States 3.35. For foreign countries generally the rate is stated at 2.48 per 1,000.

## EMPLOYMENT AND ACCIDENTS IN COAL MINING, 1918.

State.	Persons Employed in Coal Mining.	No. of Persons.		Proportion per 1,000 Employed.		Tons of Coal Raised for each Person.	
		Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
New South Wales	16,926	11	132	0.65	7.80	824,000	69,000
Victoria ..	1,584	4	6	2.53	3.80	126,000	84,000
Queensland ..	2,261	3	15	1.33	6.63	328,000	66,000
Western Australia	618	2	139	0.03	224.92	169,000	2,400
Tasmania ..	195	..	5	..	26.00	..	12,000
Commonwealth ..	21,584	20	297	0.93	13.76	547,000	37,000

The figures for New South Wales include a small number of shale miners.

## § 11. Coke.

1. **Production of Coke.**—Notwithstanding the large deposits of excellent coal in Australia, there was, prior to the war, a fairly considerable amount of coke imported from abroad. In 1918–19, however, the import was negligible. The table hereunder gives the production in New South Wales during the last five years :—

## COKE MADE IN NEW SOUTH WALES, 1914 TO 1918.

Year	1914.	1915.	1916.	1917.	1918.
Quantity .. .. tons	304,800	417,753	437,587	455,587	608,492
Value, total .. .. £	213,069	313,241	387,571	541,093	647,798
Value per ton ..	13s. 11d.	15s. 0d.	17s. 9d.	23s. 9d.	21s. 4d.

During the last five years the industry has made considerable progress. It provides a profitable means of disposal for the small coal which until recent years was allowed to go to waste.

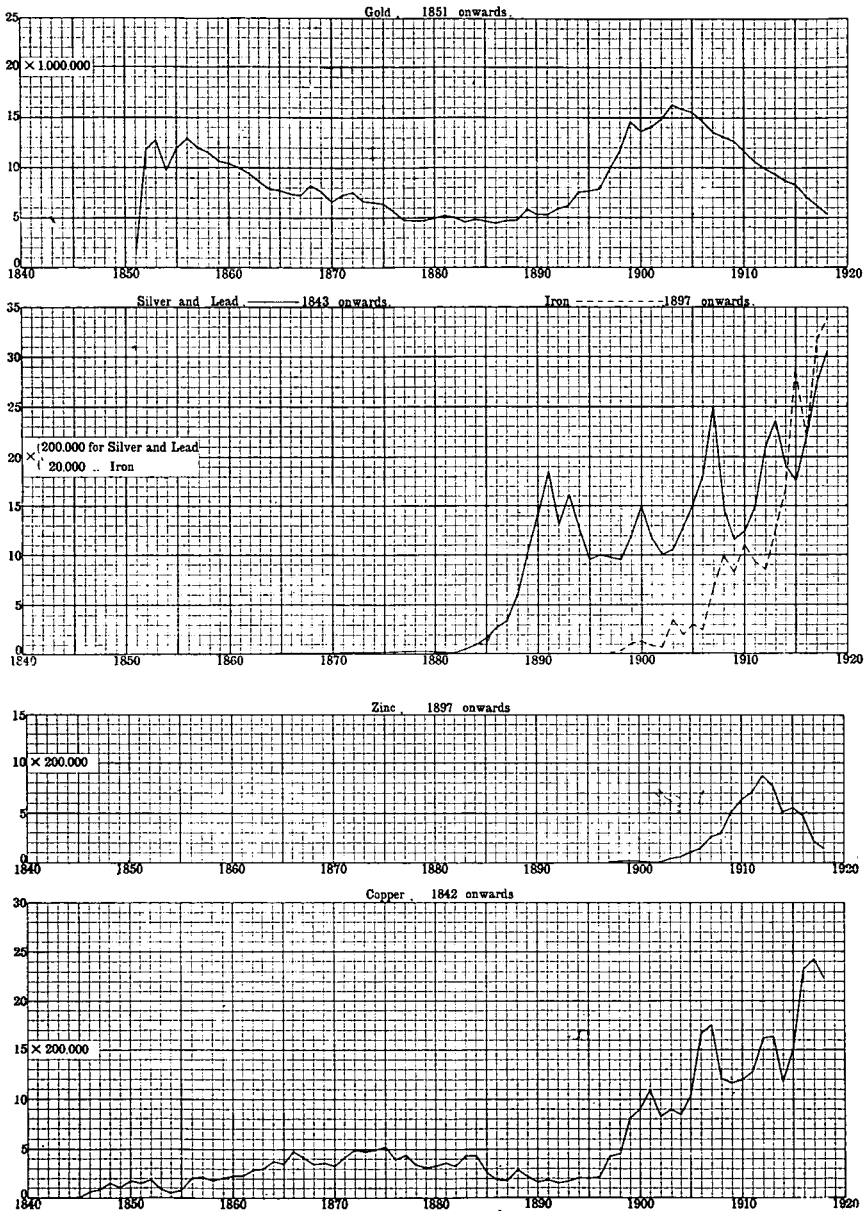
A small quantity of coke is made in Queensland, the quantity returned in 1918 being 14,437 tons, but the bulk of that used in ore reduction is imported, mainly from New South Wales. The following table shews the amount manufactured locally during the last five years :—

## QUEENSLAND.—COKE MANUFACTURED, 1914 TO 1918.

Year .. .. .	1914.	1915.	1916.	1917.	1918.
Manufactured locally tons	16,685	17,085	17,904	13,399	14,437

It is estimated that the total amount of coke consumed for smelting purposes in Queensland during 1918 was 74,000 tons, of which 14,000 tons were produced locally, and 60,000 tons were imported from New South Wales.

GRAPHS SHEWING VALUES OF THE PRINCIPAL MINERALS PRODUCED IN THE  
COMMONWEALTH, 1840 TO 1918.



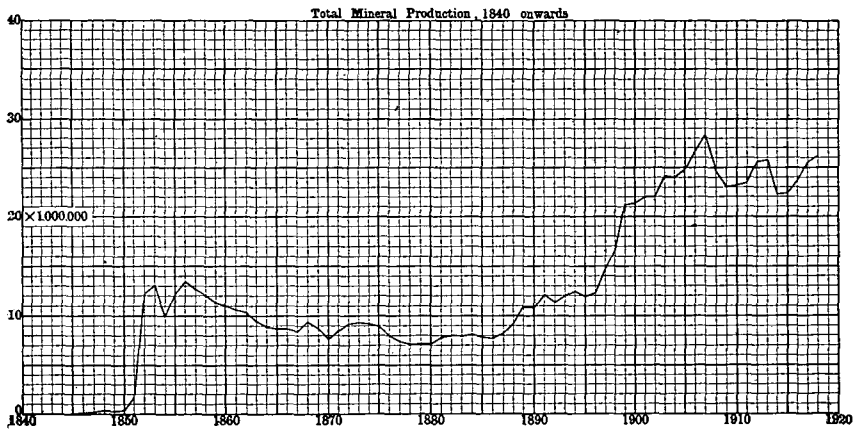
(See pages—for gold, 444 ; silver, 452 ; iron, 462 ; zinc, 461 ; copper, 455.)

EXPLANATION OF GRAPHS.—The values shewn in the above diagrams are those of the total Commonwealth production of certain of the most important minerals in successive years from 1840 to 1918.

The base of each small square represents an interval of one year, and the vertical height represents in the case of gold £1,000,000, in the case of silver and lead, zinc, and copper £200,000, and in the case of iron £20,000.



GRAPHS SHEWING VALUES OF THE PRINCIPAL MINERALS PRODUCED IN THE  
COMMONWEALTH, 1840 TO 1918—*continued*.



(See pages for 468 for coal ; 458 tin ; and 443 total mineral production.)

EXPLANATION OF GRAPHS.—The values shewn in the above diagrams are those of the total Commonwealth production of certain of the most important minerals in successive years from 1840 to 1918.

The base of each small square represents an interval of one year, and the vertical height represents in the case of coal and tin £200,000, and in the case of total mineral production £1,000,000.

## § 12. Oil Shale and Mineral Oils.

1. **Production of Shale.**—(i) *New South Wales.* As pointed out by Mr. E. F. Pittman, the name kerosene shale has been rather inaptly applied to a variety of torbanite, cannel, or boghead mineral found at various geological horizons in New South Wales. The mineral does not, as a rule, split in parallel layers, the fracture being rather of a conchoidal type. Pure samples have been found to contain over 89 per cent. of volatile hydro-carbons. The discovery of the mineral in New South Wales dates probably as early as 1802. Its occurrence in the Hartley Vale district was noted by Count Strzelecki in 1845. The mineral has been found at several places in the Upper Coal Measures, and in at least two in the Lower Carboniferous. Production on anything like a large scale commenced in 1868, when about 17,000 tons, valued at £48,000, were raised. The production in 1918 amounted to 32,395 tons, valued at £39,676, as compared with 31,661 tons, valued at £36,565, in 1917. For 1918 the whole of the production came from the Western District.

(ii) *Victoria.* Up to the present no extensive deposit of oil shale has been located in Victoria.

(iii) *Queensland.* The discovery of natural gas and traces of oil in a deep bore at Roma has fostered the hope that energetic development will lead to the discovery of mineral oil in quantity in this locality. At the end of March, 1918, the bore had reached a depth of 3,620 feet, and the casing was within 70 feet of the bottom. Although it is hoped that eventually the bore will be a producer of oil, attention is being devoted to the possibilities of the profitable utilisation of the natural gas therefrom as a source of supply of gasoline. At the latest available date further drilling operations were suspended by an obstruction in the bore, and the casing is being cut out as a preliminary to its removal. Oil-bearing shales are common in many parts of the State. The deposit at Duaringa on the Central railway line shewed a thickness of 6 feet, and contained about 30 gallons of oil to the ton. Inflammable gas and a little oil have been noted in bores put down for coal on the Dawson River. There are shale deposits at Munduran Creek, near Gladstone, Casuarina Island, Redbank Plains in the Ipswich District and Murphy's Creek, near Toowoomba. It is stated that the borings have not so far penetrated to a sufficient depth to properly test the strata.

(iv) *South Australia.* Bitumen is occasionally washed up on the Southern coasts of the continent from Port Davey in Tasmania to Cape Leeuwin in Western Australia. Specimens found on Kangaroo Island at one time led to the belief that they were the product of a terrestrial petroliferous area. Expert opinion now, however, inclines to the idea that the material is sea-borne, but the source of origin is unknown. Similar occurrences of this mineral have been reported from the coasts of California, South Africa, and New Zealand. A bore has been put down to a depth of over 4,000 feet, with negative results, by the South Australian Oil Wells Co. A large number of licenses to search for oil was taken out some years ago and bores were put down near Kingston and near Robe.

(v) *Western Australia.* A deposit of carbonaceous shale of considerable thickness is known to exist at Coolgardie, but the mineral has not yet been raised in any quantity. It is stated that small seepages of oil have been noted near Wonnerup, and indications have been reported from the neighbourhood of Albany and Esperance.

(vi) *Tasmania.* Tasmanite shale has been discovered in the basins of the Mersey, Don, and Minnow Rivers, and the Government Geologist estimates the probable capacity of the beds at 12,000,000 tons. The crude oil content of average quality shale has been estimated at 40 gallons to the ton. In July, 1912, the Railton-Latrobe Shale Oil Company acquired the leases and plant of the Tasmanian Shale and Oil Company, at Latrobe, and it was proposed to develop the deposits on a large scale. The production in 1914 was, however, small, amounting to 75 tons, valued at £75, while no returns from this source were included in the production records for 1915. In 1916, the Company

raised 1,286 tons of shale, valued at £1,286, but there was no production in 1917 and 1918. Large pieces of asphaltum have been discovered in places along the sea coast and in several of the bays of Port Davey Harbour, but it is believed that the material originates in submarine beds. A bore was put down in 1916 by a private company on Bruni Island in search of petroleum, but after sinking about 429 feet, operations ceased for lack of funds.

In 1917 a deposit of tasmanite shale was located on the Cam River.

(vii) *Northern Territory.* The existence of oil shale has been reported in the Boroloola district, and several oil licenses were applied for some years ago in the Victoria River district. Results were, however, negative, and experts have pronounced unfavourably on the prospects.

(viii) *Papua.* Many indications suggest that oil-bearing strata exist over an extensive area in the Gulf Division of Papua. Seepages of oil and natural gas are known, and, in addition, light oil of excellent quality has been obtained from sandy strata encountered in most of the prospecting bores put down under the direction of the Commonwealth Government. Reconnaissance surveys have been made of the country where evidences are known to exist, while selected areas are being surveyed in greater detail. Several test bores have been sunk, the deepest being over 1,800 feet; in each case quantities of inflammable oil and gas have been met with, but so far not in sufficient bulk for commercial purposes. (See also Section XXIX., Papua.)

2. *Export of Shale.*—In 1916–17 New South Wales exported a small quantity of shale, but there was no export in the succeeding year.

3. *Shale Oils Bounties.*—The *Shale Oils Bounties Act 1910* provided for the payment of bounties on certain goods manufactured in Australia from Australian shale on or after the 1st July, 1910, and before the 1st July, 1913. The total amount made available for bounties under this Act was £50,000. During the year 1913, the bounties paid in New South Wales amounted to £985 on 118,000 gallons of kerosene, and £809 on 324 tons of refined paraffin wax. Under the *Shale Oil Bounty Act of 1917* a sum of £270,000 was provided for bounty on crude shale oil at various rates. Bounty to the amount of £26,407 was paid on 2,816,718 gals. of crude shale oil in 1918–19.

### § 13. Other Non-Metallic Minerals.

1. *Alunite.*—Probably the most remarkable deposit of alunite in the world occurs at Bullahdelah, in the county of Gloucester, New South Wales, a large proportion of a low bluff ridge in the district being composed of this mineral. The deposits are worked by quarrying, and from 1890 up to the end of 1918, 51,000 tons had been exported, valued at £176,000, the exports for the year 1918 being 13,406 tons, valued at £17,030.

Deposits of a high-class alunite are reported to have been discovered near Sunbury, in Victoria.

According to the Geologist's report, apart from its scientific interest, no commercial importance attaches to the presence of natural alum over the area examined near Boonmoo, on the Chillagoe Railway in Queensland.

In South Australia an extensive deposit of the mineral was located in 1913 at Carrickalinga Head, on the coast north of Normanville, and within a short distance of Adelaide. Fresh discoveries were recently reported on the western shores of St. Vincent's Gulf. It is stated that the specimens so far analyzed have proved richer in valuable constituents than any similar find yet recorded. The mineral returns for 1917 shew a small production, but none was recorded in 1918.

2. *Asbestos.*—This substance has been found in various parts of Australia, but up to the present has not been produced in any considerable quantity. In New South Wales 180 tons of ore were raised by a company from deposits in the Barraba division. In Queensland seams of asbestos have been found over a belt of country extending

from Cawarral to Canoona. Samples of the fibre proved suitable for the manufacture of fibro-cement, sheeting, and tiles, but so far a payable deposit has not been located. In Western Australia a deposit of the fibrous chrysolite variety was located at Soanesville, on the Pilbara goldfield, and in 1909 £154 worth of this mineral was raised. The discovery of a deposit of commercial quality was reported from the Nullagine district in 1917. In 1899 Tasmania raised 200 tons, valued at £363, but there was no further production until 1916, when a small quantity was raised at Anderson's Creek, near Beaconsfield. In 1917, 271 tons, valued at £271, and in 1918, 2,854 tons, valued at £5,008, were produced. Deposits of asbestos of the mountain leather and mountain cork varieties have been discovered at Oodlawirra, while deposits of a good blue variety have been discovered near Hawker and about 23 miles from Eudunda, in South Australia.

**3. Barytes.**—In New South Wales during 1918 about 382 tons of barytes, valued at £541, were obtained, of which 212 tons were raised in the Trunkey division, and 100 tons in the Rylstone division. Deposits of the mineral have also been located in the Burrowa, Carcoar, Braidwood, and Cootamundra divisions. The production in South Australia during 1918 was given as £4,059. In this State there are extensive deposits of the mineral in the Willunga and other districts. About 200 tons of barytes were produced in Tasmania in 1918.

**4. Clays and Pigments.**—Valuable deposits of clays and pigments of various sorts are found throughout the Commonwealth. There is a considerable local production of earthenware, bricks, and tiles, but the finer clays have not as yet been extensively used. In New South Wales the production of kaolin in 1918 amounted to 339 tons, valued at £395, raised in the Murrumburrah division. Deposits of steatite were worked during 1918 in the Murrumburrah division, the quantity raised during the year amounting to 309 tons. Near Morangaroo 7,000 tons of silica were raised by the Silica Fire Brick Company. About 326 tons of ochre, valued at £564, were raised in the Dubbo division. In Victoria 1,478 tons of kaolin were obtained at Egerton, 352 tons at Stawell, 1,000 tons at Pyalong, and 234 tons at Carngham, the total value of the production being given at £3,544. A small quantity of pigments was raised from leases in the Balnarring and Knowsley areas. In Queensland, 8,306 tons of fireclay, valued at £2,040, were mined during the year 1918, the whole of which—with the exception of 2 tons from the Rockhampton field—was obtained in the Mount Morgan district. On Kangaroo Island, South Australia, where, it is stated, the first pottery mill in the Commonwealth was erected, there are vast deposits of felspar, china-stone, silica, and firebrick clay. There are also very extensive deposits of fireclay near Ardrossan on the Yorke Peninsula. Ochre deposits suitable for making coloured tiles are found near Port Noarlunga. Several tons were raised in 1918 from the Beltana deposits. Porcelain and other clays of good quality have been found in Tasmania at Beaconsfield, Sorell, Hagley, etc. Deposits of ochre have been opened up at Dubbo, Wellington, and Marulan, in New South Wales, and ochres and pigments of excellent quality have been produced therefrom. Extensive deposits of iron oxide, giving a return of 80 per cent. ochre, have been discovered near Oodlawirra in South Australia. Oil and water paints of good quality have been made from coloured ochres from Sorell, in Tasmania, and a deposit of ochre of good quality has been located near Mowbray. A company is making paints from the latter deposits, and also from deposits on leases near Ilfracombe.

**5. Coorongite.**—This peculiar india-rubber like material was first noted many years ago near Salt Creek and in the vicinity of Coorong Inlet, in South Australia, as well as at various localities on Kangaroo Island. It was thought that the substance owed its origin to subterranean oil-bearing strata, but so far the search for petroleum has not been attended with success. (See also § 12, 1 (iv.)) While the origin of coorongite is still in doubt, it is held by some observers that it originates from the blue-green algæ which frequently abound in swamps and shallow inland waters. Similar material has been found in Portuguese East Africa, and on the shores of lakes in Siberia.

**6. Fuller's Earth.**—Small quantities of this material were produced in 1917, from leases in the Narrabri division, New South Wales.

**7. Graphite.**—Graphite is found in New South Wales near Undercliff Station, in the county of Buller, and 240 tons raised during 1918 realised £30 per ton. The ore near the surface in this area was of the amorphous variety, but fine samples are now

being obtained in the deeper workings. In Victoria the mineral occurs in Ordovician slates in several of the goldfields, but is not worked. In Queensland graphite was raised some years ago by the Graphite Plumbago Company at Mt. Bopple, near Netherby, on the Maryborough-Gympie line. In South Australia deposits are found at various places in Eyre's Peninsula. While a large proportion of the product is not suitable for commercial use, the work so far done shews that flake graphite containing as high as 80 per cent. carbon can be obtained. The Government is offering a bonus of £1 per ton for the production of a marketable graphite. In Western Australia deposits occur at Munglinup Creek, near the Oldfield River, at Northampton, in the Murchison division, and on the Donnelly River, at Kendenup, about 40 miles from Albany. At the last-mentioned locality, where the ore is of good grade, a fair amount of developmental work has been done, but the export in 1918 was small, amounting to 5 tons, valued at £75.

8. **Gypsum.**—This mineral is found in various places in the Commonwealth. It occurs in two forms, large crystals, and a floury earth consisting of minute crystals and known as "copi." Both forms are exceedingly pure. It is used largely as a natural manure and to some extent in the manufacture of Portland cement. Gypsum, or hydrous sulphate of lime, when burnt, forms plaster of Paris. In Victoria during 1918 there was a production of 731 tons, valued at £434, obtained chiefly at Lake Boga. Numerous deposits of gypsum are found in Southern Yorke's Peninsula in South Australia. The production in 1918 was valued at £28,012. A factory for the manufacture of plaster of Paris has been erected by the Permasite Co. on its lease at Dry Bone Lake. A deposit of gypsum sand containing practically an inexhaustible supply is found on the edge of Lake Austin in Western Australia.

9. **Magnesite.**—Deposits of this mineral have been discovered at several localities in New South Wales. During 1918, 2,855 tons, valued at £4,336, were raised at Fifield, and 450 tons, valued at £416, at Attunga. A small quantity was also raised near Warialda. The mineral is found at Heathcote in Victoria, where 225 tons, valued at £675, were produced in 1918. There are deposits in the neighbourhood of Rockhampton and Bowen in Queensland, and a deposit of exceptional purity has been located in the vicinity of Tumby Bay in South Australia, about five miles from the township of Tumby. The cost of transport is a drawback to the production from the Copley (Leigh Creek) district. The Broken Hill Co. is working a small deposit near the Beetaloo Waterworks. During 1915, 688 tons of magnesite, valued at £1,196, were exported from Western Australia, but the export in 1916 amounted to 12 tons only, in 1917 to 42 tons, and in 1918 to 62 tons. A large area of magnesite bearing country has been located at Bulong, about 20 miles east of Kalgoorlie.

10. **Tripolite, or Diatomaceous Earth.**—Although tripolite has been found at Barraba, Cooma, Wyrallah, and in the Warrumbungle Mountains in New South Wales, the deposits have not been worked commercially on any considerable scale. From the deposits at Middle Flat, in the Cooma division, 110 tons of diatomaceous earth, valued at £350, were produced in 1917. A small quantity was raised in the Barraba district in 1918. In Victoria there is a remarkably pure deposit at Lillicur, near Talbot, while beds of the mineral are also met with at other places in the Loddon Valley, near Ballarat, at various places close to Melbourne, at Craigieburn, Lancefield, Portland, Swan Hill, Bacchus Marsh, etc. During 1918, a production of 140 tons, valued at £560, was recorded. Fairly extensive deposits of diatomite exist in Queensland, in the Nerang, Beaudesert and Canungar areas, but the various outcrops have as yet been only partially examined. In Tasmania a deposit of diatomaceous earth has been located at Oatlands, but its use for the manufacture of explosives is apparently prejudiced by the circumstance that the diatoms are pulverised and contaminated with clay.

11. **Salt.**—Salt is obtained from salt lakes in the Western and North-western Districts of Victoria, and from salterns in the neighbourhood of Geelong. Large quantities are also obtained from the shallow salt lakes of South Australia, chiefly on Yorke Peninsula. Lake Hart, about 60 square miles in area, situated about 120 miles N.W. from Port Augusta, contains immense supplies of salt of good quality, which at present, however, owing to distance from market, possess no economic value. The salt is simply scraped from the beds of the lakes in summer time and carted to the refinery.

It is stated that care must be taken not to leave too thin a crust of salt over the underlying mud, as the resultant "crop" after the winter rains will in that case be smaller than usual. A bore put down near Kingscote, on Kangaroo Island, revealed brine from which salt can be profitably obtained by evaporation. In Western Australia supplies are obtained from dried-up shallow lakes and consumed locally or exported. The chief centres of production were formerly Rottnest Island, near Fremantle, Middle Island, near Esperance, and Port Gregory; but during recent years the bulk of the demand has been supplied from imports.

**12. Natural Manures.**—Gypsum has already been referred to (see 8 *ante*). South Australia possesses deposits of rock phosphate near Port Clinton and Ardrossan on Yorke Peninsula, at Belvedere near Kapunda, and at Koorunga, and also at many other places which have only been prospected to a small extent. The production in 1918 was 8,074 tons, valued at £10,773. Phosphate of lime has been found in small quantities in the limestone caves of New South Wales. In the Wellington division, from the area situated over the caves, about 300 tons of phosphate, valued at £1,000, were raised during 1918. There was a small production also from an area near Canowindra. In Victoria, about 3,000 tons of phosphate rock were raised in 1918 at Mansfield. Although it can hardly be considered a mineral product, mention may be made here of the large accumulations of guano on the Abrolhos Islands, off the coast of Western Australia, in the neighbourhood of Geraldton. The deposits vary in thickness from four to twenty-seven inches. During the years 1876–80 over 36,000 tons were raised; no figures are available shewing the quantity raised in recent years.

## § 14. Gems and Gemstones.

**1. Diamonds.**—Diamonds were first noted in New South Wales by E. J. Hargraves in 1851, and in October of the same year by Geological Surveyor Stutchbury. The Cudgegong field was discovered in 1867, and shortly afterwards the Bingara diamantiferous deposits were located. Stones of small size are also found at Cope's Creek and other places in the Inverell district. The largest diamond won in New South Wales was reported to have been obtained in 1905 at Mt. Werong, near Oberon, and weighed 28  $\frac{1}{2}$  carats. It is difficult to secure accurate returns in connexion with the production of precious stones, but the yield of diamonds in 1918 was estimated at 1,784 carats, valued at £1,204, while the total production to the end of 1918 is given at 193,640 carats, valued at £132,281. The yield in 1918 was contributed by miners working in the vicinity of Copeton, in the Tingha division. Small quantities of diamonds are found in Victoria in the gravels of streams running through granite country in the Beechworth district, at Kongbool in the Western District, and near Benalla. The stones are generally small and the production up to date has been trifling. In 1912, eleven small diamonds, valued at £20, were picked out of the sluice boxes of the Great Southern alluvial mine at Rutherglen. A few small diamonds have been found in the Pilbara district in Western Australia. In South Australia diamonds have been found on the Echunga goldfield, the most notable gem being Glover's diamond, which was sold for £70. A few small diamonds have, from time to time, been found in Tasmania, chiefly while sluicing for gold in the Donaldson district.

**2. Sapphires.**—These gems were discovered in New South Wales in 1851, near Burrandong. They have also been found in small quantities near Inverell, and at a few other localities in the State. There is no record of production. Specimens of sapphire have been found in Victoria, but the stones of commercial size are generally of little value owing to flaws.

In Queensland sapphires are found in the gravel of creek beds, between Withersfield and Anakie on the Rockhampton-Winton railway line. The gems shew excellent fire and lustre, but the colour is darker blue than the Oriental sapphire. Hyacinths are occasionally found in association with the gems. The production of sapphires in Queensland in 1918 was valued at £16,591 as compared with £600 in 1915, and over £40,000 in 1913. The gem mining industry practically collapsed on the outbreak of the war, as the German buyers ceased business. With the opening up of markets in London and Paris,

however, matters assumed a more satisfactory footing and business remained fairly satisfactory in 1918. It is hoped that with the end of the war the trade with Switzerland in small blue and machine stones will be renewed. The approximate value of the stones cut on the field is given as £1,969. About 165 men are engaged in the search for the gems.

Sapphires are plentifully found in the tin drifts of the Ringarooma and Portland districts in Tasmania, but the stones are, as a rule, small and not worth saving.

**3. Precious Opal.**—This stone was first discovered in New South Wales at Rocky Bridge Creek on the Abercrombie River, in the year 1877, and later a most important discovery was made at White Cliffs in the Wilcannia district, which, until recently, contributed the bulk of the production. In 1918, however, out of a total production valued at £20,600, the yield from the Lightning Ridge field, near Walgett, amounted to £20,000, while the output from the White Cliffs field was only £600. Some very fine stones are at times obtained, one weighing 5 ozs. and valued at £300 being recovered in 1911. Occasionally, black opals of very fine quality are found, one specimen from the Wallangulla field, weighing  $6\frac{1}{2}$  carats, being sold in 1910 for £102. It is stated that this locality is the only place in the world where the "black" variety of the gem has been found. The total value of opal won in New South Wales since the year 1890 is estimated at £1,447,000.

Small quantities of precious opal are also found in the Beechworth district in Victoria.

In Queensland, the first recorded discovery of the gem dates from about 1875. The opaliferous district stretches over a considerable area of the western interior of the State, from Kynuna and Opalton as far down as Cunnamulla. The yield in 1918 was estimated at £300, and up to the end of that year at about £178,000. These figures are, however, merely approximations, as large quantities of opal are disposed of privately to buyers on the fields, no record of which is obtained. At present, the industry suffers from the peculiar disability that in good seasons there is plenty of work available on the pastoral stations, and most men prefer this to the uncertain results obtainable by fossicking, while in dry seasons when constant work is not obtainable, the search for opal is limited by the difficulty in obtaining sufficient water.

Precious opal has been discovered in South Australia in a locality 144 miles N. by E. of Tarcoola. The specimens show similar characteristics to those obtained at White Cliffs in New South Wales. Production in 1918 amounted to £7,175.

**4. Other Gems.**—Emeralds were found in New South Wales in the year 1890, near the township of Emmaville, the largest specimen found in the district weighing 23 carats in the rough. Altogether 2,225 carats were sent to London during that year, some of the gems bringing £4 a carat, but the production has since dwindled. The mine at the Glen in the Emmaville division was re-opened and worked for a short period during 1908, when about 1,000 carats of emeralds, valued at about £1,650, were obtained. The largest stone in the rough weighed 60 carats. Small emeralds of fine quality have been found at Poona, in Western Australia, and it is stated that prospecting at greater depths would possibly reveal the existence of larger specimens. Amongst other gems found in New South Wales at various times may be mentioned *turquoises*, discovered in 1894, near Bodalla; *topazes*, fine specimens of which have been obtained in the New England district; and *zircon*s and *garnets*. Zircons of small size are plentifully found in the vicinity of Table Cape in Tasmania. Topazes are common in the tin drifts of Tasmania, and some fine specimens have been found. Turquoises are also found in thin veins in Victoria. In Gascoigne's mine, situated near the King River, in the parish of Edi, samples of the gem have been found equal in colour to the best Persian stone, and a considerable quantity of turquoises from this mine has been sold in England and Germany. Fine *agates* are found in many places in Victoria, but have not been made use of to any extent. The gems also occur plentifully in the bed of Agate Creek, about four miles south of Forsayth, on the Etheridge field in Queensland. Garnets are found in Western Australia, and beautiful specimens of *crocidolite* have been obtained at Yarra Creek in the Murchison district. *Rubies* have been found at various places in New South Wales and Queensland. *Tourmaline* has been found on Kangaroo Island, in South Australia, and *beryls* near Williamstown, Victoria, and at Poona in Western Australia.

Very large but impure beryl crystals have been found at Ben Lomond in Tasmania. Some fine samples of *chiastolite* or luck stone have been found at Mt. Howden, near Bimbourie, in South Australia.

### (C) GENERAL.

#### § 15. Numbers Engaged, Wages Paid, and Accidents in Mining.

1. **Total Employment in Mining.**—The number of persons engaged in the mining industry in each State and in the Commonwealth fluctuates according to the season, the price of industrial metals, the state of the labour markets, and according also to the permanence of new finds, and the development of the established mines. During the year 1918 the number so employed was as follows:—

NUMBER OF PERSONS ENGAGED IN MINING, 1918.

State.	Number of Persons Engaged in Mining for						Total.
	Gold.	Silver, Lead, and Zinc.	Copper.	Tin.	Coal and Shale.	Other.	
New South Wales ..	2,540	7,585	1,529	2,352	16,926	2,731	33,663
Victoria ..	3,547	..	..	52	1,584	195	5,378
Queensland ..	929	98	3,209	1,110	2,261	1,034	8,641
South Australia ..	100	..	2,000	..	..	650	2,750
Western Australia ..	7,790	382	158	292	618	25	9,265
Tasmania ..	125	631	1,597	1,260	195	392	4,200
Northern Territory ..	84	10	60	190	..	168	512
Commonwealth ..	15,115	8,706	8,553	5,256	21,584	5,195	64,409

The following table shews the number of persons engaged in mining in the Commonwealth during each of the years 1891, 1901, and 1918, together with the proportion of the total population so engaged. The general falling-off since 1901 is due to the stagnation caused by the war, and largely also to the decline in the gold-mining industry:—

PROPORTION OF PERSONS ENGAGED IN MINING, 1891, 1901, AND 1918.

State.	1891.		1901.		1918.	
	Miners Employed.	No. per 100,000 of Popu- lation.	Miners Employed.	No. per 100,000 of Popu- lation.	Miners Employed.	No. per 100,000 of Popu- lation.
New South Wales ..	30,604	2,700	36,615	2,685	33,663	1,742
Victoria ..	24,649	2,151	28,670	2,381	5,378	376
Queensland ..	11,627	2,934	13,352	2,664	8,641	1,244
South Australia ..	2,683	834	7,007	1,931	2,750	617
Western Australia ..	1,269	2,496	20,895	11,087	9,265	2,956
Tasmania ..	3,988	2,695	6,923	4,017	4,200	2,011
Northern Territory ..	..	..	..	..	512	..
Commonwealth ..	74,820	2,341	113,462	2,992	64,409	1,280

2. **Wages Paid in Mining.**—Particulars regarding wages paid in the mining industry, which in earlier issues of the Year Book were given in this section, have now been transferred to the section dealing with Labour and Industrial Statistics.



3. Accidents in Mining, 1918.—The following table gives particulars of the number of men killed and injured in mining accidents during the year 1918:—

#### NUMBERS KILLED AND INJURED IN MINING ACCIDENTS, 1918.

Mining for—	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	N. T.	C'wealth.
KILLED.								
Coal and shale	11	4	3	..	2	..	..	20
Copper ..	1	..	9	2	..	3	..	15
Gold ..	1	5	3	..	24	..	..	33
Silver, lead, and zinc ..	9	..	..	..	..	..	..	9
Tin ..	..	..	2	..	..	1	..	3
Other minerals	1	..	..	..	..	1	..	2
Total ..	23	9	17	2	26	5	..	82
INJURED.								
Coal and shale	132	6	15	..	139	5	..	297
Copper ..	9	..	24	5	..	29	..	67
Gold ..	..	12	11	..	545	1	..	569
Silver, lead, and zinc ..	41	..	..	..	..	2	..	43
Tin ..	..	..	1	..	..	6	1	8
Other minerals	2	..	1	..	..	2	..	5
Total ..	184	18	52	5	684	45	1	989

### § 16. State Aid to Mining.

1. Introduction.—The terms and conditions under which the States granted aid in mining were alluded to at some length in previous issues (see Year Books 4 and 5), but owing to considerations of space they have been omitted from this issue. A résumé of what is being done in this direction at the present time is given hereunder.

2. New South Wales.—The chief aid given in this State is in the direction of assistance to prospectors. Up to the end of 1918 the total sum expended in this manner amounted to £489,436, of which £10,000 was advanced in 1918.

3. Victoria.—Up to the end of 1918 the total advances in aid of mining amounted to about £806,000, of which £41,997 was expended in 1918. Of the latter sum, £15,185 was disbursed in connexion with gold-mining, and £2,000 with coal-mining. The balance, amounting to £24,812, was made up chiefly of expenditure in connexion with boring, £12,116; aid to Bendigo Trust for clearing Bendigo Creek, £4,650; and construction and maintenance of testing plants, £3,600.

4. Queensland.—State assistance to the mining industry in 1918 amounted to £43,520, of which £12,393 consisted of loans in aid of deep sinking; £8,297 grants in aid of prospecting; £1,838 in aid of roads and bridges to gold and mineral fields; £5,424 advances under *Mining Machinery Advances Acts*; and £3,727 purchase of boring plant and boring for oil at Roma. At the State battery at Bamford 1,490 tons of ore were treated in 1918 for a recovery of 32 tons of molybdenite and 9 tons of wolfram. State assay offices are maintained at Cloncurry and Mareeba.

5. **South Australia.**—Aid is given to the mining industry under the terms of the Mining Act of 1893, and previous measures. Up to the end of 1918 the total amount of subsidy paid was £64,898, of which £10,698 has been repaid, and £2,250 written off, leaving a debit of £51,950. Portion of this amount is represented by machinery that has fallen into the hands of the Government. Repayments are made from profits, but in only two instances have the profits enabled a full return to be made.

6. **Western Australia.**—Under the Mining Development Act of 1902 assistance was granted in 1918 in accordance with the subjoined statement :—Advances in aid of mining work and equipment of mines with machinery, £2,620; aid to prospectors, £1,249; advances in aid of boring, £161; subsidies paid on stone crushed for the public, £612; miscellaneous, £1,751; making a total of £6,393. The receipts under the Act came to £960, of which £410 consisted of refunds of advances.

In 1918 there were 33 State batteries in operation. The amount expended thereon up to the end of 1918 was £91,981 from revenue and £276,850 from loan, giving a total of £368,831. During the year receipts amounted to £35,107, and working expenditure to £43,758.

The total value of gold and tin recovered to the end of 1918 at the State plants was £5,107,000, resulting from the treatment of 1,196,736 tons of gold ore and 77,000 tons of tin ore, together with a small amount from residues.

7. **Tasmania.**—Under the terms of the *Aid to Mining Act 1912* the expenditure for the year 1918 amounted to £130, and the total up to the end of that year to £19,610. The bulk of this was expended in mining, prospecting, and development work undertaken by or under the direction of the Department of Mines. Under the *Mining and Public Works Appropriation Act 1913*, there was no expenditure in 1918. The outlay to the end of 1917 was £57,692. Of the latter sum, £21,273 consisted of advances on the security of ore produced from any mine in the State, and £11,209 was absorbed by expenses in connexion with the State Argent Flat mine, Zeehan. Under the *Public Works Appropriation Act 1913*, a sum of £124 was expended in 1918, the total expenditure under this Act being £7,633. Further, a sum of £1,308 was expended under the *Mining Appropriation Act of 1917*. The practice of granting £5 per month to an approved prospector has resulted in the efficient investigation of mining possibilities over a wide area.

8. **Northern Territory.**—During the year 1918–19 the Government expenditure in aid of mining amounted to £4,948, of which £1,873 represented subsidies; £1,432 loss on crushing operations at Maranboy battery; £1,304 expenditure on driving and shaft sinking; £200 aid to Government prospecting party; and £139 cost of free assays. As it was considered that the method of assisting private prospectors was unsatisfactory the Government took over the control. Ten returned soldiers with good mining experience were selected and placed under the charge of a qualified mining engineer, and the party set out in May, 1920, to prospect the head reaches of the Katherine River.

The Government maintains batteries at Maranboy and Hayes Creek.

## § 17. Commonwealth Government Control of Industrial Metals.

1. **General.**—The Australian Metal Exchange was formed in September, 1915, with offices in Melbourne and Sydney. The members of the Exchange must be British companies, British firms, or natural-born British subjects, engaged in the production, buying or selling of metals and minerals. The Attorney-General has the right of veto with regard to membership for one year after the declaration of peace.

The policy of the Commonwealth Government is to have all metallic ores, as far as possible, treated within the Commonwealth, so that the resultant metals can be marketed in a refined state. In pursuance of this policy, an embargo exists by proclamation under the Customs Acts against the export of ores, metals, and minerals, except with

the consent of the Minister for Trade and Customs. Before such consent is given it is stipulated that all contracts for sales of ores, metals, or minerals for export from Australia must first be registered with the Australian Metal Exchange.

2. **Zinc.**—The Zinc Producers' Association Proprietary Limited was formed in May, 1916, to control and dispose of the Australian output of zinc concentrates and metal. All the principal zinc-producing companies are members, and the Association is founded on a co-operative basis. Fundamental principles are "all British control" and "equality of treatment" to all members. The Commonwealth Government is represented on the Board, and provision is made in the Articles of Association for the appointment of a representative of the Imperial Government on the Association's London Board.

In order to facilitate the early establishment of Australian zinc industries the Imperial Government has undertaken to advance £500,000, if required, to finance Australian zinc works, interest on such advances to be at the same rate as is paid by the Imperial Government.

3. **Copper.**—The Copper Producers' Association Proprietary Limited was formed in November, 1917, on similar lines to those of the Zinc Producers' Association, to control and dispose of the output of copper produced within the Commonwealth. All the principal copper-producing companies are members of the Association, and, as in the case of the Zinc Producers' Association, the Commonwealth Government is represented on the Board of Directors.

4. **Molybdenite, Wolfram, and Scheelite.**—The Commonwealth Government in September, 1915, entered into an arrangement with the Imperial Government for the acquisition of all wolfram, molybdenite, etc., produced in Australia. Under this arrangement, practically the whole of these minerals produced in Australia are being acquired for the Imperial Government, the prices fixed from the 1st January, 1918, being—

Wolfram and scheelite, 65 per cent.,  $\text{WO}_3$ , 52s. 6d. per unit at producing centres.  
Molybdenite, 85 per cent.,  $\text{MoS}_2$ , 100s. per unit at producing centres.

This arrangement with the Imperial Government terminates on the 31st March, 1920.

## § 18. Estimated Metallic Contents of Ores, Etc., Produced in Australia.

1. **Local Production.**—According to returns compiled by the Secretary of the Australian Metal Exchange from information obtained from mining companies and metal smelting and refining works, the quantities of the principal metals (exclusive of gold) extracted within the Commonwealth during the years 1916 to 1918 were as follows :—

### LOCAL EXTRACTION OF METALS, 1916-18.

Metal.					1916.	1917.	1918.
Silver .. .. .	..	..	..	ozs.	5,251,604	6,437,079	9,920,486
Lead, pig .. ..	..	..	..	tons	107,635	125,100	166,731
Zinc .. .. .	..	..	..	tons	5,227	4,131	6,221
Copper .. .. .	..	..	..	tons	34,828	35,989	44,018
Tin .. .. .	..	..	..	tons	3,879	3,990	4,582

2. **Metallic Contents of Ores, Concentrates, etc., Exported.**—The estimated metallic contents of ores, concentrates, etc., exported or sold for export during the years 1916–18 are given in the following table :—

**ESTIMATED METALLIC CONTENTS OF ORES, CONCENTRATES, ETC., EXPORTED OR SOLD FOR EXPORT, 1916-18.**

Metal.	Contained in—			1916.	1917.	1918.
Silver	ozs.	Lead, Silver, Gold Bullion	..	2,520,563	1,977,603	..
		Lead Concentrates	..	324,189	..	..
		Zinc Concentrates	..	2,093,554	1,582,575	5,666,609
		Copper Ores	..	2,980	..	..
		Total	..	4,941,286	3,560,178	5,666,609
Lead	tons	Lead, Silver, Gold Bullion	..	30,699	22,766	..
		Lead Concentrates	..	7,352	..	..
		Zinc Concentrates	..	12,218	9,138	32,653
		Total	..	50,269	31,904	32,653
Zinc	tons	Lead Concentrates	..	1,020	..	..
		Zinc Concentrates	..	89,783	64,656	231,448
		Total	..	90,803	64,656	231,448
Copper	tons	Ores, Matte, etc.	..	4,399	..	..
Tin	tons	Concentrates	..	1,459	847	..

The quantities and values of the principal metals, ores, and concentrates of Australian produce exported overseas as recorded by the Customs Department for the year 1918–19 were as follows :—Zinc, bars, blocks, and rods, 1,518 tons, £101,591 (of which 1,162 tons went to India and 300 tons to Japan); zinc concentrates, 71,847 tons, £429,469 (37,478 tons to United Kingdom and 34,349 tons to Japan); copper, ingots, 21,502 tons, £2,262,627 (18,179 tons to United Kingdom); tin, ingots, 3,202 tons, £983,799 (735 tons to United Kingdom and 1,906 tons to United States); lead, pig, 103,586 tons, £2,891,006 (77,580 tons to United Kingdom and 19,868 tons to Japan); molybdenite, 200 tons, £86,311 (the whole of which went to United Kingdom); scheelite, 310 tons, £54,844 (to United Kingdom); wolfram, 919 tons, £161,771 (to United Kingdom); platinum, osmium, iridium, etc., 1,165 ozs., £33,046 (611 ozs. to Canada, 308 ozs. to United States); and pig iron, 6,437 tons, £61,682 (4,371 tons to Japan).

## SECTION XIII.

## MANUFACTURING INDUSTRIES.

## § 1. General.

1. *Industrial Progress.*—The statistics of manufactures in the Commonwealth show that many industries have now been permanently established on a secure basis, and indicate a consistent progress both in regard to the extension of existing industries and the establishment of new ones. As will be seen from the following pages, this growth has been particularly rapid since the abolition of inter-colonial tariffs consequent upon the creation of the Commonwealth of Australia in 1901, the throwing open of the whole of the Australian markets to the industrial products of each State having facilitated the internal distribution of the products of Australian industry.

(i) *The Gold Discoveries, 1851.* Prior to the gold discoveries (1851) there was little development in the manufacturing industries of Australia. Reference to that period will be found in earlier issues of the Year Book (see No. 6, page 524.)

(ii) *Later Progress.* Soon after the discovery of gold, the construction of the first railways (1854) and the re-establishment of regular steamship communication with Europe (1856) helped to encourage the nascent industrial activity. The Colonies of New South Wales and Victoria, which had recently (1855) received the benefits of responsible government, soon turned their attention to the settlement of an agricultural population on the land. The Acts which were passed had a beneficial effect on the workers, giving them opportunities for employment not previously open to them, and fostering the manufacturing industries by increasing the measure of primary production. During the following years the various manufacturing industries prospered. The statistics of the States are not sufficiently complete or uniform to enable a statement of the progress of these industries to be given. The following table, however, shewing, so far as returns are available, the number of factories and the number of employees in each State at decennial periods from 1861 to 1911, and for each of the six years 1913 to 1918, will serve to indicate generally the progress which has been made. Consequent on New South Wales, Victoria, and South Australia furnishing returns for the commercial year ended 30th June, the 1918 manufacturing figures published in this issue for these three States are for the year ended 30th June, 1918, while Queensland, Western Australian, and Tasmanian figures are for the year ended 31st December, 1918.

## NUMBER OF FACTORIES AND EMPLOYEES IN EACH STATE, 1861 TO 1918.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
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## NUMBER OF FACTORIES.

1861	..	601	531	..	..	..	..
1871	..	1,813	1,740	..	..	..	..
1881	..	2,961	2,488	571 <sup>d</sup>	823 <sup>d</sup>	..	..
1891	..	3,056	3,141	1,328 <sup>d</sup>	996 <sup>d</sup>	175	..
1901	..	3,367	3,249	2,110 <sup>d</sup>	1,335 <sup>d</sup>	662	420 <sup>e</sup>
1911	..	5,039	5,126	1,657	1,314	710	609
1913	..	5,346	5,613	1,838	1,353	763	623
1914	..	5,269 <sup>c</sup>	5,650	1,796	1,323	787	603
1915	..	5,269 <sup>c</sup>	5,413	1,775	1,266	780	589
1916 <sup>a</sup>	..	5,210	5,413	1,782	1,266	771	563
1917 <sup>b</sup>	..	5,356	5,445	1,793	1,286	759	540
1918 <sup>b</sup>	..	5,414	5,627	1,778	1,285	764	553

<sup>a</sup> New South Wales for year ended 30th June, 1916; Victoria and South Australia, calendar year 1915; Queensland, Western Australia, and Tasmania, calendar year 1916. <sup>b</sup> New South Wales, Victoria, and South Australia for year ended 30th June; the remaining States for year ended 31st December. See last paragraph above. <sup>c</sup> For year ended 30th June, 1915. <sup>d</sup> Not on same basis as other States. <sup>e</sup> For 1902.

Note.—In this and all subsequent tables except, where specially mentioned, "Number of Employees," includes working proprietors.

NUMBER OF FACTORIES AND EMPLOYEES IN EACH STATE, 1861 TO 1918—  
*continued.*

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
NUMBER OF EMPLOYEES.							
1861	..	4,395	..	..	..	..	..
1871	..	13,583	19,569	..	5,629 <i>d</i>	..	..
1881	..	31,191	43,209	..	10,995 <i>d</i>	..	..
1891	..	50,879	53,525	..	14,099 <i>d</i>	..	..
1901	..	66,135	66,529	26,172 <i>d</i>	19,283 <i>d</i>	12,198	7,466 <i>e</i>
1911	..	108,624	111,948	37,156	27,885	15,799	10,298
1913	..	120,400	118,744	42,363	28,511	17,299	9,784
1914	..	116,611 <i>c</i>	118,399	43,282	26,874	17,640	8,922
1915	..	116,611 <i>c</i>	113,834	42,079	25,496	14,631	8,420
1916 <i>a</i>	..	116,401	113,834	39,983	25,196	12,676	8,362
1917 <i>b</i>	..	117,997	116,970	40,446	26,010	12,168	8,079
1918 <i>b</i>	..	120,554	118,241	40,990	26,634	12,917	8,713

For notes see previous page.

2. **Defects in Industrial Statistics.**—A complete statistical account of the growth of the manufacturing industries in Australia unfortunately cannot be given for any lengthy period, owing to the fact that the necessary statistics have not been collected in past years by the several States upon a definite and identical basis. Even in respect of the definition of a "factory" or (so far as they might be included in related returns) the statistics of persons employed therein, there was formerly no common agreement. The relatively minor place that manufacturing industry held in relation to the total activity of Australia was, perhaps, responsible for the fact that the necessity for uniform method was not earlier recognised.

In 1896 it was agreed, as between Victoria and New South Wales, to adopt a common definition of the term "factory," viz., "any factory, workshop, or mill where four or more persons are employed or power is used." This agreement was adopted for the States generally at the Conference of State Statisticians in 1902, when it was decided, however, that the term "factory," should include also "all establishments, whether making for the trade, wholesale or retail, or for export." It was further agreed that industries should be arranged, as far as possible, under a uniform classification which was drawn up by the conference. As a result of the conference of 1902 a higher degree of uniformity in the collection and presentation of industrial statistics was attained in the several States, so that returns upon which anything like a proper comparative study of the development and progress of various manufacturing industries in the Commonwealth may be based date back only as far as the year 1903, when the resolution of the conference first came to be put into force. All the States did not, however, fall completely into line, and, as may be seen in the succeeding parts of this section, the comparisons afforded by the returns for the years 1903 to 1906 inclusive are in some cases subject to various limitations. At the Conference of Statisticians held in Melbourne in 1906 special consideration was given to the methods to be adopted for the collection of statistical information regarding primary and secondary production and industry. The classification of industries prepared by the conference of 1902 was adopted, and a set of forms for the collection and compilation of industrial statistics on a definite and uniform basis in each State was agreed upon. The States have not, even yet, fallen entirely into line in collecting and classifying the returns. The particulars for the past twelve years are, however, in more complete co-ordination than formerly, and it is now possible to give particulars for the several States in greater detail and with greater uniformity throughout.

3. **Classification of Manufacturing Industries.**—Under the classification prepared by the Conference of Statisticians held in 1902, and adopted at that held in 1906, factories were placed under nineteen different categories, according to the nature of the industry carried on therein, most of the categories being further subdivided. Where two or more industries are carried on by one proprietor in one building, each industry is, when possible,

treated as a separate establishment. The statement given hereafter shews the classification which has been adopted; it must be understood, however, that this classification does not pretend to be exhaustive, but merely serves as a guide for the collection and presentation of statistics in the several States on a definite and uniform basis :—

### CLASSIFICATION OF MANUFACTURING INDUSTRIES.

<p><b>CLASS I.—TREATING RAW MATERIALS, ETC.</b>          Bolling-down, Tallow Refining, etc.          Tanneries          Woolscouring and Fellmongering          Chaff-cutting, etc.</p> <p><b>CLASS II.—OILS AND FAT, ETC.</b>          Oil and Grease          Soap and Candles</p>	<p>Confectionery          Corn-flour, Oatmeal, etc.          Flour Mills          Jam and Fruit Canning          Pickles, Sauces and Vinegar          Sugar Mills          Sugar Refining          Aerated Waters, Cordials, etc.          Breweries          Condiments, Coffee, Spices, etc.          Distilleries          Ice and Refrigerating          Malting          Tobacco, Cigars, etc.</p>	<p><b>CLASS XII.—SHIP AND BOAT BUILDING AND REPAIRING.</b>          Docks and Slips          Ship and Boat Building and Repairing</p>
<p><b>CLASS III.—STONE, CLAY, GLASS, ETC.</b>          Bricks and Tiles          Glass (including Bottles)          Glass (Ornamental)          Lime, Plaster, Cement and Asphalt          Marble, Slate, etc.          Modelling, etc.          Pottery and Earthenware</p>	<p><b>CLASS VII.—CLOTHING AND TEXTILE FABRICS.</b>          Woollen and Tweed Mills          Boots and Shoes          Slop Clothing          Clothing (Tailoring)          Dressmaking and Millinery—            Makers' material            Customers' material          Dyeworks and Cleaning          Furriers          Hats and Caps          Waterproof and Oilskin          Shirts, Ties, and Scarfs          Rope and Cordage          Tents and Tarpaulins          Sailmaking</p>	<p><b>CLASS XIII.—FURNITURE, BEDDING, ETC.</b>          Bedding, Flock, and Upholstery          Billiard Tables          Furniture and Cabinet Making          Picture Frames          Window Blinds</p>
<p><b>CLASS IV.—WORKING IN WOOD.</b>          Boxes and Cases          Cooperage          Joinery          Saw Mills          Wood-turning, etc.</p>	<p><b>CLASS VIII.—BOOKS, PAPER, PRINTING, ETC.</b>          Electrotyping and Stereotyping          Paper-making, Paper Boxes, Bags, etc.          Photo-engraving          Printing and Binding</p>	<p><b>CLASS XIV.—DRUGS AND CHEMICALS, ETC.</b>          Chemicals, Drugs, and Medicines          Fertilizers          Paints, Varnishes, and By-products</p>
<p><b>CLASS V.—METAL WORKS, MACHINERY, ETC.</b>          Agricultural Implements          Brass and Copper          Cutlery          Engineering          Galvanised Iron-working          Ironworks and Foundries          Lead Mills          Railway Carriages          Railway and Tramway Workshops          Smelting          Stoves and Ovens          Tinsmithing          Wireworking          Other Metal Works</p>	<p><b>CLASS IX.—MUSICAL INSTRUMENTS, ETC.</b>          Musical Instruments and Sewing Machines</p>	<p><b>CLASS XV.—SURGICAL AND OTHER SCIENTIFIC INSTRUMENTS.</b>          Surgical, Optical, and other Scientific Instruments</p>
<p><b>CLASS VI.—FOOD AND DRINK, ETC.</b>          Bacon Curing          Butter Factories          Butterine and Margarine          Cheese Factories          Condensed Milk          Meat and Fish Preserving          Biscuits</p>	<p><b>CLASS X.—ARMS AND EXPLOSIVES.</b>          Arms and Explosives</p> <p><b>CLASS XI.—VEHICLES, SADDLERY, HARNESS, ETC.</b>          Coach and Wagon Building          Cycles and Motors          Perambulators          Saddlery, Harness, etc.          Spokes, etc.</p>	<p><b>CLASS XVI.—TIMEPIECES, JEWELLERY, AND PLATED WARE.</b>          Electro-plating          Manufacturing Jewellery, etc.</p>
		<p><b>CLASS XVII.—HEAT, LIGHT, AND POWER.</b>          Coke Works          Electric Apparatus          Electric Light and Power          Gas Works and Kerosene          Lamps and Fittings, etc.          Hydraulic Power</p>
		<p><b>CLASS XVIII.—LEATHERWARE (N.E.I.).</b>          Leather Belting, Fancy Leather          Portmanteaux and Bags</p>
		<p><b>CLASS XIX.—MINOR WARES.</b>          Basket and Wickerware, Matting, etc.          Brooms and Brushware          Rubber Goods          Toys          Umbrellas          Other Industries</p>

## § 2. Number of Factories.

1. **General.**—The presentation of the number of factories in each State does not furnish a clear indication of the extent or progress of the manufacturing industry throughout Australia.

Experience has shewn that the smaller establishments in many branches of industry tend to disappear before the superior competitive facilities of larger enterprises.

On the other hand, new factories are constantly under construction in districts advantageously located for manufacturing purposes, and small plants are as numerous as large ones.

The following table presents, for the years 1913 to 1918, the total number of factories in each State of the Commonwealth :—

### FACTORIES IN THE COMMONWEALTH, 1913 TO 1918.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
1913 ..	5,346	5,613	1,838	1,353	763	623	15,536
1914 ..	5,269 <sup>c</sup>	5,650	1,796	1,323	787	603	15,428
1915 ..	5,269 <sup>c</sup>	5,413	1,775	1,266	780	589	15,092
1916 <sup>a</sup> ..	5,210	5,413	1,782	1,266	771	568	15,010
1917 <sup>b</sup> ..	5,356	5,445	1,793	1,286	759	540	15,179
1918 <sup>b</sup> ..	5,414	5,627	1,778	1,285	764	553	15,421

<sup>a</sup> See note *a* first table this section.

<sup>b</sup> See note *b* first table this section.

<sup>c</sup> For year ended 30th June, 1915.

(i) *Classification of Factories in Commonwealth, 1913 to 1918.* The following table shews the total number of factories in the Commonwealth for each year from 1913 to 1918, classified on the basis indicated in § 1, 3 hereof :—

### CLASSIFICATION OF FACTORIES IN THE COMMONWEALTH, 1913 TO 1918.

Class of Industry.	1913.	1914. <sup>a</sup>	1915. <sup>a</sup>	1916. <sup>b</sup>	1917. <sup>c</sup>	1918. <sup>c</sup>
	No.	No.	No.	No.	No.	No.
I. Treating raw material, product of agricultural and pastoral pursuits, etc. ..	907	870	839	817	797	798
II. Treating oils and fats, animal, vegetable, etc. ..	100	101	99	96	92	90
III. Processes in stone, clay, glass, etc. ..	732	706	654	626	606	616
IV. Working in wood ..	1,712	1,764	1,702	1,661	1,646	1,713
V. Metal works, machinery, etc. ..	1,814	1,824	1,814	1,832	1,802	1,836
VI. Connected with food and drink, etc. ..	2,366	2,333	2,328	2,372	2,403	2,402
VII. Clothing and textile fabrics, etc. ..	3,266	3,254	3,117	3,085	3,176	3,177
VIII. Books, paper, printing and engraving ..	1,206	1,229	1,225	1,225	1,232	1,256
IX. Musical instruments, etc. ..	21	19	19	20	25	27
X. Arms and explosives ..	20	19	20	21	17	18
XI. Vehicles and fittings, saddlery and harness, etc. ..	1,396	1,365	1,337	1,334	1,374	1,423
XII. Ship and boat building and repairing ..	96	93	88	72	74	75
XIII. Furniture, bedding, and upholstery ..	719	703	693	697	704	722
XIV. Drugs, chemicals, and by-products ..	206	213	206	207	238	260
XV. Surgical and other scientific instruments ..	48	52	51	51	63	67
XVI. Jewellery, timepieces, and platedware ..	190	200	199	195	190	187
XVII. Heat, light, and power ..	420	454	474	466	479	489
XVIII. Leatherware, n.e.i. ..	67	65	67	69	74	81
XIX. Minor wares, n.e.i. ..	150	164	160	164	187	184
Total ..	15,536	15,428	15,092	15,010	15,179	15,421

<sup>a</sup> New South Wales figures for year ended 30th June, 1915.

<sup>b</sup> See note *a* first table this section.

<sup>c</sup> See note *b* first table this section.

For the purpose of the returns in the above table the definition of a factory adopted at the Conference of Statisticians in 1902 (see § 1, 2 hereof) is used, viz., "Any factory, workshop or mill where four or more persons are employed or power is used." The total number of factories has decreased by 115 since 1913. From 1913 to 1916 the decrease in the number of factories amounted to 526, but satisfactory increases of 169 and 242 factories respectively have been noticeable during the last two years. As previously pointed out, any increase or decrease in the number of factories from year to year does not necessarily indicate a change in the position of the industry.



(ii) *Classification of Factories in each State, 1918.* The following table shows the number of factories in each State of the Commonwealth, classified according to the nature of the industry. (See classification given in § 1, 3 hereof) :—

### CLASSIFICATION OF FACTORIES IN EACH STATE, 1918.

Class of Industry.	N.S.W. 1917-18.	Vic. 1917-18.	Q'land. 1918.	S. Aust. 1917-18.	W. Aust. 1918.	Tas. 1918.	C'wealth.
I. Treating raw material, product of agricul. & pastoral pursuits, etc.	253	310	41	107	38a	49a	798
II. Treating oils and fats, animal, vegetable, etc.	39	26	13	12	b	b	90
III. Processes in stone, clay, glass, etc.	282	172	39	67	34	22	616
IV. Working in wood	672	453	296	84	63	140	1,713
V. Metal works, machinery, etc.	617	717	214	171	78	39	1,836
VI. Connected with food & drink, etc.	794	649	477	243	139	100	2,402
VII. Clothing and textile fabrics, etc.	998	1,488	242	246	135	68	3,177
VIII. Books, paper, printing & engraving	471	451	146	89	73	26	1,256
IX. Musical instruments, etc.	15	11	..	1	..	..	27
X. Arms and explosives	5	12	..	1	..	..	18
XI. Vehicles and fittings, saddlery and harness, etc.	459	561	144	132	77	50	1,423
XII. Ship and boat building & repairing	35	13	10	7	4	6	75
XIII. Furniture, bedding and upholstery	256	274	80	51	43	18	722
XIV. Drugs, chemicals, and by-products	120	103	3	14	13	7	260
XV. Surgical and other scientific instruments	18	30	7	7	7	..	67
XVI. Jewellery, timepieces & platedware	50	92	17	15	8	5	187
XVII. Heat, light, and power	223	162	32	18	31	18	489
XVIII. Leatherware, n.e.i.	29	41	3	5	3	..	81
XIX. Minor wares, n.e.i.	75	62	14	15	13	5	184
Total .. .. .	5,414	5,627	1,778	1,285	764	553	15,421

a Includes Class II.

b Included in Class I.

### § 3. Factories Classified by Number of Employees.

1. *General.*—A more scientific method of measuring the size of the manufacturing establishments in Australia is furnished by an analysis of the factories grouped according to the average number of employees in each.

The following table shews, for each State, the number of factories classified according to number of hands employed, and the average number of hands employed therein, during 1918 :—

### CLASSIFICATION OF FACTORIES IN EACH STATE ACCORDING TO NUMBER OF HANDS EMPLOYED, 1918.

No. of Persons Employed in each Factory.	N.S.W. 1917-18.	Victoria. 1917-18.	Q'land. 1918.	S. Aust. 1917-18.	W. Aust. 1918.	Tasmania. 1918.	C'wealth.
NUMBER OF FACTORIES.							
Under 4 ..	1,002	1,213	334	190	169	122	3,030
4 ..	507	615	165	133	79	68	1,567
5 to 10 ..	1,790	1,810	548	495	244	188	5,075
11 to 20 ..	941	881	328	207	135	76	2,568
21 to 50 ..	728	669	242	162	90	67	1,958
51 to 100 ..	244	243	76	62	29	23	677
Over 100 ..	202	196	85	36	18	9	546
Total ..	5,414	5,627	1,778	1,285	764	553	15,421

CLASSIFICATION OF FACTORIES IN EACH STATE ACCORDING TO NUMBER OF HANDS EMPLOYED, 1918—*continued.*

No. of Persons Employed in each Factory.	N.S.W. 1917-18.	Victoria. 1917-18.	Q'land. 1918.	S. Aust. 1917-18.	W. Aust. 1918.	Tasmania. 1918.	C'wealth.
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AVERAGE NUMBER OF HANDS EMPLOYED.

Under 4 ..	2,266	2,738	738	475	356	267	6,840
4 ..	2,028	2,460	660	532	316	272	6,268
5 to 10 ..	12,341	12,472	3,821	3,415	1,738	1,276	35,063
11 to 20 ..	13,702	12,804	4,778	2,952	1,933	1,085	37,254
21 to 50 ..	22,870	21,166	7,556	5,181	2,869	2,101	61,743
51 to 100 ..	17,182	16,559	5,369	4,318	2,047	1,564	47,039
Over 100 ..	50,165	50,042	18,068	9,761	3,658	2,148	133,842
Total	120,554	118,241	40,990	26,634	12,917	8,713	328,049

Reference to the following table will shew a tendency for the proportionate number of hands employed in the larger establishments to still further increase and for that of the smaller factories to diminish. During the quinquennial period under discussion, the ratio of hands in factories employing under 21 hands to total number of employees in all factories shews a decline from 26.70 per cent. in 1913 to 26.04 in 1918. The larger establishments with 101 hands and upwards during the same period exhibit an increase from 40.76 to 40.80 per cent. of total employed. The average number of hands per establishment in 1913 was 21.70, and in 1918, 21.27.

CLASSIFICATION OF FACTORIES IN THE COMMONWEALTH ACCORDING TO NUMBER OF HANDS EMPLOYED DURING THE YEARS 1913 TO 1918.

Year.	Establishments Employing on the Average—							
	20 hands and under.		21 to 100 hands.		101 hands and upwards.		Total.	
	Es- tablish- ments.	Hands.	Es- tablish- ments.	Hands.	Es- tablish- ments.	Hands.	Es- tablish- ments.	Hands.
1913—								
Number ..	12,280	90,005	2,676	109,704	580	137,392	15,536	337,101
Average per establishment ..	..	7.33	..	41.00	..	236.88	..	21.70
Percentage on total ..	79.04	26.70	17.23	32.54	3.73	40.76	100.00	100.00
1914a—								
Number ..	12,284	88,071	2,589	106,584	554	136,924	15,427	331,579
Average per establishment ..	..	7.17	..	41.16	..	247.15	..	21.49
Percentage on total ..	79.62	26.56	16.79	32.14	3.59	41.30	100.00	100.00
1915a—								
Number ..	12,106	84,545	2,445	101,722	541	134,804	15,092	321,071
Average per establishment ..	..	6.99	..	41.60	..	249.18	..	21.27
Percentage on total ..	80.22	26.33	16.20	31.68	3.58	41.99	100.00	100.00
1916b—								
Number ..	12,081	83,263	2,386	98,107	543	135,382	15,010	316,752
Average per establishment ..	..	6.89	..	41.11	..	249.32	..	21.10
Percentage on total ..	80.49	26.29	15.90	30.97	3.61	42.74	100.00	100.00
1917c—								
Number ..	12,158	84,685	2,491	102,695	530	134,290	15,179	321,670
Average per establishment ..	..	6.97	..	41.23	..	253.38	..	21.19
Percentage on total ..	80.10	26.33	16.41	31.92	3.49	41.75	100.00	100.00
1918c—								
Number ..	12,240	85,425	2,635	108,782	546	133,842	15,421	328,049
Average per establishment ..	..	6.98	..	41.28	..	245.13	..	21.27
Percentage on total ..	79.37	26.04	17.09	33.16	3.54	40.80	100.00	100.00

a New South Wales figures for year ended 30th June, 1915.      b See note a first table this section.  
c See note b first table this section.

### § 4. Factories Using Mechanical Power.

1. **Use of Mechanical Power.**—The statistics relating to the utilization of mechanical power in factories bring into relief another phase of industrial development in Australia.

The following tables reveal a gradual increase in the number of factories using mechanical power, and a more striking increase in the amount of power used, while a marked decline is noticeable in the number of factories using no power, thus affording definite statistical evidence of the growth of power-driven machinery in Australia, and of its increasing ascendancy over hand labour.

The principal motive power is steam, but the chief towns possess electric power stations owned either by the Government, or by public bodies or private companies. From these many factories find it convenient to derive their motive power.

The following table shews the number of factories in which machinery was worked by steam, gas, oil, electricity, or water and the horse-power of engines or motors used, in each State and in the Commonwealth :—

#### UTILIZATION OF MECHANICAL POWER IN FACTORIES IN EACH STATE, 1918.

State.	Number of Establishments.			Actual Horse-power of Engines Used.					
	Using Machinery worked by Steam, Gas, Oil, Electricity, or Water.	Others.	Total.	Steam.	Gas.	Oil.	Electricity.	Water.	Total.
	No.	No.	No.	H.P.	H.P.	H.P.	H.P.	H.P.	H.P.
N.S.W., 1917-18	4,444	970	5,414	175,232	14,110	1,795	67,719	248	259,104
Vict., 1917-18 ..	4,330	1,297	5,627	89,561	19,045	2,243	38,246	..	149,095
Q'land., 1918 ..	1,370	408	1,778	46,553	9,515	1,522	13,811	40	71,441
S. Aust., 1917-18	1,019	266	1,285	29,126	7,370	1,954	9,787	30	48,767
W. Aust., 1918 ..	627	137	764	38,580	5,374	780	6,489	..	51,223
Tas., 1918 ..	460	93	553	5,742	223	282	12,680	11,769	30,696
Commonwealth	12,250	3,171	15,421	384,794	56,137	8,576	148,732	12,087	610,326

The preponderance of horse-power employed in the New South Wales factories is the result of the location in that State of the largest number of industries demanding a considerable amount of power; Victoria, on the other hand, has the largest number of establishments, such as those connected with clothing and textile fabrics, wherein much less mechanical power is utilised.

The number of establishments in the Commonwealth using machinery worked by steam, gas, oil, electricity, or water was 12,250, or 79.44 per cent. of the total; 3,171 establishments, representing 20.56 per cent., used no mechanical power. The total actual horse-power in use was 610,326, distributed in the following proportions :—Steam, 63.05 per cent.; gas, 9.20 per cent.; oil, 1.40 per cent.; electricity, 24.37 per cent.; and water, 1.98 per cent.

The following table shews the horse-power of engines used in connexion with factories in the Commonwealth during each of the last six years :—

**UTILIZATION OF MECHANICAL POWER IN FACTORIES IN COMMONWEALTH, 1913 TO 1918.**

Year.	Number of Establishments.			Actual Horse-power of Engines used.					
	Using Machinery worked by Steam, Gas, Oil, Electricity or Water.	Others.	Total.	Steam.	Gas.	Oil.	Electricity.	Water.	Total.
	No.	No.	No.	H.P.	H.P.	H.P.	H.P.	H.P.	H.P.
1913 ..	11,239	4,297	15,536	313,085	48,677	8,142	72,250	..	442,154
1914a ..	11,396	4,032	15,428	336,766	50,976	8,542	95,253	..	491,537
1915a ..	11,438	3,654	15,092	333,494	54,994	8,558	107,788	..	504,834
1916b ..	11,550	3,460	15,010	349,157	53,921	8,541	118,149	..	529,768
1917c ..	11,931	3,248	15,179	358,346	54,825	8,687	131,819	6,584	560,261
1918c ..	12,250	3,171	15,421	384,794	56,137	8,576	148,732	12,087	610,326

a New South Wales figures for year ended 30th June, 1915. b See note a first table this section. c See note b first table this section.

From this table it appears that the number of manufacturing establishments using power increased from 11,239 in 1913 to 12,250 in 1918, an increase of 1,011, or 9 per cent. During the same period the number of establishments using no power decreased from 4,297 to 3,171, a decrease of 1,126, or 26.2 per cent. The corresponding increase in the actual horse-power of engines used was 168,172, or 38.03 per cent.

(i) *Classification of Mechanical Power Used in Factories in each State.*—The following table gives a classification of the actual horse-power of engines used in factories of different descriptions in each State during 1918 :—

**ACTUAL HORSE-POWER OF ENGINES USED IN VARIOUS FACTORIES IN EACH STATE, 1918.**

Class of Industry.	N.S.W. 1917-18.	Victoria. 1917-18.	Q'land. 1918.	S. Aust. 1917-18.	W. Aust. 1918.	Tas. 1918.	C'wealth.
I. Treating raw material, product of agricultural and pastoral pursuits, etc. ..	H.P. 7,155	H.P. 6,493	H.P. 1,028	H.P. 2,099	H.P. 536	H.P. 531	H.P. 17,842
II. Treating oils and fats, animal, vegetable, etc. ..	1,286	616	135	245	..	..	2,282
III. Processes in stone, clay, glass, etc. ..	14,009	6,837	1,830	2,721	589	397	26,383
IV. Working in wood ..	17,363	11,107	8,967	1,809	6,377	1,937	47,560
V. Metal works, machinery, etc.	54,162	13,421	6,389	10,265	4,234	5,963	94,434
VI. Connected with food and drink, etc.	27,914	28,894	33,358	7,994	5,491	1,739	105,300
VII. Clothing and textile fabrics, etc. ..	6,357	9,057	1,377	967	281	323	18,362
VIII. Books, paper, printing, and engraving ..	6,901	5,833	1,311	1,212	732	236	16,225
IX. Musical instruments, etc. ..	404	254	..	6	..	..	664
X. Arms and explosives ..	778	768	..	1	..	..	1,547
XI. Vehicles and fittings, saddlery and harness, etc. ..	1,994	1,337	431	693	249	147	4,851
XII. Ship and boat building and repairing ..	3,773	1,282	120	77	30	28	5,310
XIII. Furniture, bedding, and upholstery ..	2,500	1,654	831	931	422	229	6,576
XIV. Drugs, chemicals, and by-products ..	2,439	2,518	35	2,019	1,060	31	8,102
XV. Surgical and other scientific instruments ..	37	44	17	14	8	..	120
XVI. Jewellery, timepieces, and plated ware ..	258	241	50	61	17	8	635
XVII. Heat, light, and power ..	110,687	51,916	15,508	17,419	31,117	19,120	245,767
XVIII. Leatherware, n.e.i. ..	223	262	16	6	5	..	512
XIX. Minor wares, n.e.i. ..	855	6,561	38	228	75	7	7,764
Total ..	259,104	149,095	71,441	48,767	51,223	30,696	610,326

(ii) *Classification of Mechanical Power Used in Factories in the Commonwealth, 1913 to 1918.*—The following table shews a similar classification of the actual horse-power of engines used in manufacturing industries in the Commonwealth during the years 1913 to 1918 inclusive :—

**ACTUAL HORSE-POWER OF ENGINES USED IN VARIOUS FACTORIES IN THE COMMONWEALTH, 1913 TO 1918.**

Class of Industry.	1913.	1914.	1915.	1916.	1917.	1918.
I. Treating raw material, product of agricultural and pastoral pursuits, etc.	H.P. 14,818	H.P. 14,723	H.P. 15,294	H.P. 15,963	H.P. 15,483	H.P. 17,842
II. Treating oils and fats, animal, vegetable, etc.	1,868	2,019	2,028	2,435	2,140	2,282
III. Processes in stone, clay, glass, etc.	23,496	26,298	25,554	24,736	24,275	26,383
IV. Working in wood	47,108	48,805	47,894	45,997	45,712	47,560
V. Metal works, machinery, etc.	65,987	75,579	77,646	85,733	86,991	94,434
VI. Connected with food and drink, etc.	80,437	88,183	92,923	94,477	100,803	105,390
VII. Clothing and textile fabrics, etc.	13,961	14,885	15,470	16,353	17,923	18,362
VIII. Books, paper, printing, and engraving	12,498	13,897	13,987	14,125	14,590	16,225
IX. Musical instruments, etc.	489	480	480	448	613	664
X. Arms and explosives	805	753	855	910	1,739	1,547
XI. Vehicles and fittings, saddlery and harness, etc.	3,767	3,927	4,215	4,310	4,620	4,851
XII. Ship and boat building and repairing	5,361	5,844	5,824	4,333	5,445	5,310
XIII. Furniture, bedding, and upholstery	5,033	5,207	5,638	5,894	5,876	6,576
XIV. Drugs, chemicals, and by-products	5,760	6,242	6,201	6,555	7,386	8,102
XV. Surgical and other scientific instruments	66	61	74	72	109	120
XVI. Jewellery, timepieces, and plated ware	559	535	554	586	658	635
XVII. Heat, light, and power	158,017	181,124	185,558	202,232	217,980	245,767
XVIII. Leatherware, n.e.i.	349	377	369	377	444	512
XIX. Minor wares, n.e.i.	1,775	2,598	4,270	4,232	7,474	7,764
Total	442,154	491,537	504,834	529,768	560,261	610,326

From the above table it will be seen that the actual horse-power of engines used increased in practically all of the various branches of industry during the last five years. The industries using the greatest amount of power were Class XVII. Heat, light, and power; Class VI. Connected with food and drink; and Class V. Metal works, machinery, etc. These three classes, which together accounted for 73 per cent. of the total power used in 1918, increased their horse-power from 304,441 to 445,591 during the five years under review, and are mainly responsible for the development of mechanical power in factories since 1913.

## § 5. Numbers Employed in Australian Factories.

1. *Total Number Employed.*—Each person employed in and about a factory, in whatever capacity, is now included as a factory employee, consequently every proprietor who works in his business is counted as an employee, and all "outworkers" (see paragraph 5 hereinafter) are also included. The individuals embraced may be classed under the following heads, viz. :—(i) Working proprietors; (ii) managers and overseers; (iii) accountants and clerks; (iv) engine-drivers and firemen; (v) skilled and unskilled workers in the factories, mills, or workshops; (vi) carters and messengers; and (vii) others.

(i) *Average Numbers Employed, 1913 to 1918.* The following table shews, for each year from 1913 to 1918 inclusive, (a) the average numbers of persons (including both sexes and all ages) employed in manufacturing industries in each State; (b) the percentage

of the numbers employed in each State on the total numbers employed in the Commonwealth; and (c) the numbers employed per ten thousand of the mean population in each State and the Commonwealth :—

**AVERAGE NUMBER OF PERSONS EMPLOYED IN MANUFACTURING INDUSTRIES,  
1913 TO 1918.**

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
AVERAGE NUMBER.							
1913 ..	120,400	118,744	42,363	28,511	17,299	9,784	337,101
1914 ..	116,611 <sup>a</sup>	118,399	43,282	26,874	17,640	8,922	331,728
1915 ..	116,611 <sup>a</sup>	113,834	42,079	25,496	14,631	8,420	321,071
1916 <sup>b</sup> ..	116,401	113,834	39,983	25,496	12,676	8,362	316,752
1917 <sup>c</sup> ..	117,997	116,970	40,446	26,010	12,168	8,079	321,670
1918 <sup>c</sup> ..	120,554	118,241	40,990	26,634	12,917	8,713	328,049

**PERCENTAGE ON COMMONWEALTH TOTAL.**

	%	%	%	%	%	%	%
1913 ..	35.72	35.22	12.57	8.46	5.13	2.90	100.00
1914 ..	35.15	35.69	13.05	8.10	5.32	2.69	100.00
1915 ..	36.32	35.45	13.11	7.94	4.56	2.62	100.00
1916 <sup>b</sup> ..	36.75	35.94	12.62	8.05	4.00	2.64	100.00
1917 <sup>c</sup> ..	36.68	36.37	12.57	8.09	3.78	2.51	100.00
1918 <sup>c</sup> ..	36.75	36.04	12.49	8.12	3.94	2.66	100.00

**PER 10,000 OF MEAN POPULATION.**

1913 ..	665	852	649	658	551	499	702
1914 ..	626 <sup>a</sup>	832	641	611	545	450	674
1915 ..	626 <sup>a</sup>	798	612	580	454	422	650
1916 <sup>b</sup> ..	622	798	590	580	403	422	642
1917 <sup>c</sup> ..	635	836	600	601	394	406	659
1918 <sup>c</sup> ..	638	838	595	611	415	428	663

<sup>a</sup> For year ended 30th June, 1915.    <sup>b</sup> See note <sup>a</sup> first table this section.  
<sup>c</sup> See note <sup>b</sup> first table this section.

(ii) *Rates of Increase, 1913 to 1918.* The following table shows the percentage of increase or decrease on the average number of persons employed for the preceding year from 1914 to 1918. The figures for the past four years are somewhat vitiated by the change in dates of collecting the statistics in New South Wales, Victoria, and South Australia :—

**PERCENTAGE OF INCREASE ON AVERAGE NUMBER EMPLOYED, 1914 TO 1918.**

Years.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
	%	%	%	%	%	%	%
1913-14 ..	-3.27 <sup>a</sup>	-0.29	2.17	-5.74	1.97	-8.81	-1.64
1914-15 ..	-3.27 <sup>a</sup>	-3.86	-2.78	-5.13	-17.06	-5.63	-3.21
1915-16 <sup>b</sup> ..	-0.18	-3.86	-4.98	-5.13	-13.36	-0.69	-1.35
1916-17 <sup>c</sup> ..	1.37	2.75	1.16	2.02	-4.01	-3.38	1.55
1917-18 <sup>c</sup> ..	2.17	1.09	1.35	2.40	6.16	7.85	1.98

Note.—The minus sign (—) indicates decrease.

<sup>a</sup> Eighteen months ended 30th June, 1915.    <sup>b</sup> See note <sup>a</sup> first table this section.

<sup>c</sup> See note <sup>b</sup> first table this section.

2. Classification of Numbers Employed in Factories in the Commonwealth, 1913 to 1918.—The following table gives a classification of the average numbers of persons employed in factories of different descriptions in the Commonwealth during the years 1913 to 1918 inclusive:—

**AVERAGE NUMBER OF PERSONS EMPLOYED IN VARIOUS FACTORIES  
IN THE COMMONWEALTH, 1913 TO 1918.**

Class of Industry.	1913.	1914. <i>a</i>	1915. <i>a</i>	1916. <i>b</i>	1917. <i>c</i>	1918. <i>c</i>
I. Treating raw material, product of agricultural and pastoral pursuits, etc.	9,495	9,221	9,306	9,009	9,411	9,984
II. Treating oils and fats, animal, vegetable, etc.	2,091	2,259	2,523	2,399	2,554	2,726
III. Processes in stone, clay, glass, etc.	13,794	13,570	12,616	11,604	10,949	12,575
IV. Working in wood	31,640	30,137	26,030	23,336	22,079	24,112
V. Metal works, machinery, etc.	68,859	66,112	65,368	65,350	62,115	60,392
VI. Connected with food and drink, etc.	49,882	51,980	49,266	48,272	52,781	56,297
VII. Clothing and textile fabrics, etc.	84,237	81,076	78,952	80,292	83,201	82,002
VIII. Books, paper, printing and engraving	20,013	25,213	24,928	24,890	24,954	25,054
IX. Musical instruments, etc.	616	542	515	542	652	677
X. Arms and explosives	1,240	1,674	2,028	2,571	2,951	2,225
XI. Vehicles and fittings, saddlery and harness, etc.	13,913	13,125	12,350	12,006	12,196	12,672
XII. Ship and boat building and repairing	4,216	5,633	6,097	4,605	4,953	4,569
XIII. Furniture, bedding, and upholstery	10,462	9,534	8,961	8,716	9,072	9,542
XIV. Drugs, chemicals, and by-products	4,328	4,490	4,601	4,738	5,036	5,564
XV. Surgical & other scientific instruments	264	282	301	293	361	415
XVI. Jewellery, timepieces, and plated ware	2,170	2,026	1,878	1,835	1,975	2,119
XVII. Heat, light, and power	9,394	9,942	9,939	10,018	10,329	10,714
XVIII. Leatherware, n.e.i.	1,204	1,217	1,292	1,376	1,488	1,647
XIX. Minor wares, n.e.i.	3,297	3,695	4,120	4,400	4,613	4,763
Total	337,101	331,728	321,071	316,752	321,670	328,049

*a* New South Wales figures for year ended 30th June, 1915. *b* See note *a* first table this section.

*c* See note *b* first table this section.

The number of persons employed in factories decreased by 9,052 since 1913. Heavy decreases occurred in 1914, 1915, and 1916, consequent upon the withdrawal from industrial life of considerable numbers of the male population for war purposes, but during 1917, and again in 1918, satisfactory increases were recorded on the previous year's figures.

3. Classification of Numbers Employed in each State, according to Class of Industry.—The following table shews a similar classification of employees in manufacturing industries in each State:—

**AVERAGE NUMBER OF PERSONS EMPLOYED IN VARIOUS FACTORIES  
IN EACH STATE, 1918.**

Class of Industry.	N.S.W. 1917-18.	Vic. 1917-18	Q'land. 1918.	S.A. 1917-18	W.A. 1918.	Tas. 1918.	C'wth.
I. Treating raw material, product of agricul. and pastoral pursuits, etc.	3,973	3,632	746	929	365 <i>a</i>	339 <i>a</i>	9,984
II. Treating oils and fats, animal, vegetable, etc.	1,405	883	173	265	<i>b</i>	<i>b</i>	2,726
III. Processes in stone, clay, glass, etc.	6,040	3,921	823	1,142	409	240	12,575
IV. Working in wood	7,444	6,948	4,385	1,202	2,544	1,589	24,112
V. Metal works, machinery, etc.	26,188	16,183	5,770	8,255	2,518	1,478	60,392
VI. Connected with food and drink, etc.	16,886	17,100	15,001	3,549	1,906	1,855	56,297
VII. Clothing and textile fabrics, etc.	26,399	40,312	6,994	4,867	2,132	1,298	82,002
VIII. Books, paper, printing, and engraving	9,562	8,940	2,916	1,860	1,085	691	25,054
IX. Musical instruments, etc.	433	229	..	15	..	..	677
X. Arms and explosives	1,192	1,030	..	3	..	..	2,225
XI. Vehicles and fittings, saddlery, and harness, etc.	4,299	4,654	1,302	1,478	544	395	12,672
XII. Ship and boat building & repairing	3,619	653	115	112	20	50	4,569
XIII. Furniture, bedding, and upholstery	3,760	2,867	1,240	907	447	321	9,542
XIV. Drugs, chemicals, and by-products	2,210	2,207	91	692	343	21	5,564
XV. Surgical and other scientific instruments	162	149	45	30	29	..	415
XVI. Jewellery, timepieces, & plated ware	728	1,028	117	155	62	29	2,119
XVII. Heat, light, and power	4,040	4,146	952	880	329	367	10,714
XVIII. Leatherware, n.e.i.	723	750	112	39	23	..	1,647
XIX. Minor wares, n.e.i.	1,491	2,609	208	254	161	40	4,763
Total	120,554	118,241	40,990	26,634	12,917	8,713	328,049

(*a*) Includes Class II.

(*b*) Included in Class I.

The largest number employed in any particular class in the Commonwealth was in Class VII., in which there were 82,002 employees, or 25 per cent. of the whole number. The class affording employment to the smallest number of hands was Class XV., in which there were 415 hands, or 0.13 per cent. of the total number of employees. Classes VI., VII., and VIII. comprise those industries in which female labour is largely employed. (See § 6, 5 hereof.)

4. **Classification of Numbers Employed in each State according to Nature of Employment.**—In the following table the average numbers of persons employed in each State are classified according to the nature of their employment :—

**AVERAGE NUMBER OF PERSONS EMPLOYED IN EACH STATE, CLASSIFIED  
ACCORDING TO NATURE OF EMPLOYMENT, 1918.**

State.	Average Number of Persons Employed.						Total.
	Working Pro-prietors.	Managers and Overseers.	Account-ants and Clerks.	Engine-drivers and Firemen.	Workers, Skilled & Unskilled, in Factory Mill or Workshop <sup>a</sup>	Carters, Messen-gers, and Others.	
N.S. Wales, 1917-18	4,043	4,305	5,320	2,990	101,617	2,279	120,554
Victoria, 1917-18 ..	5,368	3,716	4,519	1,867	99,171	3,600	118,241
Queensland, 1918 ..	1,430	1,605	1,865	1,707	32,198	2,185	40,990
S. Australia, 1917-18	1,173	1,014	1,280	540	22,061	566	26,634
W. Australia, 1918	424	660	640	394	10,261	538	12,917
Tasmania, 1918 ..	372	407	481	295	6,887	271	8,713
Commonwealth	12,810	11,707	14,105	7,793	272,195	9,439	328,049

<sup>a</sup> Including outworkers.

5. **Outworkers.**—The term “outworker” or “homeworker” has acquired a special meaning in connexion with manufacturing industries, and technically embraces only those to whom work is given out by factory owners to be wrought upon in the employees’ own homes. Individuals working for themselves are not included. The following table gives particulars of the average number of outworkers connected with factories in each State during each year from 1913 to 1918 inclusive :—

**NUMBER OF OUTWORKERS(<sup>a</sup>) CONNECTED WITH FACTORIES, 1913 TO 1918.**

Year.	N.S.W.	Victoria.	Q’land.	S. Aust.	W. Aust.	Tasmania.	C’wealth.
1913 .. ..	724	1,910	122	54	7	72	2,889
1914 .. ..	582 <sup>b</sup>	1,737	117	58	8	58	2,560
1915 .. ..	582 <sup>b</sup>	1,473	92	44	6	70	2,267
1916 <sup>c</sup> .. ..	577	1,473	99	44	6	35	2,234
1917 <sup>d</sup> .. ..	677	1,814	89	41	5	32	2,658
1918 <sup>d</sup> .. ..	637	1,406	30	25	4	20	2,122

<sup>a</sup> In all tables relating to number of hands employed in factories, outworkers are included.

<sup>b</sup> Year ended 30th June, 1915. <sup>c</sup> See note <sup>a</sup> first table this section. <sup>d</sup> See note <sup>b</sup> first table this section.



The Factories Acts in each State contain provisions regulating the employment of outworkers. Generally, records of out-work must be kept by factory proprietors, specifying the names and remuneration of workers, and stating the places where the work is done. Further particulars are given in a later part of this book. (See Section relating to *Industrial Unionism and Industrial Legislation*.)

## § 6. Sex Distribution in Factories.

1. **Employment of Females in Factories.**—In all the States the employment of female labour in factories is now regulated by Act of Parliament. In Victoria the first Act dealing with the subject was passed in the year 1873, and provided that no female should be employed for more than eight hours a day without the permission of the Chief Secretary. The number of working hours for women is now limited to forty-eight per week in all the States, overtime being allowed only with the permission of the Departments, and then to a limited extent. The maximum periods of continuous labour, and the intervals of cessation therefrom, are also prescribed by the several Acts. Further reference is made to the restrictions regarding the employment of females in a later part of this book. (See Section relating to *Industrial Unionism and Industrial Legislation*.)

2. **Distribution of Employees according to Sex, 1913 to 1918.**—In New South Wales the ratio of the number of females employed in factories to the number of males during 1886 was about one to seven; in 1891 one to six; in 1903 it became about one to four; and is now slightly more than one to three. In Victoria the ratio of females to males during the year 1886 was about one to five. Five years later (1891) it was somewhat less, but in 1896 had increased to about one woman to three men, and at present is more than one to two. In South Australia and Western Australia the ratio at the latest date was one female employed to every four males, while Queensland was less than one to four, and Tasmania less than one to five. The ratio for the whole of the Commonwealth was more than one to three. The employment of women is, however, largely confined to a few trades.

The great prosperity in clothing and textile industries is one of the main causes of increase in female employment. Certain trades are specifically known as women's trades, such as clothing and textile trades, preparation of food, book-binding, and lighter work connected with the drug trade, as, for example, wrapping. In common also with commercial establishments, a considerable number of factories employ women as clerks and typists.

(i) *Average Number of Males and Females Employed, 1913 to 1918.* The following table shews the average number of male and female employees in factories in each State from 1913 to 1918 :—

### AVERAGE NUMBER OF MALES AND FEMALES EMPLOYED IN MANUFACTURING INDUSTRIES, 1913 TO 1918.

State.	1913.	1914.	1915.	1916. <i>b</i>	1917. <i>c</i>	1918. <i>c</i>
MALES.						
New South Wales ..	93,036	90,409 <sup>a</sup>	90,409 <sup>a</sup>	87,724	88,910	90,025
Victoria ..	80,054	79,772	75,971	75,971	74,924	76,654
Queensland ..	34,715	35,717	34,387	32,235	32,763	33,597
South Australia ..	23,323	22,111	20,772	20,772	20,738	21,325
Western Australia ..	14,625	14,996	12,290	10,259	9,704	10,497
Tasmania ..	8,354	7,813	7,161	7,046	6,860	7,356
Commonwealth ..	254,107	250,618	240,990	234,007	233,959	239,454

<sup>a</sup> Year ended 30th June, 1915.      <sup>b</sup> See note <sup>a</sup> first table this section.

<sup>c</sup> See note <sup>b</sup> first table this section.

**AVERAGE NUMBER OF MALES AND FEMALES EMPLOYED IN  
MANUFACTURING INDUSTRIES, 1913 TO 1918—continued.**

State.	1913.	1914.	1915.	1916. <i>b</i>	1917. <i>c</i>	1918. <i>c</i>
<b>FEMALES.</b>						
New South Wales ..	27,364	26,202 <sup>a</sup>	26,202 <sup>a</sup>	28,677	29,087	30,529
Victoria ..	38,690	38,627	37,863	37,863	42,046	41,587
Queensland ..	7,648	7,565	7,692	7,748	7,683	7,393
South Australia ..	5,188	4,763	4,724	4,724	5,212	5,309
Western Australia ..	2,674	2,644	2,341	2,417	2,464	2,420
Tasmania ..	1,430	1,309	1,259	1,316	1,219	1,357
Commonwealth ..	82,994	81,110	80,081	82,745	87,711	88,595

*a* Year ended 30th June, 1915.*b* See note *a* first table this section.*c* See note *b* first table this section.

It will be seen that during the years specified there has been for the whole Commonwealth a total decrease in the number of male employees of 14,653, or an annual average of 2,931, whilst the number of female employees has shewn a total increase of 5,601, or an annual average of 1,120. The decline in the number of males employed since 1913 is, of course, due in a large measure to the disorganising effect of the war.

(ii) *Average Number of Males and Females Employed per 10,000 of Mean Population, 1913 to 1918.* The following table shews the average number of male and female employees per 10,000 of the mean male and female population respectively in each State from 1913 to 1918 :—

**AVERAGE NUMBER OF MALE AND FEMALE FACTORY EMPLOYEES PER 10,000  
OF MEAN MALE AND FEMALE POPULATION RESPECTIVELY, 1913 TO 1918.**

State.	1913.	1914.	1915.	1916. <i>b</i>	1917. <i>c</i>	1918. <i>c</i>
<b>MALES.</b>						
New South Wales ..	979	935 <sup>a</sup>	935 <sup>a</sup>	920	963	962
Victoria ..	1,151	1,119	1,077	1,077	1,125	1,142
Queensland ..	982	978	932	910	948	958
South Australia ..	1,062	1,002	960	960	1,030	1,059
Western Australia ..	823	826	696	615	612	658
Tasmania ..	823	741	702	706	690	717
Commonwealth ..	1,015	981	948	936	975	987

**FEMALES.**

New South Wales ..	319	293 <sup>a</sup>	293 <sup>a</sup>	313	311	320
Victoria ..	555	543	525	525	574	562
Queensland ..	256	244	242	239	234	219
South Australia ..	242	217	212	212	226	226
Western Australia ..	196	186	161	163	164	160
Tasmania ..	151	137	129	134	122	134
Commonwealth ..	361	342	333	340	354	351

*a* Year ended 30th June, 1915.*b* See note *a* first table this section.*c* See note *b* first table this section.

3. **Rate of Variation for each Sex.**—The percentages of annual increase or decrease during the years 1914 to 1918 in the average number of males and females employed in manufacturing industries in the several States and the Commonwealth are shewn below :—

**PERCENTAGE OF ANNUAL INCREASE IN NUMBERS OF MALE AND FEMALE EMPLOYEES, 1914 TO 1918.**

State.	1913-14.	1914-15.	1915-16. <i>b</i>	1916-17. <i>c</i>	1917-18. <i>c</i>
<b>MALES.</b>					
	%	%	%	%	%
New South Wales ..	-2.82 <sup>a</sup>	-2.82 <sup>a</sup>	-2.97	1.35	1.25
Victoria ..	-0.35	-4.76	-4.76	-1.38	2.31
Queensland ..	2.89	-3.72	-6.26	1.64	2.55
South Australia ..	-5.20	-6.06	-6.06	0.13	2.53
Western Australia ..	2.54	-18.04	-16.53	-5.41	8.17
Tasmania ..	-8.87	-5.94	-1.61	-2.64	7.23
Commonwealth ..	-1.37	-3.84	-2.90	-0.02	2.35
<b>FEMALES.</b>					
New South Wales ..	-4.25 <sup>a</sup>	-4.25 <sup>a</sup>	9.45	1.43	4.96
Victoria ..	-0.16	-1.98	-1.98	11.05	-1.09
Queensland ..	-1.08	1.68	0.73	-0.84	-3.77
South Australia ..	-8.19	-0.82	-0.82	10.33	1.86
Western Australia ..	-1.12	-11.46	3.25 <sup>*</sup>	1.94	-1.79
Tasmania ..	-8.46	-3.82	4.55	-7.37	11.32
Commonwealth ..	-2.27	-1.27	3.33	6.00	1.01

Note.—The minus sign (—) indicates decrease.

<sup>a</sup> Eighteen months ended 30th June, 1915. <sup>b</sup> See note <sup>a</sup> first table this section.

<sup>c</sup> See note <sup>b</sup> first table this section.

4. **Ratio of Female Employment in Factories.**—The extent to which females are employed in the factories of the Commonwealth may perhaps be best shewn by giving the masculinity of employees for each State for a series of years. The following table furnishes particulars for each of the years 1913 to 1918 inclusive :—

**EXCESS OF MALES OVER FEMALES PER 100 OF BOTH SEXES COMBINED, 1913 TO 1918.**

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
1913 ..	54.5	34.8	63.9	63.6	69.1	70.8	50.8
1914 ..	55.1 <sup>a</sup>	34.8	65.0	64.6	70.0	70.7	51.1
1915 ..	55.1 <sup>a</sup>	33.5	63.4	62.9	68.0	70.1	50.1
1916 <sup>b</sup> ..	50.7	33.5	61.2	62.9	61.9	68.5	47.8
1917 <sup>c</sup> ..	50.7	28.1	62.0	59.9	59.5	69.8	45.5
1918 <sup>c</sup> ..	49.4	29.7	63.9	60.1	62.5	68.9	46.0

<sup>a</sup> Year ended 30th June, 1915. <sup>b</sup> See note <sup>a</sup> first table this section.

<sup>c</sup> See note <sup>b</sup> first table this section.

Since 1914, owing principally to the war, the excess of males employed over females per 100 of both sexes combined has declined from 51.1 in 1914 to 46.0 in 1918 for the Commonwealth as a whole. This decline is in evidence in all the States. The tables given in the succeeding paragraph shew that the comparatively high proportions of females have been due not so much to the incursion of female labour into what may be termed men's trades, as to the activity in those trades in which women are ordinarily engaged, more especially in dressmaking, millinery, etc.

5. **Employment of Females in Particular Industries.**—The employment of women in manufacturing industries in Australia is largely confined to a few trades, of which the more important are comprised in Classes VI., VII., and VIII., viz., in connexion with food, drink, etc., clothing and textile fabrics, and books, paper, printing, etc. The following table shews the average number of females employed in each of these classes in each State, and also shews the percentages of the average number so employed on the total average number of females employed in all classes of factories :—

**AVERAGE NUMBER OF FEMALES EMPLOYED IN PARTICULAR INDUSTRIES, AND PERCENTAGES ON AVERAGE TOTAL EMPLOYED, 1918.**

Class.	N.S.W. 1917-18.	Victoria. 1917-18.	Q'land. 1918.	S. Aust. 1917-18.	W. Aust. 1918.	Tas. 1918.	C'wealth.
AVERAGE NUMBER.							
VI. Food, drink, etc. . . . .	4,751	5,007	956	540	332	294	11,880
VII. Clothing and textile fabrics . . . . .	19,181	29,865	5,202	3,584	1,645	838	60,315
VIII. Books, paper, printing, etc. . . . .	2,833	2,705	681	613	247	108	7,187
All other classes . . . . .	3,764	4,010	554	572	196	117	9,213
Total . . . . .	30,529	41,587	7,393	5,309	2,420	1,357	88,595
PERCENTAGES ON TOTAL AVERAGE FEMALE EMPLOYEES.							
VI. Food, drink, etc. . . . .	15.56	12.04	12.93	10.17	13.72	21.67	13.41
VII. Clothing and textile fabrics . . . . .	62.83	71.81	70.37	67.51	67.97	61.75	68.08
VIII. Books, paper, printing, etc. . . . .	9.28	6.51	9.21	11.55	10.21	7.96	8.11
All other classes . . . . .	12.33	9.64	7.49	10.77	8.10	8.62	10.40
Total . . . . .	100.00	100.00	100.00	100.00	100.00	100.00	100.00

It will be seen that by far the greater part of the total number of females employed in factories work in one or other of the three classes of industry indicated, Class VII. being the most important. The classification of the employment of females in the several industries in that class, and the relation of their number to that of the males so employed, are shewn in the following table :—

**FEMALE EMPLOYMENT IN EACH INDUSTRY IN CLASS VII. DURING 1918.**

Industry.	New South Wales. 1917-18.			Victoria. 1917-18.			Other States. <sup>a</sup>		
	Males.	Females	Femini- nity. <i>b</i>	Males.	Females	Femini- nity. <i>b</i>	Males.	Females	Femini- nity. <i>b</i>
Woollen and tweed mills	473	572	9.47	877	1,195	15.35	312	388	10.86
Boots and shoes . . . . .	2,692	1,789	-20.15	5,115	3,450	-19.44	1,544	909	-25.89
Slop clothing	2,465	7,032	48.09	2,037	7,116	55.49	1,681	4,857	48.58
Clothing (tailoring)									
Dressmaking and millinery . . . . .	184	5,937	99.19	299	8,750	93.39	26	3,379	98.47
Dyeworks and cleaning	85	87	1.16	87	104	8.90	23	27	8.00
Furriers . . . . .	30	62	34.78	79	192	41.70	..	..	..
Hats and caps . . . . .	509	976	31.45	707	1,087	21.18	73	113	21.51
Waterproof and oilskin	52	180	55.17	52	164	51.85	..	..	..
Shirts, ties, and scarfs	154	1,676	83.17	295	5,673	90.11	75	1,311	89.18
Hosiery and knitted Goods . . . . .	99	540	69.01	160	1,377	79.18	..	..	..
Rope and cordage . . . . .	300	19	-88.09	625	520	-9.17	174	174	..
Tents and tarpaulins . . . . .	175	311	27.98	90	70	-12.50	107	86	-10.88
Other . . . . .	..	..	..	24	167	74.87	7	25	56.25
Total, Class VII. . . . .	7,218	19,181	45.32	10,447	29,865	43.21	4,022	11,269	47.39

Note.—The minus sign (–) denotes excess of males over females.

<sup>a</sup> See note *b* first table this section. <sup>b</sup> Excess of females over males per 100 of both sexes combined.

## § 7. Child Labour in Factories.

1. **Conditions of Child Labour.**—The employment of young persons in factories in each State of the Commonwealth is regulated by Acts of Parliament in a similar manner to the employment of female labour. Excepting under special circumstances, children under a certain age may not be employed in factories. The minimum age in all the States is 14, with the exception of South Australia, where it is 13 years, and Victoria, where the minimum for females is 15 years. Other restrictions on the employment of young persons in factories are more particularly referred to in a later part of this book. (See Section relating to *Industrial Unionism and Industrial Legislation*.) The general object of the restrictions imposed is to assure that a proper period shall be devoted to primary education and that the early years of toil shall not exhaust the worker before the attainment of full growth.

2. **Average Number of Children Employed in Factories, 1913 to 1918.**—In the statistical compilations of the various States the term "child" may be taken to denote any person under sixteen years of age. The following table shews the average number of children of each sex employed in manufacturing industries in each State during the years 1913 to 1918 :—

### AVERAGE NUMBER OF CHILDREN EMPLOYED IN FACTORIES, 1913 TO 1918.

State.	1913.	1914.	1915.	1916. <sup>b</sup>	1917. <sup>c</sup>	1918. <sup>c</sup>
MALES.						
New South Wales ..	2,385	2,437 <sup>a</sup>	2,437 <sup>a</sup>	2,578	2,604	2,584
Victoria ..	2,743	2,398	3,355	3,355	3,072	3,195
Queensland ..	1,122	1,148	1,247	1,197	1,170	1,171
South Australia ..	1,122	1,064	1,068	1,068	744	779
Western Australia ..	346	381	414	398	408	407
Tasmania ..	283	213	262	217	253	244
Commonwealth ..	8,001	8,141	8,783	8,813	8,251	8,380
FEMALES.						
New South Wales ..	2,086	2,326 <sup>a</sup>	2,326 <sup>a</sup>	2,605	2,449	2,492
Victoria ..	1,840	1,816	2,197	2,197	2,301	2,447
Queensland ..	701	713	835	745	704	711
South Australia ..	611	522	591	591	586	567
Western Australia ..	360	361	311	271	314	307
Tasmania ..	141	77	97	102	89	105
Commonwealth ..	5,739	5,815	6,357	6,511	6,443	6,629
TOTAL.						
New South Wales ..	4,471	4,763 <sup>a</sup>	4,763 <sup>a</sup>	5,183	5,053	5,076
Victoria ..	4,583	4,714	5,552	5,552	5,373	5,642
Queensland ..	1,823	1,861	2,082	1,942	1,874	1,882
South Australia ..	1,733	1,586	1,659	1,659	1,330	1,346
Western Australia ..	706	742	725	669	722	714
Tasmania ..	424	290	359	319	342	349
Commonwealth ..	13,740	13,956	15,140	15,324	14,694	15,009

<sup>a</sup> Year ended 30th June, 1915. <sup>b</sup> See note <sup>a</sup> first table this section.

<sup>c</sup> See note <sup>b</sup> first table this section.

3. **Percentage of Children on Total Persons Employed.**—The foregoing table shows a general increase in the number of children employed in factories during the past quinquennial period. This increase is more marked among the females than the males, the respective gains being 890 and 379. Examined in conjunction with the total number of persons employed, the following table reveals a gradual increase in the percentage of children employed in factories since 1913 :—

**PERCENTAGE OF CHILDREN IN FACTORIES ON TOTAL NUMBER OF EMPLOYEES, 1913 TO 1918.**

State.	1913.	1914.	1915.	1916. <i>b</i>	1917. <i>c</i>	1918. <i>c</i>
	%	%	%	%	%	%
New South Wales ..	3.71	4.08 <sub>a</sub>	4.08 <sub>a</sub>	4.45	4.28	4.21
Victoria ..	3.86	3.98	4.88	4.88	4.59	4.77
Queensland ..	4.30	4.30	4.95	4.86	4.63	4.59
South Australia ..	6.08	5.90	6.51	6.51	5.11	5.05
Western Australia ..	4.08	4.21	4.96	5.28	5.93	5.53
Tasmania ..	4.33	3.25	4.26	3.81	4.23	4.01
Commonwealth ..	4.08	4.21	4.72	4.84	4.57	4.58

*a* Year ended 30th June, 1915. *b* See note *a* first table this section.

*c* See note *b* first table this section.

4. **Industries Employing Child Labour.**—The employment of children is largely confined to a limited number of industries, the most important of which are specified in the table below, which shows the average number of children of each sex employed in the several industries indicated in each State :—

**NUMBER OF CHILDREN ENGAGED IN VARIOUS INDUSTRIES, 1918.**

Class.	Industry.	N.S.W. 1917-18.		Victoria. 1917-18.		Q'land. 1918.		S. Aust. 1917-18.		W. Aust. 1918.		Tas. 1918.		C'wealth.	
		M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
IV.	Joinery, boxes, cases, etc. ..	76	..	87	..	38	2	18	..	10	1	7	..	236	3
	Saw mills ..	64	..	16	..	38	2	2	..	11	..	52	..	183	3
V.	Engineering, ironworks, and foundries ..	224	6	362	..	62	4	50	..	58	2	10	..	766	12
	Galvanised ironworking and tinsmithing ..	82	18	92	29	45	3	38	5	..	..	7	..	264	55
	Railway carriage, railway and tramway workshops ..	39	..	83	..	32	..	11	..	26	..	..	..	191	..
VI.	Meat & fish preserving ..	5	2	23	3	124	5	2	..	..	..	..	..	154	10
	Biscuits ..	160	131	58	39	10	18	12	14	33	36	18	4	291	242
	Confectionery ..	35	86	39	81	32	45	9	36	9	37	..	..	124	285
	Jams, pickles, sauces, etc. ..	27	23	22	13	23	15	23	20	2	..	22	10	119	81
	Tobacco, cigars, etc. ..	64	88	59	16	3	3	4	1	1	7	..	..	131	115
VII.	Woollen, cotton, and tweed mills ..	33	77	85	117	14	29	7	15	..	..	1	4	140	242
	Boots and shoes ..	173	217	245	333	40	55	41	55	9	10	14	23	522	693
	Clothing (tailoring and slop) ..	70	436	87	320	43	192	17	93	15	32	2	9	234	1,082
	Dressmaking and millinery ..	12	469	8	510	1	161	1	118	1	104	..	30	23	1,392
	Hats and caps ..	28	91	47	46	1	2	3	2	..	..	..	..	79	141
	Shirts, ties, scarfs, etc. ..	9	135	18	346	8	51	3	63	1	20	..	2	39	617
VIII.	Electrotyping, printing and binding ..	327	156	365	130	170	61	70	31	39	17	27	14	998	409
	Paper making, paper boxes, etc. ..	64	154	31	53	3	13	14	52	1	12	..	..	113	284
XI.	Coach and wagon building ..	58	..	98	..	42	..	40	..	8	..	14	..	260	..
	Cycles and motors ..	42	1	85	..	19	1	59	..	15	..	13	..	233	2
XIII.	Billiard tables, cabinet making and furniture ..	57	..	100	2	90	2	39	..	17	..	10	..	313	4

5. **Apprenticeship.**—It is obvious that the age of apprenticeship in each State must be limited by the conditions governing the employment of child labour in factories. The early Apprentices Acts in some of the States are apparently in conflict on this point with the Factories Acts. The statutes limiting the age at which children may begin to work may be regarded as applicable by way of preventing too early apprenticeship, as may also those directing that education be continued up to a certain age or standard.

Indentures must be entered into specifying the conditions of the employment. Apprenticeships may not exceed seven years in duration, and usually become inoperative at twenty-one years of age, or in the case of women, on marriage. In Tasmania, however, the section of the Wages Boards Act 1910 which deals with apprentices has been amended to provide for the issue of licenses by the Minister to enable persons to complete their term of apprenticeship after the age of twenty-one if necessary.

The Arbitration Courts and Wages Boards have power to limit the number of apprentices which may be taken into a factory and specify the term of apprenticeship. No general statistics of the number of apprentices in Australia have been collected up to the present time. Various enactments relating to child labour are referred to in the Section of this book dealing with *Industrial Unionism and Industrial Legislation*.

## § 8. Amount of Wages Paid and Value of Production.

1. **Introduction.**—The importance of the manufacturing industries of the Commonwealth is indicated by the fact that the total value of the output for 1918 was £225,753,611, of which amount the sum of £146,181,866 represents the value of the raw materials used. The difference between these two amounts, viz., £79,571,745, represents the amount by which the value of the raw materials was enhanced in the process of manufacture. The total amount of salaries and wages paid in factories during 1918 was £38,379,268.

2. **Amount of Salaries and Wages Paid.**—The total amount of salaries and wages paid during the year in various classes of factories in the Commonwealth (excluding all sums drawn by working proprietors) is shown in the following table :—

AMOUNT OF SALARIES AND WAGES PAID IN FACTORIES  
IN COMMONWEALTH, 1918.(a)

Class of Industry.	N.S.W. 1917-18.	Victoria. 1917-18.	Q'land. 1918.	S. Aust. 1917-18.	W. Aust. 1918.	Tas. 1918.	C'wealth.
	£	£	£	£	£	£	£
I. Treating raw material, product of agricul- tural and pastoral pursuits, etc. . .	482,855	441,965	106,326	101,197	40,290b	23,797b	1,196,430
II. Treating oils and fats, animal, vegetable, etc. . .	169,173	105,223	25,153	33,365	c	c	332,914
III. Processes in stone, clay, glass, etc. . .	733,796	494,417	102,008	141,724	52,764	24,908	1,549,617
IV. Working in wood . .	940,806	836,083	556,680	161,372	372,433	167,501	3,034,875
V. Metal works, machin- ery, etc. . .	3,985,818	2,180,711	829,964	1,393,914	409,806	216,984	9,017,197
VI. Connected with food and drink, etc. . .	2,097,106	1,989,964	2,083,282	422,614	264,937	191,989	7,049,892
VII. Clothing and textile fabrics, etc. . .	2,145,362	2,967,355	506,612	354,558	167,891	95,175	6,236,953
VIII. Books, paper, printing, and engraving . .	1,175,067	1,077,345	399,952	195,083	162,134	94,354	3,103,935
IX. Musical instruments, etc.	65,466	28,071	..	1,600	..	..	95,137
X. Arms and explosives	227,096	133,130	..	78	..	..	360,304
XI. Vehicles & fittings, sad- dlery & harness, etc.	492,075	478,298	136,200	163,414	65,154	39,568	1,374,709

a Excluding all amounts drawn by working proprietors. b Includes Class II. c Included in Class I.

AMOUNT OF SALARIES AND WAGES PAID IN FACTORIES IN  
COMMONWEALTH, 1918(a)—continued.

Class of Industry.	N.S.W. 1917-18.	Victoria. 1917-18.	Q'land. 1918.	S. Aust. 1917-18.	W. Aust. 1918.	Tas. 1918.	C'wealth.
	£	£	£	£	£	£	£
XII. Ship and boat building and repairing ..	560,358	99,178	13,747	16,153	2,942	7,756	700,134
XIII. Furniture, bedding, and upholstery ..	441,687	294,933	140,333	102,639	56,838	28,766	1,065,196
XIV. Drugs, chemicals, and by-products ..	238,733	254,993	7,738	85,358	47,398	1,364	635,584
XV. Surgical & other scientific instruments ..	18,965	12,804	5,195	3,273	1,830	..	42,067
XVI. Jewellery, timepieces, and plated ware ..	97,782	111,985	14,032	18,458	7,342	3,235	252,834
XVII. Heat, light, and power ..	615,938	640,013	168,381	137,167	63,087	65,837	1,690,423
XVIII. Leatherware, n.e.i. ..	68,507	68,378	9,392	4,194	1,848	..	152,319
XIX. Minor warea, n.e.i. ..	144,665	287,755	16,193	23,193	14,202	2,740	488,748
Total ..	14,701,255	12,502,601	5,121,188	3,359,354	1,730,896	963,974	38,379,268

a Excluding all amounts drawn by working proprietors.

The maximum amount of salaries and wages paid in any particular class was in Class V., the amount being £9,017,197, or 23.49 per cent. on the total amount; the minimum amount was in Class XV., £42,067, or 0.11 per cent. on the total amount. The State in which the largest amount was paid was New South Wales. The following statement shews the total amount of salaries and wages paid, and the average amount paid per employee in each State, during each of the years 1913 to 1918; the figures are exclusive of working proprietors and of the amounts drawn from the business by them:—

AMOUNT OF SALARIES AND WAGES PAID AND AVERAGE AMOUNT PER ANNUM  
PAID PER EMPLOYEE, 1913 TO 1918.

Year.	Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
		£	£	£	£	£	£	£
1913	Total amount paid ..	12,683,384	10,714,336	4,075,191	3,034,537	2,215,187	883,452	33,606,087
	Average per employee ..	109.66	94.74	100.05	111.66	132.31	95.18	104.14
1914a	Total amount paid ..	12,667,721	11,099,940	4,211,489	2,946,296	2,342,428	835,829	34,103,703
	Average per employee ..	112.94	98.50	100.91	115.31	137.30	98.82	107.36
1915a	Total amount paid ..	12,667,721	11,036,345	4,226,635	2,705,130	1,791,276	783,547	33,210,654
	Average per employee ..	112.94	101.75	104.21	111.54	127.31	97.82	108.00
1916b	Total amount paid ..	13,413,845	11,036,345	4,181,254	2,705,130	1,656,799	835,467	33,828,340
	Average per employee ..	119.29	101.75	108.13	111.54	136.29	104.88	111.35
1917c	Total amount paid ..	14,381,309	11,833,517	4,879,940	3,094,094	1,590,696	838,662	36,618,218
	Average per employee ..	126.16	105.87	125.28	124.57	136.22	108.97	118.54
1918c	Total amount paid ..	14,701,255	12,502,601	5,121,188	3,359,354	1,730,896	963,974	38,379,268
	Average per employee ..	126.18	110.77	129.45	131.94	138.55	115.57	121.75

a New South Wales figures for year ended 30th June, 1915. b See note a first table this section.

c See note b first table this section.

In comparing the figures in the preceding table, regard should be paid to the nature of certain industries which are carried on to a greater extent in some States than in others. In Victoria, for instance, there is a large number of hands employed in Class VII., comprising a heavy percentage of women and children. The position occupied by Western Australia is principally due to the high ratio of male to female employees in that State.

It will be noted that there has been a persistent increase in the average wage paid per employee in each of the States during the period under review. Taking the Commonwealth as a whole, during the period 1913-18 there has been an increase of 14 per cent. on the total amount of wages paid, and nearly 17 per cent. on the average paid per employee.



The following tables shew the approximate amount paid in salaries and wages to males and females in each class of industry in each State during 1918, and the total amounts paid to employees of each sex during the last six years :—

**AMOUNT(a) OF SALARIES AND WAGES PAID TO MALE AND FEMALE HANDS EMPLOYED IN EACH CLASS OF INDUSTRY IN THE SEVERAL STATES OF THE COMMONWEALTH DURING 1918.**

Class of Industry.	N.S.W. 1917-18.	Victoria. 1917-18.	Q'land. 1918.	S. Aust. 1917-18.	W. Aust. 1918.	Tas. 1918.	C'wealth.
<b>MALES.</b>							
I. Treating raw material, product of agricultural and pastoral pursuits, etc. . .	£ 475,886	£ 440,905	£ 105,757	£ 100,528	£ 39,843b	£ 623,526b	£ 1,186,445
II. Treating oils and fats, animal, vegetable, etc. . .	152,443	95,755	24,184	31,572	c	c	303,954
III. Processes in stone, clay, glass, etc. . .	727,307	488,512	101,358	141,160	52,281	24,758	1,535,376
IV. Working in wood . .	932,123	828,486	551,834	159,245	372,094	166,275	3,010,057
V. Metal works, machinery, etc. . .	3,949,645	2,155,946	823,925	1,387,572	407,420	215,882	8,940,390
VI. Connected with food and drink, etc. . .	1,809,381	1,702,877	2,026,703	397,367	248,335	176,524	6,361,187
VII. Clothing and textile fabrics, etc. . .	975,459	1,308,426	230,996	164,516	60,646	52,447	2,792,490
VIII. Books, paper, printing and engraving . .	1,003,021	922,138	357,505	169,495	146,775	88,603	2,687,537
IX. Musical instruments, etc. . .	62,373	27,367	..	1,600	..	..	91,340
X. Arms and explosives	226,966	92,726	..	78	..	..	319,770
XI. Vehicles and fittings, saddlery and harness, etc. . .	480,733	465,297	131,255	158,117	62,826	33,226	1,336,454
XII. Ship and boat building and repairing . .	559,074	98,906	13,747	16,153	2,942	7,756	698,578
XIII. Furniture, bedding, and upholstery . .	410,088	275,555	132,613	100,465	55,107	27,219	1,001,047
XIV. Drugs, chemicals, and by-products . .	193,689	225,189	5,420	80,674	44,319	1,137	550,428
XV. Surgical and other scientific instruments	14,600	12,188	4,993	3,084	1,449	..	36,314
XVI. Jewellery, timepieces, and plated ware . .	90,621	103,040	13,159	17,652	7,148	3,157	234,777
XVII. Heat, light, and power	610,504	603,147	165,867	133,582	63,987	64,761	1,640,945
XVIII. Leatherware, n.e.l. . .	56,400	52,862	7,513	3,336	1,518	..	121,629
XIX. Minor wares, n.e.l. . .	117,704	242,428	13,888	20,867	12,810	2,472	410,169
Total . .	12,848,017	10,141,750	4,710,717	3,087,063	1,578,600	892,743	33,258,890
<b>FEMALES.</b>							
I. Treating raw material, product of agricultural and pastoral pursuits, etc. . .	6,969	1,060	569	669	447b	271b	9,985
II. Treating oils and fats, animal, vegetable, etc. . .	16,730	9,468	969	1,793	c	c	28,960
III. Processes in stone, clay, glass, etc. . .	6,489	5,905	650	564	483	150	14,241
IV. Working in wood . .	8,683	7,597	4,846	2,127	339	1,226	24,818
V. Metal works, machinery, etc. . .	36,173	24,765	6,039	6,342	2,386	1,102	76,807
VI. Connected with food and drink, etc. . .	287,725	287,087	56,579	25,247	16,602	15,465	688,705
VII. Clothing and textile fabrics, etc. . .	1,169,903	1,658,929	275,616	190,042	107,245	42,728	3,444,468
VIII. Books, paper, printing and engraving . .	172,046	155,207	42,447	25,588	15,359	5,751	416,398
IX. Musical instruments, etc. . .	3,093	704	..	..	..	..	3,797
X. Arms and explosives	130	40,404	..	..	..	..	40,534

a Exclusive of amount drawn by working proprietors. b Includes Class II. c Included in Class I.

AMOUNT(a) OF SALARIES AND WAGES PAID TO MALE AND FEMALE HANDS EMPLOYED IN EACH CLASS OF INDUSTRY, ETC.—*continued.*

Class of Industry.	N.S.W. 1917-18.	Victoria. 1917-18.	Q'land. 1918.	S. Aust. 1917-18.	W. Aust. 1918.	Tas. 1918.	C'wealth.
<b>FEMALES—<i>continued.</i></b>							
XI. Vehicles and fittings, saddlery and harness, etc. . .	£ 11,342	£ 13,001	£ 4,945	£ 5,297	£ 2,328	£ 1,342	£ 38,255
XII. Ship and boat building and repairing. . .	1,284	272	..	..	..	..	1,556
XIII. Furniture, bedding, and upholstery . . .	31,599	19,378	7,720	2,174	1,731	1,547	64,149
XIV. Drugs, chemicals, and by-products . . .	45,044	29,804	2,318	4,684	3,079	227	85,156
XV. Surgical and other scientific instruments. . .	4,365	616	202	189	381	..	5,753
XVI. Jewellery, timepieces, and plated ware . .	7,161	8,945	873	806	194	78	18,057
XVII. Heat, light, and power . . .	5,434	36,866	2,514	3,585	..	1,076	49,475
XVIII. Leatherware, n.e.l. . .	12,107	15,516	1,879	858	330	..	30,690
XIX. Minor wares, n.e.l. . .	26,961	45,327	2,305	2,326	1,392	268	78,579
Total . . .	1,853,238	2,360,851	410,471	272,291	152,296	71,231	5,120,378

a Exclusive of amount drawn by working proprietors.

## AMOUNT(a) OF SALARIES AND WAGES PAID TO MALES AND FEMALES IN FACTORIES IN THE SEVERAL STATES OF THE COMMONWEALTH, 1913 TO 1918.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
<b>MALES.</b>							
1913. Amount paid . . .£	11,323,791	8,925,814	3,744,050	2,809,066	2,068,212	826,358	29,697,291
Per cent. on total . . .	89.28	83.30	91.87	92.57	93.37	93.54	88.37
Average per employee£	127.76	118.04	112.95	127.43	146.79	105.09	123.32
1914.bAmount paid . . .£	11,296,572	9,252,336	3,880,472	2,734,603	2,199,961	782,300	30,146,244
Per cent. on total . . .	89.18	83.35	92.14	92.81	93.92	93.60	88.40
Average per employee£	130.96	123.84	113.39	131.21	152.31	109.24	126.86
1915.bAmount paid . . .£	11,296,572	9,161,852	3,886,165	2,506,579	1,667,477	723,010	29,241,655
Per cent. on total . . .	89.18	83.02	91.94	92.66	93.09	92.27	88.05
Average per employee£	130.96	128.76	118.03	122.92	141.93	106.97	128.01
1916.cAmount paid . . .£	11,888,028	9,161,852	3,823,488	2,506,579	1,520,760	772,789	29,673,496
Per cent. on total . . .	88.63	83.02	91.44	92.66	91.79	92.50	87.72
Average per employee£	141.46	128.76	123.57	122.92	155.50	116.10	133.66
1917.dAmount paid . . .£	12,727,172	9,590,851	4,496,449	2,852,334	1,449,780	778,352	31,894,939
Per cent. on total . . .	88.50	81.05	92.14	92.19	91.14	92.81	87.10
Average per employee£	149.35	136.48	143.51	144.99	156.99	120.13	143.53
1918.dAmount paid . . .£	12,848,017	10,141,750	4,710,717	3,087,063	1,578,600	892,743	33,258,890
Per cent. on total . . .	87.39	81.12	91.98	91.89	91.20	92.61	86.66
Average per employee£	148.93	141.12	146.19	152.89	156.41	127.75	146.11

**FEMALES.**

1913. Amount paid . . .£	1,359,593	1,788,522	331,141	225,471	146,975	57,094	3,908,796
Per cent. on total . . .	10.72	16.70	8.13	7.43	6.63	6.46	11.63
Average per employee£	50.29	47.01	43.66	43.94	55.42	40.24	47.74
1914.bAmount paid . . .£	1,371,149	1,847,604	331,017	211,693	142,467	53,529	3,957,459
Per cent. on total . . .	10.82	16.65	7.86	7.19	6.08	6.40	11.60
Average per employee£	52.94	43.65	44.06	44.95	54.44	41.27	49.46
1915.bAmount paid . . .£	1,371,149	1,874,493	340,470	198,551	123,799	60,537	3,968,999
Per cent. on total . . .	10.82	16.98	8.06	7.34	6.91	7.73	11.95
Average per employee£	52.94	50.24	44.62	42.47	53.34	48.39	50.18
1916.cAmount paid . . .£	1,525,817	1,874,493	357,766	198,551	136,039	62,678	4,155,344
Per cent. on total . . .	11.37	16.98	8.56	7.34	8.21	7.50	12.28
Average per employee£	59.22	50.24	46.29	42.47	56.80	47.85	50.81
1917.dAmount paid . . .£	1,654,137	2,242,666	383,491	241,760	140,916	60,309	4,723,279
Per cent. on total . . .	11.50	18.95	7.86	7.81	8.86	7.19	12.90
Average per employee£	57.49	54.05	50.31	46.81	57.71	49.56	54.47
1918.dAmount paid . . .£	1,853,238	2,360,851	410,471	272,291	152,296	71,231	5,120,378
Per cent. on total . . .	12.61	18.88	8.02	8.11	8.80	7.39	13.34
Average per employee£	61.27	57.57	55.95	51.67	63.46	52.65	58.45

a Exclusive of amounts drawn by working proprietors.

b Year ended 30th June, 1915, for New South Wales. c See note a first table this section. d See note b first table this section.

A further analysis of salaries and wages paid is given in the following table, the amounts paid to managers, overseers, etc., being differentiated from those paid to other employees. As previously mentioned, amounts drawn by working proprietors are excluded in all cases.

**DETAILS OF SALARIES AND WAGES PAID TO MANAGERS, OVERSEERS, ETC.,  
AND OTHER EMPLOYEES IN FACTORIES DURING 1918.(a)**

Class of Industry.	Salaries and Wages Paid to—						
	Managers, Overseers, Accountants, and Clerks.		All Other Employees.		All Employees.		
	Males.	Females.	Males.	Females.	Males.	Females.	Total.
	£	£	£	£	£	£	£
I. Treating raw material, product of agricultural pursuits, etc. . .	148,473	3,540	1,037,972	6,445	1,186,445	9,985	1,196,430
II. Treating oils and fats, animal, vegetable, etc. . .	61,050	6,135	242,904	22,825	303,954	28,960	332,914
III. Processes in stone, clay, glass, etc. . .	171,608	7,164	1,363,768	7,077	1,535,376	14,241	1,549,617
IV. Working in wood . .	374,711	21,320	2,635,346	3,498	3,010,057	24,818	3,034,875
V. Metal works, machinery, etc. . .	949,068	41,623	7,991,322	35,184	8,940,390	76,807	9,017,197
VI. Connected with food and drink, etc. . .	1,166,843	80,005	5,194,344	608,700	6,361,187	688,705	7,049,892
VII. Clothing and textile fabrics, etc. . .	450,748	200,122	2,341,742	3,244,341	2,792,490	3,444,463	6,236,953
VIII. Books, paper, printing, and engraving . .	543,870	75,379	2,143,667	341,019	2,687,537	416,398	3,103,935
IX. Musical instruments, etc. . .	12,192	2,045	79,148	1,752	91,340	3,797	95,137
X. Arms and explosives . .	28,698	3,073	291,072	37,461	319,770	40,534	360,304
XI. Vehicles and fittings, saddlery and harness, etc. . .	138,443	20,010	1,198,011	18,245	1,336,454	38,255	1,374,709
XII. Ship and boat building and repairing . .	79,765	1,556	618,813	..	698,578	1,556	700,134
XIII. Furniture, bedding, and upholstery . .	79,803	13,202	921,244	50,947	1,001,047	64,149	1,065,196
XIV. Drugs, chemicals, and by-products . .	115,354	14,446	435,074	70,710	550,428	85,156	635,584
XV. Surgical & other scientific instruments . .	5,244	1,024	31,070	4,729	36,314	5,753	42,067
XVI. Jewellery, timepieces, and plated ware . .	21,317	4,843	213,460	13,214	234,777	18,057	252,834
XVII. Heat, light, and power . .	319,998	19,361	1,320,950	30,114	1,640,948	49,475	1,690,423
XVIII. Leatherware, n.e.i. . .	20,276	2,878	101,353	27,812	121,629	30,690	152,319
XIX. Minor wares, n.e.i. . .	48,243	5,843	361,926	72,736	410,169	78,579	488,748
Total . .	4,735,704	523,569	28,523,186	4,596,809	33,258,890	5,120,378	38,379,268
Average paid per employee . .	233.18	95.14	137.58	55.99	146.11	58.45	121.75

a See note b first table this section.

**3. Value of Fuel and Light used in Factories.**—The amount expended in factories on fuel and light is of considerable importance; in 1918 it amounted to £4,732,890. The classes of industry in which fuel was most extensively used were Class V., Metal Works, Machinery, etc., £1,331,773; Class VI., Connected with Food, Drink, etc., £1,079,228; Class XVII., Heat, Light, Power, etc., £935,299, of which amount £800,255 was expended on generating electric light and power; and Class III., £500,303. The

following tables shew the value of fuel and light used in the different classes of industry in the several States of the Commonwealth at latest date, and of the total used for each of the last six years :—

## VALUE OF FUEL AND LIGHT USED IN FACTORIES IN COMMONWEALTH, 1918.

Class of Industry.	N.S.W. 1917-18.	Vic. 1917-18.	Q'land. 1918.	S. Aust. 1917-18.	W. Aust. 1918.	Tas. 1918.	C'wealth.
	£	£	£	£	£	£	£
I. Treating raw material, product of agricultural and pastoral pursuits, etc. . .	64,709	60,104	14,984	13,999	4,633a	1,520a	159,949
II. Treating oils and fats, animal, vegetable, etc. . .	44,870	29,282	4,245	8,252	b	b	86,649
III. Processes in stone, clay, glass, etc. . .	247,142	158,368	20,805	50,821	16,602	6,565	500,303
IV. Working in wood . .	32,483	23,600	12,181	5,331	2,787	1,870	78,252
V. Metal works, machinery, etc. . .	646,792	183,272	33,471	385,569	27,329	55,340	1,331,773
VI. Connected with food and drink, etc. . .	326,212	336,003	249,853	97,295	52,239	17,626	1,079,228
VII. Clothing and textile fabrics, etc. . .	54,529	103,109	10,398	11,219	3,876	2,105	185,236
VIII. Books, paper, printing, and engraving . .	44,780	53,980	16,736	8,407	5,908	2,203	132,014
IX. Musical instruments, etc. . .	1,100	652	..	31	..	..	1,783
X. Arms and explosives . .	3,650	11,808	..	15	..	..	15,473
XI. Vehicles and fittings, saddlery and harness, etc. . .	17,672	16,267	3,080	6,416	3,187	844	47,466
XII. Ship and boat building and repairing . .	15,430	4,290	211	395	17	105	20,448
XIII. Furniture, bedding, and upholstery . .	12,967	8,492	3,828	2,638	1,746	601	30,272
XIV. Drugs, chemicals, and by-products . .	21,819	26,475	610	17,741	4,949	50	71,644
XV. Surgical and other scientific instruments . .	239	588	197	205	90	..	1,319
XVI. Jewellery, timepieces, and plated ware . .	1,975	3,474	596	969	179	45	7,238
XVII. Heat, light, and power . .	515,786	190,317	52,526	72,332	87,861	16,477	935,299
XVIII. Leatherware, n.e.l. . .	1,537	2,086	165	45	73	..	3,906
XIX. Minor wares, n.e.l. . .	6,384	36,019	213	1,507	474	41	44,638
Total . .	2,060,076	1,248,186	424,099	683,187	211,950	105,392	4,732,890

a Includes Class II.

b Included in Class I.

## VALUE OF FUEL AND LIGHT USED IN FACTORIES IN COMMONWEALTH DURING THE YEARS 1913 TO 1918.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
	£	£	£	£	£	£	£
1913 . .	1,371,425	739,835	328,519	417,280	198,161	185,681	3,240,901
1914 . .	1,364,186a	804,325	335,219	406,987	210,192	189,012	3,309,921
1915 . .	1,364,186a	834,966	300,716	399,731	187,121	110,803	3,197,523
1916b . .	1,528,220	834,966	310,454	399,731	193,523	116,704	3,383,598
1917c . .	1,766,664	1,024,156	415,052	558,524	198,000	92,544	4,054,940
1918c . .	2,060,076	1,248,186	424,099	683,187	211,950	105,392	4,732,890

a Year ended 30th June, 1915. b See note a first table this section.

c See note b first table this section.

4. Value of Raw Materials used in Factories.—The total value of raw materials worked up (i.e., exclusive of fuel, lubricants, etc.) in factories in the Commonwealth during 1918 was £146,181,866, which represents 64.75 per cent. of the total value of the finished products. (See next paragraph.) The following table shows the value of the raw materials worked up in various classes of industry in each State :—

VALUE OF RAW MATERIALS WORKED UP IN FACTORIES IN COMMONWEALTH,  
1918.

Class of Industry.	N.S.W. 1917-18.	Victoria. 1917-18.	Q'land. 1918.	S. Aust. 1917-18.	W. Aust. 1918.	Tas. 1918.	C'wealth.
	£	£	£	£	£	£	£
I. Treating raw material, product of agricultural and pastoral pursuits, etc. . .	7,809,944	4,665,646	2,477,075	789,655	2,359,642	2,277,758	16,379,720
II. Treating oils and fats, animal, vegetable, etc. . .	2,092,309	781,835	142,051	216,836	b	b	3,233,031
III. Processes in stone, clay, glass, etc. . .	530,213	237,453	54,180	87,623	20,209	9,749	939,432
IV. Working in wood . .	2,522,473	1,262,067	866,612	593,729	117,957	103,343	5,466,181
V. Metal works, machinery, etc. . .	15,018,690	3,358,608	867,706	4,802,567	439,583	1,095,263	25,582,417
VI. Connected with food and drink, etc. . .	25,135,986	17,353,596	12,984,071	3,964,793	1,947,234	1,338,249	62,723,929
VII. Clothing and textile fabrics, etc. . .	4,791,680	7,850,380	1,277,937	770,670	392,662	175,591	15,258,920
VIII. Books, paper, printing, and engraving . .	1,836,026	1,718,071	431,475	331,784	198,430	97,653	4,613,439
IX. Musical instruments, etc. .	98,766	25,276	..	1,100	..	..	125,142
X. Arms and explosives . .	145,976	424,646	..	465	..	..	571,087
XI. Vehicles and fittings, saddlery and harness, etc. . .	532,205	613,357	183,990	202,583	85,090	45,372	1,662,597
XII. Ship and boat building and repairing . .	335,228	99,092	11,674	11,114	2,452	11,523	471,083
XIII. Furniture, bedding, and upholstery . .	721,000	543,138	201,200	119,778	85,510	34,582	1,705,208
XIV. Drugs, chemicals, and by-products . .	1,450,744	1,072,303	24,843	397,802	233,921	11,405	3,191,018
XV. Surgical and other scientific instruments . .	18,692	12,900	2,845	2,030	2,940	..	39,407
XVI. Jewellery, timepieces, and platedware . .	124,396	208,591	13,302	18,630	9,761	1,196	375,876
XVII. Heat, light, and power . .	960,740	660,210	108,804	91,038	45,459	25,918	1,891,669
XVIII. Leatherware, n.e.i. . .	255,495	301,560	23,120	11,296	2,540	..	594,011
XIX. Minor wares, n.e.i. . .	338,163	944,907	22,658	29,305	20,080	2,586	1,357,699
Total . . .	64,718,726	42,133,636	19,693,043	12,442,803	3,963,470	3,230,188	146,181,866

a Includes Class II.      b Included in Class I.

The class in which the maximum value of raw materials was used was Class VI., "Connected with Food and Drink, etc.," the value being £62,723,929. The next important class in order of value was Class V., "Metal Works, Machinery, etc.," in which raw materials to the value of £25,582,417 were used. The class in which the minimum value appears is Class XV., "Surgical and other Scientific Instruments," the value being only £39,407. The following table gives particulars for the six years ended 1918 :—

VALUE OF RAW MATERIALS WORKED UP IN FACTORIES IN COMMONWEALTH  
DURING THE YEARS 1913 TO 1918.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
	£	£	£	£	£	£	£
1913 . .	40,537,476	28,465,699	14,183,539	8,351,258	2,782,839	2,083,666	96,407,477
1914 . .	42,559,370a	28,986,694	15,710,794	7,931,175	2,608,312	1,992,719	99,789,064
1915 . .	42,559,370a	30,728,743	15,939,583	8,720,436	2,634,700	2,193,250	102,776,082
1916b . .	44,227,079	30,728,743	16,127,926	8,720,436	3,033,638	2,342,623	105,180,445
1917c . .	57,044,667	37,103,750	20,938,266	11,331,814	3,323,424	2,541,175	132,283,096
1918c . .	64,718,726	42,133,636	19,693,043	12,442,803	3,963,470	3,230,188	146,181,866

a Year ended 30th June, 1915.    b See note a first table this section.    c See note b first table this section.

5. **Total Value of Output of Manufacturing Industries.**—The value of the output of new goods manufactured and repairs effected in factories of various classes in each State is shewn in the following table. The figures given represent not only the increase in value due to the process of manufacture, but also include the value of the raw materials used. The difference between the value of the materials used and the total output (see paragraph 6 hereof) is the real value of production from manufactories:—

### TOTAL VALUE OF OUTPUT OF FACTORIES IN COMMONWEALTH, 1918.

Class of Industry.	N.S.W. 1917-18.	Victoria. 1917-18.	Q'land. 1918.	S. Aust. 1917-18.	W. Aust. 1918.	Tas. 1918.	C'wealth.
	£	£	£	£	£	£	£
I. Treating raw material, product of agricultural pursuits, etc. . . .	9,473,367	5,924,913	3,031,623	1,010,486	6468,883	6337,701	20,246,973
II. Treating oils and fats, animal, vegetable, etc. . . .	2,883,273	1,171,575	238,558	305,844	b	b	4,599,250
III. Processes in stone, clay, glass, etc. . .	1,951,841	1,131,409	215,983	366,548	110,551	56,019	3,832,351
IV. Working in wood . .	4,066,585	2,616,051	1,870,980	878,446	634,418	361,081	10,427,561
V. Metal works, machinery, etc. . . .	23,416,570	6,820,180	1,905,982	7,566,506	970,607	1,993,492	42,673,337
VI. Connected with food and drink, etc. . .	30,698,691	22,651,445	18,190,762	5,086,382	2,628,052	1,864,924	81,120,256
VII. Clothing and textile fabrics, etc. . . .	8,303,314	13,094,684	2,175,189	1,346,832	637,172	373,145	25,930,336
VIII. Books, paper, printing, and engraving . .	3,959,322	3,803,147	1,179,442	696,054	480,430	235,907	10,354,302
IX. Musical instruments, etc. . . .	208,293	70,376	..	3,490	..	..	282,159
X. Arms and explosives .	372,342	662,842	..	760	..	..	1,035,944
XI. Vehicles and fittings, saddlery and harness, etc. . . .	1,267,346	1,359,817	411,152	451,226	180,522	104,566	3,774,629
XII. Ship and boat building and repairing. . .	967,571	228,451	29,309	34,910	7,011	21,888	1,289,140
XIII. Furniture, bedding, and upholstery . . .	1,375,264	1,013,071	425,842	267,429	165,049	86,485	3,333,140
XIV. Drugs, chemicals, and by-products . . .	2,412,794	1,750,546	56,687	588,940	325,748	14,456	5,149,171
XV. Surgical and other scientific instruments .	59,723	38,248	11,285	8,060	6,716	..	124,032
XVI. Jewellery, timepieces, and plated ware . .	261,468	411,228	35,335	50,440	19,620	5,682	783,773
XVII. Heat, light, and power .	3,548,484	2,430,852	703,199	515,833	320,342	222,627	7,741,337
XVIII. Leatherware, n.e.i. .	384,632	442,763	35,319	19,167	5,360	..	887,241
XIX. Minor wares, n.e.i. .	567,311	1,445,117	43,192	63,789	43,024	6,246	2,168,679
Total . . . .	96,178,191	67,066,715	30,559,839	19,261,142	7,003,505	5,684,219	225,753,611

a Includes Class II.

b Included in Class I.

It will be seen that the State of New South Wales far outstrips the other States in the total value of the output of her factories, the value being £96,178,191, or 42.60 per cent. on the total for the Commonwealth. The next State in order of value is Victoria, which produced 29.71 per cent.; the value of the output of Queensland was 13.54 per cent.; of South Australia 8.53 per cent.; of Western Australia 3.10 per cent.; and of Tasmania 2.52 per cent. The two most important classes in order of value of output (Classes VI. and V.) are the same as in order of value of raw materials used. The following statement shews the value of output of factories, value per employee, and value per head of mean population in each State during the six years ended 1918:—

### TOTAL VALUE OF OUTPUT OF FACTORIES IN COMMONWEALTH DURING THE YEARS 1913 TO 1918.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
	£	£	£	£	£	£	£
1913 . . .	65,672,495	47,936,647	23,688,789	13,998,670	6,481,331	3,782,831	161,560,763
1914 . . .	68,253,332a	49,439,985	25,491,955	13,215,970	6,381,512	3,667,754	166,450,508
1915 . . .	68,253,332a	51,466,093	25,444,812	13,994,223	5,712,793	4,215,447	169,086,700
1916b . . .	70,989,864	51,466,093	25,541,024	13,994,223	6,007,111	4,576,530	172,574,845
1917c . . .	85,944,320	60,047,284	31,969,302	17,392,352	6,255,388	4,768,000	206,376,646
1918c . . .	96,178,191	67,066,715	30,559,839	19,261,142	7,003,505	5,684,219	225,753,611

a Year ended 30th June, 1915.

b See note a first table this section.

c See note b first table this section.

**TOTAL VALUE OF OUTPUT OF FACTORIES IN COMMONWEALTH  
DURING THE YEARS 1913 TO 1918—continued.**

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
<b>PER EMPLOYEE.</b>							
	£	£	£	£	£	£	£
1913 ..	545	404	559	491	375	387	479
1914 ..	585 <i>b</i>	418	589	492	362	411	502
1915 ..	585 <i>b</i>	452	605	549	390	501	527
1916 <i>c</i> ..	610	452	639	549	474	547	545
1917 <i>d</i> ..	728	513	790	669	514	590	642
1918 <i>d</i> ..	798	567	746	723	542	652	688
<b>PER HEAD OF MEAN POPULATION.</b>							
1913 ..	36.32	34.41	36.30	32.29	20.64	19.30	33.63
1914 ..	36.67 <i>b</i>	34.73	37.77	30.04	19.73	18.49	33.78
1915 ..	33.67 <i>b</i>	36.07	37.04	31.85	17.72	21.15	34.21
1916 <i>c</i> ..	37.95	36.07	37.69	31.85	19.09	23.09	34.97
1917 <i>d</i> ..	46.24	42.93	47.43	40.19	20.27	23.97	42.30
1918 <i>d</i> ..	50.87	47.53	44.38	44.16	22.51	27.89	45.62

a Including working proprietors.

b Year ended 30th June, 1915.

c See note a first table this section.

d See note b first table this section.

6. Value of Production of Manufacturing Industries.—The difference between the figures given in paragraph 5 and the corresponding figures in paragraph 4 represents the amount added to the value of the raw materials by the process of manufacture. This is the real measure of the value of production of manufacturing industries. The following table shews the value added in this manner in each State for the various classes of factories :—

**VALUE OF PRODUCTION OF MANUFACTURING INDUSTRIES IN COMMONWEALTH,  
1918.**

Class of Industry.	N.S.W. 1917-18.	Victoria. 1917-18.	Q'land. 1918.	S. Aust. 1917-18.	W. Aust. 1918.	Tas. 1918.	C'wealth.
	£	£	£	£	£	£	£
I. Treating raw material, product of agricultural and pastoral pursuits, etc. ..	1,663,423	1,259,267	554,548	220,831	109,241	159,943	3,867,253
II. Treating oils and fats, animal, vegetable, etc. ..	790,964	389,740	96,507	89,008	<i>b</i>	<i>b</i>	1,366,219
III. Processes in stone, clay, glass, etc. ..	1,421,628	893,956	161,803	278,920	90,342	46,270	2,892,919
IV. Working in wood ..	1,544,112	1,353,984	1,004,368	284,717	516,461	257,738	4,961,380
V. Metal works, machinery, etc. ..	8,397,880	3,461,572	1,038,276	2,763,939	531,024	898,229	17,090,920
VI. Connected with food and drink, etc. ..	5,562,705	5,297,849	5,206,691	1,121,589	680,818	526,675	18,396,327
VII. Clothing and textile fabrics, etc. ..	3,511,634	5,244,304	897,252	576,162	244,510	197,554	10,671,416
VIII. Books, paper, printing, and engraving ..	2,123,296	2,085,076	747,967	364,270	282,000	138,254	5,740,863
IX. Musical instruments, etc. ..	109,527	45,100	..	2,390	..	..	157,017
X. Arms and explosives. ..	226,366	238,196	..	295	..	..	464,857
XI. Vehicles and fittings, saddlery and harness, etc. ..	735,141	746,460	227,162	248,643	95,432	59,194	2,112,032
XII. Ship and boat building and repairing ..	632,343	129,359	17,635	23,796	4,559	10,365	818,057
XIII. Furniture, bedding, and upholstery ..	654,264	469,933	224,642	147,651	79,539	51,903	1,627,932
XIV. Drugs, chemicals, and by-products ..	962,050	678,243	31,844	191,138	91,827	3,051	1,958,153
XV. Surgical & other scientific instruments ..	41,031	25,348	8,440	6,030	3,776	..	84,625
XVI. Jewellery, timepieces, and plated ware ..	137,072	202,637	22,033	31,810	9,859	4,486	407,897
XVII. Heat, light, and power ..	2,587,744	1,770,642	594,895	424,795	274,883	196,709	5,849,668
XVIII. Leatherware, n.e.i. ..	129,137	141,203	12,199	7,871	2,820	..	293,230
XIX. Minor wares, n.e.i. ..	229,148	500,210	20,534	34,484	22,944	3,660	810,980
Total ..	31,459,465	24,933,079	10,866,796	6,818,339	3,040,035	2,454,031	79,571,745

a Includes Class II.

b Included in Class I.

The amount of the value added in each State is not quite in the same order as in the case of value of output, the five most important classes being VI., V., VII., XVII., and VIII., in the order named. The value added to raw material by process of manufacture and amount per employee and per head of mean population are shewn in the following statement for the years 1913 to 1918 :—

VALUE OF PRODUCTION OF MANUFACTURING INDUSTRIES IN COMMONWEALTH,  
1913 TO 1918.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
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VALUE.

	£	£	£	£	£	£	£
1913 ..	25,135,019	19,470,948	9,505,250	5,644,412	3,698,492	1,699,165	65,153,286
1914 ..	25,693,962a	20,453,291	9,781,161	5,284,795	3,773,200	1,675,035	66,661,444
1915 ..	25,693,962a	20,737,350	9,505,229	5,273,787	3,078,093	2,022,197	66,310,618
1916b ..	26,762,785	20,737,350	9,413,098	5,273,787	2,973,473	2,233,907	67,394,400
1917c ..	28,899,653	22,943,534	11,031,036	6,060,538	2,931,964	2,226,825	74,093,550
1918c ..	31,459,465	24,933,079	10,866,796	6,818,339	3,040,035	2,454,031	79,571,745

PER EMPLOYEE.

	£	£	£	£	£	£	£
1913 ..	209	164	224	198	214	174	193
1914 ..	220a	173	226	197	214	188	201
1915 ..	220a	182	226	207	210	240	207
1916b ..	230	182	235	207	235	267	213
1917c ..	245	196	273	233	241	276	230
1918c ..	261	211	265	256	235	282	243

PER HEAD OF MEAN POPULATION.

	£	£	£	£	£	£	£
1913 ..	13.90	13.98	14.57	13.02	11.78	8.67	13.56
1914 ..	13.80a	14.37	14.49	12.01	11.67	8.44	13.53
1915 ..	13.80a	14.54	13.84	12.00	9.55	10.14	13.41
1916b ..	14.31	14.54	13.87	12.00	9.45	11.27	13.66
1917c ..	15.55	16.40	16.37	14.01	9.50	11.19	15.19
1918c ..	16.64	17.67	15.78	15.63	9.77	12.04	16.08

a Year ended 30th June, 1915.      b See note a first table this section.

c See note b first table this section.

As the total value of the output for the Commonwealth was estimated at £225,753,611, there remained, after payment of £146,181,866, the value of the raw materials used, of £38,379,268 for salaries and wages, and of £4,732,890 for fuel, the sum of £36,459,587 to



provide for all other expenditure and profits. The following table gives corresponding particulars for each State, expressed absolutely, and as percentages on the total value of the output :—

**VALUE OF OUTPUT AND COST OF PRODUCTION IN COMMONWEALTH FACTORIES, 1918.**

State.	Raw Materials Used.	Fuel and Light.	Salaries and Wages.	All other Expenditure, Interest, and Profits.	Total Value of Output.
<b>VALUE AND COST, ETC.</b>					
	£	£	£	£	£
New South Wales, 1917-18	64,718,726	2,060,076	14,701,255	14,698,134	96,178,191
Victoria, 1917-18 ..	42,133,636	1,248,186	12,502,601	11,182,292	67,066,715
Queensland, 1918 ..	19,693,043	424,099	5,121,188	5,321,509	30,559,839
South Australia, 1917-18 ..	12,442,803	683,187	3,359,354	2,775,798	19,261,142
Western Australia, 1918 ..	3,963,470	211,950	1,730,896	1,097,189	7,003,505
Tasmania, 1918 ..	3,230,188	105,392	963,974	1,384,665	5,684,219
Commonwealth ..	146,181,866	4,732,890	38,379,268	36,459,587	225,753,611

**PERCENTAGE OF COSTS, ETC., ON TOTAL VALUE.**

	%	%	%	%	%
New South Wales, 1917-18	67.29	2.14	15.29	15.28	100.00
Victoria, 1917-18 ..	62.83	1.86	18.64	16.67	100.00
Queensland, 1918 ..	64.44	1.39	16.76	17.41	100.00
South Australia, 1917-18 ..	64.60	3.55	17.44	14.41	100.00
Western Australia, 1918 ..	56.59	3.03	24.71	15.67	100.00
Tasmania, 1918 ..	56.83	1.85	16.96	24.36	100.00
Commonwealth ..	64.75	2.10	17.00	16.15	100.00

**§ 9. Land, Buildings, Plant and Machinery.**

1. **General.**—As an indication of the permanent character and stability of the industries which have been established in the Commonwealth, it may be noted that the values of land and buildings and of plant and machinery used in the factories are rapidly increasing. Thus, for the whole Commonwealth the total value of land and buildings and plant and machinery has increased from 1913 to 1918 by £22,434,475, i.e., from £74,153,534 to £96,588,009, or at the rate of £4,486,895 per annum.

The following statement shews the values of land and buildings and of plant and machinery used in connexion with manufacturing industries in each State :—

**VALUE OF LAND, BUILDINGS, PLANT, AND MACHINERY IN CONNEXION WITH MANUFACTURING INDUSTRIES, 1918.**

Value of—	N.S.W. 1917-18.	Victoria. 1917-18.	Q'land. 1918.	S. Aust. 1917-18.	W. Aust. 1918.	Tasmania. 1918.	C'wealth.
	£	£	£	£	£	£	£
Land and buildings	20,533,171	12,847,485	5,519,316	3,564,366	2,487,967	843,399	45,795,704
Plant and machinery	21,739,739	12,612,797	8,391,480	3,389,719	2,742,386	1,916,184	50,792,305
Total ..	42,272,910	25,460,282	13,910,796	6,954,085	5,230,353	2,759,583	96,588,009

The total capital invested in land, buildings, plant and machinery in manufacturing industries in the Commonwealth during the year 1918 was approximately £96,588,009 (or £19 10s. 4d. per head of population); of that sum £45,795,704 was invested in land and buildings occupied as manufactories, the remaining £50,792,305 being the value of the plant and machinery used in connexion therewith.

2. **Value of Land and Buildings.**—The value of the land and buildings occupied in connexion with manufacturing industries may be conveniently classified according to the nature of the industry concerned.

(i) *Total Value in Commonwealth, 1913 to 1918.* The following table shews for the whole Commonwealth the approximate values of land and buildings occupied in connexion with manufacturing industries of various classes during each year from 1913 to 1918 inclusive :—

**VALUE OF LAND AND BUILDINGS OCCUPIED AS FACTORIES IN COMMONWEALTH,  
1913 TO 1918.**

Class of Industry.	1913.	1914. <i>a</i>	1915. <i>a</i>	1916. <i>b</i>	1917. <i>c</i>	1918. <i>c</i>
	£	£	£	£	£	£
I. Treating raw material, product of agricultural and pastoral pursuits, etc. . . . .	1,014,783	1,063,549	1,069,890	1,002,686	1,126,504	1,237,117
II. Treating oils and fats, animal, vegetable, etc. . . . .	452,415	466,373	465,757	518,932	524,349	573,005
III. Processes in stone, clay, glass, etc. . . . .	1,593,769	1,679,050	1,666,097	1,620,520	1,657,760	1,739,247
IV. Working in wood . . . . .	2,184,257	2,244,995	2,146,909	2,036,786	2,083,755	2,283,985
V. Metal works, machinery, etc. . . . .	6,072,737	6,467,224	6,587,199	6,800,296	7,137,251	7,961,012
VI. Connected with food and drink, etc. . . . .	8,656,547	9,800,457	9,852,479	10,508,926	11,209,366	11,640,843
VII. Clothing and textile fabrics, etc. . . . .	5,188,631	5,270,374	5,244,627	5,239,362	5,580,472	5,695,268
VIII. Books, paper, printing, and engraving . . . . .	3,388,072	3,521,164	3,546,017	3,824,069	3,891,991	4,028,048
IX. Musical instruments, etc. . . . .	88,136	83,375	83,430	82,695	96,335	98,680
X. Arms and explosives . . . . .	184,772	179,723	194,149	212,267	252,498	260,550
XI. Vehicles and fittings, saddlery and harness, etc. . . . .	1,835,221	1,824,018	1,825,999	1,822,565	1,866,859	1,955,096
XII. Ship and boat building and repairing . . . . .	1,113,243	1,127,521	1,134,530	1,126,754	953,879	1,009,201
XIII. Furniture, bedding, and upholstery . . . . .	1,149,120	1,117,699	1,094,646	1,075,547	1,071,635	1,103,679
XIV. Drugs, chemicals, and by-products . . . . .	831,892	929,933	955,995	1,013,577	1,109,703	1,318,731
XV. Surgical and other scientific instruments . . . . .	70,968	64,263	67,021	70,536	83,304	94,524
XVI. Jewellery, timepieces, and plated ware . . . . .	353,900	345,018	344,452	325,126	334,147	336,289
XVII. Heat, light, and power . . . . .	2,517,179	2,717,502	2,775,148	3,150,513	3,655,063	3,873,924
XVIII. Leatherware, n.e.i. . . . .	133,283	132,777	137,666	137,391	150,660	165,835
XIX. Minor wares, n.e.i. . . . .	270,307	317,417	343,529	344,651	426,906	421,370
Total . . . . .	37,099,232	39,352,432	39,535,540	40,913,199	43,212,437	45,795,704

*a* New South Wales figures for year ended 30th June, 1915.

*b* See note *a* first table this section.

*c* See note *b* first table this section.

As shewn in the above table, the total net increase during the five years was £8,696,472, or an annual average of £1,739,294. The largest increases were in Classes VI., V., and XVII., and amounted to £2,984,296, £1,888,275, and £1,356,045 respectively.

(ii) *Value in each State.* The following table gives similar information for each State up to latest date :—

**VALUE OF LAND AND BUILDINGS OCCUPIED AS FACTORIES IN EACH STATE, 1918.**

Class of Industry.	N.S.W. 1917-18.	Victoria. 1917-18.	Q'land. 1918.	S. Aust. 1917-18.	W. Aust. 1918.	Tas. 1918.	C'wealth.
	£	£	£	£	£	£	£
I. Treating raw material, product of agricultural and pastoral pursuits, etc. . .	512,071	466,810	74,069	103,061	662,577	218,529	1,237,117
II. Treating oils and fats, animal, vegetable, etc. . .	341,455	140,095	31,989	59,466	(b)	(b)	573,005
III. Processes in stone, clay, glass, etc. . .	971,374	468,320	95,926	125,189	49,547	28,891	1,739,247
IV. Working in wood . .	1,082,106	442,310	239,268	178,289	260,920	81,092	2,283,985
V. Metal works, machinery, etc. . .	3,836,875	1,887,495	713,978	823,799	612,804	86,061	7,961,012
VI. Connected with food and drink, etc. . .	4,137,103	3,110,415	2,824,970	797,928	482,042	288,385	11,640,843
VII. Clothing and textile fabrics, etc. . .	2,424,116	2,204,265	423,995	330,453	198,586	113,853	5,695,268
VIII. Books, paper, printing, and engraving . .	1,883,531	1,011,065	486,532	345,927	242,558	58,435	4,028,048
IX. Musical instruments, etc. .	61,515	34,765	..	2,400	..	..	98,680
X. Arms and explosives . .	93,360	163,690	..	3,500	..	..	260,550
XI. Vehicles and fittings, saddlery and harness, etc. . .	774,436	558,215	193,531	225,059	134,433	69,422	1,955,096
XII. Ship and boat building and repairing . .	692,204	246,215	11,207	53,945	3,180	2,450	1,009,201
XIII. Furniture, bedding, and upholstery . .	455,852	335,780	115,958	90,171	80,076	25,842	1,103,679
XIV. Drugs, chemicals, and by-products . .	616,988	398,970	12,814	185,304	99,655	5,000	1,318,731
XV. Surgical and other scientific instruments . .	39,855	26,105	12,064	8,415	8,085	..	94,524
XVI. Jewellery, timepieces, and plated ware . .	137,157	131,135	23,167	22,895	14,160	7,775	336,289
XVII. Heat, light, and power . .	2,226,378	968,035	232,603	180,735	210,839	54,634	3,873,224
XVIII. Leatherware, n.e.l. . .	80,785	66,155	8,470	5,940	4,485	..	165,835
XIX. Minor wares, n.e.l. . .	166,010	187,645	18,775	21,890	24,020	3,030	421,370
Total . .	20,533,171	12,847,485	5,519,316	3,564,366	2,487,967	843,399	45,795,704

a Includes Class II.

b Included in Class I.

The maximum value for the Commonwealth of land and buildings in any particular class was in Class VI., amounting to £11,640,843, or 25.42 per cent. on the total value. The next in order of importance were Classes V., VII., VIII., and XVII., in which the values were £7,961,012, £5,695,268, £4,028,048, and £3,873,224 respectively. The sum of the values for the five classes mentioned amounted to £33,198,395, or 72.49 per cent. on the total value for all classes.

(iii) *Value in each State, 1913 to 1918.* The following table shews the total value of land and buildings occupied as manufactories in each State at the end of each year from 1913 to 1918 inclusive :—

**VALUE OF LAND AND BUILDINGS OCCUPIED AS FACTORIES IN EACH STATE, 1913 TO 1918.**

Year.	N.S.W.	Victoria.	Queensland.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
	£	£	£	£	£	£	£
1913	15,792,105	10,753,309	3,923,584	3,487,754	2,036,769	1,105,711	37,099,232
1914	16,843,698a	11,248,120	4,434,336	3,272,047	2,409,517	1,144,714	39,352,432
1915	16,843,698a	11,460,123	4,446,405	3,289,628	2,363,262	1,132,424	39,535,540
1916b	17,770,517	11,460,123	5,014,824	3,289,628	2,247,505	1,130,602	40,913,199
1917c	18,920,057	12,052,227	5,251,877	3,462,296	2,398,264	1,127,716	43,212,437
1918c	20,533,171	12,847,485	5,519,316	3,564,366	2,487,967	843,399	45,795,704

a Year ended 30th June, 1915.

b See note a first table this section.

c See note b first table this section.

It will be seen that since 1913 there has been a general increase throughout the Commonwealth, with the exception of Tasmania, where, since 1914, a gradual decline has been in evidence. The States shewing the largest growth were New South Wales, Victoria, and Queensland, with an annual average increase of £948,213, £418,835, and £319,146 respectively.

3. Value of Plant and Machinery.—(i) *Total Value in Commonwealth, 1913 to 1918.* The following table shews for the whole Commonwealth the approximate value of plant and machinery used in factories during each year from 1913 to 1918 inclusive :—

**VALUE OF PLANT AND MACHINERY USED IN FACTORIES IN COMMONWEALTH, 1913 TO 1918.**

Class of Industry.	1913.	1914. <i>a</i>	1915. <i>a</i>	1916. <i>b</i>	1917. <i>c</i>	1918. <i>c</i>
	£	£	£	£	£	£
I. Treating raw material, product of agricultural and pastoral pursuits, etc.	985,619	974,556	971,841	965,932	1,048,729	1,216,281
II. Treating oils and fats, animal, vegetable, etc.	444,502	469,680	545,796	576,877	597,327	634,936
III. Processes in stone, clay, glass, etc.	1,717,544	1,869,446	1,900,086	1,866,993	1,972,885	2,172,225
IV. Working in wood	2,664,508	2,737,527	2,611,407	2,806,653	2,784,838	2,915,781
V. Metal works, machinery, etc.	6,996,932	7,745,988	7,761,871	8,604,804	9,549,635	10,259,558
VI. Connected with food and drink, etc.	9,650,298	10,782,825	10,914,862	11,654,182	12,318,334	13,026,771
VII. Clothing and textile fabrics, etc.	1,746,713	1,774,910	1,798,554	1,846,758	1,926,718	2,006,983
VIII. Books, paper, printing, and engraving	2,814,226	2,974,120	2,987,190	3,054,941	3,070,739	3,124,559
IX. Musical instruments, etc.	22,630	19,030	19,119	21,191	22,841	26,827
X. Arms and explosives	190,060	216,581	228,031	228,210	308,536	323,073
XI. Vehicles and fittings, saddlery and harness, etc.	374,371	395,463	411,295	421,416	433,716	477,472
XII. Ship and boat building, and repairing	725,934	764,782	768,159	511,237	1,312,832	1,477,247
XIII. Furniture, bedding, and upholstery	235,068	238,547	244,796	251,822	267,180	231,229
XIV. Drugs, chemicals, and by-products	650,185	832,686	916,136	868,126	906,091	1,055,262
XV. Surgical and other scientific instruments	13,121	13,758	13,955	13,873	19,021	19,813
XVI. Jewellery, timepieces, and plated ware	68,186	69,724	72,988	74,617	72,757	75,437
XVII. Heat, light, and power	7,560,198	9,044,847	9,532,800	9,970,117	10,365,297	11,274,492
XVIII. Leatherware, n.e.i.	28,035	30,576	31,706	34,240	33,029	37,103
XIX. Minor wares, n.e.i.	166,172	199,343	226,285	234,313	305,358	387,256
Total	37,054,302	41,154,389	41,956,877	44,006,302	47,315,863	50,792,305

*a* New South Wales figures for year ended 30th June, 1915.

*b* See note *a* first table this section.

*c* See note *b* first table this section.

It will be seen that during the period in question there has been a steady and substantial net increase amounting in all to £13,738,003, or an annual average of £2,747,601. Development has occurred in all classes of industry, the largest increase being in Class XVII., "Heat, Light, and Power," where it amounted to £3,714,294, while the two next were in Class VI., "Connected with Food and Drink, etc.," with an increase of £3,376,473, and Class V., "Metal Works, Machinery, etc.," £3,262,626.

(ii) *Value in each State, 1913 to 1918.* The figures which were given in the above table referred to the Commonwealth as a whole. In the following table they are shewn for each State, and it will be seen that the increase referred to above is general throughout the States. New South Wales shews by far the largest increase, viz., £6,878,063; while Victoria comes next with £2,590,368. The establishment of the Electrolytic Zinc Works at Risdon, and a further extension of the State Hydro-electric Works to cope with the demand for increased power, have been mainly responsible for the substantial increase noted in Tasmania during 1918.

**VALUE OF PLANT AND MACHINERY IN FACTORIES, 1913 TO 1918.**

Year.	N.S.W.	Victoria.	Queensland.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
	£	£	£	£	£	£	£
1913	14,861,676	10,022,429	5,877,387	2,779,667	2,264,455	1,248,688	37,054,302
1914	16,866,982 <sup>a</sup>	10,727,526	6,898,673	2,985,037	2,484,793	1,191,378	41,154,389
1915	16,866,982 <sup>a</sup>	11,068,949	7,051,113	3,101,413	2,640,163	1,228,252	41,956,877
1916 <sup>b</sup>	18,211,104	11,068,949	7,543,873	3,101,413	2,817,863	1,263,100	44,006,302
1917 <sup>c</sup>	20,364,122	11,732,062	7,846,834	3,313,113	2,835,085	1,224,647	47,315,863
1918 <sup>c</sup>	21,739,739	12,612,797	8,331,400	3,339,719	2,742,326	1,916,184	50,792,305

*a* Year ended 30th June, 1915.

*b* See note *c* first table this section.

*c* See note *b* first table this section.

(iii) *Classified Value in each State.* The following table shews the value of plant and machinery used in factories in each State, classified according to the nature of the industry in which used:—

**VALUE OF PLANT AND MACHINERY USED IN FACTORIES IN EACH STATE, 1918.**

Class of Industry.	N.S.W. 1917-18.	Victoria. 1917-18.	Q'land. 1918.	S. Aust. 1917-18.	W. Aust. 1918.	Tas. 1918.	C'wealth.
I. Treating raw material, product of agricultural and pastoral pursuits, etc. . .	£ 527,326	£ 394,890	£ 127,944	£ 81,218	£ a47,593	£ a37,310	£ 1,216,281
II. Treating oils and fats, animal, vegetable, etc. . .	393,734	150,170	51,188	39,844	(b)	(b)	634,936
III. Processes in stone, clay, glass, etc. . .	1,212,078	448,380	239,611	195,807	53,258	23,091	2,172,225
IV. Working in wood . .	922,910	561,400	473,132	80,679	691,303	186,357	2,915,781
V. Metal works, machinery, etc. . .	6,037,231	1,856,870	646,010	760,484	573,614	385,349	10,259,558
VI. Connected with food and drink, etc. . .	4,151,037	2,587,980	5,070,442	632,445	421,946	162,921	13,026,771
VII. Clothing and textile fabrics, etc. . .	652,447	1,016,640	136,887	114,139	35,165	51,705	2,006,983
VIII. Books, paper, printing, and engraving . .	1,326,907	1,026,839	339,836	205,762	161,598	63,617	3,124,559
IX. Musical instruments, etc. .	18,412	7,895	..	520	..	..	26,827
X. Arms and explosives . .	142,148	180,525	..	400	..	..	323,073
XI. Vehicles and fittings, saddlery and harness, etc. . .	193,994	145,450	41,491	59,907	21,249	15,381	477,472
XII. Ship and boat building, and repairing . .	1,354,372	101,155	9,815	9,260	1,450	1,195	1,477,247
XIII. Furniture, bedding, and upholstery . .	94,506	85,043	43,234	31,431	17,657	9,358	281,229
XIV. Drugs, chemicals, and by-products . .	369,914	331,750	7,191	230,263	115,384	760	1,055,262
XV. Surgical and other scientific instruments . .	7,701	6,030	2,097	2,831	1,154	..	19,813
XVI. Jewellery, timepieces, and plated ware . .	27,962	32,800	4,304	6,241	2,380	1,750	75,437
XVII. Heat, light, and power . .	4,190,696	3,391,180	1,194,653	928,034	593,104	976,825	11,274,492
XVIII. Leatherware, n.e.l. . .	15,105	18,725	1,577	586	1,110	..	37,103
XIX. Minor wares, n.e.l. . .	101,259	269,075	2,068	9,868	4,421	565	387,256
Total . .	21,739,739	12,612,797	8,391,480	3,389,719	2,742,386	1,916,184	50,792,305

a Includes Class II.      b Included in Class I.

The greatest value for any particular class of industry is for Class VI., "Connected with Food and Drink, etc.," and amounts to £13,026,771, or 25.64 per cent. on the total for all classes. The next in order of importance is Class XVII., "Heat, Light, and Power," which amounts to £11,274,492, or 22.20 per cent. on the total; followed by Class V., "Metal Works, Machinery, etc.," amounting to £10,259,558, or 20.20 per cent. on the total value. The total for these three classes amounts to £34,560,821, or 68.04 per cent. on the total value for all classes.

## § 10. Individual Industries.

1. *General.*—The preceding remarks and tables furnish a general view of the recent development of particular classes of industries in Australia treated under the nineteen categories referred to in § 1, 3 hereof. In order to make the information complete, it is necessary to furnish details of the development of individual industries. While it is not possible, within the limits of this section, to give a full and detailed account of all the manufacturing industries of the Commonwealth, it is proposed to deal herein with such particular industries as are of special importance by reason of the number of persons employed, the number of factories, the amount of capital invested therein, the value of the production, or other features of special interest. In cases where there are only one or two establishments of a particular class in any State, returns relative to output are not published, in order to avoid disclosing information as to the operations of individual factories.

2. *Tanning Industry.*—(i) *Details for each State.* In Class I. (see § 1, 3 hereof) the most important industry is tanning. Until recent years, the production of tanneries in Australia was confined to the coarser class of leathers, but lately the tanning of the finer skins has been undertaken with satisfactory results. The present position of the industry in the several States is as follows :—

## TANNERIES, 1918.

Item.	N.S.W. 1917-18.	Vic. 1917-18.	Q'land. 1918.	S.A. 1917-18.	W.A. 1918.a	Tas. 1918.	C'wth.
Number of factories .. ..	74	45	17	10	3	4	153
Number of employees .. ..	1,073	1,760	241	193	65	64	3,396
Actual horse-power of engines employed ..	1,538	2,476	335	301	116	118	4,884
Approx. value of land and buildings £	172,495	201,270	19,090	25,304	15,540	8,038	441,737
Approx. value of plant and machinery £	106,971	191,635	23,957	14,850	12,650	8,864	383,927
Total amount of wages paid during year £	154,879	256,727	34,731	29,776	9,065	8,702	499,880
Value of fuel used .. ..	£ 11,946	22,454	2,473	2,514	818	353	40,558
Value of raw material worked up .. ..	£ 1,403,384	1,803,470	309,287	174,455	72,739	67,815	3,831,180
Total value of output .. ..	£ 1,779,832	2,385,512	418,652	226,507	90,234	89,675	4,990,412
Value added in process of manufacture £	376,448	582,042	109,365	52,022	17,495	21,860	1,159,232

(ii) *Raw Materials used in Tanneries.* The quantity of raw materials used in tanneries in each State is shewn in the following table :—

## RAW MATERIALS USED IN TANNERIES, 1918.

Particulars.	N.S.W. 1917-18.	Victoria. 1917-18.	Q'land. 1918.	S. Aust. 1917-18.	W. Aust. 1918.	Tas. 1918.	C'wealth.
Hides and calf skins .. No.	542,734	819,555	110,626	71,739	24,180	21,552	1,590,386
Sheep pelts .. ..	3,479,395	898,470	66,059	93,584	17,369	{ 24,432 2,160 }	5,477,257
Other skins .. ..	281,439	520,125	80,960	13,264			
Bark .. .. Tons	12,053	11,145	2,566	1,403	650	422	28,239

(iii) *Progress of Tanning Industries, 1913 to 1918.* The development of the tanning industry during the period 1913 to 1918 is shewn in the following table :—

## DEVELOPMENT OF TANNING INDUSTRY IN THE COMMONWEALTH, 1913 TO 1918.

Items.	1913.	1914.a	1915.	1916.	1917.b	1918.
Number of factories .. ..	184	166	165	163	156	153
Number of employees .. ..	2,892	3,091	3,376	3,303	3,437	3,396
Actual horse-power of engines used ..	3,748	3,803	3,899	4,145	4,449	4,884
Approx. value of land and buildings £	366,696	392,420	389,924	387,706	412,311	441,737
Approx. value of plant and machinery £	276,610	283,499	287,856	285,956	307,483	328,927
Total amount of wages paid .. ..	£ 322,747	366,484	418,363	422,014	466,071	493,880
Value of fuel used .. ..	£ 19,642	22,573	26,140	27,292	34,102	40,558
Value of raw materials worked up .. ..	£ 2,428,003	2,732,525	3,188,817	3,283,787	3,951,266	3,831,180
Value of final output .. ..	£ 3,030,785	3,468,475	4,088,140	4,233,427	4,979,988	4,990,412
Value added in process of manufacture £	602,782	735,950	899,323	949,640	1,028,722	1,159,232

a Including three bone-milling establishments in Western Australia. b Including one wool-scouring and fellmongering establishment in Western Australia.

It will be seen from the above table that during the last five years the number of factories has decreased by about 7 per cent., while the number of hands employed has increased by about 17 per cent. The approximate amount of permanently invested capital shews a substantial increase, amounting to 20.46 per cent. in the value of land and buildings, and 18.91 per cent. in that of plant and machinery. The amount of wages paid, value of materials used, and of final output, shew the large increases of 53.03, 57.79, and 64.66 per cent. respectively during the same period, while the value added in process

of manufacture increased by 92.31 per cent. The relatively high increases which have taken place in the values of raw materials, added value, and final output in tanneries during the last five years, are not a reflection of any correspondingly large increase in the volume of business, but rather serve as an indication of the enhanced value of commodities since 1913.

**3. Fellmongering and Wool-scouring.**—(i) *Details for each State.* The next industry in importance in Class I. is that of fellmongering and wool-scouring, one of the earliest industries established in Australia. The following table gives particulars of the industry in each State :—

### FELLMONGERING AND WOOL-SCOURING, 1918.

Items.	N.S.W. 1917-18.	Vic. 1917-18.	Q'land. 1918.	S. Aust. 1917-18.	W.A. 1918.	Tas. 1918.	C'wealth.
Number of factories .. ..	50	31	17	3	1	..	102
Number of employees .. ..	1,896	725	460	86	14	..	3,191
Actual horse-power of engines used ..	3,239	1,000	508	209	35	..	4,991
Approx. value of land and buildings £	179,302	116,905	48,073	7,890	5,000	..	348,170
Approx. value of plant and machinery £	278,666	109,485	90,900	4,760	4,500	..	488,301
Total amount of wages paid £	232,833	91,026	65,402	11,914	2,904	..	404,079
Value of fuel used .. ..	35,599	17,153	10,246	2,214	901	..	66,113
Value of raw material worked up £	5,486,004	2,228,217	2,154,448	351,827	69,635	..	10,290,131
Value of final output .. ..	6,396,000	2,675,724	2,588,712	372,325	73,108	..	12,105,929
Value added in process of manufacture £	910,056	447,507	434,264	20,498	3,473	..	1,815,798

(ii) *Development of Fellmongering and Wool-scouring, 1913 to 1918.* The following return furnishes particulars of fellmongering and wool-scouring establishments in the Commonwealth for the last six years :—

### DEVELOPMENT OF FELLMONGERING AND WOOL-SCOURING IN THE COMMONWEALTH, 1913 TO 1918.

Items.	1913.	1914.	1915.	1916.	1917. <sup>a</sup>	1918.
Number of factories .. ..	119	108	106	100	98	102
Number of employees .. ..	2,375	2,298	2,337	2,379	2,599	3,191
Actual horse-power of engines used ..	3,966	3,772	3,754	4,463	4,157	4,991
Approx. value of land and buildings £	269,895	256,330	266,440	263,530	276,162	348,170
Approx. value of plant and machinery £	348,381	330,047	329,780	334,131	369,728	488,301
Total amount of wages paid £	230,445	226,509	245,362	279,128	332,583	404,079
Value of fuel used .. ..	33,404	38,658	40,834	44,914	53,667	66,113
Value of raw materials worked up £	4,365,413	4,238,705	5,223,231	5,903,149	7,341,638	10,290,131
Value of final output .. ..	4,940,410	4,742,531	5,919,690	6,989,122	8,572,579	12,105,929
Value added in process of manufacture £	574,997	503,826	696,459	1,085,973	1,230,941	1,815,798

<sup>a</sup> Excluding one establishment in Western Australia, particulars of which are included in tanneries.

Despite a decline in the number of establishments to the extent of about 14 per cent., this industry has been considerably extended during the last five years. The number of hands employed has risen from 2,375 to 3,191, and the amount of salaries and wages paid from £230,445 to £404,079, or more than 75 per cent. Though an augmentation of values has materially assisted, the progress of this industry may be gauged from the fact that the values of raw materials used and of final output have been more than doubled, while the added value has increased by no less than 215.79 per cent.

**4. Soap and Candle Factories.**—(i) *Details for each State.* In Class II. (see § 1, 3 hereof) soap and candle factories are the most important establishments. The manufacture of these two products is frequently carried on in the same factory, so that separate

returns cannot be obtained ; it may, however, be said generally that the manufacture of soap is the more important of the two. The following table gives particulars of soap and candle factories in each State during the year 1918 :—

## SOAP AND CANDLE FACTORIES, 1918.

Items.	N.S.W. 1917-18.	Victoria. 1917-18.	Q'land. 1918.	S. Aust. 1917-18.	W.A. 1918. <sup>a</sup>	Tas. 1918. <sup>a</sup>	C'wealth.
Number of factories .. ..	26	17	13	6	..	..	62
Number of employees .. ..	962	769	173	224	..	..	2,128
Actual horse-power of engines employed ..	308	463	135	177	..	..	1,083
Approx. value of land and buildings £ ..	201,211	119,395	31,989	47,922	..	..	400,517
Approx. value of plant and machinery £ ..	226,927	130,795	51,188	35,309	..	..	444,219
Total amount of wages paid during year £ ..	95,296	91,604	25,153	30,907	..	..	242,960
Value of fuel used .. ..	£ 31,126	24,315	4,245	7,953	..	..	67,639
Value of raw material worked up .. ..	£ 776,608	637,006	142,051	206,743	..	..	1,762,408
Total value of output .. ..	£ 1,074,952	951,114	238,558	285,938	..	..	2,550,562
Value added in process of manufacture £ ..	298,344	314,108	96,507	79,195	..	..	788,154

<sup>a</sup> Western Australia has three soap and candle establishments and Tasmania one, but separate details are not available for publication.

(ii) *Development of Soap and Candle Factories, 1913 to 1918.* The following table gives similar particulars for the last six years as regards the Commonwealth as a whole :—

## DEVELOPMENT OF SOAP AND CANDLE FACTORIES IN THE COMMONWEALTH, 1913 TO 1918.

Items.	1913.	1914. <sup>a</sup>	1915. <sup>a</sup>	1916.	1917. <sup>b</sup>	1918. <sup>b</sup>
Number of factories .. ..	74	75	75	72	65	62
Number of employees .. ..	1,755	1,801	2,141	2,009	2,049	2,128
Actual horse-power of engines used .. ..	1,314	1,434	1,420	1,477	1,165	1,083
Approx. value of land and buildings .. £ ..	360,783	374,418	374,886	391,619	373,377	400,517
Approx. value of plant and machinery £ ..	364,357	385,744	460,519	447,005	424,942	444,219
Total amount of wages paid .. ..	£ 172,247	190,349	219,865	219,398	228,384	242,960
Value of fuel used .. ..	£ 31,692	33,949	36,101	38,548	52,085	67,639
Value of raw material worked up .. ..	£ 1,067,001	1,117,140	1,285,950	1,318,105	1,407,431	1,762,408
Value of final output .. ..	£ 1,644,188	1,756,938	1,971,513	1,965,881	2,036,978	2,550,562
Value added in process of manufacture £ ..	577,187	639,798	685,563	647,776	629,547	788,154

<sup>a</sup> Including three bark milling establishments in Western Australia in 1914, and three oil establishments in 1915. <sup>b</sup> Excluding three soap and candle establishments in Western Australia, and one in Tasmania.

(iii) *Production of Soap and Candles, 1913 to 1918.* The subjoined statement furnishes particulars of the output of soap and candles during the past six years :—

## PRODUCTION OF SOAP AND CANDLES IN THE COMMONWEALTH, 1913 TO 1918.

Particulars.	1913.	1914. <sup>a</sup>	1915. <sup>a</sup>	1916. <sup>a</sup>	1917. <sup>a</sup>	1918.
Soap .. .. cwt.	700,878	697,807	729,984	727,349	671,326	737,966 <sup>b</sup>
Candles .. .. "	129,877	110,734	104,986	102,775	100,497	101,098 <sup>a</sup>

<sup>a</sup> Exclusive of Western Australia.

<sup>b</sup> Exclusive of Western Australia and Tasmania.



(iv) *Raw Materials Used, 1913 to 1918.* The following statement shows the quantity of certain raw materials used in soap and candle factories in the Commonwealth during the years 1913 to 1918 :—

### RAW MATERIALS USED IN SOAP AND CANDLE FACTORIES, 1913 TO 1918.

Particulars.	1913.	1914. <i>a</i>	1915. <i>a</i>	1916. <i>a</i>	1917. <i>a</i>	1918. <i>b</i>
Tallow .. .. . cwt.	391,133	410,235	439,402	416,649	382,188	418,571
Alkali .. .. . "	135,231	158,624	159,344	154,348	143,683	143,875
Cocoonut oil .. .. . gal.	457,693	460,561	485,851	630,298	524,918	532,485

*a* Exclusive of Western Australia.

*b* Exclusive of Western Australia and Tasmania.

5. *Saw Mills, etc.*—The most important industry in Class IV. is that of saw-milling. As separate particulars of forest saw mills are not available for some of the States, both forest and other saw mills, as well as joinery, moulding, and box factories have been combined in the following table :—

### SAW MILLS, FOREST AND OTHER, JOINERY, ETC., 1918.

Items.	N.S.W. 1917-18.	Victoria. 1917-18.	Q'land. 1918.	S. Aust. 1917-18.	W. Aust. 1918.	Tas. 1918.	C'wealth.
Number of factories .. ..	606	406	281	78	68	136	1,575
Number of employees .. ..	6,872	6,392	4,227	1,148	2,544	1,573	22,756
Actual horse-power of engines employed .. ..	16,685	10,368	8,682	1,726	6,377	1,918	45,756
Approximate value of land and buildings .. .. £	971,315	382,160	223,660	( <i>a</i> )	260,920	( <i>a</i> )	62,086,166
Approximate value of plant and machinery .. .. £	849,715	526,510	456,311	( <i>a</i> )	691,303	( <i>a</i> )	62,784,355
Total amount of wages paid during year .. .. £	870,772	769,269	536,132	( <i>a</i> )	372,433	( <i>a</i> )	62,870,214
Value of fuel used .. .. £	29,210	19,962	10,629	5,116	2,787	1,802	69,506
Value of raw material worked up .. .. £	2,371,562	1,163,321	825,143	579,530	117,957	102,178	5,159,691
Total value of output .. .. £	3,791,294	2,404,877	1,786,190	855,217	634,418	357,876	9,829,872
Value added in process of manufacture .. .. £	1,419,732	1,241,556	961,047	275,687	516,461	255,698	4,670,181

*a* Information not available for publication.

*b* Including South Australia and Tasmania.

The development of forest and other saw mills, etc., since 1913 is shown in the following table :—

### DEVELOPMENT OF SAW MILLS, FOREST AND OTHER, JOINERY, ETC., IN THE COMMONWEALTH FROM 1913 TO 1918.

Items.	1913.	1914.	1915.	1916.	1917.	1918.
Number of establishments .. ..	1,670	1,623	1,567	1,526	1,517	1,575
Number of employees .. ..	39,371	28,864	24,847	22,173	20,902	22,756
Actual horse-power of engines used .. ..	45,684	47,341	46,479	44,456	43,833	45,756
Approx. value of land and buildings .. .. £	2,008,035	2,063,437	1,969,758	1,845,812	1,901,505	2,086,166
Approx. value of plant and machinery .. .. £	2,571,701	2,632,465	2,502,325	2,693,132	2,662,625	2,784,355
Total amount of wages paid .. .. £	3,383,907	3,401,045	2,780,990	2,552,197	2,558,412	2,870,214
Value of fuel used .. .. £	51,436	50,650	51,276	52,273	60,567	69,506
Value of raw material worked up .. .. £	5,273,688	5,012,211	4,602,863	4,487,201	4,463,996	5,159,691
Value of final output .. .. £	10,411,923	10,100,689	8,892,082	8,297,110	8,443,255	9,829,872
Value added in process of manufacture .. .. £	5,163,235	5,088,475	4,289,219	3,809,909	3,979,259	4,670,181

The great development in the building and other trades in Australia using timber during the years immediately preceding the war was reflected in the very satisfactory progress of the timber industries, in which there were large increases in wages paid, value of materials used, and final output, as well as in capital invested in land and buildings, and plant and machinery. During the war period, however, there was, as might have been expected, a fairly considerable decline on the returns for 1913.

6. **Agricultural Implement Factories.**—The manufacture of agricultural implements is an important industry in Australia, and is of particular interest owing to the fact that it was one of the first industries to which the so-called "New Protection" system was sought to be applied. The articles manufactured include stripper harvesters, strippers, stump-jump and other ploughs, harrows, disc and other cultivators, winnowers, corn-shellers and baggers, drills, and other implements usually employed in agriculture. The stripper-harvester, which combines the stripper with a mechanism for winnowing and bagging grain, is an Australian invention, and is exported to many countries.

The following table gives particulars of the agricultural implement works of Australia for the year 1918:—

#### AGRICULTURAL IMPLEMENT WORKS, 1918.

Items.	N.S.W. 1917-18.	Vic. 1917-18.	Q'land. 1918.	S.A. 1917-18.	W.A. 1918. <sup>a</sup>	Tas. 1918.	C'wealth. <sup>c</sup>
Number of factories .. ..	23	62	6	50	..	1	142
Number of employees .. ..	445	1,967	68	853	..	3	3,336
Actual horse-power of engines employed	273	1,271	103	915	..	4	2,566
Approx. value of land and buildings £	114,737	164,550	(b)	65,486	..	(b)	355,830
Approx. value of plant and machinery £	42,538	229,790	(b)	77,490	..	(b)	360,621
Total amount of wages paid during year £	62,024	261,045	(b)	98,768	..	(b)	428,522
Value of fuel used .. ..	£ 2,566	20,911	(b)	6,264	..	(b)	30,011
Value of raw material worked up ..	£ 193,720	435,665	(b)	125,282	..	(b)	762,969
Total value of output .. ..	£ 295,789	830,876	(b)	268,600	..	(b)	1,415,375
Value added in process of manufacture £	102,069	395,211	(b)	143,318	..	(b)	652,406

<sup>a</sup> Western Australia has three agricultural implement establishments, but separate details are not available for publication. <sup>b</sup> Information not available for publication. <sup>c</sup> Excluding Western Australia.

A glance at the following table will shew that the Agricultural Implement industry has failed to progress during the last five years. There are fewer factories, fewer hands, less power used, and the total output is smaller than it was in 1913:—

#### DEVELOPMENT OF AGRICULTURAL IMPLEMENT WORKS IN THE COMMONWEALTH, FROM 1913 TO 1918.

Items.	1913.	1914.	1915.	1916.	1917. <sup>a</sup>	1918. <sup>b</sup>
Number of factories .. ..	154	154	153	151	142	142
Number of employees .. ..	4,444	3,865	3,606	3,538	3,313	3,336
Actual horse-power of engines used ..	2,698	2,665	2,905	2,811	2,613	2,566
Approx. value of land and buildings £	348,666	380,916	363,166	355,108	340,521	355,830
Approx. value of plant and machinery £	309,015	324,292	337,459	336,397	339,244	360,621
Total amount of wages paid .. ..	£ 502,244	466,686	428,370	425,866	427,102	428,522
Value of fuel used .. ..	£ 30,408	29,892	29,167	29,067	27,659	30,011
Value of raw material worked up ..	£ 824,556	749,153	664,412	757,231	798,110	762,969
Value of final output .. ..	£ 1,536,378	1,413,789	1,299,308	1,457,645	1,465,955	1,415,375
Value added in process of manufacture £	711,822	664,636	634,896	700,414	667,845	652,406

<sup>a</sup> Excluding three establishments in Western Australia and one in Tasmania.

<sup>b</sup> Excluding three establishments in Western Australia.

**7. Engineering Works, Ironworks, and Foundries.**—The classification in these industries is not very satisfactory. Generally, engineering shops, ironworks, and foundries are included, as also are factories for making nails, safes, patterns, meters, and springs. Railway workshops, agricultural implement factories, cyanide, smelting, pyrites, and metallurgical works, galvanised iron, stoves and ovens, and wire working establishments are not included. The combination of industries is rendered necessary owing to the limited classification still adopted by some of the States.

### ENGINEERING WORKS, IRONWORKS, AND FOUNDRIES, 1918.

Items.	N.S.W. 1917-18.	Victoria. 1917-18.	Q'land. 1918.	S. Aust. 1917-18.	W. Aust. 1918. <sup>a</sup>	Tas. 1918.	C'wealth.
Number of factories .. ..	347	420	95	64	67	19	1,012
Number of employees .. ..	11,214	7,717	1,989	1,419	1,080	364	23,783
Actual horse-power of engines employed .. ..	30,207	8,894	1,942	1,212	1,741	321	44,317
Approximate value of land and buildings .. ..	£ 1,659,153	734,965	204,375	120,349	165,398	26,641	2,910,881
Approximate value of plant and machinery .. ..	£ 3,268,378	919,940	207,924	143,804	163,629	41,075	4,744,750
Total amount of wages paid during year .. ..	£ 1,662,246	1,057,705	250,544	176,002	168,207	50,341	3,365,045
Value of fuel used .. ..	£ 325,853	115,238	14,571	17,846	16,249	3,359	493,116
Value of raw materials worked up .. ..	£ 5,170,294	1,579,485	248,148	192,272	292,196	38,535	7,520,930
Total value of output .. ..	£ 8,168,810	3,363,576	645,115	469,576	562,762	112,956	13,322,795
Value added in process of manufacture .. ..	£ 2,998,516	1,784,091	396,967	277,304	270,566	74,421	5,801,865

<sup>a</sup> Including three agricultural implement establishments.

In addition to engineering works which supply ordinary requirements, there is now a number of large and important establishments which engage in the manufacture of special classes of machinery and implements. The manufacture of mining and smelting machinery and apparatus forms an important section of this industry.

The development of engineering works, ironworks, and foundries in the Commonwealth since 1913 is shewn in the following table :—

### DEVELOPMENT OF ENGINEERING WORKS, IRONWORKS, AND FOUNDRIES, FROM 1913 TO 1918.

Items.	1913.	1914.	1915.	1916.	1917. <sup>a</sup>	1918. <sup>a</sup>
Number of factories .. ..	919	950	950	956	962	1,012
Number of employees .. ..	26,014	25,766	25,219	25,718	23,543	23,783
Actual horse-power of engines used .. ..	20,630	33,630	34,049	39,658	42,502	44,317
Approx. value of land and buildings .. ..	£ 1,980,453	2,264,889	2,315,944	2,424,759	2,581,605	2,910,881
Approx. value of plant and machinery .. ..	£ 2,188,935	2,946,347	2,984,650	3,555,662	4,274,067	4,744,750
Total amount of wages paid .. ..	£ 3,044,283	3,143,920	3,134,873	3,468,260	3,265,738	3,365,045
Value of fuel used .. ..	£ 217,173	357,071	369,170	420,139	431,448	493,116
Value of raw material worked up .. ..	£ 2,719,643	3,980,252	4,005,914	4,718,516	5,932,214	7,520,930
Value of final output .. ..	£ 8,315,320	8,881,777	8,944,601	10,205,424	11,096,741	13,322,795
Value added in process of manufacture .. ..	£ 4,595,677	4,921,525	4,938,687	5,486,908	5,164,527	5,801,865

<sup>a</sup> Including three agricultural implement establishments in Western Australia.

The progress in these industries during late years has been very marked. Since 1913 the number of establishments has increased over 10 per cent., the amount of wages paid 10.54 per cent., the amount of capital invested in land, buildings, plant and machinery, 83.62 per cent., and the output over 60 per cent.

8. *Railway and Tramway Workshops.*—(i) *Details for each State.* The railway workshops of Australia form an important item in the metal and machinery class, and are chiefly State institutions. The following table gives the details concerning them, but includes also private and municipal establishments for manufacturing and repairing rolling stock :—

RAILWAY AND TRAMWAY WORKSHOPS, 1918.

Items.	N.S.W. 1917-18.	Victoria. 1917-18.	Q'land. 1918.	S. Aust. 1917-18.	W. Aust. 1918.	Tas. 1918.	C'wealth.
Number of factories .. ..	39	19	12	10	8	7	95
Number of employees .. ..	7,724.	3,619	2,522	2,468	1,410	328	18,071
Actual horse-power of engines employed .. ..	5,384	1,543	2,866	453	2,446	182	12,874
Approximate value of land and buildings .. .. £	1,163,701	656,360	357,464	a	442,517	a	b2,904,419
Approximate value of plant and machinery .. .. £	1,164,678	485,260	256,051	a	408,268	a	b2,614,127
Total amount of wages paid during year .. .. £	1,179,971	557,829	430,089	a	237,291	a	b2,839,827
Value of fuel used .. .. £	27,347	25,270	7,632	8,445	10,929	1,864	81,487
Value of raw material worked up .. £	791,612	594,756	194,250	193,951	138,119	21,937	1,934,645
Total value of output .. .. £	2,065,897	1,295,640	556,565	653,628	391,635	73,890	5,037,255
Value added in process of manufacture .. .. £	1,274,285	700,884	362,315	459,677	253,516	51,933	3,102,610

(a) Information not available for publication.

(b) Including South Australia and Tasmania.

(ii) *Northern Territory Railway Workshop.* In addition to the above, a railway workshop is in operation in the Northern Territory. The work is confined almost exclusively to repairs to rolling stock, etc., no new goods being manufactured. For the sake of convenience this establishment is not included in any of the tables in this section.

(iii) *Development of Railway and Tramway Workshops, 1913 to 1918.* The following table shows the development of railway and tramway workshops in the Commonwealth since 1913 :—

DEVELOPMENT OF RAILWAY AND TRAMWAY WORKSHOPS, ETC., FROM 1913 TO 1918.

Items.	1913.	1914.	1915.	1916.	1917.	1918.
Number of factories .. ..	73	75	77	92	94	95
Number of employees .. ..	26,014	21,745	22,224	22,995	20,566	18,071
Actual horse-power of engines used ..	9,581	11,025	12,571	14,350	13,363	12,874
Approximate value of land and buildings .. .. £	2,213,697	2,378,764	2,471,731	2,548,223	2,609,432	2,904,419
Approximate value of plant and machinery .. .. £	1,685,050	2,141,654	2,236,578	2,389,065	2,480,239	2,614,127
Total amount of wages paid .. .. £	3,018,988	3,096,734	3,174,946	3,409,265	3,270,817	2,839,827
Value of fuel used .. .. £	77,155	90,332	90,490	92,200	87,701	81,487
Value of raw material worked up .. £	2,874,535	2,492,217	2,363,785	2,234,063	2,010,288	1,934,645
Value of final output .. .. £	6,435,823	6,134,588	6,046,521	6,298,338	5,566,940	5,037,255
Value added in process of manufacture £	3,561,288	3,642,371	3,682,736	3,974,275	3,556,652	3,102,610

The growth of the railway and tramway systems, conjointly with heavy increases in passenger and goods traffic throughout the Commonwealth, has resulted in corresponding activity in workshops engaged in the manufacture or repair of rolling stock, etc. During the war period, however, the operations of these establishments were restricted, on the score of economy, to necessary works, and consequently the value of output decreased from £6,435,823 in 1913, to £5,037,255 in 1918.

9. **Smelting Works, etc.**—The subjoined table gives particulars of metal smelting, cyanide, pyrites, and metallurgical works. The classification of these works does not appear to be carried out on an uniform basis in the several States, and the combination of industries is, therefore, somewhat unsatisfactory. The returns do not include particulars of plants used on mines.

### SMELTING, CYANIDE, PYRITES, ETC., WORKS, 1918.

Items.	N.S.W. 1917-18.	Victoria. 1917-18.	Q'land. 1918.	S. Aust. 1917-18.	W.A. <sup>a</sup> 1918.	Tasmania. 1918.	C'wealth.
Number of factories .. ..	28	20	10	2	..	3	63
Number of employees .. ..	3,407	184	174	2,642	..	678	7,085
Actual horse-power of engines employed .. ..	15,249	331	978	7,237	..	5,420	29,215
Approximate value of land and buildings .. .. £	399,670	10,580	16,630	268,310	..	44,805	739,995
Approximate value of plant and machinery .. .. £	1,204,263	30,010	86,680	253,077	..	251,031	1,825,061
Total amount of wages paid during year .. .. £	672,091	18,725	29,630	627,953	..	108,654	1,457,053
Value of fuel used .. .. £	253,850	4,966	8,497	347,036	..	49,884	664,233
Value of raw material worked up £	7,368,851	72,446	124,236	4,082,209	..	1,022,769	12,670,511
Total value of output .. .. £	10,550,973	113,530	173,744	5,797,020	..	1,773,760	18,409,027
Value added in process of manufacture .. .. £	3,182,122	41,084	49,508	1,714,811	..	750,991	5,738,516

<sup>a</sup> See third paragraph below.

In New South Wales the above figures represent twenty-seven smelting works and one metallurgical establishment; those for Victoria include ten cyanide works, two metallurgical, four pyrites, and four smelting works; Queensland smelting and cyaniding; and South Australia and Tasmania smelting works.

The greatest output was in New South Wales, viz., £10,550,973, or 57.31 per cent. on the total output for the Commonwealth. South Australia came next with £5,797,020, or 31.49 per cent. For Tasmania the output was £1,773,760, while the figures for Queensland and Victoria were comparatively small, amounting only to £173,744 and £113,530 respectively.

In Western Australia all the plants are worked on the mines, and are therefore not included.

10. **Bacon-curing Factories.**—(i) *Details for each State.* The following table gives particulars of factories engaged in bacon-curing in each State:—

### BACON-CURING FACTORIES, 1918.

Items.	N.S.W. 1917-18.	Victoria. 1917-18.	Q'land. 1918.	S. Aust. 1917-18.	W. Aust. 1918.	Tas. 1918.	C'wealth.
Number of factories .. ..	22	21	7	12	7	5	74
Number of employees .. ..	276	455	459	134	48	22	1,394
Actual horse-power of engines employed .. ..	443	1,066	792	136	114	65	2,616
Approx. value of land and buildings £	87,454	99,650	105,226	14,219	16,725	5,275	328,549
Approx. value of plant and machinery .. .. £	34,659	58,060	58,299	7,723	6,322	1,160	166,223
Total amount of salaries and wages paid .. .. £	51,556	65,870	79,072	17,404	6,083	2,678	222,663
Value of fuel used .. .. £	9,882	8,880	8,251	1,763	764	397	29,937
Value of raw material worked up .. .. £	763,301	889,200	705,851	206,537	93,512	47,444	2,705,845
Total value of output .. .. £	878,711	1,084,440	1,172,207	245,318	104,831	53,105	3,538,612
Value added in process of manufacture .. .. £	115,410	195,240	466,356	38,781	11,319	5,661	832,767

(ii) *Quantity and Value of Production.* The following table shews the number of pigs killed and the quantity and value of the production of bacon-curing factories in each State :—

**PRODUCTION OF BACON-CURING FACTORIES, 1918.**

Particulars.	N.S.W. 1917-18.	Victoria. 1917-18.	Q'land. 1918.	S. Aust. 1917-18.	W. Aust. 1918. <sup>a</sup>	Tasmania. 1918.	C'wealth.
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**QUANTITY (,000 OMITTED).**

Bacon and ham .. lbs.	15,603	17,908	15,703	5,013	2,335	910	57,472
Lard .. lbs.	811	889	854	207	35	51	2,847

**VALUE.**

Bacon and ham .. £	767,845	976,345	897,683	217,302	103,371	46,996	3,009,542
Lard .. £	28,464	33,345	33,392	6,913	1,226	1,757	105,097
Other products .. £	52,274	74,750	241,132	21,103	1,154	4,352	394,765

**PIGS KILLED.**

Number .. ..	183,850	197,880	190,623	59,653	<i>b</i>	10,577	642,583
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<sup>a</sup> In Western Australia, a portion of the bacon and ham treated in factories is imported and subsequently smoked in that State. <sup>b</sup> Not available.

Bacon and ham and other pig products are dealt with more fully in Section IX., *Farmyard and Dairy Production.*

**11. Butter, Cheese, and Condensed Milk Factories.**—(i) *Details for each State.* The subjoined table gives particulars of butter, cheese, and condensed milk factories in each State during the year 1918 :—

**BUTTER, CHEESE, AND CONDENSED MILK FACTORIES, 1918.**

Items.	N.S.W. 1917-18.	Victoria. 1917-18.	Q'land. 1918.	S. Aust. 1917-18. <sup>a</sup>	W. Aust. 1918.	Tasmania. 1918.	C'wealth.
Number of factories ..	159	181	137	44	5	31	557
Number of employees ..	1,128	1,677	919	205	27	119	4,075
Actual horse-power of engines employed ..	3,306	3,252	1,959	452	71	239	9,279
Approximate value of land and buildings .. £	271,689	326,550	147,688	43,249	8,587	25,413	823,176
Approximate value of plant and machinery .. £	351,430	356,590	231,075	30,880	6,373	22,493	998,841
Total amount of wages paid £	179,074	226,050	133,007	22,054	3,691	12,672	576,548
Value of fuel used .. £	41,870	48,519	19,571	4,349	461	1,458	116,228
Value of raw material worked up .. .. £	5,170,900	4,497,581	2,207,597	483,144	61,179	221,580	12,642,071
Total value of output .. £	5,623,826	5,086,238	2,737,602	543,830	67,718	263,011	14,322,025
Value added in process of manufacture .. £	452,836	588,657	530,005	60,486	6,539	41,431	1,679,954

<sup>a</sup> Includes one margarine establishment.

(ii) *Development of Factories, 1913 to 1918.* The following table shows the progress of the factories in this industry during the past five years :—

**DEVELOPMENT OF BUTTER, CHEESE, AND CONDENSED MILK FACTORIES IN THE COMMONWEALTH, 1913 TO 1918.**

Items.	1913.	1914.	1915.	1916.	1917. <sup>a</sup>	1918.
Number of factories .. ..	531	528	536	559	560	557
Number of employees .. ..	3,507	3,568	3,300	3,287	3,801	4,075
Actual horse-power of engines used ..	7,726	7,895	7,948	8,329	8,961	9,279
Approx. value of land and buildings £	664,735	664,990	683,413	734,686	756,454	823,176
Approx. value of plant and machinery £	828,986	850,770	852,260	881,267	933,086	908,841
Total amount of wages paid £	411,491	439,121	408,181	403,136	510,832	576,548
Value of fuel used £	72,214	81,809	71,796	70,053	101,496	116,228
Value of raw material worked up £	8,146,178	8,709,272	3,040,316	7,763,596	12,128,520	12,842,071
Value of final output .. ..	9,284,747	9,898,398	3,203,041	3,974,067	14,151,299	14,322,025
Value added in process of manufacture £	1,138,569	1,189,126	1,162,725	1,210,471	2,022,779	1,679,954

<sup>a</sup> Including one margarine establishment in South Australia.

(iii) *Quantity and Value of Production.* The following table shews the quantity and value of butter, cheese, and condensed milk produced, and the quantity of milk used in butter, cheese, and condensed milk factories in each State :—

**PRODUCTION OF BUTTER, CHEESE, AND CONDENSED MILK FACTORIES, 1918.**

Particulars.	N.S.W. 1917-18.	Vic. 1917-18.	Q'land. 1918.	S. Aust. 1917-18.	W. Aust. 1918.	Tas. 1918.	C'wealth.
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**QUANTITY (,000 OMITTED).**

Butter .. .. lbs.	75,867	59,702	30,669	6,916	889	3,740	177,783
Cheese .. .. "	6,089	3,973	8,573	2,446	..	426	21,507
Condensed and concentrated milk .. "	8,974	37,805	6,846	..	..	..	53,625

**VALUE (,000 OMITTED).**

Butter .. .. £	5,156	3,920	2,198	461	66	248	12,049
Cheese .. .. £	235	149	345	83	..	15	827
Condensed and concentrated milk .. £	206	973	195	..	..	..	1,374

**MILK USED (,000 OMITTED).**

Butter factories .. gals.	170,611	137,398	64,206	14,043	1,951	8,300	396,509
Cheese .. .. "	6,295	3,940	8,482	2,398	..	446	21,561
Condensed milk factories .. "	2,366	12,023	1,223	..	..	..	15,612

The butter, cheese, and condensed milk industries are dealt with more fully in Section IX., *Farmyard and Dairy Production.*

**12. Meat and Fish Preserving, Ice and Refrigerating Works.**—These industries are now of considerable importance in Australia. Large freezing works have been installed

at many ports in the Commonwealth for the purpose of freezing produce chiefly for export, while insulated space for the carriage of frozen produce is provided by a number of steamship companies trading between Australia and other parts of the world. Extensive meat freezing and canning works have recently been erected in the Northern Territory at Darwin at a cost of approximately £750,000. The Commonwealth Government has entered into an agreement with the proprietors in regard to the carriage of cattle at special rates provided that private owners of cattle may have their stock treated under reasonable terms and conditions. The killing season in the Northern Territory generally extends from April to August, and is necessarily short, because the drying of stock route waters precludes the travelling of stock to the freezing works. The works accommodation provides for killing and chilling 500 cattle, while 400 carcasses can be frozen and 200 canned per day. When the works are in full operation it is expected that from 400 to 500 head of stock will be treated daily, and that the annual killing will approximate 50,000 cattle. Operations were commenced early in 1917, and between April and August 18,911 cattle were treated. A dispute arose between the Company and the employees over the question of wages during the early part of 1918, and six weeks of the killing season were lost before an agreement was arrived at. Owing to the dispute, instead of from 40,000 to 50,000 bullocks being treated, only 29,011 could be handled during the 1918 season.

Particulars regarding the export of frozen beef and mutton may be found on pages 327 and 330 hereof respectively.

The particulars given in the subjoined table include ice-making and freezing works, and also meat-canning factories, separate particulars for each item for all the States not being available.

#### MEAT AND FISH PRESERVING, ICE AND REFRIGERATING WORKS, 1918.

Items.	N.S.W. 1917-18	Vic. 1917-18.	Q'land. 1918.	S.A. 1917-18.	W.A. 1918.	Tas. 1918.	C'wealth. (b)
Number of factories .. ..	143	40	62	16	20	5	286
Number of employees .. ..	2,882	1,421	4,899	352	131	27	9,712
Actual horse-power of engines employed	7,941	6,907	11,314	1,125	1,144	72	28,503
Approx. value of land and buildings £	956,315	581,660	1,565,372	a	57,589	a	3,358,673
Approx. value of plant and machinery £	741,549	343,300	908,077	a	59,240	a	2,155,410
Total amount of wages paid during year .. ..	£ 342,155	183,846	844,477	a	22,699	a	1,440,094
Value of fuel used .. ..	£ 73,694	46,196	99,196	a	10,327	a	247,749
Value of raw material worked up	£ 5,654,573	953,694	4,871,643	a	36,236	a	11,651,156
Total value of output .. ..	£ 6,538,744	1,304,960	6,146,350	a	82,149	a	14,318,244
Value added in process of manufacture £	884,171	351,266	1,274,701	a	45,913	a	2,667,088

(a) Information not available for publication.

(b) Including South Australia and Tasmania.

The following table gives particulars, so far as available, of meat tinned during the year:—

#### MEAT PRESERVING WORKS—OUTPUT, 1918.

Output.	N.S.W. 1917-18.	Victoria. 1917-18.	Q'land. 1918.	S. Aust. 1917-18.	W. Aust. 1918.	Tas. 1918.	C'wealth.
Tinned meat .. cwt.	171,792 <sup>a</sup>	61,450 <sup>b</sup>	308,730 <sup>c</sup>	4,717 <sup>d</sup>	..	..	546,689

<sup>a</sup> Also 18,360 cwt. tinned rabbits. <sup>b</sup> Also 9,530 cwt. tinned rabbits. <sup>c</sup> Also 1,940 cwt. salted meat. <sup>d</sup> Large quantities of rabbits are tinned in South Australia, but particulars are not available for publication.



Large quantities of rabbits, hares, and poultry, for which, however, complete returns are not available, were treated in freezing works. Exclusive of Victoria, for which State particulars are not available, the returns shew that 90,714 tons of ice, valued at £191,917, were manufactured in the Commonwealth in 1918.

Full particulars of quantities and value of beef, mutton, and lamb preserved by cold process, exported from the Commonwealth during a series of years, will be found in Section VII., *Pastoral Production*.

13. **Biscuit Factories.**—The following table gives particulars regarding establishments at which the manufacture of biscuits, cakes, etc., was carried on in each State during the year 1918 :—

#### BISCUIT, ETC., FACTORIES, 1918.

Items.	N.S.W. 1917-18.	Victoria. 1917-18.	Q'land. 1918.	S. Aust. 1917-18.	W. Aust. 1918. <sup>c</sup>	Tas. 1918.	C'wealth.
Number of factories .. ..	9	7	22	3	6	3	50
Number of employees .. ..	1,658	1,424	547	159	190	124	4,102
Actual horse-power of engines employed .. ..	712	399	332	99	355	63	1,960
Approximate value of land and buildings .. .. £	126,672	74,080	71,571	<i>a</i>	10,740	<i>a</i>	6323,719
Approximate value of plant and machinery .. .. £	101,900	61,540	46,820	<i>a</i>	12,452	<i>a</i>	6243,265
Total amount of wages paid during year .. .. £	147,821	130,790	65,767	<i>a</i>	13,766	<i>a</i>	6378,973
Value of fuel used .. .. £	13,210	15,214	3,333	2,055	1,801	821	36,434
Value of raw material worked up .. .. £	689,222	527,759	168,145	40,401	51,795	28,490	1,505,812
Total value of output .. .. £	1,057,402	800,626	292,777	64,979	81,913	50,606	2,348,303
Value added in process of manufacture .. .. £	368,180	272,867	124,632	24,578	30,118	22,116	842,491

*a* Information not available for publication.

*b* Including South Australia and Tasmania.

*c* Including one butterine and margarine, and one macaroni establishment.

14. **Jam and Fruit Preserving, Pickles, Sauces, and Vinegar.**—(i) *Details for each State.* The jam and fruit preserving industry has increased in importance of late years, consequent on the extension of fruit-growing. As an exporting industry it is comparatively recent, but is of increasing value, and has shewn considerable expansion during the past four years. During the year ended 30th June, 1919, 79,277,560 lbs. of jams and jellies, valued at £1,847,970, were exported from the Commonwealth. The subjoined table gives particulars of factories at which these industries were carried on in each State during the year. Separate returns for the different branches of the industry are not available for most of the States.

#### JAM AND FRUIT PRESERVING, PICKLES, SAUCES, AND VINEGAR FACTORIES, 1918.

Items.	N.S.W. 1917-18.	Victoria. 1917-18.	Q'land. 1918.	S. Aust. 1917-18.	W. Aust. 1918.	Tas. 1918.	C'wealth.
Number of factories .. ..	43	37	20	22	7	17	146
Number of employees .. ..	1,380	2,644	357	348	93	1,202	6,024
Actual horse-power of engines employed .. ..	540	699	87	95	72	498	1,991
Approximate value of land and buildings .. .. £	221,524	151,460	20,319	31,408	6,715	84,687	516,113
Approximate value of plant and machinery .. .. £	125,332	76,770	15,605	14,919	3,171	38,758	274,555
Total amount of wages paid during year .. .. £	129,880	229,795	28,896	28,562	6,823	114,388	538,344
Value of fuel used .. .. £	7,954	16,167	1,657	2,685	486	8,046	36,995
Value of raw material worked up .. .. £	833,591	1,111,712	117,980	165,949	17,098	684,073	2,930,403
Total value of output .. .. £	1,051,858	1,614,707	172,522	230,237	26,214	952,374	4,047,912
Value added in process of manufacture .. .. £	218,267	502,995	54,542	64,288	9,116	268,301	1,117,509

(ii) *Production of Factories, 1918.* The following table shows the quantity and value of jams, pickles, and sauces manufactured in each State :—

**QUANTITY AND VALUE OF JAMS, PICKLES, AND SAUCES MANUFACTURED, 1918.**

Particulars.	N.S.W. 1917-18.	Victoria. 1917-18.	Q'land. 1918.	S. Aust. 1917-18.	W. Aust. 1918.	Tas. 1918.	C'wealth.
QUANTITY (,000 OMITTED).							
Jams .. lbs.	30,504	44,632	2,783	7,904	b	40,987	c126,810
Fruit, preserved .. lbs.	5,542	12,945	3,934	2,209	b	7,571	c32,201
Pickles .. pints	2,120	3,412	a	1,248	166	20	5,866
Sauces .. pints	3,614	7,065	428	1,060	361	90	12,618
VALUE.							
Jams .. £	637,130	932,224	64,253	143,159	b	780,616	c2,557,382
Fruit, preserved .. £	124,084	289,852	57,411	35,759	b	162,002	c669,108
Pickles .. £	59,691	96,092	14,312	10,060	2,330	729	183,214
Sauces .. £	109,577	214,205	8,916	26,176	9,336	2,171	370,381

a Information not available. b Information not available for publication.

c Exclusive of Western Australia.

(iii) *Development of Factories, 1913 to 1918.* The following table furnishes particulars of jam and fruit preserving establishments in the Commonwealth for the last six years :—

**DEVELOPMENT OF JAM AND FRUIT PRESERVING, PICKLES, SAUCES, AND VINEGAR FACTORIES, 1913 TO 1918.**

Items.	1913.	1914.	1915.	1916.	1917. *	1918.
Number of factories ..	130	136	128	139	150	146
Number of employees ..	4,525	4,530	4,393	4,669	5,323	6,024
Actual horse-power of engines employed	1,280	1,561	1,567	1,714	2,059	1,991
Approx. value of land and buildings £	333,389	349,438	358,144	367,277	426,919	516,113
Approx. value of plant and machinery £	145,478	168,578	178,182	185,529	209,548	274,555
Total amount of wages paid £	308,909	318,532	326,442	365,928	443,793	538,344
Value of fuel used .. £	19,216	21,886	21,965	24,941	32,726	36,995
Value of raw material worked up .. £	1,358,917	1,444,242	1,602,465	1,919,102	2,271,966	2,930,403
Total value of output .. £	2,026,941	2,110,187	2,417,111	2,775,635	3,284,844	4,047,912
Value added in process of manufacture £	668,024	665,945	814,646	856,533	1,012,878	1,117,509

The progression of the jam and fruit preserving industry has been very marked during the past five years. Since 1913, the number of factories has increased by 16, and the number of employees by 1,499, while the power used, the amount of salaries and wages paid, and the value of the output have been nearly doubled.

**15. Confectionery.**—(i) *Details for each State.* The following table shows the present position of the confectionery industry. Its growth will be apparent when it is stated that at the close of 1900 there were in New South Wales only 16 establishments, with 706 employees, and in Victoria 16 establishments, employing 731 persons, the plant and machinery in the former State being valued at £2,815, and in the latter at £19,070.

**CONFECTIONERY FACTORIES, 1918.**

Items.	N.S.W. 1917-18.	Victoria. 1917-18.	Q'land. 1918.	S. Aust. 1917-18.	W.A. 1918.	Tas. 1918.	C'wealth.
Number of factories ..	63	56	8	11	5	4	147
Number of employees ..	1,954	2,734	542	371	230	25	5,856
Actual horse-power of engines employed	1,047	1,562	153	301	185	29	3,277
Approx. value of land and buildings £	246,938	183,990	34,973	39,078	37,530	11,590	554,099
Approx. value of plant and machinery £	145,428	191,260	21,584	36,660	22,179	2,875	419,986
Total amount of wages paid during year .. £	183,666	231,897	50,074	27,916	19,330	2,891	515,774
Value of fuel used .. £	17,717	29,880	1,822	3,388	10,632	235	63,674
Value of raw material worked up .. £	788,835	838,059	88,386	112,267	54,240	12,400	1,894,187
Total value of output .. £	1,165,590	1,340,137	183,808	170,637	91,301	18,100	2,969,573
Value added in process of manufacture	376,755	502,078	95,422	58,370	37,061	5,700	1,075,386

(ii) *Development of Confectionery Factories, 1913 to 1918.* The progress of the confectionery industry during the past five years may be seen from the following table :—

### DEVELOPMENT OF CONFECTIONERY FACTORIES, 1913 TO 1918.

Items.	1913.	1914. <i>a</i>	1915. <i>a</i>	1916.	1917.	1918.
Number of factories .. ..	99	114	115	117	131	147
Number of employees .. ..	3,840	4,163	4,411	4,570	5,266	5,856
Actual horse-power of engines employed .. ..	1,525	2,056	2,268	2,181	2,802	3,277
Approx. value of land and buildings £	354,288	440,534	457,882	462,555	495,488	554,099
Approx. value of plant and machinery £	226,432	287,658	284,916	294,351	354,539	419,986
Total amount of wages paid during year .. ..	£ 290,133	£ 333,009	£ 345,938	£ 377,310	£ 463,067	£ 515,774
Value of fuel used .. ..	£ 19,331	£ 23,815	£ 26,543	£ 27,662	£ 45,304	£ 63,674
Value of raw material worked up .. ..	£ 1,057,902	£ 1,130,938	£ 1,224,464	£ 1,406,451	£ 1,586,353	£ 1,894,187
Total value of output .. ..	£ 1,657,045	£ 1,838,222	£ 1,963,299	£ 2,173,675	£ 2,504,732	£ 2,969,573
Value added in process of manufacture £	599,143	707,284	738,835	767,224	918,379	1,075,386

*a* Includes three biscuit factories.

The embargo placed on the importation of luxuries during the war period has resulted in a considerable expansion of the confectionery industry in Australia.

During the past five years the number of factories increased by 48 per cent., the number of employees by 52 per cent., and the actual horse-power of engines used by 115 per cent., while the values of the salaries and wages paid, and of the final output shewed increases amounting to 78 and 79 per cent. respectively.

16. *Flour Mills.*—The following table shews the position of the flour-milling industry :—

### FLOUR MILLS, 1918.

Items.	N.S.W. 1917-18.	Victoria. 1917-18.	Q'land. 1918. <i>a</i>	S. Aust. 1917-18. <i>a</i>	W. Aust. 1918.	Tas. 1918.	C'wealth.
Number of factories .. ..	61	55	23	46	16	10	211
Number of employees .. ..	1,236	1,021	297	653	392	104	3,703
Actual horse-power of engines employed .. ..	5,090	4,469	1,006	3,071	2,135	498	16,269
Approx. value of land and buildings £	373,849	216,340	80,699	121,808	<i>b</i>	<i>b</i>	c952,217
Approx. value of plant and machinery .. ..	£ 371,852	£ 301,170	£ 84,713	£ 157,737	<i>b</i>	<i>b</i>	c1,054,645
Total amount of wages paid during year .. ..	£ 208,810	£ 155,330	£ 44,324	£ 92,122	<i>b</i>	<i>b</i>	c575,492
Value of fuel used .. ..	£ 43,770	£ 39,980	£ 5,378	£ 27,779	£ 13,143	£ 2,282	£ 132,312
Value of raw material worked up .. ..	£ 4,148,576	£ 3,489,300	£ 610,445	£ 1,527,047	£ 1,369,827	£ 278,151	£ 11,423,346
Total value of output .. ..	£ 4,665,301	£ 3,989,510	£ 734,227	£ 1,745,389	£ 1,546,261	£ 317,011	£ 12,997,699
Value added in process of manufacture .. ..	£ 516,725	£ 500,210	£ 123,782	£ 218,342	£ 176,434	£ 38,860	£ 1,574,353

*a* The manufacture of cornflour, oatmeal, etc., was also carried on in some of these establishments.

*b* Information not available for publication.

*c* Including Western Australia and Tasmania.

The production of flour by the mills in each State of the Commonwealth in the years 1913 to 1918 was as follows :—

### FLOUR MILLS—PRODUCTION, 1913 TO 1918.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
	Tons. <i>a</i>	Tons. <i>a</i>	Tons. <i>a</i>	Tons. <i>a</i>	Tons. <i>a</i>	Tons. <i>a</i>	Tons. <i>a</i>
1913 ..	285,425	252,763	33,889	107,994	61,997	18,545	760,613
1914 ..	266,302 <i>b</i>	246,136	35,402	84,701	61,922	19,382	713,845
1915 ..	266,302 <i>b</i>	134,401	39,734	49,404	32,396	19,573	541,810
1916 <i>c</i> ..	254,393	134,401	42,559	49,404	70,912	25,369	577,038
1917 <i>d</i> ..	331,233	263,095	46,244	105,925	102,300	21,178	869,975
1918 <i>d</i> ..	355,843	311,450	45,589	135,882	119,876	17,121	985,761

*a* Tons of 2,000 lbs. *b* Year ended 30th June, 1915. *c* See note *a* first table this section.

*d* See note *b* first table this section.

The total production of flour for the Commonwealth for the last year, viz., 985,761 tons, was valued at £10,637,623; in addition 434,769 tons of bran and pollard, valued at £2,127,237, were made. The total quantity of wheat ground was 48,232,440 bushels.

17. Sugar Mills.—The following table shews the position of the cane-crushing branch of the sugar-making industry. This industry is carried on in Queensland and New South Wales, the only States of the Commonwealth in which the sugar-cane is grown.

### SUGAR MILLS, 1918.

Items.	N.S.W. 1917-18.	Queensland. 1918.	Total.
Number of factories .. .. .	3	42	45
Number of employees .. .. .	367	5,214	5,581
Actual horse-power of engines employed .. .. .	1,213	15,146	16,359
Approximate value of land and buildings £	105,823	454,023	559,846
Approximate value of plant and machinery £	423,289	3,211,336	3,634,625
Total amount of wages paid during year .. £	54,090	623,736	677,826
Value of fuel used .. .. . £	5,460	67,968	73,428
Value of raw material worked up .. .. . £	285,274	2,733,268	3,018,542
Total value of output .. .. . £	436,202	4,037,706	4,473,908
Value added in course of manufacture .. £	150,928	1,304,438	1,455,366

The product of the sugar mill is raw sugar and molasses, the former being sent to the refineries in different parts of Australia for further treatment. Part of the molasses produced is used in distillation, part is prepared for human consumption, part is turned into food cake for cattle, and part is used for manuring land, but a considerable quantity is run to waste. The following tables shew the progress of this industry in each State from the dates at which information is first obtainable :—

### SUGAR MILLS, NEW SOUTH WALES, 1870 TO 1918.

Items.	1870.	1877.	1886.	1896.	1901.	1911.	1914-15.	1915-16.	1916-17.	1917-18
No. of factories	27	50	64	23	12	4	3	3	3	3
No. of employees	..	1,065	2,259	1,475	695	469	437	463	427	367
Cane crushed tons	<i>a</i>	<i>a</i>	<i>a</i>	<i>a</i>	<i>a</i>	167,799	181,606	157,748	143,558	174,881
Sugar produced tons	677	7,537	13,750	28,557	19,519	17,299	20,029	19,144	16,064	19,875
Molasses produced gals.	..	345,543	507,000	2,520,880	1,300,909	796,440	1,104,000	1,099,000	781,870	975,770

*a* Not available.

The reduction in the number of New South Wales mills is due chiefly to the tendency towards concentration of cane-crushing in mills fitted with modern machinery, and the consequent closing of the small home mill. On the north coast of New South Wales some land formerly devoted to sugar-growing has been turned into pasture in connection with the dairying industry.

### SUGAR MILLS, QUEENSLAND, 1868 TO 1918.

Items.	1868.	1876.	1886.	1896.	1901.	1911.	1916.	1917.	1918.
No. of factories ..	10	70	118	63	52	49	42	47	42
No. of employees ..	..	<i>b</i>	<i>b</i>	3,796	<i>b</i>	4,295	4,528	5,500	5,214
Cane crushed tons ..	..	7,245 <sup>c</sup>	40,756 <sup>c</sup>	66,640 <sup>c</sup>	78,160 <sup>c</sup>	1,534,451	1,579,514	2,704,211	1,674,829
Sugar produced, tons	619	8,214	59,225	100,774	120,858	173,296	176,973	307,714	189,978
Molasses—									
Sold to distillers and others, gals.						2,393,669	818,812	1,558,407	1,662,454
Used as fodder gals.						789,564	1,439,108	1,464,084	1,602,962
Used as manure gals.						223,000	54,600	627,000	109,000
Run to waste or burnt a gals.	<i>b</i>	<i>b</i>	<i>b</i>	<i>b</i>	<i>b</i>	1,847,333	3,232,835	6,986,813	3,501,668
In stock ..						1,197,626	797,084	878,332	923,307
Total molasses a gals.	68,622	416,415	1,784,266	2,195,470	3,679,952	6,451,192	6,342,439	11,514,636	7,799,391

a Quantity recorded; large quantities run to waste of which no record is kept. b No record.  
c Acres crushed.

Information regarding the cultivation of sugar-cane may be found in the section of this book dealing with *Agricultural Production*. (See pages 386 to 389.)

18. **Sugar Refineries.**—The establishment of the sugar-refining industry considerably antedates the establishment of the sugar-milling industry, the raw material operated upon being originally brought chiefly from Mauritius and the East. In 1918 there were two sugar refineries in each of the States of Victoria and Queensland, and one in each of the States of New South Wales and South Australia. The returns for the individual States cannot be disclosed.

In the six refineries in the Commonwealth, an average number of 1,676 hands was employed during the year. The approximate value of land and buildings was £425,551; of plant and machinery, £1,136,822; and the total amount of wages paid during the year was £250,438. The value of all materials used in sugar refineries was £6,235,703, while the total output reached £7,286,672. The amount of crude sugar used was 278,199 tons, and of refined sugar produced 266,494 tons, valued at £7,248,371.

19. **Breweries.**—(i) *Details for each State.* The following table gives particulars of breweries in each State:—

### BREWERIES, 1918.

Items.	N.S.W. 1917-18.	Victoria. 1917-18.	Q'land. 1918.	S. Aust. 1917-18.	W. Aust. 1918. <sup>a</sup>	Tas. 1918.	C'wealth.
Number of breweries ..	21	18	10	8	11	4	72
Number of employees ..	950	875	518	314	488	123	3,268
Actual horse-power of engines employed ..	2,577	3,734	1,042	925	1,173	151	9,602
Approximate value of land and buildings ..	£ 734,707	£ 471,980	<i>b</i>	90,567	<i>b</i>	61,950	£ 1,676,567
Approximate value of plant and machinery ..	£ 729,322	£ 435,960	<i>b</i>	81,820	<i>b</i>	4,236	£ 1,600,734
Total amount of wages paid during year ..	£ 188,703	£ 177,276	<i>b</i>	59,811	<i>b</i>	20,213	£ 632,076
Value of fuel used ..	£ 45,501	£ 39,200	10,626	11,223	13,019	2,612	£ 120,381
Value of raw material worked up ..	£ 737,658	£ 660,090	158,549	147,582	220,591	34,762	£ 1,959,232
Total value of output ..	£ 1,535,669	£ 1,334,344	862,773	345,931	519,283	143,744	£ 4,741,744
Value added by processes of manufacture ..	£ 798,011	£ 674,254	704,224	198,349	298,692	108,982	£ 2,782,512

a Includes malting. b Information not available for publication.  
c Including Queensland and Western Australia.

(ii) *Production and Materials Used.* The following table shews the quantity and value of ale and stout brewed and the quantity of raw materials used in each State during the year :—

### PRODUCTION AND MATERIALS USED IN BREWERIES, 1918.

Particulars.	N.S.W. 1917-18.	Victoria. 1917-18.	Q'land. 1918.	S. Aust. 1917-18.	W. Aust. 1918.	Tasmania. 1918.	C'wealth.
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#### ALE AND STOUT BREWED.

Quantity	gallons	22,483,993	21,021,070	6,757,770	5,560,706	5,361,712	1,643,267	62,828,518
Value a ..	£	1,050,079	1,334,344	862,773	342,890	509,763	143,753	4,243,602

#### RAW MATERIALS USED.

Malt ..	bush.	687,702	650,500	206,992	139,551	163,929	68,933	1,917,607
Hops ..	lbs.	771,078	748,840	287,748	172,094	212,097	103,690	2,295,547
Sugar ..	cwt.	108,600	109,640	43,829	26,861	28,220	6,362	323,512

#### RAW MATERIALS USED PER 1,000 GALLONS OF ALE AND STOUT PRODUCED.

Malt ..	bush.	30.59	30.95	30.63	25.10	30.57	41.95	30.52
Hops ..	lbs.	34.29	35.62	42.58	30.95	39.56	63.10	36.54
Sugar ..	cwt.	4.83	5.22	6.49	4.83	5.26	3.87	5.15

a Exclusive of excise duty.

(iii) *Development of Breweries, 1913 to 1918.* The following table shews the progress of this industry during the past five years :—

### DEVELOPMENT OF BREWERIES FROM 1913 TO 1918.

Items.	1913.	1914.	1915.	1916.	1917.	1918.
Number of breweries ..	101	95	90	86	77	72
Number of employees ..	3,551	3,535	3,295	3,179	3,191	3,268
Actual horse-power of engines used ..	6,930	8,313	8,430	8,882	8,955	9,602
Approx. value of land and buildings £	1,554,187	1,860,584	1,872,535	1,864,712	1,901,488	1,676,567
Approx. value of plant and machinery £	1,171,595	1,433,616	1,452,639	1,518,846	1,565,914	1,600,734
Total amount of wages paid £	552,843	575,446	548,632	560,004	594,687	632,076
Value of fuel used ..	75,824	86,175	81,252	87,375	104,629	120,381
Value of raw material worked up £	1,568,620	1,534,656	1,494,974	1,548,615	1,637,568	1,959,232
Value of final output ..	3,817,396	4,107,498	3,869,786	3,872,044	3,952,647	4,741,744
Value added in process of manufacture £	2,248,776	2,572,842	2,374,812	2,323,429	2,315,079	2,782,512

The main feature in the history of the brewing industry, which was established at an early date in Australia, has been the change from the small local brewery in every township of moderate size to the large centralised city brewery. This, however, has not been so much in evidence during the period embraced in the above table, the reduction of the number of establishments during recent years being mainly due to several large amalgamations. The total value of output of breweries in the Commonwealth increased from £3,817,396 in 1913 to £4,741,744 in 1918, while the quantity of ale and stout brewed during the same period decreased from 63,578,096 to 62,828,518 gallons. The average production per head of mean population likewise decreased from 13.24 gallons per head for 1913 to 12.7 gallons for 1918.

20. *Distilleries.*—The subjoined table gives particulars of distilleries in four States. There are no distilleries in Western Australia or Tasmania.

## DISTILLERIES, 1918.

Items.	N.S.W. 1917-18.	Victoria. 1917-18.	Q'land. 1918.	S. Aust. 1917-18.	W. Aust. 1918.	Tas. 1918.	C'wealth.
Number of distilleries .. ..	3	10	3	18	..	..	34
Number of employees .. ..	25	205	40	90	..	..	360
Actual horse-power of engines employed	135	332	93	296	..	..	856
Approx. value of land and buildings £	16,906	125,240	12,598	37,639	..	..	192,383
Approx. value of plant and machinery £	63,053	94,510	21,157	31,291	..	..	210,011
Total amount of wages paid during year £	5,756	31,906	7,021	10,642	..	..	55,325
Value of fuel used .. ..	£ 2,800	12,283	4,466	4,065	..	..	23,614
Value of raw materials worked up £	44,153	155,398	16,759	89,823	..	..	306,133
Total value of output .. ..	£ 70,271	287,579	112,885	139,064	..	..	609,799
Value added in process of manufacture £	26,118	132,181	96,126	49,241	..	..	303,666

The total quantity of rum distilled during the year was 177,361, of whisky 637,988, of brandy 195,097, and of other spirits, including rum distilled in Queensland, separate particulars for which are not available, 2,992,253 proof gallons. The materials used comprised 630,308 cwt. of molasses and sugar, and 3,081,601 gallons of wine. Particulars for the separate States are not available for publication.

21. *Tobacco, Cigars, and Cigarettes.*—(i) *Details for each State.* During the year there were thirty-seven establishments in which the manufacture of tobacco, cigars, and cigarettes was carried on. There were no factories engaged in this industry in Tasmania.

## TOBACCO, CIGAR, AND CIGARETTE FACTORIES, 1918.

Items.	N.S.W. 1917-18.	Vic. 1917-18.	Q'land. 1918.	S.A. 1917-18.	W.A. 1918.	Tas. 1918.	C'wealth. b
Number of factories .. ..	16	14	2	2	3	..	37
Number of employees .. ..	2,032	1,740	65	44	39	..	3 920
Actual horse-power of engines employed	524	383	26	..	1	..	934
Approx. value of land and buildings £	222,346	a	a	a	2,744	..	413,167
Approx. value of plant and machinery £	140,849	a	a	a	590	..	265,150
Total amount of wages paid during year £	237,484	a	a	a	2,573	..	466,520
Value of fuel used .. ..	£ 7,863	4,210	a	a	2	..	12,347
Value of raw material worked up £	1,600,387	949,302	a	a	4,645	..	2,578,758
Total value of output .. ..	£ 2,222,751	1,414,934	a	a	10,383	..	3,694,246
Value added in process of manufacture £	622,364	465,632	a	a	5,738	..	1,115,488

a Not available for publication.

b Including Victoria, Queensland, and South Australia.

(ii) *Quantity of Goods Produced, and Tobacco Leaf Used.* The following table shews the quantity of goods produced in tobacco factories in each State, and the quantities of imported and Australian-grown leaf used :—

## PRODUCTION OF TOBACCO FACTORIES AND QUANTITY OF LEAF USED, 1918.

Particulars.	N.S.W. 1917-18.	Vic. 1917-18.	Q'land. 1918.	S. Aust. 1917-18.	W. Aust. 1918.	Tas. 1918.	C'wealth. b
QUANTITY (,000 OMITTED).							
Manufactured tobacco .. lbs.	5,529	5,479	a	..	3	..	11,011
Cigars .. ..	119	308	..	a	a	..	427
{ No. 10,534	27,920	..	a	a	..	..	38,454
Cigarettes .. ..	3,018	283	..	..	a	..	8,301
{ No. 1,368,869	126,884	..	..	..	a	..	1,495,753
TOBACCO LEAF USED (,000 OMITTED).							
Australian leaf .. .. lbs.	918	558	a	a	..	..	1,476
Imported leaf .. .. lbs.	6,865	4,598	..	a	18	..	11,481

a Not available for publication.

b Incomplete.

(iii) *Development of Industry.* This industry was among the first to be established in Australia. In 1861 New South Wales had eleven factories, producing 177,744 lbs. of manufactured tobacco; in the same year there was one factory in Victoria, but the quantity of tobacco manufactured is not available. The Australian market has for many years been largely supplied with local manufactures. The quantities imported into Australia during 1918-19 were—manufactured tobacco 1,125,160 lbs., cigars 115,470 lbs., and cigarettes 95,070 lbs., while the quantities manufactured in Australian factories were respectively 11,011,227 lbs., 426,621 lbs., and 3,301,400 lbs. The following tables shew the development of the tobacco manufacturing industry in the Commonwealth during recent years:—

### DEVELOPMENT OF TOBACCO, CIGAR, AND CIGARETTE FACTORIES IN THE COMMONWEALTH, 1913 TO 1918.

Items.	1913.	1914.	1915. <i>a</i>	1916. <i>a</i>	1917. <i>b</i>	1918.
Number of factories .. ..	36	36	34	35	38	37
Number of employees .. ..	3,566	3,658	3,547	3,739	3,814	3,920
Actual horse-power of engines used ..	1,119	808	826	914	934	934
Approx. value of land and buildings £	353,447	402,462	404,593	412,068	424,252	413,167
Approx. value of plant and machinery £	231,547	248,532	241,591	253,953	260,372	265,150
Total amount of wages paid .. £	373,963	380,821	c370,227	c394,435	438,142	466,520
Value of fuel used .. £	4,053	7,365	c7,607	c9,720	13,523	12,347
Value of raw material worked up .. £	1,651,226	1,905,489	c1,959,525	c2,124,204	2,344,063	2,578,758
Value of final output .. £	2,713,363	3,006,482	c3,041,050	c3,223,433	3,543,704	3,694,246
Value added in process of manufacture £	1,062,137	1,100,993	c1,081,525	c1,099,229	1,199,641	1,115,488

### PRODUCTION.

Tobacco made .. .. 1,000 lbs.	9,956	9,984	9,776	10,306	d11,107	d11,011
Cigars .. .. "	406	401	c365	d362	d398	d427
Cigarettes .. .. "	2,768	3,197	3,175	d3,351	d3,075	d3,301
Leaf used .. .. "	11,677	12,091	c11,858	12,541	d13,166	d12,957

*a* Including four condiment establishments in Western Australia. *b* Including one condiment and two malting establishments in Queensland, and excluding two cigar factories in South Australia. *c* Exclusive of two factories in South Australia. *d* Incomplete.

22. **Woollen, Cotton, and Tweed Mills.**—(i) *Details for each State.* The manufacture of woollens and tweeds was established in Australia at an early period in its history, and was under Government control, the first record in New South Wales dating back to 1801, when a few blankets were made by the convicts; the first record in Victoria was in 1867. The following table, which gives particulars of the mills in each State, shews that the industry is now well established:—

### WOOLLEN, COTTON, AND TWEED MILLS, 1918.

Items.	N.S.W. 1917-18.	Victoria. 1917-18.	Q'land. 1918.	S. Aust. 1917-18.	W.A. 1918.	Tas. 1918.	C'wealth. <i>b</i>
Number of factories .. ..	6	11	2	2	..	4	25
Number of employees .. ..	1,045	2,072	225	209	..	266	3,817
Actual horse-power of engines employed ..	2,513	3,495	552	309	..	245	7,114
Approx. value of land and buildings £	137,297	156,210	<i>a</i>	<i>a</i>	..	24,700	355,931
Approx. value of plant and machinery .. £	188,437	276,950	<i>a</i>	<i>a</i>	..	40,281	573,902
Total amount of wages paid during year .. £	111,714	196,942	<i>a</i>	<i>a</i>	..	20,402	360,466
Value of fuel used .. £	13,843	30,222	<i>a</i>	<i>a</i>	..	1,949	49,339
Value of raw material worked up .. £	446,483	580,069	<i>a</i>	<i>a</i>	..	48,035	1,141,962
Total value of output .. £	731,185	1,036,031	<i>a</i>	<i>a</i>	..	113,805	2,024,343
Value added in process of manufacture .. £	284,702	456,012	<i>a</i>	<i>a</i>	..	65,770	882,381

*a* Information not available for publication.

*b* Including Queensland and South Australia.



(ii) *Progress of Industry, 1913 to 1918.* The progress of woollen and tweed manufactories in the Commonwealth during the last five years is shewn in the following table :—

**DEVELOPMENT OF WOOLLEN, COTTON, AND TWEED MILLS IN THE  
COMMONWEALTH FROM 1913 TO 1918.**

Items.	1913.	1914.	1915.	1916.	1917.	1918.
Number of factories .. ..	22	22	22	23	24	25
Number of employees .. ..	3,090	3,290	3,620	3,927	3,746	3,817
Actual horse-power of engines used ..	4,358	5,072	5,364	5,538	6,840	7,114
Approx. value of land and buildings £	299,306	311,391	310,114	319,273	339,511	355,931
Approx. value of plant and machinery £	516,659	532,084	537,849	553,671	570,871	573,902
Total amount of wages paid .. ..	231,018	257,590	313,826	357,137	351,043	360,466
Value of fuel used .. ..	21,778	27,306	36,275	40,283	43,732	49,339
Value of raw material worked up ..	475,637	603,387	836,298	971,144	1,073,314	1,141,962
Value of final output .. ..	925,602	1,152,657	1,615,223	1,888,115	1,940,304	2,024,343
Value added in process of manufacture £	449,965	549,270	772,925	916,971	866,990	882,381

(iii) *Quantity and Value of Production.* The production of the woollen mills of Australia consists chiefly of tweed cloths, flannels, and blankets, all of which have acquired a reputation for purity and durability. Detailed particulars for the several States are not available for publication. The total length of tweed and cloth manufactured in the Commonwealth during 1918 was 4,367,787 yards. In New South Wales 2,044,745 yards of tweed and cloth, and in Victoria 1,429,050 yards were manufactured. The production of flannel in the Commonwealth amounted to 6,270,978 yards, while blankets, shawls, and rugs to the number of 728,319 were manufactured.

No cotton spinning or weaving, or linen weaving is carried on in Australia. Cotton ginning has been carried on intermittently in the northern States, and a mill was lately reopened at Ipswich in Queensland.

23. **Boots and Shoes.**—(i) *Details for each State.* Among the manufactories of Australia the boot and shoe industry holds an important place both in respect to the employment afforded and the extent of its output. The following table shews latest available particulars of this industry for each State :—

**BOOT AND SHOE FACTORIES, 1918.**

Items.	N.S.W. 1917-18.	Vic. 1917-18.	Q'land. 1918.	S.A. 1917-18	W.A. 1918.	Tas. 1918.	C'wealth.
Number of factories .. ..	111	231	30	33	17	10	432
Number of employees .. ..	4,481	8,565	1,130	822	265	236	15,499
Actual horse-power of engines employed ..	1,285	1,793	315	227	67	55	3,742
Approx. value of land and buildings £	312,320	345,015	a	a	24,938	15,394	6790,573
Approx. value of plant and machinery £	160,490	232,110	a	a	10,469	6,980	6465,020
Total amount of wages paid during year £	498,674	858,874	a	a	27,362	22,302	61,613,728
Value of fuel used .. ..	9,617	15,536	1,178	1,875	698	151	29,055
Value of raw material worked up ..	1,249,137	2,093,803	258,106	181,433	79,017	52,397	3,913,893
Total value of output .. ..	1,977,376	3,442,302	469,436	310,823	119,088	91,439	6,410,464
Value added in process of manufacture £	728,239	1,348,409	211,330	129,390	40,071	39,042	2,496,571

a Information not available for publication.

b Including Queensland and South Australia.

(ii) *Progress of Industry, 1913 to 1918.* The progress of the industry in the last five years is shewn in the following table :—

**DEVELOPMENT OF BOOT AND SHOE FACTORIES IN THE COMMONWEALTH, 1913 TO 1918.**

Items.	1913.	1914.	1915.	1916.	1917.	1918.
Number of factories .. ..	346	357	358	352	399	432
Number of employees .. ..	13,456	13,192	13,175	13,322	15,286	15,499
Actual horse-power of engines used ..	2,823	3,091	3,029	3,249	3,590	3,742
Approx. value of land and buildings £	629,787	656,576	677,307	692,673	750,551	790,573
Approx. value of plant and machinery £	429,994	415,693	418,529	428,837	447,389	465,020
Total amount of wages paid .. £	1,154,658	1,193,900	1,220,987	1,244,700	1,574,623	1,613,728
Value of fuel used .. .. £	18,073	18,902	20,713	22,248	31,131	29,055
Value of raw material worked up £	2,308,194	2,437,169	2,673,016	2,793,391	3,784,338	3,913,893
Value of final output .. .. £	4,004,486	4,156,590	4,486,885	4,617,322	6,143,018	6,410,464
Value added in process of manufacture £	1,696,292	1,719,421	1,813,869	1,823,931	2,358,710	2,496,571

The above table furnishes evidence of substantial and consistent development in the manufacture of boots and shoes in the Commonwealth during the period under review. Since 1913, the amount of wages paid increased from £1,154,658 to £1,613,728; the value of materials used from £2,308,194 to £3,913,893; and the final output from £4,004,486 to £6,410,464. During the same period the production of boots and shoes increased by 1,188,611 pairs, slippers by 111,004 pairs, and uppers by 14,495 pairs.

(iii) *Quantity and Value of Production.* The number and value of boots, shoes, and slippers made at factories in each State are shewn in the following table :—

**PRODUCTION OF BOOT AND SHOE FACTORIES, 1918.**

Particulars.	N.S.W. 1917-18.	Vic. 1917-18.	Q'land. 1918.	S. Aust. 1917-18.	W. Aust. 1918.	Tas. 1918.	C'wealth.
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QUANTITY (,000 OMITTED).

Boots and shoes .. .. pairs	3,772	6,050	743	634	206	164	11,569
Slippers .. .. pairs	473	206	34	32	2	..	747
Uppers a .. .. pairs	51	9	59	10	..	6	135

VALUE.

Boots and shoes .. .. £	1,853,317	3,300,000	412,707	280,337	102,849	86,577	6,035,787
Slippers .. .. £	63,097	35,000	6,973	5,581	890	105	111,646
Uppers a .. .. £	18,081	3,500	23,918	2,970	..	1,587	50,056

a Made for other than factory use.

24. **Clothing (Tailoring and Slop) Factories.**—The importance of this industry in the several States and in the Commonwealth as a whole is shewn in the following table :—

**CLOTHING (TAILORING AND SLOP) FACTORIES, 1918.**

Items.	N.S.W. 1917-18.	Vic. 1917-18.	Q'land. 1918.	S.A. 1917-18.	W.A. 1918.	Tas. 1918.	C'wealth.
Number of factories .. ..	426	435	129	129	53	33	1,205
Number of employees .. ..	9,497	9,153	3,080	2,172	829	457	25,188
Actual horse-power of engines employed .. ..	492	454	251	107	63	12	1,379
Approx. value of land and buildings £ .. ..	1,028,897	573,780	249,008	166,601	102,995	61,045	2,182,326
Approx. value of plant and machinery £ .. ..	66,841	82,720	31,443	14,456	8,263	3,231	206,954
Total amount of wages paid during year £ .. ..	788,941	657,997	236,615	159,474	75,703	35,626	1,954,356
Value of fuel used .. ..	11,239	13,708	4,261	3,959	1,722	..	34,889
Value of raw material worked up £ .. ..	1,340,324	1,533,075	461,805	250,483	125,474	47,991	3,759,152
Total value of output .. ..	2,563,571	2,648,371	867,986	492,323	235,587	116,982	6,924,820
Value added in process of manufacture £ .. ..	1,223,247	1,115,296	406,181	241,840	110,113	68,991	3,165,668

The considerable increases which have taken place in the prices of raw materials, and the lessened demand due to the absence of so many soldiers from Australia, were mainly responsible for the consistent decline of the tailoring and slop branch of the clothing industry during the past five years.

As will be seen from the following table, the number of factories decreased by 137, and the number of employees by 5,777 since 1913. The total output shews an increase of £1,046,701, but this increase merely indicates the advance which has taken place in the price of clothing during recent years :—

**DEVELOPMENT OF CLOTHING (TAILORING AND SLOP) FACTORIES IN THE COMMONWEALTH FROM 1913 TO 1918.**

Items.	1913.	1914.	1915.	1916.	1917. <sup>a</sup>	1918.
Number of factories .. ..	1,342	1,340	1,297	1,274	1,246	1,205
Number of employees .. ..	30,965	29,774	28,616	28,232	26,799	25,188
Actual horse-power of engines used .. ..	1,201	1,257	1,323	1,647	1,426	1,379
Approx. value of land and buildings £ .. ..	2,212,346	2,219,346	2,195,419	2,058,674	2,234,022	2,182,326
Approx. value of plant and machinery £ .. ..	191,752	209,167	214,967	221,940	216,718	206,954
Total amount of wages paid £ .. ..	2,075,916	1,979,088	1,895,146	1,889,195	1,941,667	1,954,356
Value of fuel used .. ..	31,219	31,825	33,312	34,767	36,052	34,889
Value of raw material worked up £ .. ..	2,732,241	2,864,893	3,096,134	3,403,019	3,356,572	3,759,152
Value of final output .. ..	5,878,119	5,953,001	6,125,272	6,447,853	6,461,405	6,924,820
Value added in process of manufacture £ .. ..	3,145,878	3,088,108	3,029,138	3,044,834	3,104,833	3,165,668

<sup>a</sup> Including two dyeworks and cleaning establishments in Western Australia.

25. **Dressmaking and Millinery.**—Particulars of dressmaking and millinery establishments are given in the following table :—

**DRESSMAKING AND MILLINERY ESTABLISHMENTS, 1918.**

Items.	N.S.W. 1917-18.	Victoria. 1917-18.	Q'land. 1918.	S. Aust. 1917-18.	W. Aust. 1918.	Tas. 1918.	C'wealth.
Number of factories .. ..	300	459	52	45	49	15	920
Number of employees .. ..	6,121	9,049	1,621	793	684	307	18,575
Actual horse-power of engines employed .. ..	276	321	10	10	21	10	648
Approximate value of land and buildings £ .. ..	457,797	500,930	43,582	32,418	45,305	7,535	1,087,567
Approximate value of plant and machinery £ .. ..	36,420	60,445	7,117	2,500	4,425	715	111,622
Total amount of wages paid during year .. ..	347,234	474,000	71,957	37,032	41,438	14,779	986,440
Value of fuel used .. ..	3,754	8,905	540	455	573	..	14,227
Value of raw material worked up £ .. ..	572,562	1,053,070	111,103	57,479	66,983	23,689	1,884,886
Total value of output .. ..	1,095,627	1,821,398	216,053	114,925	114,363	42,708	3,405,574
Value added by process of manufacture .. ..	523,065	768,828	104,950	57,446	47,380	19,019	1,520,688

The development of dressmaking and millinery establishments in the Commonwealth during the past five years is shewn in the following table :—

**DEVELOPMENT OF DRESSMAKING AND MILLINERY ESTABLISHMENTS IN THE COMMONWEALTH FROM 1913 TO 1918.**

Items.	1913.	1914.	1915.	1916.	1917.	1918.
Number of factories .. ..	995	991	892	890	932	920
Number of employees .. ..	18,217	17,318	15,616	16,383	18,211	18,575
Actual horse-power of engines used ..	376	410	423	569	602	648
Approx. value of land and buildings £	939,072	956,416	917,895	974,766	1,036,251	1,087,567
Approx. value of plant and machinery £	72,257	79,182	79,357	82,057	99,552	111,622
Total amount of wages paid .. ..	£ 772,748	£ 759,221	£ 714,131	£ 749,377	£ 873,269	£ 986,440
Value of fuel used .. ..	£ 0,238	£ 9,164	£ 9,440	£ 10,746	£ 13,341	£ 14,227
Value of raw material worked up .. ..	£ 1,287,050	£ 1,272,420	£ 1,224,687	£ 1,266,755	£ 1,505,495	£ 1,884,886
Value of final output .. ..	£ 2,492,105	£ 2,426,133	£ 2,364,862	£ 2,481,268	£ 2,976,725	£ 3,405,574
Value added in process of manufacture £	1,205,055	1,156,713	1,140,175	1,214,511	1,381,230	1,520,688

Despite the high prices, the dressmaking and millinery establishments in the Commonwealth continued to progress during the past five years.

The number of employees, the actual horse-power of engines used, and the capital invested have all shewn increases since 1913, while the amount of salaries and wages paid advanced from £772,748 to £986,440, and the value of the final output from £2,492,105 to £3,405,574.

**26. Electrotyping, Stereotyping, Printing, and Binding.**—The printing industry ranks high in importance among the manufactories of the Commonwealth. It affords employment for some 20,000 employees, and pays nearly £3,000,000 in salaries and wages. During 1918 the total value of the output amounted to £8,537,815.

The following table gives particulars of these industries in each State for the year 1918 :—

**ELECTROTYPING, STEREOTYPING, PRINTING, AND BINDING ESTABLISHMENTS, 1918.**

Items.	N.S.W. 1917-18.	Victoria. 1917-18.	Q'land. 1918.	S. Aust. 1917-18.	W. Aust. 1918.	Tas. 1918.	C'wealth.
Number of factories .. ..	419	385	138	74	64	26	1,106
Number of employees .. ..	7,731	7,291	2,711	1,290	1,000	691	20,714
Actual horse-power of engines employed .. ..	4,182	3,738	1,220	1,011	699	236	11,086
Approximate value of land and buildings .. ..	£ 1,555,279	£ 850,590	£ 471,073	£ 291,474	£ 222,543	£ 58,435	£ 3,449,394
Approximate value of plant and machinery .. ..	£ 1,099,508	£ 883,029	£ 317,149	£ 166,661	£ 153,817	£ 63,617	£ 2,683,781
Total amount of wages paid during year .. ..	£ 1,003,910	£ 923,169	£ 380,578	£ 156,232	£ 154,229	£ 94,354	£ 2,712,472
Value of fuel used .. ..	£ 31,330	£ 27,894	£ 15,679	£ 6,932	£ 5,625	£ 2,203	£ 89,663
Value of raw materials worked up .. ..	£ 1,382,136	£ 1,399,918	£ 399,256	£ 221,108	£ 190,348	£ 97,653	£ 3,690,419
Total value of output .. ..	£ 3,106,394	£ 3,119,982	£ 1,120,380	£ 494,299	£ 460,853	£ 235,907	£ 8,537,815
Value added in process of manufacture .. ..	£ 1,724,258	£ 1,720,064	£ 721,124	£ 273,191	£ 270,505	£ 138,254	£ 4,847,396

The development of electrotyping, stereotyping, printing, and binding in the Commonwealth since 1913 is shewn in the following table :—

**DEVELOPMENT OF ELECTROTYPING, STEREOTYPING, PRINTING, AND BINDING ESTABLISHMENTS IN THE COMMONWEALTH FROM 1913 TO 1918.**

Items.	1913.	1914.	1915.	1916.	1917.	1918.
Number of establishments .. ..	1,076	1,093	1,093	1,094	1,093	1,106
Number of employees .. ..	22,466	21,607	21,302	21,247	21,060	20,714
Actual horse-power of engines used ..	9,749	10,369	10,519	10,959	11,169	11,086
Approx. value of land and buildings £	2,936,422	3,055,120	3,081,872	3,346,985	3,387,008	3,449,394
Approx. value of plant and machinery £	2,496,490	2,592,391	2,607,317	2,666,977	2,664,637	2,683,781
Total amount of wages paid .. ..	£ 2,560,728	£ 2,561,214	£ 2,563,600	£ 2,582,539	£ 2,676,220	£ 2,712,472
Value of fuel used .. ..	£ 77,128	£ 93,296	£ 79,443	£ 84,637	£ 87,301	£ 89,663
Value of raw materials worked up ..	£ 2,073,843	£ 2,235,159	£ 2,152,096	£ 2,394,703	£ 3,112,140	£ 3,690,419
Value of final output .. ..	£ 6,604,290	£ 6,579,157	£ 6,404,426	£ 6,849,373	£ 7,775,300	£ 8,537,815
Value added in process of manufacture £	4,530,447	4,343,993	4,252,330	4,454,670	4,663,160	4,847,396

The latter table furnishes evidence of the activities of the printing establishments during the last five years. Since 1913 considerable increases have taken place in practically all of the items enumerated above, the value of the final output advancing from £6,604,290 to £8,537,815, or more than 29 per cent., and this despite the fact that more than 1,000 of the employees in this industry were withdrawn for military purposes.

**27. Coach and Wagon Building Works.**—This industry forms the principal branch of manufacture in Class XI. (see § 1, 3 above). The subjoined table gives particulars of factories in this branch of industry in each State. The returns include establishments for the manufacture of wheels, spokes, etc.

### COACH AND WAGON BUILDING WORKS, 1918.

Items.	N.S.W. 1917-18.	Victoria. 1917-18.	Q'land. 1918.	S. Aust. 1917-18.	W. Aust. 1918.	Tas. 1918.	C'wealth.
Number of factories .. ..	228	308	71	86	34	22	749
Number of employees .. ..	2,078	2,441	620	719	209	169	6,236
Actual horse-power of engines employed .. ..	1,297	703	224	461	149	69	2,903
Approximate value of land and buildings .. .. £	321,285	257,990	69,294	92,750	50,660	25,217	817,196
Approximate value of plant and machinery .. .. £	93,628	65,805	20,583	29,825	9,524	4,387	223,752
Total amount of wages paid during year .. .. £	232,096	241,768	61,859	65,973	27,867	15,052	644,615
Value of fuel used .. .. £	10,645	9,857	1,262	3,517	2,066	506	27,853
Value of raw material worked up .. £	261,836	300,441	79,706	80,552	38,164	21,139	781,858
Total value of output .. .. £	603,961	681,372	186,736	186,714	83,226	46,570	1,788,579
Value added in process of manufacture .. .. £	342,105	380,931	107,030	106,162	45,062	25,431	1,006,721

**28. Furniture and Cabinet Making and Billiard Table Making.**—These industries constitute the principal manufactures in Class XIII. (see § 1, 3 above). The following table gives particulars for each State :—

### FACTORIES FOR FURNITURE AND CABINET MAKING AND BILLIARD TABLE MAKING, 1918.

Items.	N.S.W. 1917-18.	Victoria. 1917-18.	Q'land. 1918.	S. Aust. 1917-18.	W. Aust. 1918.	Tas. 1918.	C'wealth.
Number of factories .. ..	182	197	68	30	31	9	517
Number of employees .. ..	2,557	1,956	1,129	742	376	248	7,008
Actual horse-power of engines employed .. ..	2,020	1,177	658	835	370	169	5,229
Approx. value of land and buildings .. £	322,314	225,860	99,782	66,801	66,715	19,235	800,707
Approx. value of plant and machinery .. .. £	69,914	53,660	37,742	28,677	15,869	6,549	212,411
Total amount of wages paid during year .. .. £	319,177	202,871	128,452	88,026	49,783	22,895	811,204
Value of fuel used .. .. £	9,333	4,901	2,943	2,281	1,520	531	21,509
Value of raw material used .. .. £	400,260	294,812	175,815	85,579	67,306	23,955	1,047,727
Total value of output .. .. £	842,732	614,586	378,960	205,743	134,850	62,777	2,239,648
Value added in process of manufacture .. .. £	442,472	319,774	203,145	120,164	67,544	38,822	1,191,921

**29. Electric Light and Power Works.**—Particulars of the electric light and power works of the Commonwealth for latest date available are given in the subjoined table. In 1913 there were 209 establishments employing 3,046 hands, whose salaries and wages amounted to £447,299; in 1918 these had increased to 257 establishments, 3,533 hands, salaries and wages £605,817, while the value of output had increased during the five years from £2,292,719 to £3,030,491.

## ELECTRIC LIGHT AND POWER WORKS, 1918.

Items.	N.S.W. 1917-18.	Victoria. 1917-18.	Q'land. 1918.	S. Aust. 1917-18.	W. Aust. 1918.	Tas. 1918.	C'wealth.
Number of factories ..	125	75	14	7	21	15	257
Number of employees ..	1,249	1,167	359	337	229	192	3,533
Actual horse-power of engines employed ..	104,722	48,526	15,334	16,778	31,047	19,091	235,498
Approx. value of land and buildings .. £	1,049,201	365,680	40,365	155,718	183,210	12,834	1,807,008
Approx. value of plant and machinery .. £	2,160,568	1,889,550	232,667	445,346	523,559	817,770	6,069,460
Total amount of wages paid during year .. £	219,613	183,948	63,396	57,156	45,868	35,836	605,817
Value of fuel used .. £	425,033	177,957	41,626	58,734	83,206	13,699	800,255
Total value of output .. £	1,321,112	760,117	335,863	228,881	245,362	139,156	3,080,491

30. Gas and Coke Works.—There are gas works in operation in nearly all the chief towns in the Commonwealth. In New South Wales there are thirteen and in Queensland two coke factories which are worked as separate industries. The subjoined table gives particulars of gas and coke works in each State :—

## GAS AND COKE WORKS, 1918.

Items.	N.S.W. 1917-18.	Victoria. 1917-18.	Q'land. 1918.	S. Aust. 1917-18.	W. Aust. 1918.	Tas. 1918.	C'wealth. b
Number of factories ..	58	47	18	5	4	2	134
Number of employees ..	1,971	2,089	593	459	60	151	5,323
Actual horse-power of engines employed ..	5,154	1,969	174	604	42	23	7,966
Approx. value of land and buildings .. £	1,024,368	478,020	192,238	17,997	a	a	1,773,112
Approx. value of plant and machinery .. £	1,956,425	1,376,560	961,986	479,032	a	a	5,000,607
Total amount of wages paid during year .. £	308,600	375,181	104,985	73,571	a	a	901,396
Value of fuel used .. £	86,341	5,262	10,900	13,149	a	a	122,846
Value of raw material used .. £	790,091	454,549	108,304	82,065	a	a	1,448,872
Total value of output .. £	1,969,280	1,263,030	367,336	267,709	a	a	4,005,876
Value added in process of manufacture .. .. £	1,179,189	808,481	259,032	185,644	a	a	2,521,004

a Information not available for publication.

b Including Western Australia and Tasmania.

The following table gives particulars regarding the quantity and value of the production of gas and coke works in each State during the year 1918 :—

## PRODUCTION OF GAS AND COKE WORKS, 1918.

Particulars.	N.S.W. 1917-18.	Victoria. 1917-18.	Q'land. 1918.	S. Aust. 1917-18.	W. Aust. 1918.	Tas. 1918.	C'wealth.
QUANTITY.							
Gas made .. 1,000 cub. ft.	6,539,334	4,505,847	1,052,575	a	169,342	a	13,193,834
Coke .. .. tons	648,714	200,660	45,131	a	7,512	a	864,730
VALUE.							
Gas .. .. £	1,127,188	1,000,000	291,886	a	47,798	a	2,721,331
Coke .. .. £	587,568	175,000	41,914	a	10,913	a	866,254
COAL USED.							
Coal .. .. tons	1,002,170	318,560	90,301	a	14,525	a	1,494,102

a Not available for publication.

b Including South Australia and Tasmania.

c Exclusive of particulars for Coke Works.

## SECTION XIV.

### WATER CONSERVATION AND IRRIGATION.

#### § 1. Artesian Water.

1. *General.*—In every country in which droughts are recurrent, there are few problems the solution of which is of greater importance than that of an adequate system of water conservation. Much has been done in the Commonwealth so far as the supply of water to centres of population is concerned, and a description of several of the metropolitan water works will be found herein, viz., in the section dealing with *Local Government*. In May, 1912, an Interstate Conference on artesian water was held in Sydney, at which it was agreed that combined Governmental action should be taken with reference to delimitation of the artesian basin, hydrographic survey, analyses and utilisation of artesian water, &c. (See map on page 559.)

(i) *The Great Australian Artesian Basin.* In speaking of the "Great Australian Artesian Basin," the area is understood which includes (a) considerably more than one-half of Queensland, taking in practically all that State lying west of the Great Dividing Range, with the exception of an area in the north-west contiguous to the Northern Territory; (b) a considerable strip of New South Wales along its northern boundary and west of the Great Dividing Range; and (c) the north-eastern part of South Australia proper, together with the extreme south-eastern corner of the Northern Territory. This basin (shewn approximately by the map on page 559) is said to be the largest yet discovered, and measures about 569,000 square miles, of which 376,000 square miles are in Queensland, 90,000 square miles in South Australia, 83,000 square miles in New South Wales, and 20,000 square miles in the Northern Territory. The area of the intake beds is estimated at 60,010 square miles, viz., 50,000 square miles in Queensland and 10,010 square miles in New South Wales. A description of the basin and its geological formation will be found in previous issues of the Year Book (see No. 6, p. 569).

(ii) *The Western Australian Basins.* The Western Australian Basins fall naturally within five distinct groups, viz., the Eucla Basin, in the extreme south-east of the State, extending well into South Australia along the shores of the Great Australian Bight; the Coastal Plain Basin, west of the Darling Range; the North-West Basin, between the Murchison and Ashburton Rivers; the Gulf Basin, between Cambridge Gulf and Queen's Channel; and the Desert Basin, between the De Grey and Fitzroy Rivers. The boring operations in these basins are referred to hereinafter (see page 553.)

The Recent and Tertiary strata which enter Western Australia at its eastern border, and which have a prevailing dip towards the Great Australian Bight, form the Eucla artesian water area. But where boring operations have been undertaken, the water has been found to be salt or brackish, and there are other conditions affecting the supply, such as local variations in the thickness of the beds, their relative porosity, and the unevenness of the floor upon which they rest, which, so far, have not been examined with sufficient thoroughness to enable many particulars to be given in regard to this basin.

In the Coastal Plain Basin to the west of the Darling Ranges artesian boring has, on the other hand, been carried on successfully for many years.

(iii) *The Murray River Basin.* The Murray River Basin extends over south-western New South Wales, north-western Victoria, and south-eastern South Australia. It is bounded on the west by the azoic and palæozoic rocks of the Mount Lofty and other ranges, extending northwards from near the mouth of the Murray to the Barrier Ranges, and on the east and north-east by the ranges of Victoria and New South Wales. This tertiary water-basin is occupied by a succession of sedimentary formations, both porous and impervious. It is of interest to note that the waters of the Murray River are partly supplied by influx from the water-bearing beds of this basin; this is proved by the fact that, at low water, springs are observed at certain places flowing into it from beneath the limestone cliffs from Pyap Bend downwards. Similar springs exist along the courses of other branches of the River Murray system, where they cut through the tertiary formation. On the Victorian side several bores have been put down, and water has been struck at various levels.

(iv) *Plutonic or Meteoric Waters.* In previous Year Books will be found the theory of Professor Gregory<sup>1</sup> as to the origin of the water in the Australian artesian basin, together with the objections held thereto by a former Government Geologist of New South Wales.<sup>2</sup> (See Year Book No. 6, p. 570.)

(v) *Particulars of Artesian and Sub-artesian Bores.* The following table gives particulars of artesian and sub-artesian bores in each State and in the Northern Territory :—

COMMONWEALTH AND STATES.<sup>a</sup>—PARTICULARS OF ARTESIAN AND SUB-ARTESIAN BORES, 1918-19.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust. <sup>d</sup>	W. Aust.	N. Ter.	Total.
Bores existing .. No.	498	309	3,578	142	115	151	4,793
Total depth bored .. feet	825,347	84,800	3,308,789	109,398	121,036	45,000	4,492,370
Daily flow .. ,000 gals.	c90,068	b	429,708	e18,159	32,071	700	b
Depth at which artesian water was struck—							
Maximum .. feet	4,338	700	6,000	4,850	d1,016	f1,250	{ 6,000
Minimum .. feet	89	150	10	55	d175		
Temperature of flow—							
Maximum .. °Fahr.	140	b	210	208	d140	b	e210
Minimum .. °Fahr.	74	b	81	82	d80	b	c80

<sup>a</sup> There are no artesian bores in Tasmania. <sup>b</sup> Not available. <sup>c</sup> Incomplete. <sup>d</sup> Government bores only. <sup>e</sup> Exclusive of flow from pumping bores. <sup>f</sup> There is only one artesian bore in Northern Territory; water struck at 1,250 feet.

2. *New South Wales.*—(i) *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. Artesian boring in New South Wales dates from 1879, when a private bore was put down on the Kallara pastoral holding, between Bourke and Wilcannia. The first Government bore was that at Goonery, on the Bourke-Wanaaring road, completed in 1884.

The following statement shows the extent of the work which has been successfully effected by the Government and by private owners up to 30th June, 1919 :—

NEW SOUTH WALES ARTESIAN BORES, 1919.

Bores.	Flowing.	Pumping.	Total.	Total Depth.
For Public Watering-places, Artesian Wells, etc. ..	120	35	155	321,229
For Country Towns Water Supply ..	2	1	3	4,354
For Improvement Leases ..	37	4	41	65,027
Total Government Bores ..	159	40	199	390,610
Private Bores .. ..	218	81	299	434,737 -

The average depth is 2,060 feet in the case of Government bores, and of private bores 1,470 feet, and it ranges from 89 to 4,338 feet. The two deepest wells in New South Wales are those at Boronga, in the County of Stapylton, with a depth of 4,338 feet and a present outflow of 941,887 gallons; and at Dolgelly, in the Parish of Carenga, in County

1. See J. W. Gregory, F.R.S., D.Sc.: "The Dead Heart of Australia," London, John Murray, 1908; "The Flowing Wells of Central Australia," Geogr. Journ., July and August, 1911.

2. E. F. Pittman, A.R.S.M., formerly Government Geologist of New South Wales: "Problems of the Artesian Water Supply of Australia, with special reference to Professor Gregory's Theory." (Clarke Memorial Lecture, delivered before the Royal Society of New South Wales, 31st October, 1907); "The Great Australian Artesian Basin," Sydney, 1914; "The Composition and Porosity of the Intake Beds of the Great Australian Artesian Basin," Sydney, 1915.



Stapylton, with a depth of 4,086 feet, and a present discharge of 548,803 gallons per day. The largest flow at the present time is that at the Wirrah bore, in the County of Benarba, which yields 1,168,710 gallons a day, and has a depth of 3,578 feet.

Of the 547 bores which have been sunk, 377 are flowing, and give an aggregate discharge of 90,068,275 gallons per day; 121 bores give a pumping supply, the balance of 49 being failures; the total depth bored represents 887,436 feet.

The flow from 73 bores is utilised for supplying water for stock on holdings served in connexion with Bore Water Trusts or Artesian Districts under the Water Act of 1912. The total flow from these bores amounts to 35,728,424 gallons per day, watering an area of 4,360,167 acres by means of 2,666 miles of distributing channels. The average rating by the Bore Trusts to repay the capital cost with 4 per cent. interest in twenty-eight years, is 1.5d. per acre, including the cost of maintenance and administration.

In the majority of cases the remaining bores are used by pastoralists for stock watering purposes only, but in a few instances the supply is utilised in connexion with country towns.

The watering of the north-western country by means of bore water has largely increased the carrying capacity of the land; and, what is of perhaps greater importance, it has made comparatively small pastoral holdings practicable in country previously confined almost entirely to the operations of companies holding immense areas.

It having been determined that multiplicity of bores is the chief factor governing the annual decrease in bore flows, and also that limiting the discharge from a bore will prolong its flowing life, action has been taken to prevent any waste by controlling the bore flow to actual requirements. It is confidently anticipated that this action will materially reduce the rate of decrease in the future.

(ii) *Shallow Boring.* The scheme described in Official Year Book No. 9 (p. 520) for assisting settlers by sinking shallow bores has met with considerable success.

Operations commenced with one plant only, but the number has been increased gradually until 21 plants are at work.

A large number of applications from settlers wishing to take advantage of the liberal conditions offered under the regulations has been received, and further applications are coming to hand daily, consequently the plants now in use will probably be insufficient to cope with the demand. Out of 372 bores put in hand up to 30th June, 1919, 47 have proved failures.

There can be no question that the added value of the holdings represented by the bores already put down is considerably in excess of their cost, and as fairly conclusive evidence of this, it might be stated that in several instances the Government Savings Bank has, on completion of a bore, made the settler a sufficient advance to enable him to pay the total cost in cash.

In addition to the work carried out under the Shallow Boring Regulations outlined above, shallow boring plants have sunk 19 bores in the Pilliga scrub and on Crown lands for the Lands and Forestry Departments.

The fact that of the bores put down in the Pilliga scrub, 42 are giving a flowing supply, adds much to their value, and is of special interest as indicating the possibility of tapping a small and hitherto unknown artesian basin.

(iii) *Private Artesian Bores.* Much has been done in the way of artesian boring by private enterprise. As far as can be ascertained, 324 private bores have been undertaken in New South Wales, of which 25 were failures. The yield of the flowing bores is estimated at 39 million gallons per day. No data are available regarding the pumping bores.

3. *Victoria.*—Victoria lies altogether outside the Great Australian Artesian Basin, and as water is generally available from surface or shallow underground supplies, there has not been much occasion for artesian boring. As early as 1880, however, an artesian well was bored at Sale, which gave a large supply of water of fair quality before it failed through corrosion of the casing. In 1905 a new bore was put down, which at a depth of 277 feet yielded sufficient water to fill Lake Guthridge, a local depression. But as the water was impure, and contained an excess of sulphuretted hydrogen, boring operations

were continued to 520 feet, when the lowering of the casing shut off the supply of water. A further bore was then put down at some distance from the first, and this, at a depth of 238 feet, yielded a fresh and clear water supply of about 145,000 gallons per day. Corrosion troubles occurred here also, and at the end of 1912 a third bore was put down to a depth of 235 feet, artesian flows being struck at 187 feet and 235 feet. Towards the end of 1915 a flow of 200,000 gallons per day was struck at a depth of 125 feet on the Powerscourt Estate, near Maffra. Other bores are being put down in the locality.

Largely due to the failure of surface supplies in the drought of 1878 to 1886, no less than 499 bores were, before the end of 1888, put down by shire councils aided by the Government. The total depth bored was 40,000 feet; fresh water was struck in 78 instances; 47 yielded brackish but usable water; 229 were salt, while the balance were dry. The bores covered practically the whole of the settled portions of Northern and North-western Victoria and parts of Gippsland.

In the late eighties a number of bores were put down in the north-western part of the State, varying from 200 to over 2,000 feet in depth, but without any notable success. In 1897 a Board reported on boring for artesian water supply in the Mallee country, but this report was adverse, except as regards the extreme northern portion thereof. In 1906 eight bores were put down on the Overnewton Estate, Maribyrnong, to depths varying from 147 to 272 feet; small supplies of good and medium water for stock purposes were obtained, but only one of the wells yielded water fit for domestic purposes. In 1908 boring was commenced in the Mallee country near the border east of Pinnaroo in South Australia, and a line of bores from the Border to Kow Plains has proved the existence of a large sheet of underground water. Altogether, 88 bores have been successful in striking fresh water, and their depths vary from 155 to 752 feet, the water rising to within from 207 to 6 feet of the surface. In three instances the bores flow, the water rising from 4 to 17 feet above the surface. The fresh water extends nearly as far east as the 142nd meridian, and its northern limit is approximately the 35th parallel.

At 30th June, 1919, the number of existing bores in use in Victoria was 309, from which supplies are obtained by pumping. The total depth bored amounted to 84,800 feet, while the maximum and minimum depths at which water was struck were 700 and 150 feet respectively. The figures include also about 140 existing private bores, with a total depth of about 30,000 feet.

4. Queensland.—A return relating to the 30th June, 1919, classifies the Queensland artesian bores under the following headings:—

#### QUEENSLAND ARTESIAN BORES, 30th JUNE, 1919.

Sunk by—	Artesian Flows.	Sub- Artesian or Pumped Supplies.	In Progress, Abandoned, or Uncertain.	Total.
Government .. .. .	63	74	116	253
Local governing authorities .. .. .	16	21	17	54
Private owners .. .. .	1,139	1,212	920	3,271
Total .. .. .	1,218	1,307	1,053	3,578

Of the 1,218 flowing bores, 129 were of less than 10,000 gallons per day; 277 from 10,001 to 100,000 gallons; 522 from 100,001 to 500,000 gallons; 274 from 500,001 to 1,500,000 gallons; 13 from 1,500,001 to 2,000,000 gallons; and 3 from 2,000,001 gallons upwards. The deepest well was about 40 miles west of Blackall, lying east of the Barcoo River; this had a depth of 6,576 feet, and was stated to yield 107,300 gallons daily. Further sinking is in progress. The flow is, of course, a comparatively small one, many wells yielding, when uncontrolled, from one to three million gallons a day. The waters of many of the wells have been analysed, and some found suitable for wool-scouring only, others are suitable for watering stock but not for irrigation, owing to

the presence of alkali; others again serve for both stock and irrigation, while some, such as those containing sulphuretted hydrogen, are not of any use. Water fit for stock may generally be said to be "safe" for domestic purposes in spite of its slightly mineral taste. The wells yielding the mineral waters known as "Helidon Spa," "Boonah Spa," and "Junot Spa," which are much in use in Queensland and New South Wales, are shallow wells from 60 to 200 feet in depth.

The following table shews particulars as to Queensland bores at the end of June, 1919 :—

#### QUEENSLAND ARTESIAN AND SUB-ARTESIAN BORES, 30th JUNE, 1919.

Particulars.	State and Local Authorities.	Private.	Total.
Bores existing .. .. . No.	307	3,271	3,578
Total depth bored .. .. feet	258,781	3,048,008	3,306,789
Daily flow .. .. . gallons	35,338,480	394,369,670	429,708,150
Depth at which artesian water was struck—			
Maximum .. .. . feet	4,256	6,000	..
Minimum .. .. . "	167	10	..
Temperature of flow—			
Maximum .. .. . °Fahr.	198	210	..
Minimum .. .. . °Fahr.	84	81	..

5. *South Australia.*—There were in South Australia 142 Government bores existing at 30th June, 1919, of which 35 were artesian and 107 sub-artesian. There are 106 under 1,000 feet in depth, 22 from 1,000 to 2,000 feet; 6 from 2,000 to 3,000 feet; 5 from 3,000 to 4,000 feet, and 3 over 4,000 feet. The deepest flowing bore was at Patchawarra, on the Farina to Haddon, *via* Innamincka, route, measuring 5,458 feet, but now yielding only 50 gallons per day. The maximum flow, *viz.*, 1,250,000 gallons, is obtained at Coonie Creek, east of Lake Frome.

The following table shews particulars as to South Australian bores at 30th June, 1919 :—

#### SOUTH AUSTRALIAN BORES, 1919.

Particulars.	Artesian and Sub-artesian.
Bores existing .. .. .	142
Total depth bored .. .. feet	109,398
Daily flow .. .. . gallons	(a)
Depth at which water was struck—	
Maximum .. .. . feet	4,850
Minimum .. .. . feet	55
Temperature of flow—	
Maximum .. .. . °Fahr.	208
Minimum .. .. . °Fahr.	82
Total cost of construction of bores up to 30th June, 1919	£294,657
Expenditure during year on boring operations	£5,682

(a) Not available.

(i) *Bores between the Murray and the Eastern Boundary of the State.* The sinking of bores across the Ninety-mile Desert between the Murray and the Victorian boundary was commenced in 1886 at Coonalpyn; with the exception, however, of salt water at 55 feet, no success was met with. Ki Ki bore was sunk in 1887, and at 361 feet a good supply of water fit for stock was struck. Tintinarra bore was sunk in 1887; it was artesian when first tapped. The water was found to be fit for locomotive engines and is still used for that purpose. The bore at Emu Flat was also sunk in 1887. In 1904 a

bore was sunk at Cotton, and numerous successful bores have since been put down by the Public Works Department, and subsequently by residents of the district. The water rises to a distance from the surface of from 15 to 320 feet, and the maximum quantity obtained per diem is 48,000 gallons at the Gosden bore. Several wells, ranging in depth from 55 to 221 feet, have also been sunk in this district. The latest Government bores are Kumara in the Hundred of Kingsford, and Perponda in the Hundred of Vincent. The former has a depth of 240 feet, and the water, which is in large supply, rises to within about 96 feet of the surface. The latter is 300 feet in depth, and the water rises to within 56 feet of the surface. The water is fresh, containing about  $\frac{3}{4}$  oz. salts and other solid matter per gallon.

(ii) *Bores West of Oodnadatta.* A series of bores has been sunk, beginning with Breaden bore, 20 miles west of Oodnadatta, which was put down in 1911. The others since put down in this district are at Gypsum, Imbitcha, Mirackina, Raspberry Creek, Appreetinna, Wintinna, and Marla. Of these, the only artesian supply is at Raspberry Creek, where 1,000,000 gallons per day of good water are obtained. The depths of these bores range from 280 feet at Mirackina to 1,122 feet at Breaden, and the water from all of them is good.

(iii) *Other New Bores.* New bores are being sunk at Montecollina on the Innamincka track, about 6 miles north of Box Flat; Stuart's Range, about 90 miles west of William Creek; and Mount Sarah on the Marree to Charlotte Waters route.

(iv) *Eyre Peninsula.* From time to time bores have been sunk on Eyre Peninsula, but with little success. In some instances, stock water ( $1\frac{1}{2}$  ozs. salts to the gallon) was obtained, but this only occurred on the Nullarbor plains. In all other cases the water struck was far too salt to be used. Consequently the supply of water is now principally from catchments. A number of reservoirs have been constructed to hold from 1,000,000 to 9,000,000 gallons each. Many underground tanks have been built to contain from 40,000 up to 500,000 gallons each.

6. *Western Australia.*—The work by which the Government of Western Australia provides a permanent supply of water to Kalgoorlie, Boulder and adjacent districts on the eastern goldfields comes properly under the heading of "Water Supply Works." A description of this undertaking is fully given in previous issues of the Year Book. (See No. 6, p. 576.)

In August, 1912, the administration of the Goldfields Water Supply and of the Mines Water Supply was transferred to a newly established Water Supply, Sewerage and Drainage Department. The statistics in connection with this department will be found in the section of this book dealing with *Local Government*.

The following table shews particulars as to Western Australian artesian bores at 30th June, 1919:—

WESTERN AUSTRALIAN ARTESIAN BORES, 30th JUNE, 1919.

Particulars.	State.	Private.	Total.
Bores existing .. .. .	66	49	115
Total depth .. .. . feet	81,092	39,944	121,036
Daily flow .. .. . gallons	23,864,700	8,206,700	32,071,400
Depth at which artesian water was struck—			
Maximum .. .. . feet	4,016	(a)	..
Minimum .. .. . feet	175	(a)	..
Temperature of flow—			
Maximum .. .. . °Fahr.	140	(a)	..
Minimum .. .. . °Fahr.	60	(a)	..

(a) Not available.

To 30th June, 1919, the total number of Government bores was 66, and there were approximately 49 private bores recorded in addition. The total cost of construction of State bores to 30th June, 1918, was about £140,128, of which amount £1,537 was

expended during the twelve months ended 30th June, 1918. The maximum outflow, 4,000,000 gallons per day, was obtained at Leederville in connection with the Metropolitan Water Supply at 2,097 feet.

The boring operations which have been carried out in the artesian basins along the West Australian Coast are as follows:—

(i) *The Coastal Plain Basin or Perth Area*, which, generally speaking, extends from Cape Leeuwin to Dongarra, and from which the Metropolitan Water Supply is largely drawn, yields a supply of water mostly fresh and suitable for domestic purposes, though towards the north it becomes brackish and is only suitable for stock.

There are 57 bores in the Metropolitan District, several of which have been put down to augment the hills supply and the domestic supply of the suburbs, and Fremantle is largely dependent upon this source.

(ii) *The North-west Basin or Carnarvon Area* may be said to extend from Gantheaume Bay in the south to Onslow in the north, and embraces a very large tract of ideal sheep country.

Many private bores have been put down on sites which permit of the gravitation of the water for miles, and, by this means, a very considerable area has been put under stock. Some remarkable flows have been obtained and, in one case, at a depth of 300 feet a flow reputed to be 3,000,000 gallons per day was struck, the water being suitable for stock. In all, about 27 bores have been put down.

(iii) *The Gulf Basin or Broome Area*. So far very little development work has been done. Artesian bores have been put down in the town site, and the domestic requirements of the town are entirely supplied from this source. The area extends from Condon in the south-west to the Meda River beyond Derby in the north, and for a considerable distance inland. So far only 5 bores have been sunk, 2 being at Broome and 2 at Derby, and 1 on the telegraph line on the road between Derby and Hall's Creek, about 67 miles inland.

(iv) *Eucla Area*. This area extends from Eucla, on the South Australian border, to west of Israelite Bay. So far, beyond the bores put down on the route of the Trans-Australian Railway, very little has been done in proving the resources of this area. In 1902 the first bore was sunk, about 35 miles north of Madura, and sub-artesian water struck at 430 feet, at an elevation of 400 feet above sea level. Following upon this, a deep bore was put down at Madura, below the cliff and nearer the coast, when an artesian supply of stock water was obtained at a depth of 2,101 feet, yielding 31,000 gallons per day. This was followed later with about 20 bores along the survey line of the proposed railway, which runs east and west about 90 miles inland. These bores were put in at intervals between the 205 mile peg and the South Australian border, and ranged in depth between 323 and 1,344 feet. In most instances only stock water was struck at depths varying between 300 and 1,300 feet, and the largest estimated supply was about 10,000 gallons per day.

7. *Northern Territory*.—In the Northern Territory, bores to the number of 151 were put down up to 30th June, 1919, 45 belonging to the Commonwealth Government. This number does not include bores put down by hand-boring plants for test purposes. One bore is artesian, and 150 give a pumping supply. The cost of construction and equipment of the Government bores exceeded £20,000. The total depth bored in State and private bores was 45,000 feet. Maximum depths were 1,474 feet in State, and 1,760 feet in private bores, and minimum depths were 110 feet and 60 feet respectively.

## § 2. Irrigation Schemes.

1. *General*.—Australia's first experiments in irrigation were made with the object of bringing under cultivation areas in which an inadequate rainfall rendered agricultural and even pastoral occupations precarious and intermittent, and, although these original settlements have for the most part proved fairly successful, most of the States, instead of promoting new settlement in unoccupied regions, are adopting the policy of making existing settlement closer, by repurchasing big estates and large farms, subdividing

them into holdings of suitable sizes for cultivation, and selling the land upon easy terms of payment. It is in connexion with this Closer Settlement policy that the special value of irrigation is recognised.

2. *New South Wales.*—(i) *Water Conservation and Irrigation Works.* The provision of an adequate water supply for other than domestic purposes is essential to the well-being of all primary industries, and particularly in a country liable to dry seasons which affect extensive areas. A large portion of the State receives an adequate and regular rainfall, but there is a considerable extent of country where all the factors exist which are requisite for success in agricultural pursuits excepting only 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 induced the Government to undertake various detached works and schemes, which will constitute portion of the ultimate irrigation system necessary to serve the whole State.

The system, and the works necessary to its maintenance and development, within the State of New South Wales, are under the control of the Water Conservation and Irrigation Commission, which consists of the Minister for Agriculture for the time being as Chairman, and two other Commissioners. The works controlled by the Commission include the great Murrumbidgee Irrigation Scheme, the small irrigation settlements at Hay and Wentworth, natural works of water conservation, shallow boring for settlers, and water trusts and artesian bore trusts operating under the Water Act. The Commission has control also of storages and diversions of water by private persons for purposes of conservation and irrigation.

(ii) *Murrumbidgee Irrigation Scheme.* The main features of the scheme include the 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 240 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; four main branch canals; and a series of subsidiary canals and distributing channels through the area to be irrigated; bridges, checks, regulators and other structures throughout the entire system, and meters for measuring the volume allowed to each farm. Towns and villages, also roadways to serve each farm, and a general surface drainage system, are also included in this scheme.

The site of the storage dam is at Burrinjuck, three 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. Ample water is being stored to meet the requirements of the farms already occupied, and to allow of water being drawn off during the summer months to augment the natural flow of the river for the benefit of riparian holders down stream. The reservoir will have a capacity of 33,612 million cubic feet, or 771,641 acre feet, the catchment area being about 5,000 square miles, drained by three principal streams—the Murrumbidgee, Goodradigbee, and Yass Rivers—up which the water will be backed, when the dam is full, to distances of 41 miles, 15 miles, and 22 miles respectively. Direct communication between Burrinjuck and the Main Southern railway has been provided by the construction of a 2-ft. gauge line from Goondah, a distance of 26 miles.

The diversion weir is situated at Berembed, about 40 miles by river and 19 miles in a direct line above the town of Narrandera. It is founded on a solid granite bar extending across the river, and has a length over all of 270 feet between abutments, divided into a 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 channoine wickets, manipulated from a punt moored up-stream. During the winter freshets the wickets are lowered, thus affording a clear water-way in the river channel.

The main canal branches from the river just above the weir, and, after passing through Narrandera, continues in a north-westerly direction, skirting the hills abutting on the plains. A scheme for enlarging the main canal to double its present capacity (1,000 cubic feet per second) has been approved by Parliament and the work is now in progress. The principal canals are the Gogeldrie canal, which off-takes at 47 miles from Berembed, and runs approximately parallel to the Narrandera-Hay railway through

the Yanco area; the Mirrool branch canal, which off-takes at 78 miles from Berembé and supplies portion of the Mirrool area; and the Northern branch canal now under construction, which off-takes at 76 miles from Berembé.

The irrigation area is situated on the northern side of the Murrumbidgee River, where it is anticipated that there will ultimately be upwards of 200,000 acres under irrigation in blocks devoted to fruit and vegetable growing, dairying, stock-raising, etc. With the aid of irrigation the soil and climate of these areas are suitable for the production of apricots, peaches, nectarines, prunes, pears, plums, almonds, melons, cantaloups, and citrus fruits, also wine and table grapes, raisins, sultanas, figs, olives, and most varieties of vegetables and fodder crops. Dairying and pig-raising are already being successfully undertaken by settlers in the areas.

The first area made available for settlement was in the vicinity of Yanco Siding on the Hay railway line. The second, which is situated on the northern side of the Mirrool Creek, is served by the branch railway from Cootamundra, which now terminates at Griffith, but which it is proposed to extend to Hillston.

Further areas are being thrown open for settlement as the construction works are completed. Farms varying in size from 2 acres to over 200 acres have been made available. The "water right" or number of "acre feet" of water allotted to each holding is specified when the holding is notified as available for application. An "acre foot" of water means such a quantity, 12 inches deep, as would cover an area of one acre. The cost of water supplied by gravitation is five shillings per acre foot. The charge for water is reduced during the early years. For the first year the charge is 2s. 6d. per acre foot, thereafter increased annually by sixpence per acre foot until in the sixth and following years the full rate of five shillings becomes payable. The average horticultural farm is from 15 to 25 acres, but to suit the requirements of dairymen and other stock farmers, blocks of larger areas have been made available. These comprise non-irrigable or "dry" areas, in addition to the irrigable portion. Some of these larger farms are 200 acres or upwards in extent, but the maximum water right allowed in respect of any of these larger farms is 80 acre feet. Additional water may be obtained, if available, by arrangement.

The conditions for the disposal of irrigation blocks are contained in the Crown Lands Consolidation Act of 1913, and Amending Acts. Any person of or over the age of sixteen years, if a male, or eighteen years if a female (other than a married woman not living apart from her husband under decree of judicial separation), or two or more such persons jointly, may apply for a farm or block. A married woman, not judicially separated from her husband, may, however, if she be not subject to any other statutory disqualification, (a) acquire by way of transfer, with the consent of the Minister, out of her own moneys, a lease within an irrigation area; (b) continue to hold a lease which she held before her marriage; (c) hold a lease which may devolve on her by will or intestacy of a deceased person. The tenure is perpetual leasehold.

The improvement conditions attached to the farm holdings include fencing, planting trees for windbreaks, construction of dwellings, and destruction of noxious plants.

Subject to such conditions as to security and terms of repayment as the Commission may think fit to impose, settlers may obtain an advance, or have payment of amounts owing suspended. Such advances are limited to the total amount of funds made available by Parliament for this purpose.

The Government Savings Bank Commissioners have statutory power to make loans upon mortgage of irrigation farm leases, and many settlers have already obtained help from the Bank. Concessions in railway fares and freights are made on New South Wales railways to bona fide applicants for land.

A large area of land on both the Yanco and Mirrool sections of the areas has been specially reserved for discharged soldiers, and camps have been established at which selected applicants are accommodated, and after satisfactory service for a period of three months, are eligible to apply for farms. While in camp soldiers are employed upon

clearing and other work in connexion with the development of their blocks, and are paid award rates while so engaged. Tent accommodation is provided, but occupants of the camp must be prepared to make their own arrangements with regard to camp equipment and catering. Upon taking up residence on their farms these settlers will, subject to their intelligent and energetic use of the advances made, as well as their own labour, in the improvement of their farms, be provided with funds up to £625 to enable them to develop their holdings, and in addition thereto such further advances may be made from time to time as found necessary to bring the farms to a proper stage of productiveness. All payments for rent, etc., and repayments of advances will be suspended in the case of fruit farms for five years and in the case of dairy farms for two years from the date of granting of the farm. The total indebtedness including interest will then become payable by instalments extending over a period of twenty years.

Towns and villages have been established at centres of the Yanco and Mirrool Irrigation Areas. The Commission is empowered to construct streets, and to provide water supply, sanitary, and other services.

An up-to-date butter factory is in operation at Leeton. The output for the year under review was approximately 186 tons, from between 137 and 140 suppliers. The factory also supplies ice to town residents and settlers. A fruit and vegetable canning factory has also been provided, which purchases vegetables and fruits grown by the settlers, and the output is rapidly increasing. A bacon factory and abattoirs have been erected at Yanco, where up to 200 pigs, including a considerable number from other districts in the Riverina outside the irrigation areas, are treated weekly, and where stock for butchers is slaughtered for local consumption.

One of the most important departmental undertakings on the irrigation areas is undoubtedly the State Nursery. For some years past the Leeton Nursery has been supplying trees to settlers, and in 1916 a second nursery was established at Griffith. Every effort is made to supply only the very best trees, free from disease, and to ensure this, as much use as possible is being made of budding wood from proven trees in the Leeton Nursery, and at the Yanco Experiment Farm.

The Department of Agriculture, which controls the Yanco Experiment Farm, has also established at Griffith (Mirrool irrigation area), a Viticultural Nursery for the propagation of vines on phylloxera resistant stocks. These stocks are intended not only for the supply of settlers on the areas, but for vignerons in all parts of the State.

An electric power station has been erected near Yanco Siding; electric light and power are supplied to the various factories, business people, and residents of Leeton and Yanco, and the supply is also available for settlers when the number of applicants in any centre warrants the connections being made.

On the 31st December, 1919, 1,011 farms were held, representing a total area of 47,993 acres, and the number of town blocks held was 260.

In the matter of cultivation, the following particulars indicate the extent of the work performed by the settlers:—There are approximately 3,719 acres under stone fruit, 488 under pome fruit, 2,215 under citrus fruits, 1,285 under vines, and 355 acres under mixed fruits. The estimated population of the areas is about 8,000.

(iii) *Other Irrigation Settlements.* Irrigation settlements have been established at Curlwaa near Wentworth, and at Hay. These were in 1913 placed under the control of the Water Conservation and Irrigation Commission.

(a) *Curlwaa Irrigation Area.* The Curlwaa Irrigation area embraces 10,600 acres, of which 1,405 acres have been subdivided into 97 irrigable blocks. On 31st December, 1919, 94 blocks, comprising 1,402 acres, had been taken up, in areas of  $1\frac{1}{2}$  to 37 acres. There are also 94 non-irrigable holdings of from  $\frac{1}{2}$  to 336 acres, comprising 7,155 acres, of which 91 blocks, representing an area of 7,103 acres, were in occupation on the above date. An area of 1,290 acres has been reserved as a common. The balance of the area is made up of road, channel and other reserves. During 1918-19 approximately 1,100 acres were under cultivation, the greater part being devoted to fruit, including oranges,



peaches, apricots, nectarines, pears, grapes, sultanas, and currants. It has been proved beyond doubt that the Curlwaa soil is eminently suited to the growth of citrus and other kinds of fruit. Some of the finest oranges grown in New South Wales are produced on this area.

The estimated weight of dried fruits produced on the Curlwaa area in the year 1918-19 was 7,992 cwt., the principal yields being sultanas, 3,343 cwt.; peaches, 1,306 cwt.; currants, 2,073 cwt. In the previous year the product was 6,580 cwt.; in 1916-17, 4,865 cwt.; in 1915-16 it was 5,955 cwt.; in 1914-15 it was 3,178 cwt.; in 1913-14, 5,118 cwt.; and in 1912-13, 4,247 cwt. The heaviest crops have been sultanas and currants. The value of the dried fruit production for the twelve months ending 30th June, 1919, is estimated at £31,768; in addition to which the area produced fresh fruit, crops, and other produce of the value of £12,101.

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 five pumpings during the 1918-19 season, 98,569,100 cubic feet of water were supplied. The length of the main channels is about 9 miles 10 chains. The land may be leased for periods not exceeding 30 years, the annual rent at present varying from 1s. to 10s. per acre. The rate for water is fixed from time to time by the Commission, and is at present, except in a few special cases, 20s. per acre per annum. Each lessee is entitled to receive a quantity of water equivalent to a depth of 30 inches per annum, limited to 4 inches in any one month.

(b) *Hay Irrigation Area.* The Hay irrigation area consists of about 4,500 acres, and previous to 1913 was controlled by a Trust appointed in 1897. On 31st December, 1919, the area held and used for irrigation purposes was 1,014 acres, in 105 blocks of from 3 to 34 acres. The term of lease is generally 30 years, and the annual rental from 5s. to 12s. per acre. In addition, there was at that date an area of 2,040 acres of non-irrigated land taken up in 43 blocks as permissive occupancies. The water rate is fixed from time to time, and during 1918-19 was £1 5s. per acre per annum. The pumping machinery is of similar type to that at Curlwaa, the capacity of the pumps being 4,000 gallons per minute. During the 1918-19 season 89,913,140 cubic feet of water were pumped. Dairying is the principal industry; the cultivation of fruit is very limited.

(iv) *Projected Irrigation Schemes.* The Water Conservation and Irrigation Commission are investigating schemes for storing water for the purpose of irrigation on the Darling, Lachlan, Macquarie, Hunter, Namoi, Peel and Warragamba Rivers.

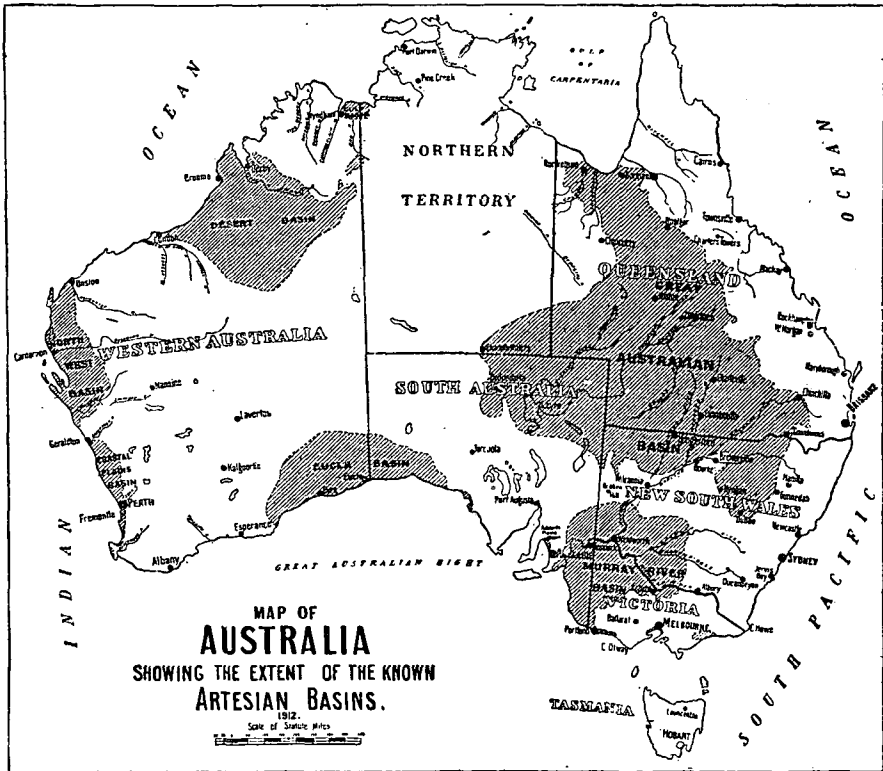
(a) *Murray River.* The effect of constructing the Upper Murray storage will be to ensure at all times sufficient flow below Albury to permit of diversions for irrigation and stock and domestic supplies, and also to make good the losses in the river due to seepage, evaporation, and lockages. The Act provides that, subject to certain conditions, New South Wales and Victoria shall have the regulated flow of the river at Albury, and shall each have the full use of all tributaries of the River Murray within its territory below Albury, with the right to divert, store, and use the flows thereof.

It is estimated that the New South Wales regulated river flow after the construction of the Upper Murray storage will amount to at least 120,000 acre feet per month at Albury during the irrigating season, and this will permit of a considerable amount of irrigation development along the river.

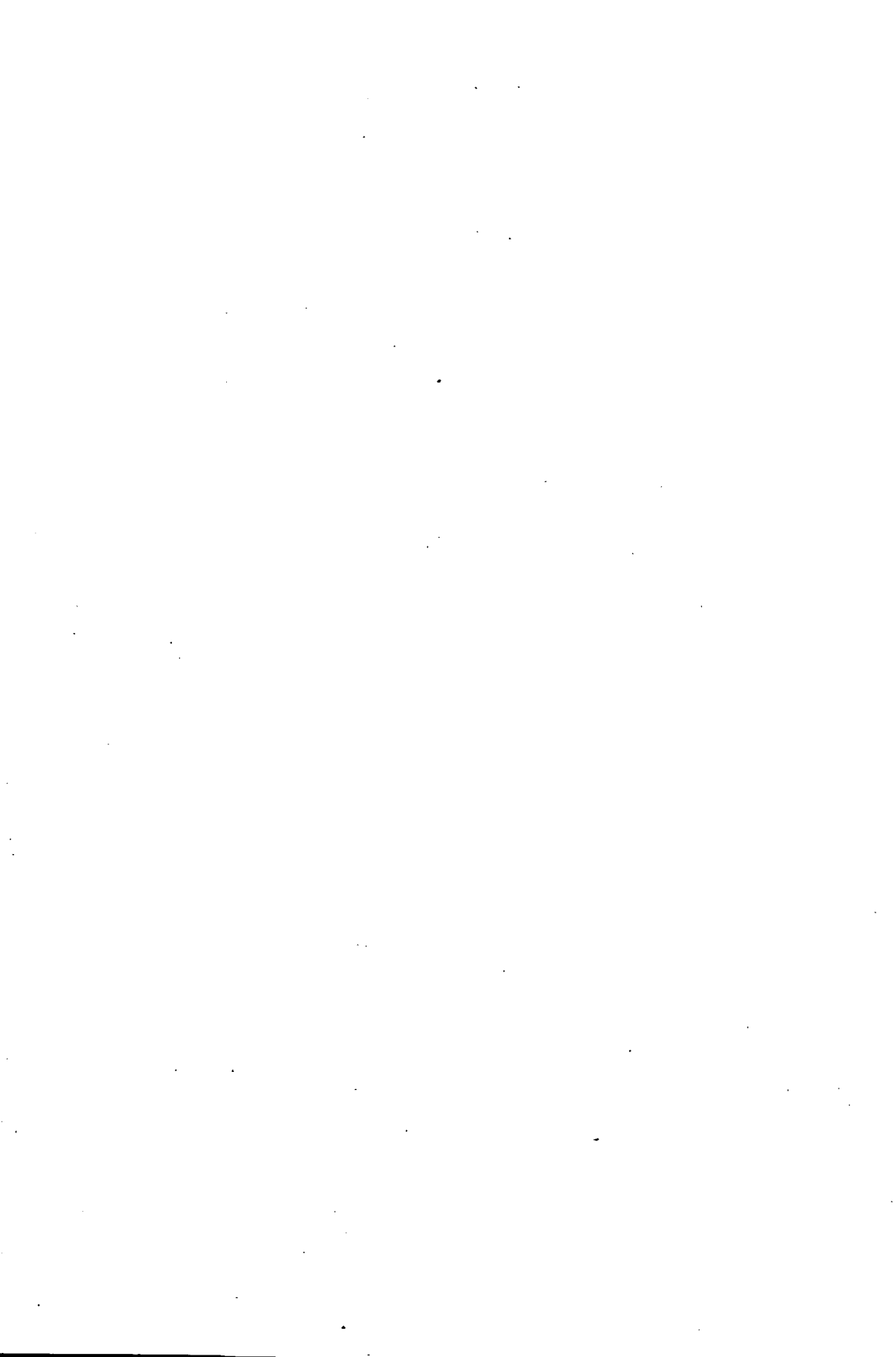
An investigation is being made into the manner in which the New South Wales proportion of the Murray waters can be most profitably applied, but as yet no conclusion has been reached.

(b) *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 when available is in the lake system to the east of the river, comprising Lakes Boolaboolka, Ratecatcher, and Victoria, and a number of other lakes (seventeen in all) fed from the river in high floods from the Talyawalka Creek, which takes off from the river about 260 miles above Menindie. Further investigation is required to determine the area which can be commanded from the storage, and the use to which the water will be put.

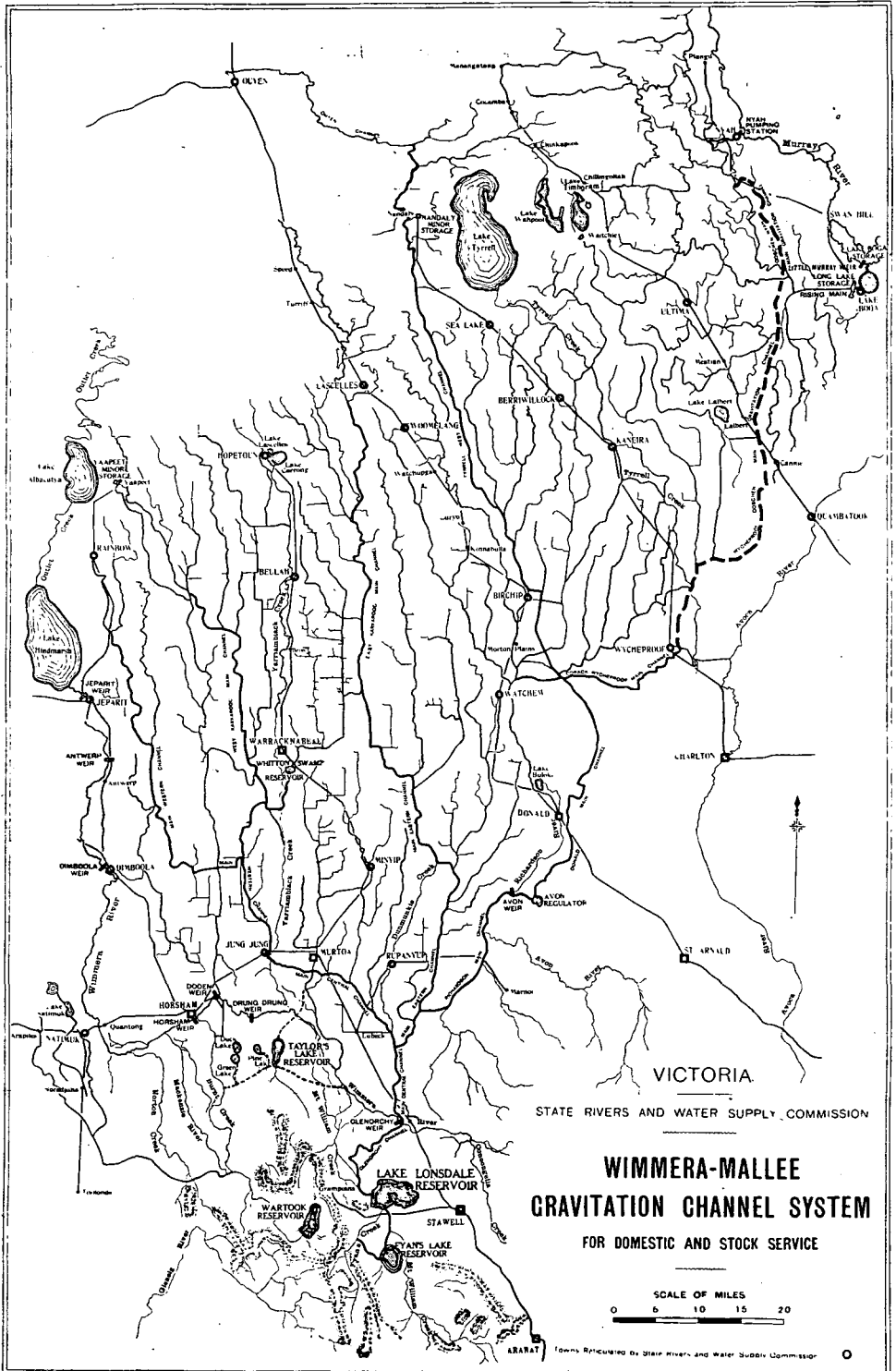
MAP SHEWING THE POSITION AND EXTENT OF THE "AUSTRALIAN ARTESIAN BASINS."



This map was prepared by the Interstate Conference on Artesian Water, held in Sydney during May, 1912. It contains the latest facts relative to the various artesian basins of the Australian continent. Of these basins the most important is the Great Australian Basin, which is about 569,000 square miles in extent, viz.:—About 376,000 square miles in Queensland, 90,000 square miles in South Australia, 83,000 square miles in New South Wales, and 20,000 square miles in the Northern Territory. The Murray River Basin extends over South-Western New South Wales, North-Western Victoria, and South-Eastern South Australia. The Western Australian Basins fall naturally within five groups, viz.:—The Eucla Basin, the Coastal Plains Basin, the North-West Basin, the Desert Basin, and the Gulf Basin. (See also pages 548 to 554.)







(c) *Lachlan River.* The construction of a storage reservoir at Wyangala, below the confluence of the Abercrombie River, is being investigated with the intention of affording water in the river channel for pastoral purposes and for the irrigation of limited areas along the river banks. A proposal is also being investigated for the increase of the storage in Lake Cudgellico, which is fed from the Lachlan River, and for the pumping thence of the water for the irrigation of an area of about 5,000 acres adjacent to the lake. The possibility of regulating the amount of water diverted into numerous effluent creeks is being considered, so that the best use may be made of the Lachlan River water.

(d) *Macquarie River.* The construction of a storage reservoir has been proposed on the river at Burrendong, below the confluence of the Cudgegong River, for the purpose of affording water by gravitation for the irrigation of certain lands to the west of Narromine. Smaller schemes for the construction of storage dams at White Rock, and on Campbell's River, at Bathurst, have also received consideration. The run-off from this catchment is somewhat uncertain, and before giving consideration to the construction of any State irrigation scheme, further investigation is necessary.

(e) *Hunter, Namoi, and Peel Rivers.* Pumping by private irrigators under license under the Water Act is increasing at such a rapid rate that in the case of some of the rivers, such as the Peel and the Hunter, it will not be possible to adequately supply the pumps in dry seasons until head storage works have been constructed. Surveys have been completed for storage dams on the Hunter and Peel Rivers and for a dam on the Namoi River above Manilla.

(f) *Warragamba River.* The Warragamba project will serve the dual purpose of amplifying the Sydney Water Supply and irrigating the best lands in the Nepean Valley. The rate of increase in the population of the metropolitan area during recent years, if maintained, will in a short space of time cause the consumption of water to overtake the capacity of the present catchment area of the Sydney water supply, and the next available source of supply will then be the Warragamba River, where a scheme for the storage of water has been investigated. It is proposed to construct a large storage dam capable of supplying about 200,000,000 gallons daily for water supply, irrigation and trade purposes, and for compensation water. Surveys have been made and details are being prepared of this scheme, which has been submitted to the Public Works Committee.

(v) *Water Rights.* By Part II. of the Water Act 1912, the right to the use and flow and to the control of the water in all rivers and lakes which flow through, or past, or are situate within the land of two or more occupiers is vested in the Crown. Private rights are abolished, riparian law is simplified, and a system of licenses is established for the protection of private works of water conservation, irrigation, water supply, drainage, and the prevention of inundation of land. The enactment prevents litigation and determines the rights of riparian owners, and it also enables such owners to obtain licenses to supply water to other occupiers of land not adjoining a river or lake.

During the year ending 30th June, 1919, 170 applications were received for fresh licenses, comprising 128 in respect of pumps, or pumps in conjunction with dams or other works, 39 in regard to dams, and 3 respecting races. The number of applications received for the renewal of existing licenses was 137; 87 of the applications were in respect of pumps, in some cases used in conjunction with dams or other works, 48 respecting dams, and 2 race and cuttings. Approximately, 1,229 licenses were in force on the 30th June, 1918, and in the succeeding twelve months 80 new licenses were issued and 54 were allowed to lapse, so that there were about 1,255 licenses current on the 30th June, 1919.

(vi) *Water Trusts and Bore Trusts.* Part III. of the Water Act 1912 provides for the supply of water either for irrigation, stock, or domestic purposes, and for drainage, the liabilities on which are repaid to the Crown, with interest spread over a period of years, and the works are administered by trustees appointed from among the beneficiaries under the Act; except in the case of trusts in the Western Division, where the Western Land Board is appointed as trustee. For the supply of water, trusts have been constituted in connexion with (a) seventy-three artesian wells; (b) eight schemes for the improvement of natural off-takes of effluent channels, for the purpose of diverting supplies from the main rivers; (c) in three instances for the construction of weirs across stream channels; and (d) two pumping schemes, one from natural watercourses, and one from a well. The total area included within these trusts amounts to 6,602,062 acres.

3. Victoria.—(i) *Classification of Works.* The Water Conservation Works in Victoria divide themselves into irrigation works proper, and those providing mainly a domestic supply, such as the works for the supply of Melbourne, controlled by the Melbourne and Metropolitan Board of Works; the Coliban, Wonthaggi, Broken River, Kerang Lakes, Naval Base and Mornington Peninsula, and Mallee Supply Works, administered by the State Rivers and Water Supply Commission, and other works for domestic supply controlled by Water Works Trusts or Municipal Corporations. With the exception of the works administered by the Commission, particulars as to these works will be found in the section on *Local Government* in this volume.

(ii) *Works Controlled by the Commission.* With the exception of that of the First Mildura Irrigation and Water Supply Trust, all the irrigation schemes, and the more important domestic and stock water-supply works in rural districts, are vested in and controlled by the State Rivers and Water Supply Commission, a body composed of three members, which was created by the Water Act 1905, now incorporated in the Water Act 1915.

(A) IRRIGATION SCHEMES. This division comprises the schemes constructed and under construction for the supply of water to some twenty irrigation districts. Up to 1906 these schemes were controlled by local Trusts, which had obtained the moneys for their construction on loan from the State. By the Water Act 1905 all local control was abolished except in the case of Mildura, and the districts were transferred to the State Rivers and Water Supply Commission. Since that date the Government has adopted a vigorous irrigation policy, and the capital expenditure at 30th June, 1919, on water supply in the irrigation and water supply districts under the control of the Commission, and at Mildura, exclusive of the amount (£71,000) expended by it on River Murray Agreement Works, was £4,431,000. The irrigation works draw their supplies mainly from headworks constructed on the Murray, Goulburn, and Loddon Rivers. The cost of these headworks which now stands at £1,124,000 is not debited to any particular districts but is borne by the State. The extent of land under irrigated culture, for all kinds of crop, is 282,000 acres, being an increase of 107,000 acres over the area irrigated in the previous year.

The following particulars of the principal schemes will be of interest, and will convey some idea of the extent to which the one-time arid northern portion of this State is now insured against droughts like that of 1902, when the combined capacities of its storages for irrigation by gravitation were only 75,000 acre feet, and of its pumping plants, 400 acre feet per day.

(a) *Goulburn Scheme.* The Goulburn River Gravitation Scheme (see map on page 561) is the largest of Victoria's irrigation enterprises. It serves, either for irrigation or domestic and stock purposes, 867,000 acres of land in the valleys of the Goulburn, Campaspe and Loddon Rivers. The present headwork of the system is a diversion weir on the Goulburn River, near Nagambie. It is constructed of concrete masonry, with 21 flood gates, which raise the up-stream water level 10 feet above the concrete crest. These gates are lowered, during high stages of river flow, to provide a clear waterway for the discharge of floods. The weir has a total length, including channel regulators, of 925 feet, and a height of 50 feet. The water is diverted by two main channels, the eastern carrying 330 cubic feet per second (660 acre feet per day) a distance of 33 miles to the country north of the Broken River, while the western, which has a capacity of 1,700 cusecs,\* and a length of 23 miles, is used to feed distributaries of the Rodney District and to fill Waranga Reservoir, the present principal storage basin of the scheme. This reservoir, formed by an earthen embankment  $4\frac{1}{2}$  miles long across a natural depression, covers an area of 20 square miles to an average depth of 22 feet, and stores 281,000 acre feet. Works now in progress will raise the full supply level of this reservoir by ten feet, and increase the storage capacity to 330,000 acre feet. Two main channels issue from this reservoir, the Waranga-Rodney, of 250 cusecs\* capacity, which feeds Rodney distributary channels, and the Waranga-Campaspe-Serpentine, which leaves the reservoir with a capacity of 1,000 cusecs, and ends at the Serpentine Creek, 92 miles westward, with a capacity of 200 cusecs. The total length of distributary channels is 1,600 miles.

\* Cusecs = Cubic feet per second.

With a view of meeting the increasing demand for water in dry seasons, and providing an irrigation supply for other suitable lands, the Commission is constructing a storage reservoir on the Upper Goulburn, just below its junction with the Delatite River, at what is known as the Sugarloaf site. The dam, which is 2,550 feet in length, consists of a diaphragm wall of reinforced concrete, built from bed rock (in some places 75 feet below natural surface) to crest level 135 feet above the river bed; a wall of clayey material on the upstream side of the diaphragm; and supporting masses of rock. This reservoir will submerge an area of 7,600 acres, and store about 300,000 acre feet of water, bringing the total capacity of the Goulburn storages to 630,000 acre feet. The foundations of the Sugarloaf structure will permit of the dam being raised, if necessary, to a height of 190 feet above the river bed. This would add 8,600 acres to the area submerged, and would increase the storage capacity from 300,000 to 900,000 acre feet.

The portion of the State served by this system comprises 19,000 acres east of the Goulburn, 564,000 acres between the Goulburn and the Campaspe, and 284,000 acres between the Campaspe and the Loddon. These areas include the irrigated Closer Settlements at Shepparton, Stanhope, Tongala, Rochester, and Dingee (see "Closer Settlement in Irrigation Districts," page 289), in which annual water rights are allotted of not less than one acre foot of water to each acre of irrigable land. They include also the districts formerly controlled by the Rodney and Tragowel Plains Irrigation Trusts, in which districts, generally, the holdings are larger than in Closer Settlement areas. The water rights in these districts are, for lands under intense culture, one acre foot of water to each irrigable acre, and for other irrigable lands, one acre foot to four irrigable acres in the former district, and one to five in the latter. The balance of the area, including Deakin district, while not subject to a compulsory irrigation charge, is provided with a domestic and stock supply, and water is sold for occasional irrigation on application. The amount of the compulsory charge for irrigation water allotted as a "right" is at present 6s. per acre foot in the two districts—Tragowel Plains and Dingee—farthest removed from the sources of supply, and 5s. per acre foot elsewhere.

(b) *Loddon River Scheme.* This also is wholly a gravitation system. The headwork is a regulating weir on the Loddon at Laanecoorie, about 22 miles westerly from Bendigo. This weir is constructed of concrete masonry with "Chaubart" automatic floodgates five feet high for a length of 320 feet, combined with an earthen embankment, the length over all being 940 feet. Its storage capacity is 14,000 acre feet. Other works of the scheme are timber diversion weirs at Serpentine and Kinypanial, 80 and 120 miles downstream respectively, also 160 miles of channels (taken over from several irrigation Trusts in the Boort district) which supply an area of 74,000 acres for domestic and stock purposes and partial irrigation.

(c) *Murray River Schemes.* These comprise both gravitation and pumping schemes. The only wholly gravitation system is that known as the Kow Swamp scheme, which supplies the Kerang irrigation district of some 85,000 acres. The off-take is at Torrumbarry headworks, from which the Gunbower channel diverts water, when the Murray River is five feet above summer level, to the Kow Swamp storage, a natural depression improved so as to hold a volume of 41,000 acre feet. From this reservoir the water is distributed by the Macorna channel (40 miles in length) and about 200 miles of distributaries.

*The Cohuna, Gannawarra, Koondrook and Swan Hill Schemes* are combined gravitation and pumping schemes. The Cohuna-Gannawarra plant consists of two 36 inch and four 39 inch centrifugal pumps—total capacity 280 cusecs; those at Koondrook and Swan Hill, each of 100 cusecs capacity, consist each of two 39 inch centrifugal pumps. The pumped supplies are supplemented at varying stages of river level by the gravitation water.

*The Cohuna, Koondrook and Swan Hill Districts*, comprising 106,000 acres, embrace the irrigated Closer Settlements of the same names. In these districts and that of Gannawarra (comprising 44,000 acres) the quantity of water allotted as a "right" is one acre foot per irrigable acre. The compulsory charge is at present 5s. per acre foot of such water right. In Kerang district—not under a compulsory irrigation charge—water is sold to irrigators on application at a charge not exceeding 3s. per acre foot of water supplied.



*The Nyah Irrigation Area* was occupied in 1894 under village settlement conditions, settlers being allowed up to 50 acres each. Individual attempts at irrigation having proved unsuccessful, a Government scheme was prepared for the whole settlement. A number of settlers surrendered portions of their holdings, which were too large for effective working, and these portions, with adjacent Crown lands, were re-subdivided and made available, under the Murray Settlements Act 1907, on easy terms. Water is diverted from the Murray by a high lift pumping plant—capacity 25 cusecs—consisting of two coupled 24 inch turbine centrifugal pumps. The settlement now contains 188 holdings, of an average area of 17 acres, of which 182 are settled. Water rights are apportioned to these holdings on the basis of  $2\frac{1}{2}$  acre feet of water for each irrigable acre, and the compulsory charge is at present 14s. per acre foot of such water rights. The land is devoted mainly to vineyards and orchards, and the settlers, taken as a whole, are making good progress.

*The Merbein Irrigation Area* comprises 7,700 acres of what, ten years ago, were Crown lands. This settlement now contains 334 holdings, averaging 23 acres each, so highly improved as to sell, as orchard properties, at prices up to £250 per acre. The water is pumped from the Murray by a plant of four turbine centrifugal pumps—lift 96 feet, capacity 50 cusecs—and one 36 inch high lift centrifugal pump, capacity 50 cusecs. The land settlement conditions and water rights apportioned are the same as at Nyah, but the compulsory charge is at present 15s. per acre foot.

(d) *Werribee River Schemes.—Bacchus Marsh.* The headwork of this gravitation scheme is a reservoir of 15,000 acre feet capacity on Pyke's Creek, a tributary of the Werribee, the in-take from the creek catchment being supplemented by a tunnel through a dividing spur, which taps the Werribee River near Ballan. The dam, 1,000 feet in length and 100 feet in height, is built of earth, with dwarf concrete core. The area of the district is 6,600 acres—half of which is irrigable—and includes some of the richest lucerne land in the State. The annual water right is one acre foot per irrigable acre, and the present compulsory charge is £1 per acre foot of such right. The higher portion of the district receives a supply for domestic and stock purposes.

*Werribee.* This is another gravitation scheme on the same river. The headwork is a reservoir at Melton, immediately below the Bacchus Marsh district. The dam is of earth, with dwarf concrete core. Its length is 600 feet, height 100 feet, and the storage capacity of the reservoir 17,000 acre feet. A diversion weir at Werribee, 71 miles downstream from the reservoir, a main channel therefrom, and the usual distributaries and appurtenant works, complete the scheme. The irrigation district comprises some 8,000 acres of first-class land, being the irrigable portion of the Werribee Closer Settlement Estate, which is within 20 miles southwesterly of Melbourne. The water right allotment is one acre foot per irrigable acre, and the charge at present is 10s. per acre foot. The non-irrigable portion of the estate, containing about 13,000 acres, is supplied with water for domestic and stock purposes.

(B) DOMESTIC AND STOCK SCHEMES. (a) *General.* The second division takes into account the schemes constructed and under construction for the supply of water for domestic and stock purposes, the capital expenditure on which at 30th June, 1919, was £5,217,000. The area of country lands artificially supplied with water for these purposes is nearly 21,000 square miles. The number of towns supplied, exclusive of the City of Melbourne and its suburbs, is 160, serving an estimated population of 297,000. In addition to the Commission's districts, some large areas are still administered by local authorities.

(b) *Wimmera-Mallee System.* The principal scheme in this division is that known as the *Wimmera-Mallee Gravitation Channel System*. This comprehensive scheme of works will compare favourably, it is believed, with any similar individual scheme, for domestic and stock service, in any part of the world. The main supply is drawn from three reservoirs in the catchment area of the Wimmera River, at the foot of the Grampians Ranges, viz.:—Lake Lonsdale, Wartook, and Fyans Lake. A fourth—Taylor's Lake—now under construction, is nearing completion. The reservoirs in use, including some minor works, have a combined storage capacity of 97,900 acre feet. The completion of the works in progress will bring this total to 127,900 acre feet. The water

is conveyed, partly by natural water-courses, but chiefly by artificial channels, aggregating over 3,600 miles in length, over farming districts comprising about 8,500 square miles, approximately one-tenth of the whole State (see map on page 562).

(c) *Naval Base and Mornington Peninsula Scheme.* Another scheme in this division which calls for mention here is the *Naval Base and Mornington Peninsula Scheme*. This comprehensive scheme—prepared at the request of the Naval Authorities—is for the supply of water to the Flinders Naval Base, and for the service of fifteen townships en route, including Berwick, Beaconsfield, Pakenham, Aspendale, Chelsea, Carrum, Frankston, Mornington, and Hastings. An ample supply of water is obtainable from the headwaters of the Bunyip River, which drains some 30 square miles of forest country above the point of off-take. The works are so far advanced that water is already being delivered at the Naval Base; and efforts are now being concentrated on the works for the supply of Mornington, Frankston, Mordialloc, and the intervening bayside towns.

(d) *Flood Protection.* The Water Acts of Victoria provide for the constitution of Flood Protection Districts, in which the residents are rated for schemes carried out for their benefit. The works are constructed, and Districts administered by the State Rivers and Water Supply Commission. Under these provisions the Commission is carrying out extensive schemes at Koo-wee-rup and Cardinia, in the south-eastern portion of the State, and works, on a smaller scale, at Echuea.

(iii) *Mildura.* The creation of an irrigation colony at Mildura was the outcome of a visit by Mr. Deakin to California in 1885, when Messrs. Chaffey Bros. were invited to visit Victoria, with the object of founding a similar settlement to those which they had been largely instrumental in establishing in California.

Active operations were commenced in 1887, since which date marvellous progress has been made, instanced in the fact that, originally used as a sheep run and carrying one sheep to every thirty acres, the dried fruit harvested from 12,000 acres in 1916 was valued at £683,000 gross.

Water is pumped and supplied under Act of Parliament by the first Mildura Irrigation Trust from the river Murray from two pumping stations:—(1) into a billabong, and thence to pumps lifting to various levels, and (2) to a comparatively small area adjacent to the town.

The length of the Trust's main and subsidiary channels is 280 miles. For the year ending 30th June, 1919, the Trust's receipts aggregated £34,590, and its expenditure £33,013. For the same period the number of water acres supplied was 39,895.

Loans (balance) advanced to the Trust by the Government for the purpose of improving the plants and channels, &c., amounted at 30th June, 1919, to £84,469, exclusive of the sum of £10,224 (balance) arrears of interest.

The area of the settlement is 45,000 acres, of which 12,000 acres are under intense culture, vines predominating.

4. *Queensland.*—The main irrigation works in Queensland are as follows:—(a) those at Ayr, which utilise the waters of the Burdekin River, and shallow wells on its banks; (b) those at Bingera, near Bundaberg, which utilise water pumped from the Burnett River just above the point of meeting of the salt and fresh waters, and (c) those at Fairymead, which utilise water pumped from a number of shallow spear wells sunk on the alluvial flats on the north side of the Burnett River and about six miles from Bundaberg. There were 591 irrigators in the State in 1918, chiefly farmers and graziers, and the area irrigated was 6,947 acres.

5. *South Australia.*—(i) *The Renmark Irrigation Trust.* The Renmark Irrigation Trust was established in 1893 on similar lines to Mildura, but on a smaller scale. The area of settlement is 21,000 acres, the area under irrigation being 5,364 acres. There are also 1,000 acres under crop for hay. The dried fruit pack for 1919 was 1,981 tons, green fruit 4,500 tons, and the gross value of the production for the year exceeded £120,000. The population of the town and settlement is 3,000. The chief products are sultanas, currants, raisins, oranges, apricots, peaches, pears, olive oil, and grape spirit. There are two distilleries for the manufacture of grape spirit.

(ii) *Other Waterworks.* A number of country water works are under the control of the Public Works Department. As, however, they are not irrigation works properly so called, but are used for supplying water for domestic purposes, etc., to several towns, no further reference will be made to them in this chapter. (See Section xxvi., *Local Government*.)

(iii) *Area under Irrigation.* The irrigation areas under Government control on the River Murray, above Morgan, up to the end of March, 1920, contained 11,000 acres of irrigable land, allotted to 576 settlers; about 1,200 acres reserved by the Department for fodder cultivation, 1,600 acres ready for allotment, and about 5,000 acres in course of preparation. The pumping plants at present installed on these areas aggregate 4,038 brake horse power, with a pumping capacity of over four million gallons per hour.

The *Cadell Irrigation Area* is 7 miles by river above Morgan. The total area of the settlement is 2,726 acres, of which 1,175 are irrigable; 532 acres have been allotted to 33 soldier settlers, and the balance is ready for allotment in 47 blocks. This area is suitable for fruit growing. The first allotment was on 30th September, 1919. The pumping plant is a 190 b.h.p. steam plant with centrifugal pump. Its capacity is 4,200 gallons per minute against a head of 90 feet.

The *Waikerie Irrigation Area* is 39 miles above Morgan by river. This area includes the old Waikerie and Ramco Settlements. The total area of settlement is 9,276 acres, of which 2,680 acres are first-class irrigable land, growing fruit trees and vines. This area is divided between 136 settlers, and the first allotment took place on the 5th July, 1910. The pumping plant consists of four units, three suction gas and one steam unit, with a total of 1,110 b.h.p. The capacity of the plant is 12,500 gallons per minute against a total head of 150 feet.

The *Holder Irrigation Area* adjoins the Waikerie Irrigation Area, and has been incorporated as a portion of that area. It contains 358 acres of irrigable land, divided into 31 blocks, and 2,017 acres of dry land. This area is exclusively a soldier settlement: five blocks are allotted, and the other blocks are being planted for allotment. The pumping plant consists of two steam units, total b.h.p. 338, with capacity of 4,750 gallons per minute, and highest lift 130 feet total head.

The *Kingston Irrigation Area* is situated 73 miles above Morgan by river, and comprises the old village settlement of that name. It has a total area of 3,748 acres, of which 405 acres are irrigable. This area was allotted to 30 settlers in July, 1914, and is used for fruit and vine culture. The pumping plant is 118 b.h.p. steam plant, capacity of pump 2,000 gallons per minute, total head 118 feet.

The *Moorook Irrigation Area*, adjoining the Kingston area, contains 5,959 acres of land, of which 1,074 acres are good land, suitable for vines and fruit trees; 974 acres of irrigable land have been allotted to 48 settlers, of whom 30 are soldier settlers. The first allotment of area dates from March, 1916. The area is irrigated by a 250 b.h.p. steam plant, with a capacity of 4,160 gallons per minute against a total head of 142 feet. A second steam unit with a capacity of 3,000 gallons per minute will shortly be installed.

The *Cobdogla Irrigation Area* is on the opposite side of the river to Kingston and Moorook areas. It was formerly a sheep station, and was resumed by the Government for irrigation purposes. The total area of the station was 160,000 acres, of which 23,100 acres have been set apart as the Berri area, and the remainder, 137,000 acres, as the Cobdogla area. The latter area includes Lake Bonney, 4,000 acres in extent; this lake is situated 3 miles inland from the Murray, and is filled at high rivers by Chambers' Creek. The water is retained in the lake by a weir with movable shutters, erected at the junction of the lake and creek.

The Cobdogla area contains about 30,000 acres of first-class land, capable of intense culture. A portion of this area, 1,834 acres in extent, has been developed as a low-lift area, the pumping head being about 40 feet. This land is suitable for vine culture, or for fodder for dairy farming; 404 acres have been allotted to 10 settlers, 220 acres are open for allotment, and 1,210 acres are being used by the Department for fodder growing. The remainder of the proposed irrigable land, about 28,000 acres, will be utilized for fruit, vines, and fodders. About 3,000 acres are in course of preparation at the south end of Lake Bonney, and will be ready for allotment this year. Pumping plant at present installed is a 340 b.h.p. steam plant, capacity 16,700 gallons per minute against a total head of 40 feet. A second pumping plant is being installed at the south end of Lake Bonney. This is a 390 b.h.p. steam plant, with a capacity of 9,000 gallons per minute against a head of 100 feet. The completed area of Cobdogla will have five pumping stations, two on the lake at the north and south ends, two on the River Murray, and one intermediate from the low-lift.

The *Berri Irrigation Area* is 120 miles above Morgan by river, and contains a total area of 23,100 acres, of which 8,100 acres is first-class land for fruit and vine culture;

5,831 acres have been allotted to 314 settlers, of which 2,650 acres are allotted to 131 soldier settlers, and 2,270 acres are in course of preparation for allotment in this manner. The first allotment of the older portion of this area took place in January, 1911. The pumping plant consists of five units, three suction gas and two steam units, with a total of 1,702 b.h.p., and a pumping capacity of 24,700 gallons per minute against total heads of 50 feet to 120 feet. Another steam unit will shortly be installed with a capacity of 9,000 gallons per minute.

The proposed *Chaffey Irrigation Area*, at present known as *Ral Ral*, comprises a large area of country adjacent to Renmark. Preliminary survey work is proceeding over 7,000 acres, which can be watered with a lift of approximately 45 feet, and this area will be prepared for early allotment. The future extension of this area may approximate 100,000 acres, with lifts not exceeding 100 feet above low river.

The irrigation and reclaimed swamp areas under Government control on the River Murray below Morgan contain 6,300 acres of high irrigable and reclaimed swamp land. The former is irrigable by pumping, and the latter by gravitation. There are at present 204 settlers on these areas. The pumping plants installed total 1,257 b.h.p., with a pumping capacity of over three million gallons per hour. The high irrigable land is utilized for fruit and vine culture, and the reclaimed land for dairy farming.

*Mobilong and Burdett Areas* adjoin Murray Bridge, and contain 575 acres of reclaimed fodder land, with 29 settlers.

*Long Flat and Monteith Flat*, below Murray Bridge, have between them a reclaimed area of 1,342 acres, divided between 57 settlers.

The *Swanport Area*, below Murray Bridge, has 191 acres of fruit and fodder land, and is open for allotment to soldier settlers.

The *Jervois Irrigation Area* is in course of preparation. It is 15 miles below Murray Bridge, and includes 1,206 acres of irrigable and reclaimed land, and, when completed, will accommodate 40 settlers.

The *Mypolonga Area* is 9 miles above Murray Bridge, and has a river frontage of 7 miles. The total area of this settlement is 5,800 acres, of which 1,086 acres are irrigable, and 1,627 acres reclaimed land; 141 blocks are leased to 74 settlers.

The *Pompoota Area*, situated 13 miles above Murray Bridge, is at present used as a training farm for prospective soldier settlers. The area contains 674 acres of fruit and fodder land.

The *Wall Area*, 16 miles above Murray Bridge, has 779 acres of irrigable and reclaimed land; 61 blocks are allotted to 22 soldier settlers, and 9 blocks are available for allotment.

The *Neeta and Cowirra Irrigation Areas* are 20 miles above Murray Bridge, and include in their areas 410 acres of irrigable land, and 1,702 acres of fodder land. These areas are in course of preparation, and at present 22 soldier settlers have been placed on blocks; a further 42 settlers can be accommodated when areas are complete.

The Government has recently completed the purchase of the Wellington Estate. Situated from 18 to 24 miles below Murray Bridge, the estate has a river frontage of 6 miles, and comprises a total area of 12,028 acres, of which there are 1,910 acres of rich swamp land suitable for intense culture. In addition to the reclaimed land, as much as possible of the high land will be set apart for irrigation purposes.

*Lake Albert Area.* There is a possibility of this lake being reclaimed in the near future, which will give an area of about 40,000 acres suitable for dairying.

The total area adjacent to the River Murray which it is possible to reclaim or to bring under irrigation, including 75,000 acres of Lake Alexandrina, is 282,556 acres.

The reclaimed lands consist of peaty soils, composed of rich river silt, and are eminently suited for the growth of lucerne and other fodders, onions, potatoes, etc. The soils of the irrigable lands have already proved their suitability for the production of peaches, apricots, nectarines, oranges, lemons, figs, and grapes.

All lands are allotted under perpetual lease, and blocks are surveyed into areas varying up to 50 acres of irrigable or reclaimed land. No lessee is permitted to hold more than 50 acres of irrigable or reclaimed land, or of both irrigable and reclaimed, except that in the case of a partnership 50 acres may be allotted for each member of the partnership up to a maximum of 150 acres.

In addition, areas of non-irrigable land are allotted to lessees of irrigation and reclaimed blocks for dry farming. The rentals of the blocks are fixed by the Land Board immediately prior to the land being offered for application. For the reclaimed land, an amount is charged sufficient to cover interest on cost of land and reclamation, while for the irrigable land the rent is based on the unimproved value of Crown lands, or to cover interest on cost of repurchased lands.

On the irrigable land the water rate has been fixed at 40s. per acre per annum for the first four years, after which an amount will be charged sufficient to cover actual cost of supplying water, and interest on pumping plant, channels, etc. On the reclaimed lands an amount is charged to meet annual management, drainage, and maintenance expenses. A sliding scale covers the rent on all land, and water rates on the irrigable land for the first four years, *i.e.*, first year, one-quarter of the rent and water rate; second year, one-half; third, three-quarters; fourth and afterwards, full amount per acre. On the irrigable lands, each lessee is entitled for the water rate to 24 acre inches per annum, supplied in four irrigations; special irrigations and domestic supplies are available, at times other than during the general irrigations, at a nominal cost. On the reclaimed lands water is supplied regularly by reticulation from the river.

The Department assists settlers by fencing, clearing, grading, and constructing irrigation channels and tanks. Such improvements are undertaken up to a value not exceeding £15 per acre of the irrigable area in each lessee's block, but before the work is commenced a deposit must be paid equal to 15 per cent. of the Department's estimated value of such improvements. The total cost of the work, less deposit, is treated as a loan to the lessee, and is repayable in twenty equal annual instalments after the expiration of five years, or at any shorter period if desired by the lessee, current rate of interest being charged. Any lessee is permitted to accept the contract for carrying out his own improvements according to the specifications and estimates of the Department up to the maximum amount per acre, as mentioned above. Advances can be obtained from the Advances to Settlers Board for the purchase of stock, discharging mortgages, erecting permanent buildings, and other improvements, the first £400 being advanced on the fair estimated aggregate value of the settler's lease and any improvements made, or in course of being made, on the holding. Any loan beyond £400 would not exceed 15s. in the £1 of the fair estimated value of the improvements already made.

6. *Western Australia.*—An Irrigation Act has been brought into force providing for the constitution of irrigation districts. At Harvey works for irrigating about 4,000 acres devoted to fruit growing, principally oranges, were opened on the 21st June, 1916. A scheme is now in preparation for irrigating a further area in the same district.

Numerous small private irrigation schemes are in full operation on many of the south-west rivers, in connection with fruit, fodder, and potato growing.

7. *Murray Waters.*—(i) *Water Rights of States.* The relative rights of the States of New South Wales, Victoria, and South Australia to the waters of the Murray River being undetermined, negotiations which had been in progress for some considerable time resulted in the passing of the River Murray Waters Act 1915. Territorially the south bank of the Murray River was the boundary between New South Wales and Victoria. The region of the river itself, up to the point of its entry into South Australia, was wholly within the former State. At the Federal conventions which preceded the establishment of the Commonwealth, the South Australian delegates expressed their fear lest too much irrigation on the Murray and its tributary, the Darling, might impair the navigability of the lower waters of the river. The result was the insertion of a provision in the Commonwealth Constitution, which reads as follows (Section 100):—

“The Commonwealth shall not by any law or regulation of trade or commerce abridge the right of a State or of the residents therein to the reasonable use of the waters of rivers for conservation or irrigation.”

(ii) *Conferences.* After considerable controversy, a conference was held in Melbourne in January, 1911, between the Premiers of New South Wales, Victoria, and South Australia, on the Murray Waters question. The main results of the conference were that Lake Victoria and certain lands adjacent thereto situated within New South Wales territory should be handed over by New South Wales to South Australia for purposes of a storage basin, and that South Australia might lock her own portion of the Murray

at her own expense; no rights of navigation were conceded by New South Wales and Victoria, who would not bind themselves to deliver any quantity of water at the point of intake into South Australia; the upper portions of the river were left free for irrigation.

In 1913 the three States appointed a Board of engineers to carry out investigations, with a view to ascertain means which would lead to a settlement of the whole question of the waters of the Murray and its tributaries. The Board in its report recorded its belief that the interests of irrigation are more important than those of navigation, and that the heavy expense of maintaining the latter is not warranted; suggestions relative to the apportionment between the three States concerned of the river waters and of the works contemplated for their conservation were also made. (See Official Year Book, No. 7, page 510.)

In April, 1914, further discussion took place at the Premiers' Conference in Melbourne, certain resolutions being agreed to by the Prime Minister of the Commonwealth and the Premiers of New South Wales, Victoria, and South Australia. (See Official Year Book, No. 8, page 507.)

(iii) *Legislation.* The necessary authority having been given by the Parliaments of the three States concerned, the Commonwealth River Murray Waters Act was passed in 1915, and on 31st January, 1917, was brought into operation. The procedure to be followed in the construction of works is set out. All works under the agreement will be constructed by the Constructing Authorities of the States concerned (New South Wales, Victoria, and South Australia). Each of these bodies is to prepare and to submit to the Commission a general scheme of the works to be constructed by it, with designs and estimates. The approval of the Commission is to be given before the commencement of any work embodied in the scheme. The Constructing Authority is then authorised to proceed with the work in accordance with the approved designs and estimates.

(iv) *Constitution of the Commission and its Activities.* The Commission was constituted on 31st January, 1917, and consisted of four members, representing respectively the Governments of the Commonwealth, New South Wales, Victoria, and South Australia. Steps were immediately taken to obtain information regarding investigations, surveys, works, gaugings, diversions, etc., theretofore made. The contracting State Governments were requested to expedite the submission of their general schemes and proposals in connexion with the various works embodied therein, particularly with a view to providing employment to returned soldiers, and making available suitable areas for soldier settlements on the banks of the Murray.

The general schemes of works to be constructed by the Governments of New South Wales and Victoria above Wentworth (including the Upper Murray storage and seventeen weirs and locks), and by the Government of South Australia below Wentworth (including the Lake Victoria storage and nine weirs and locks), have been approved.

Designs and estimates for the following works have been submitted to the Commission, and with certain reservations, have been approved:—

*To be constructed jointly by the Governments of New South Wales and Victoria.—*

Upper Murray storage (to be known as the Hume Reservoir), estimated cost £1,629,000. This reservoir, which will be created by the construction of a dam immediately below the junction of the Mitta Mitta and Murray rivers, will have a storage capacity of one million acre feet. The site for this work was decided upon only after the most exhaustive investigations, 28 possible sites on the River Murray above Albury having been thoroughly examined. The ceremony of turning the first sod in connexion with this important work was performed by His Excellency the Governor-General on the 18th November, 1919.

Weir and lock at Torrumbarry below Echuca (estimated cost £120,000).

*To be constructed by the Government of South Australia.—*Lake Victoria storage, providing for the storage of about 500,000 acre feet, estimated cost £320,000. Weir and lock No. 2, estimated cost £162,758; weir and lock No. 3, estimated cost £120,328; weir and lock No. 9, estimated cost £186,998.

Prior to the appointment of the River Murray Commission, the Government of South Australia had commenced the construction of lock No. 1 at Blanchetown. Despite delays due to floods and other causes, this work is proceeding steadily. Work on the lock and on the navigable pass is practically completed, and the Constructing Authority is now proceeding with the construction of the weir.

The Constructing Authorities for New South Wales and Victoria are proceeding with surveys and investigations along the river with a view to the location of the sites of further weirs and locks below Echuca, and it is anticipated that at an early date proposals regarding two of such weirs and locks, viz., those in the vicinity of Wentworth and Mildura, will be submitted to the Commission.

The River Murray Agreement also provides for the construction by the Government of New South Wales of nine weirs and locks in the Murrumbidgee River from its junction with the Murray River to Hay.

The cost of the River Murray Scheme, based on an estimate prepared prior to the signing of the Agreement, was set down at £4,663,000. Towards this sum the Commonwealth will contribute £1,000,000. Each of the three contracting State Governments will provide the sum of £1,221,000. Owing to the increased cost of labour and materials it is anticipated that this estimate will be considerably exceeded.

The effect of constructing the Upper Murray storage will be to insure at all times sufficient flow below Albury to permit of diversions for irrigation, and stock and domestic supplies, and also to make good the losses in the river due to seepage, evaporation, and lockages. The Act provides that, subject to certain conditions, New South Wales and Victoria shall share the regulated flow of the river at Albury, and shall each have the full use of all the tributaries of the River Murray within its territory below Albury, with the right to divert, store, and use the flows thereof. It is estimated that the New South Wales regulated river flow after the construction of the Upper Murray storage will amount to at least 120,000 acre feet per month at Albury during the irrigation season, except in a period of phenomenal drought, such as 1902-3 and 1914-15.

*Finance.* The total expenditure on works incurred by the three Constructing Authorities up to the end of March, 1920, was—

New South Wales	..	..	..	..	£31,273
Victoria	..	..	..	..	51,936
South Australia	..	..	..	..	242,906
Total	..	..	..	..	<u>£326,115</u>

The estimated expenditure during the financial year 1920-1921 is £618,000.

*Plant.* Plant necessary for the construction of works pursuant to the River Murray Agreement will be provided by each of the contracting State Governments at its own cost. A Conference of representatives of the Commission and the Constructing Authorities is now considering the question of the charges for the use of such plant, with a view to the adoption of uniform procedure.

*Gaugings.* The Commission shortly after its appointment convened a Conference of representatives of the three contracting State Governments for the purpose of furnishing a report for its guidance, in connexion with the adoption of uniform procedure regarding gaugings on the River Murray and its tributaries. Such report has been received, and action is now being taken with a view to giving effect to the Commission's decisions thereon.

## SECTION XV.

## COMMERCE.

## § 1. Introductory.

NOTE.—From the 1st July, 1914, the Trade Year, which was formerly the Calendar Year, was altered to coincide with the Fiscal Year (July to June).

1. Constitutional Powers of the Commonwealth in regard to Commerce.—The powers vested in the Commonwealth Parliament by the Commonwealth Constitution Act with respect to oversea trade and commerce will be found on page 21 (sub-section 51 (i)) and pp. 27 and 28 (sub-sections 86–95) of this volume.

## § 2. Commonwealth Legislation affecting Foreign Trade.

1. Customs Act 1901 (No. 6 of 1901).—"An Act relating to the Customs," assented to on the 3rd October, 1901, came into operation by proclamation on the 4th October, 1901. This provided for the establishment of the necessary administrative machinery for all matters pertaining to the Customs, and prescribed, *inter alia*, the manner in which Customs duties shall be computed and paid. It did not, however, determine the rates thereof.

During the interval between the inception of the Commonwealth, viz., on 1st January, 1901, and the coming into operation of the Customs Act 1901, the Customs Acts of the several States were administered by the Executive Government of the Commonwealth, under section 86 of the Constitution.

2. Customs Tariff Act 1902 (No. 14 of 1902).—The first Commonwealth Customs Tariff imposing uniform rates of Customs duty in all the States was introduced in the House of Representatives on the 8th October, 1901. "An Act relating to Duties of Customs," assented to on the 16th September, 1902, made provision that uniform duties of Customs specified in the tariff schedule should be imposed from the 8th October, 1901. From this date trade between the States became free, with, however, the exception, under section 95 of the Constitution Act, of the right of Western Australia to levy duty on the goods from other States for five years. [Repealed by the Customs Tariff Act 1908 (No. 7 of 1908).]

3. Sea Carriage of Goods Act (No. 14 of 1904).—"An Act relating to the Sea Carriage of Goods," assented to on the 15th December, 1904, to commence on the 1st January, 1905, defines the responsibility of shipowners, charterers, masters, or agents in regard to goods carried.

4. Secret Commissions Act 1905 (No. 10 of 1905).—"An Act relating to Secret Commissions, Rebates, and Profits," assented to on the 16th November, 1905, provides that "Any person who, without the full knowledge and consent of the principals directly or indirectly (a) being an agent of the principal, accepts or obtains, or agrees or offers to accept or obtain, from any person, for himself, or for any person other than the principal; or (b) gives or agrees to give or offers to the agent of a principal, or to any person at the request of an agent of the principal, any gift or consideration as an inducement or reward for any act done or to be done, or any forbearance observed or to be observed, or



any favour or disfavour shewn or to be shewn in relation to the principal's affairs or business or on the principal's behalf, or for obtaining or having obtained, or aiding or having aided to obtain for any person an agency or contract for or with the principal, shall be guilty of an indictable offence."

5. **Commerce (Trade Descriptions) Act 1905 (No. 16 of 1905).**—"An Act relating to Commerce with other Countries," assented to on the 8th December, 1905, and brought into operation by proclamation on the 8th June, 1906, gives power to compel the placing of a proper description on certain prescribed goods, or on packages containing the same, being imports or exports of the Commonwealth.

6. **Australian Industries Preservation Act 1906 (No. 9 of 1906).**—"An Act for the Preservation of Australian Industries and for the Repression of Destructive Monopolies," assented to 24th September, 1906, provides that any person or any corporation making or engaging or continuing in any combination "with intent to restrain trade or commerce to the detriment of the public or with intent 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 producers, workers, or consumers," or any person or corporation monopolising or attempting or conspiring to monopolise any part of the trade of the Commonwealth with intent to control, to the detriment of the public, the supply or price of any service, merchandise, or commodity, is guilty of an offence. (Amended, see Acts No. 5 of 1908, No. 26 of 1909, and No. 29 of 1910.)

7. **Customs Tariff 1906 (No. 14 of 1906).**—"An Act relating to Duties of Customs" amended the Customs Tariff of 1902 in relation to the duties on harvesters and agricultural implements and machinery and prescribed the prices which were not to be exceeded of Australian harvesters and drills delivered to the purchaser at the railway station or port nearest to the factory where they are made. [Repealed by Customs Tariff Act 1908 (No. 7 of 1908).]

8. **Customs Tariff (South African Preference) 1906 (No. 17 of 1906).**—"An Act relating to Preferential Duties of Customs on certain goods the produce or manufacture of the British Colonies or Protectorates in South Africa which are included within the South African Customs Union," assented to 12th October, 1906, to operate from 1st October, 1906, provides for special preferential rates of duty on certain goods imported from and being the produce of any of the Colonies or Protectorates included within the South African Customs Union.

9. **Australian Industries Preservation Act 1907 (No. 5 of 1908).**—"An Act to amend the Australian Industries Preservation Act 1907," assented to 14th April, 1908, provides additional machinery for procuring evidence of offences against the principal Act.

10. **Customs Tariff 1908 (No. 7 of 1908).**—"An Act relating to Duties of Customs," assented to 3rd June, 1908, repeals section 5 of the Customs Tariff 1902 (No. 14 of 1902) and the schedule of that Act and the whole of the Customs Tariff 1906 (No. 14 of 1906) as from 8th August, 1907, and imposes new rates of Customs duties. This Act provides preference rates of Customs duties on certain "goods the produce or manufacture of the United Kingdom."

11. **Customs Tariff Amendment Act 1908 (No. 13 of 1908).**—"An Act to amend the Tariff Act of 1908," assented to 10th June, 1908. The purpose of this Act is merely to remove possible doubt as to the intention of the original Acts.

12. **Australian Industries Preservation Act 1909 (No. 26 of 1909).**—"An Act to amend the Australian Industries Preservation Acts 1906-1907" formally repeals sections 5 and 8 of the parent Act, which were declared by the High Court to be *ultra vires*. It also provides that, in relation to trade and commerce with other countries or among the States, the payment of rebates, or the refusal to sell, "either absolutely or except upon disadvantageous conditions," with the purpose of promoting exclusive dealing, shall be an offence.

13. Customs (Interstate Accounts) Act 1910 (No. 9 of 1910).—Repeals Sections 272 and 273 of the Customs Act 1901. These sections relate to the passing of dutiable goods from one State to another State of the Commonwealth, and their repeal was consequent on the termination of the book-keeping system of accounts between the Commonwealth Government and the Governments of the States, in favour of a system of payments based on population.

14. Australian Industries Preservation Act 1910 (No. 29 of 1910).—"An Act to amend the Australian Industries Preservation Act 1906-1909." This Act removes from the principal Act the obligation to prove intent to restrain trade and detriment to the public.

15. Customs Act 1910 (No. 36 of 1910).—"An Act to amend the Customs Act 1901" gives the Customs control of all goods for export, the exportation of which is subject to compliance with any condition or restriction under any Act or regulation, extends the machinery provisions for the prevention of the importation or exportation of goods which are prohibited imports or exports respectively, amends the provisions for the payment of duty under protest, gives the Governor-General power to prescribe the nature, size, and material of the coverings for packages, and the maximum or minimum weight or quantity to be contained in any one package of goods imported or exported, or transported coastwise from one State to another; the condition of preparation or manufacture for export of any articles used for, or in the manufacture of, food or drink by man; the conditions as to purity, soundness, and freedom from disease to be conformed to by the goods for export.

16. Customs Tariff 1910 (No. 39 of 1910).—"An Act relating to Duties of Customs," amends the Customs Tariff of 1908 by more explicit definition of certain tariff items, and by alteration of some rates of duty.

17. Customs Tariff 1911 (No. 19 of 1911).—"An Act relating to Duties of Customs," amends the Customs Tariff 1908-10 by alteration of some rates of duty.

18. Interstate Commission Act 1912 (No. 33 of 1912).—In accordance with the provisions of the Commonwealth Constitution Act—sections 101 to 104 (see page 29 *ante*)—an Act relating to the Interstate Commission was assented to on the 24th December, 1912. This Act provides for the appointment of the Commission, and cognate matters.

19. Trading with the Enemy Act 1914 (No. 9 of 1914).—"An Act relating to the control of trade during the war with Germany and Austria-Hungary." This Act was amended by Act No. 17 of 1914.

20. Customs Act 1914 (No. 19 of 1914).—Amends the Customs Act 1901-10 by extending the powers of the Governor-General to prohibit the exportation of goods in time of war.

21. The Income Tax Assessment Act 1915 (No. 34 of 1915) and Amendment thereto (No. 47 of 1915).—Provide that "In the case of a person selling goods in Australia on account of a person not resident in Australia, or on account of a company not registered in Australia, the principal shall be deemed to have derived from such sale a taxable income equal to five pounds per cent. upon the price at which the goods were sold. The person selling the goods shall be assessable on the taxable income as the agent for the principal, and shall be personally liable for the payment of the tax to the extent of the tax payable on goods sold by him after the 30th June, 1915. Goods shall be deemed to be sold in Australia on account of a person not resident in Australia, if any person in Australia receives a commission in respect of the sale of the goods or is paid a salary for obtaining orders for or for influencing the sale of the goods."

22. Customs Tariff Validation Act (No. 6 of 1917).—"An Act to provide for the validation of—(1) Collections of Customs duties under tariff proposals introduced into the House of Representatives on the 3rd December, 1914; (2) the remission of Customs duty on wheat as from the 12th December, 1914; (3) the remission of Customs duty on oats as from the 27th February, 1915; and (4) the restoration of the Customs duties on wheat and oats from the 12th November, 1915."

23. **Apple Bounty Act (No. 21 of 1918).**—This Act appropriates from the Consolidated Revenue Fund the sum of £12,000, for the payment, to the grower, of a bounty of 1<sup>1</sup>/<sub>2</sub>d. per pound upon the export of apples grown and evaporated in Australia under certain prescribed conditions, and sold to the Imperial Government for delivery between the 1st April and 31st August, 1918.

24. **Customs Tariff Validation Act (No. 17 of 1919).**—Provides for the validation of collections of Duties of Customs under Tariff proposals introduced into the House of Representatives on the following dates, namely:—10th August, 1917; 26th September, 1917; and 25th September, 1918.

25. **Customs Tariff of 1920.**—The Tariff Schedule which was submitted to Parliament on the 25th March, 1920, provides a British Preferential Tariff, an Intermediate Tariff, and a General Tariff. The Tariff Act will provide that the Preferential Tariff or the Intermediate Tariff may, under reciprocal arrangements, be extended to other British Dominions, and that the Intermediate Tariff may in certain circumstances apply to foreign countries.

### § 3. Regulation of Trade during the War.

In Official Year Book number 11 (page 559) a statement was given shewing the authority for the regulation of trade during the war. Reference was also made to the appointment of a Luxuries Board to control the imports of goods of a luxurious nature, and to the establishment of the Commonwealth Board of Trade.

### § 4. Method of Recording Imports and Exports.

1. **Value of Imports.**—The recorded value of goods imported from countries beyond the Commonwealth represents the amount on which duty is payable or would be payable if the duty were charged *ad valorem*. The value of goods is taken to be 10 per cent.\* in advance of the fair market value in the principal markets of the country whence the goods were exported, the increase being intended to represent roughly the insurance, freight and other charges to the place of landing.

2. **Value of Exports.**—The recorded value of goods exported is taken to represent the value in the principal markets of the Commonwealth in the ordinary commercial acceptance of the term. Some modification of this practice has, however, been necessary in respect of products affected by the policy of price-fixing arising from the war.

3. **Records of Past Years.**—In the years preceding federation each State independently recorded its trade, and in so doing did not distinguish other Australian States from foreign countries. As the aggregation of the records of the several States is, necessarily, the only available means of ascertaining the trade of Australia for comparison with later years, it is unfortunate that past records of values and the direction of imports were not on uniform lines, admitting of the preparation of a record for Australia as a whole. On the introduction of the Customs Act 1901, the methods of recording values were made uniform throughout the States, but it was not until September, 1903, that a fundamental defect in the system of recording transhipped goods was remedied. Up to this date goods arriving in any Australian port for transshipment to a port in another Australian State were recorded at the latter port only, where they were ordinarily recorded as from the transshipping State, and not as an import from the oversea country.

In recording exports an analogous defect also existed in most of the States, since goods despatched from one Australian State for transshipment in another State to an oversea country were simply recorded in the former as an export to the transshipping State; thus no proper record of the export oversea was made. Owing to this defect the oversea trade prior to September 1903 is understated by an amount which it is impossible to estimate accurately, since it varies with the development of the shipping facilities of the States concerned. To discover the direction of the transhipped trade is not possible. The figures presented in the tables hereinafter are therefore the values as recorded, and must be taken as subject to the defects explained.

Prior to 1905 the value of ships imported or exported was not included in the returns of trade.

\* Although cost of freight and insurance has risen materially in consequence of the war, no further addition has been made to the value of imports, and cognisance should be taken of this fact in regard to imports during 1914-15 and subsequent years referred to throughout this section.

4. **Ships' Stores.**—Prior to 1906 goods shipped in Australian ports on board oversea ships as ships' stores were included in the general exports. From 1906, ships' stores have been specially recorded as such, and omitted from the return of exports.

The value of these stores shipped each year, distinguishing bunker coal, is shewn below :—

**VALUE OF STORES SHIPPED IN AUSTRALIAN PORTS BY OVERSEA VESSELS.**

Period.	Bunker Coal.	All Stores (including Coal).	Period.	Bunker Coal.	All Stores (including Coal).
	£	£		£	£
1906 .. ..	575,471	875,966	1914		
1907 .. ..	663,724	998,897	(1st six months) }	533,288	771,581
1908 .. ..	867,707	1,196,106	1914-15 ..	829,875	1,587,757
1909 .. ..	781,118	1,071,677	1915-16 ..	719,510	1,544,872
1910 .. ..	740,567	1,080,133	1916-17 ..	748,852	1,676,116
1911 .. ..	853,783	1,238,446	1917-18 ..	632,910	1,389,291
1912 .. ..	1,008,259	1,431,985	1918-19 ..	857,507	1,765,367
1913 .. ..	1,018,595	1,458,702			

**§ 5. Oversea Trade.**

1. **Total Oversea Trade.**—The following table shews the total trade of the Commonwealth with oversea countries from the earliest date for which records are available.\* In consequence of the defects of record referred to in the preceding section, the results can be only approximate to the actual figures. The very marked rise and sudden fall in the value of imports during the period 1837 to 1842 were contemporaneous with heavy land speculation and a subsequent severe financial crisis. The great increase of trade in the early fifties was due to the discovery of gold. In the State of Victoria the value of imports from oversea countries increased from £500,000 in 1851 to nearly £11,000,000 in 1853, and to £13,000,000 in 1854; while in New South Wales similar imports rose from £1,390,000 in 1851 to £5,500,000 in 1854, when the total imports into the Commonwealth reached the sum of £34 13s. 10d. per head, and the total trade £56 3s. 10d. per head of the population. The rapid influx of persons anxious to share the good fortunes of these times, however, soon reduced the value of the trade per head, till, in 1858, it had declined to £31 19s. 6d. per head. The period 1867-1872 shewed a marked reduction in the value of trade per head. For some years prior to this period New South Wales had experienced a succession of indifferent seasons, and Victoria was suffering from a congested labour market consequent on the decline of alluvial gold-mining in that State. This congestion of the labour market during the years 1862 to 1866 gave rise to the agitation for a protective tariff to provide employment in manufactures, and in April 1866, the Tariff Act, which expressed the protective policy thenceforward adhered to in Victoria, was assented to.

**OVERSEA TRADE OF THE COMMONWEALTH, 1826 TO 1919-20.**

Period.	Recorded Value.			Value per Inhabitant.†			Percentage of Exports on Imports.
	Imports.	Exports.	Total.	Imports.	Exports.	Total.	
1826-30 ..	£1,000.	£1,000.	£1,000.	£ s. d.	£ s. d.	£ s. d.	%
	638	153	791	10 12 5	2 10 11	13 3 4	23.9
1831-35 ..	1,144	613	1,757	11 19 10	6 8 6	18 8 4	53.6
1836-40 ..	2,283	1,112	3,395	14 15 9	7 4 1	21 19 10	48.7
1841-45 ..	1,906	1,378	3,284	9 0 5	6 10 5	15 10 10	72.3
1846-50 ..	2,379	2,264	4,643	6 18 10	6 12 2	13 11 0	95.2
1851-55 ..	11,931	11,414	23,345	19 12 5	18 15 4	38 7 9	95.7
1856-60 ..	18,816	16,019	34,835	18 6 1	15 11 8	33 17 9	85.1
1861-65 ..	20,132	18,699	38,831	15 17 1	14 14 9	30 11 10	92.96

\* The figures given for the years 1826 to 1865 represent the annual averages for the quinquennial periods. The trade of the individual years will be found in the Official Year Book No. 7 and earlier issues.

† Reckoned on mean population of the year.

OVERSEA TRADE OF THE COMMONWEALTH, 1826 TO 1919-20—*continued.*

Period.	Recorded Value.			Value per Inhabitant.*			Percentage of Exports on Imports.
	Imports.	Exports.	Total.	Imports.	Exports.	Total.	
	£1,000.	£1,000.	£1,000.	£ s. d.	£ s. d.	£ s. d.	%
1866 ..	21,311	18,972	40,283	15 0 10	13 7 10	28 8 8	89.0
1867 ..	15,964	18,384	34,348	10 18 1	12 11 2	23 9 3	115.2
1868 ..	18,436	21,650	40,086	12 3 11	14 6 6	26 10 5	117.4
1869 ..	19,910	20,066	39,976	12 14 4	12 16 4	25 10 8	103.8
1870 ..	17,833	18,012	35,845	11 0 2	11 2 5	22 2 7	101.0
1871 ..	17,017	21,725	38,742	10 3 3	12 19 6	23 2 9	127.7
1872 ..	18,833	22,518	41,351	10 18 9	13 1 7	24 0 4	119.6
1873 ..	24,567	26,370	50,937	13 17 10	14 18 2	28 16 0	107.4
1874 ..	24,554	25,646	50,200	13 9 9	14 1 8	27 11 5	104.5
1875 ..	24,939	24,978	49,917	13 6 2	13 6 7	26 12 9	100.1
1876 ..	23,963	23,540	47,503	12 8 7	12 4 2	24 12 9	98.2
1877 ..	25,797	23,107	48,904	12 18 8	11 11 8	24 10 4	89.6
1878 ..	26,181	23,773	49,954	12 14 0	11 10 8	24 4 8	90.8
1879 ..	24,233	21,184	45,417	11 7 10	9 19 2	21 7 0	87.4
1880 ..	22,939	27,255	50,194	10 8 10	12 8 1	22 16 11	118.8
1881 ..	29,067	27,528	56,595	12 16 2	12 2 8	24 18 10	94.7
1882 ..	36,103	27,313	63,416	15 7 7	11 12 9	27 0 4	75.6
1883 ..	35,454	30,058	65,512	14 9 9	12 5 8	26 15 5	84.8
1884 ..	36,988	28,708	65,696	14 9 6	11 4 8	25 14 2	77.6
1885 ..	36,862	26,667	63,529	13 18 2	10 1 3	23 19 5	72.3
1886 ..	34,179	21,700	55,879	12 9 4	7 18 4	20 7 8	63.5
1887 ..	29,572	23,421	52,993	10 8 8	8 5 3	18 13 11	79.2
1888 ..	36,881	28,900	65,781	12 11 7	9 17 2	22 8 9	78.4
1889 ..	37,577	29,553	67,130	12 8 8	9 15 7	22 4 3	78.6
1890 ..	35,168	29,321	64,489	11 6 4	9 8 9	20 15 1	83.4
1891 ..	37,711	36,043	73,754	11 16 0	11 5 6	23 1 6	95.6
1892 ..	30,107	33,370	63,477	9 4 0	10 3 10	19 7 10	110.8
1893 ..	23,765	33,225	56,990	7 2 7	9 19 4	17 1 11	139.8
1894 ..	21,897	32,131	54,028	6 9 0	9 9 4	15 18 4	146.7
1895 ..	23,195	33,644	56,839	6 14 1	9 14 6	16 8 7	145.0
1896 ..	29,658	32,964	62,622	8 8 5	9 7 2	17 15 7	111.1
1897 ..	31,958	37,783	69,741	8 18 3	10 10 9	19 9 0	118.2
1898 ..	31,481	40,165	71,646	8 12 11	11 0 7	19 13 6	127.6
1899 ..	34,339	48,599	82,929	9 6 0	13 3 5	22 9 5	141.6
1900 ..	41,388	45,957	87,345	11 1 3	12 5 9	23 7 0	111.0
1901 ..	42,434	49,696	92,130	11 3 11	13 2 2	24 6 1	117.1
1902 ..	40,676	43,915	84,591	10 11 4	11 8 3	21 19 7	108.0
1903 ..	37,811	48,250	86,061	9 14 3	12 7 10	22 2 1	127.6
1904 ..	37,021	57,486	94,507	9 7 9	14 11 7	23 19 4	155.3
1905 ..	38,347	56,841	95,188	9 11 9	14 4 1	23 15 10	148.2
1906 ..	44,745	69,738	114,483	11 0 4	17 3 6	28 3 10	155.9
1907 ..	51,809	72,824	124,633	12 11 3	17 13 2	30 4 5	140.6
1908 ..	49,799	64,311	114,110	11 17 5	15 6 8	27 4 1	129.1
1909 ..	51,172	65,319	116,491	11 19 5	15 5 7	27 5 0	127.6
1910 ..	60,014	74,491	134,505	13 14 8	17 0 10	30 15 6	124.1
1911 ..	66,968	79,482	146,450	14 18 3	17 14 0	32 12 3	118.7
1912 ..	78,159	79,096	157,255	16 16 7	17 0 7	33 17 2	101.2
1913 ..	79,749	78,572	158,321	16 12 0	16 7 2	32 19 2	98.5
First six months 1914	39,777	37,930	77,707	8 2 7	7 15 0	15 17 7	95.4
1914-15 ..	64,432	60,593	125,025	13 0 10	12 5 3	25 6 1	94.0
1915-16 ..	77,521	74,778	152,299	15 14 5	15 3 3	30 17 8	96.4
1916-17 ..	76,229	97,955	174,184	15 12 7	20 1 10	35 14 5	128.5
1917-18 ..	62,335	81,429	143,764	12 12 7	16 10 0	29 2 7	130.63
1918-19 ..	102,335	113,964	216,299	20 6 10	22 13 1	42 19 11	111.36
1919-20† ..	98,607	148,565	247,172	18 15 11	28 6 2	47 2 1	150.55

\* Reckoned on mean population of the year. † Preliminary figures subject to alteration.

The graphs illustrating the movement of the oversea trade of Australia (see pages 611 and 612) shew that periods of depressed trade have been recurrent at more or less regular intervals of from seven to nine years, and, measured by population, each succeeding depression since 1855 carried the trade per head lower than the preceding one, until the lowest point was reached in 1894.

The year 1892 marked the beginning of a period of acute financial stress, culminating in the commercial crisis of 1893. The collapse of these years is plainly reflected in the trade records of that period, the trade of 1894 falling to £54,028,227, a decline of no less than 26.75 per cent. in three years. In 1895 there was a slight recovery, and a continuous upward movement until 1901, when the trade reached £92,130,183, or £24 6s. 1d. per head. A decline, due to drought, in the exports of agricultural, pastoral, and dairy produce, reduced the trade of 1902 to £84,591,037, but although in the next year there was a further shrinkage in the exports of agricultural produce, the increase in the value of the exports of metals, specie, butter, and wool was so large as to effect an increase in the total trade. From 1902 the increase in the value of trade continued, till in 1907 it reached the amount of £124,633,280, equal to £30 4s. 5d. per inhabitant.

The imports during 1907 were, doubtless, to some extent inflated by the importation of goods in anticipation of the tariff revision of that year. The trade of 1908 shows a decline of £10,523,000 as compared with 1907, of which £8,513,000 was in the value of exports, notwithstanding an increase of £3,447,767 in the export of gold and specie. This decline in the value of exports was largely due to reduced prices ruling for wool and metals in consequence of the financial crisis in the United States during the previous year, and in lesser degree to the smaller exports of agricultural and pastoral produce, due to the unfavourable season experienced in some of the States.

The trade of 1909 per head of population was slightly more than in 1908, notwithstanding that the gold exports were less by £5,193,587. In 1910 the value of imports per head was higher than in any year since 1885, and the value of exports was—excepting in the years 1906 and 1907—the highest since 1857. The high value of exports is particularly striking when considered in conjunction with the exceptionally small exports of gold. The exports of gold, already much reduced in 1909 as compared with 1908, were in 1910 still further reduced by £4,264,368 to £4,108,783, the smallest recorded since 1892. During 1911 the exports of gold bullion and specie again increased to £11,540,782. The continued increase in the value of imports during 1912 and 1913, while the value of exports remained stationary, is referred to on the next page.

The trade of 1914–15, and subsequent years, was seriously disturbed by conditions arising from the war such as the dislocation of shipping and increased prices. The shortage of shipping was particularly marked in 1917–18, when, in order to conserve space for more essential requirements, the importation of goods which were considered to be in the nature of luxuries was prohibited or restricted.

The effect of prices on the value of exports is shewn in the "Price Levels" given on page 604, from which it will be seen that on the basis of uniform prices the exports during the years 1914–15 to 1918–19 were less than for the years immediately preceding the war. The exports of 1919–20 (for which preliminary figures only are available), notwithstanding that they include accumulations of wool and wheat, which could not be shipped earlier, represent a volume or quantitative mass only about 13½ per cent. greater than those of 1913; the recorded values are 89 per cent. higher.

The variations in the composition of the trade will be seen from the tables in § 8 following.

**2. Alteration of Trade Year.**—The desirability had long been felt of bringing the trade year into conformity with the seasons for the export of agricultural and pastoral products, but a disinclination to break the continuity of records had, hitherto, prevented the change. As it was obvious that trade itself, and not merely the records, would be seriously disturbed by the war, the time appeared to be peculiarly opportune for making the alteration. The trade returns were, therefore, closed as on the 30th June, 1914, and the new year started from the 1st July. The year 1914–15 thus includes nearly eleven months under war conditions.

3. **Ratio between Exports and Imports.**—The foregoing table shows the percentage of exports on imports for each year.† From this it will be seen that, with few exceptions, due to temporary dislocations of trade, prior to 1892 the balance of trade has been on the side of imports, but from 1891 to 1912 the reverse has been the case. The excess of imports in the earlier years represents the introduction of capital in the form of Government loans and for investment in private undertakings, and the excess of exports represents mainly the interest and profit on the earlier investments, repayment of loans to foreign bondholders, and also freight on trade, which is carried mainly by ships of the United Kingdom and foreign countries. As the introduction of new capital and the payments for interest on existing investments and for shipping and other services are continually operating in opposite directions at the same time in the statistics of trade, it follows that it is the balance only of these transactions which is reflected in the excess of imports or exports.

The marked diminution of the excess of exports is a striking feature of the trade returns for 1912. The decline in the ratio of exports to imports has been due, mainly, to loans raised in London by the Governments of the various States of the Commonwealth. The proceeds of these loans, of course, swell the import returns, but, as no immediate payment beyond an instalment of interest has to be made in return, the export figures are affected to a very minor degree, until such time as the principal of the debt is repaid. The larger number of immigrants had, also, to some extent affected the balance of trade by the introduction of capital. The following table presents the balance of trade of the Commonwealth as shewn by the records of imports and exports for each year from 1902, and, also, the modification of these figures as affected by loans raised in London by the Governments of the States and the Commonwealth :—

**EFFECT OF LOANS ON THE RECORDED BALANCE OF COMMONWEALTH  
TRADE, 1902 TO 1919-20.**

Year.	Excess of Exports as Recorded.		Net Amount of Debt Raised or Redeemed (—) in London.‡	Excess of Exports Modified by Elimination of Loans to Commonwealth and States' Governments.	
	Amount.	Per cent.	Amount.	Amount.	Per cent.
	£1,000.		£1,000.	£1,000.	
1902 .. .. .	3,239	100	5,014	8,253	100
1903 .. .. .	10,439	322	1,658	12,097	146
1904 .. .. .	20,465	632	753	21,218	257
1905 .. .. .	18,494	571	1,968	20,462	248
1906 .. .. .	24,993	771	— 5,308	19,685	238
1907 .. .. .	21,015	649	— 2,259	18,756	227
1908 .. .. .	14,512	448	6,088	20,600	249
1909 .. .. .	14,147	436	2,562	16,709	202
1910 .. .. .	14,477	447	— 2,904	11,573	140
1911 .. .. .	12,514	386	3,123	15,637	189
1912 .. .. .	937	29	12,205	13,142	159
1913 .. .. .	— 1,178	— 36	19,666	18,488	225
1914 (January to June) ..	— 1,847	*	*	— 1,847	*
1914-15 .. .. .	— 3,839	— 119	5,151	1,312	16
1915-16 .. .. .	— 2,743	— 85	2,827	94	1
1916-17 .. .. .	21,726	670	11,695	33,421	405
1917-18 .. .. .	19,095	590	17,373	36,468	442
1918-19 .. .. .	11,629	359	— 2,908	8,721	106
1919-20 .. .. .	49,958	1,543	§	49,958	605

\* Prior to June, 1914, the figures relating to debt were six months in advance of the trade figures; since that date the periods to which the figures relate are identical.

† For individual years 1826 to 1865 see Official Year Book, No. 7, and previous issues.

‡ See note to the following table.

§ Complete information relating to loans raised or redeemed in London during 1919-20 is not available, but it is known that the amount of new loans was not sufficient to make any material modification of the excess of exports as recorded. The trade figures for 1919-20 are subject to slight alteration.

The trade balances would be further modified by the loans of local governing bodies, by the imports of capital for private enterprises, and by the addition to or absorption of bank balances held in London on Australian account. Particulars of such transactions are, however, not available.

Since the outbreak of war the trade balances for single years have been completely upset by the difficulties of transport. Consequently, it is necessary for proper observation to take the total transactions during the six years from the 1st July, 1914, to the 30th June, 1920.

The following table shews that during the decade 1902-1911 an annual excess of exports of about £16,000,000 was required to meet the obligations of this community on account of interest and for services performed for it by persons outside the Commonwealth. Loans since raised in London by the States and the loans and advances made by the Imperial Government to the Commonwealth Government have increased this annual liability by about £6,000,000 in 1919-20; the *average* increase on account of each of the six years being about £3,720,000, which, added to the pre-war liability, represents an annual liability throughout the war period of about £20,000,000, whereas the results of these six years, as shewn in the preceding table, will give an average excess of exports, as modified by new loans, of £21,666,000.

The foregoing figures are based on the values of imports and exports as recorded by the Department of Trade and Customs, and take no account of any profit which may have accrued from the re-sale of Australian wool originally purchased by the Imperial Government.

The general relationship between the balance of trade of the Commonwealth and the borrowing of money abroad is demonstrated by the following figures:—

#### COMMONWEALTH BALANCE OF TRADE AND PUBLIC DEBT, 1867 TO 1920.

Period.	Annual Average.					
	Imports.	Exports.	Recorded Excess of		New Debt.	Excess of Exports modified by elimination of Loans.
			Imports.	Exports.		
	Mill. £.	Mill. £.	Mill. £.	Mill. £.	Mill. £.	Mill. £.
1867-1871 .. ..	17.8	20.0	..	2.2	1.7	3.9
1872-1876 .. ..	23.4	24.6	..	1.2	2.6	3.8
1877-1881 .. ..	25.6	24.6	1.0	..	5.2	4.2
1882-1886 .. ..	35.8	26.8	9.0	..	10.6	1.6
1887-1891 .. ..	35.4	29.4	6.0	..	7.4	1.4
1892-1896 .. ..	25.6	33.0	..	7.4	3.8	11.2
1897-1901 .. ..	36.2	44.4	..	8.2	3.2	11.4
1902-1906 .. ..	39.6	55.2	..	15.6	0.8	16.4
1907-1911 .. ..	56.0	71.2	..	15.2	1.3	16.5
1912-1915-16 (4½ years) ..	75.5	73.5	2.0	..	10.0	8.0
1916-17-1919-20 (4 years) ..	84.9	110.5	..	25.6	6.5	32.1

\* Subsequent to 1897 these figures relate to moneys raised outside of Australia only. Prior to 1893 the amounts raised locally were insignificant, but it is probable that the amount of new debt raised during 1892-6 is somewhat overstated. Loans raised by Local Government Bodies are not included. Loans for redemption purposes are not included, nor are loans from the Imperial Government for war purposes, the proceeds of which were spent abroad, and consequently did not affect Australian imports.



## § 6. Direction of Trade.

1. Country of Shipment and Country of Origin.—The following table shews, for the years 1909 and 1918-19, the value of imports recorded as direct from the principal countries, and also the disposition of the value of imports against the countries where they were produced or manufactured. A similar comparison for earlier years will be found in previous issues of this work.

**COMMONWEALTH IMPORTS FROM COUNTRIES OF SHIPMENT AND COUNTRIES OF ORIGIN, 1909 AND 1918-19.**

Country.	Imports according to—							
	Country of Shipment.				Country of Origin.			
	1909.		1918-19.		1909.		1918-19.	
	Value.	Per cent.	Value.	Per cent.	Value.	Per cent.	Value.	Per cent.
United Kingdom ..	£ 31,171,828	60.92	£ 37,971,346	37.10	£ 25,862,618	50.54	£ 34,584,611	33.80
BRITISH POSSESSIONS—								
Canada .. ..	508,415	0.99	2,283,978	2.23	680,590	1.33	2,844,050	2.78
Ceylon .. ..	740,271	1.44	1,628,939	1.59	739,016	1.44	1,370,337	1.34
Hong Kong ..	241,533	0.47	542,655	0.53	9,545	0.02	6,893	0.01
India .. ..	1,794,483	3.51	7,558,858	7.39	1,830,756	3.58	7,967,228	7.79
New Zealand ..	2,195,313	4.29	2,420,724	2.37	2,072,849	4.05	2,136,146	2.09
Straits Settlements	489,909	0.96	1,266,820	1.24	160,360	0.31	339,162	0.33
Other British Possessions ..	915,170	1.79	6,955,643	6.80	1,144,973	2.24	7,250,934	7.08
Total British Possessions ..	6,885,094	13.45	22,657,617	22.15	6,638,089	12.97	21,923,750	21.42
Total British Countries ..	38,056,922	74.37	60,628,963	59.25	32,500,707	63.51	56,508,361	55.22
FOREIGN COUNTRIES—								
Austria-Hungary* ..	12,885	0.03	..	..	270,194	0.53	231	0.00
Belgium .. ..	968,481	1.89	725	0.00	662,132	1.29	4,691	0.00
China .. ..	44,103	0.08	288,117	0.28	302,594	0.59	791,378	0.77
France .. ..	409,949	0.80	144,544	0.14	1,784,312	3.49	1,651,833	1.61
Germany* .. ..	3,331,141	6.51	2,356	0.00	4,538,612	8.87	10,956	0.01
Japan .. ..	601,534	1.18	8,281,439	8.09	638,623	1.25	8,203,725	8.02
Java .. ..	1,056,885	2.06	1,819,186	1.78	1,057,079	2.07	1,757,781	1.72
Netherlands ..	153,328	0.30	57,521	0.06	299,334	0.58	259,599	0.25
Norway .. ..	431,272	0.84	630,838	0.62	495,346	0.97	654,220	0.64
Spain .. ..	13,514	0.03	4,506	0.00	100,350	0.20	70,169	0.07
Sweden .. ..	328,790	0.64	505,617	0.49	418,165	0.82	512,624	0.50
Switzerland ..	33,793	0.07	122,488	0.12	796,432	1.55	1,250,904	1.22
United States ..	5,003,130	9.78	27,930,085	27.29	5,935,740	11.60	27,183,792	26.57
Other Foreign Countries ..	726,169	1.42	1,918,774	1.88	1,373,276	2.68	3,474,895	3.40
Total Foreign Countries ..	13,114,974	25.63	41,706,196	40.75	18,671,189	36.49	45,826,708	44.78
Total Imports from all Countries ..	51,171,896	100.00	102,335,159	100.00	51,171,896	100.00	102,335,159	100.00

\* The imports shewn as from enemy countries during 1918-19 were on board German ships interned in South Africa and elsewhere and were subsequently forwarded to Australia.

The only country from which the value of direct imports exceeds by any large amount the value of the imports of goods which were manufactured or produced therein, that is to say, the only country which shews a balance of any magnitude as a distributor of the goods of other countries to Australia, is the United Kingdom. The records of imports therefrom during the year 1918-19 shew that while the total direct imports from that country amounted to £37,971,346, the value of the manufactures or produce of the United Kingdom itself, imported from all countries whatsoever during the same year, was £34,584,611. From the foregoing figures it appears that goods to the value of at least £3,386,735 were received from other countries through the United Kingdom.

Other countries which prior to the war shewed balances as distributors to Australia, though absolutely of much less amount, were Belgium, Canada, Hong Kong, New Zealand, Straits Settlements, and Ceylon. The countries mentioned were, of course,

not the only countries through which goods were indirectly imported into Australia, for the direct imports from other countries included considerable values which were not the produce of those countries. Prior to the war large quantities of goods not manufactured in France or Germany were shipped to Australia from those countries. Such transactions were, however, more than balanced by French and German goods received through the United Kingdom and other countries.

2. **Direct Imports according to Country of Shipment.**—The following table shows the average yearly value of imports from each of the principal countries during each succeeding quinquennial period from 1899 to 1919, and for the year 1918-19. The countries mentioned in this table are those in which the goods were shipped or whence they were directly consigned to Australia.

**IMPORTS INTO THE COMMONWEALTH FROM VARIOUS COUNTRIES,  
1899 TO 1918-19.**

Country.	Yearly Average for Quinquennial Periods.				Year 1918-19.
	1899-1903.	1904-8.	1909-13.	1914-5/1918-9.	
	£	£	£	£	£
United Kingdom	23,107,178	26,789,801	40,171,599	36,093,175	37,971,346
British Possessions—					
Canada .. ..	285,312	292,801	857,133	1,761,200	2,283,978
Ceylon .. ..	481,627	679,572	816,220	1,300,167	1,628,939
Fiji .. ..	91,918	89,425	389,276	582,608	192,921
Hong Kong .. ..	299,872	279,030	297,127	424,801	542,655
India .. ..	998,326	1,563,604	2,350,599	4,477,714	7,558,858
Mauritius .. ..	156,485	51,239	69,533	35,250	145,289
New Zealand .. ..	2,096,004	2,441,722	2,647,942	2,281,134	2,420,724
Papua .. ..	67,655	63,746	80,179	122,493	211,770
South African Union ..	5,626	50,232	137,911	1,538,515	5,779,795
Straits Settlements ..	234,001	270,550	625,079	1,005,157	1,266,820
Other British Possessions	49,334	168,318	298,640	524,342	625,868
Total British Possessions	4,766,160	5,950,239	8,569,639	14,053,381	22,657,617
Total British Countries	27,873,338	32,740,040	48,741,238	50,146,566	60,628,963
Foreign Countries—					
Belgium .. ..	428,305	815,228	1,724,846	110,404	725
Bismarck Archipelago, Hawaiian Islands, New Caledonia, New Hebrides and other South Sea Islands .. ..	149,889	167,665	230,338	437,624	784,768
Chile and Peru .. ..	32,956	22,611	47,818	214,546	30,718
China .. ..	249,940	70,887	83,628	216,558	288,117
France .. ..	504,558	455,301	545,071	190,665	144,544
Germany .. ..	2,521,486	3,112,897	4,329,681	279,940	2,356
Italy .. ..	157,502	197,464	343,894	358,580	165,970
Japan .. ..	290,835	460,514	804,346	4,302,953	8,281,439
Java .. ..	648,729	314,745	848,213	1,209,439	1,819,186
Netherlands .. ..	59,576	133,191	234,650	65,722	57,521
Norway .. ..	*425,664	312,357	599,801	683,405	630,838
Philippine Islands ..	84,660	79,056	113,156	161,537	110,500
Sweden .. ..	*	105,828	489,113	573,443	505,617
United States of America	5,342,307	5,124,191	7,643,641	16,720,033	27,930,085
Other Foreign Countries	553,542	232,183	432,463	898,848	953,812
Total Foreign Countries	11,440,949	11,604,118	18,471,159	26,423,697	41,706,196
Total .. ..	39,323,287	44,344,158	67,212,397	76,570,253	102,335,159

\* Norway and Sweden combined for these years.

Expressing each item as percentage on the total of the imports, the following results are obtained :—

**COMMONWEALTH IMPORTS.—PERCENTAGES OF IMPORTS FROM EACH COUNTRY ON THE TOTAL IMPORTS, 1899 TO 1918-19.**

Country.	Yearly Average for Quinquennial Periods.				1918-19.
	1899-1903.	1904-8.	1909-13.	1914-5/1918-9.	
	per cent.	per cent.	per cent.	per cent.	per cent.
United Kingdom .. ..	58.76	60.41	59.77	47.14	37.10
British Possessions—					
Canada .. ..	0.73	0.66	1.28	2.30	2.23
Ceylon .. ..	1.22	1.53	1.21	1.70	1.59
Fiji .. ..	0.23	0.20	0.58	0.76	0.19
Hong Kong .. ..	0.76	0.63	0.44	0.55	0.53
India .. ..	2.54	3.53	3.50	5.85	7.39
Mauritius .. ..	0.40	0.12	0.10	0.05	0.14
New Zealand .. ..	5.33	5.51	3.94	2.98	2.37
Papua .. ..	0.17	0.14	0.12	0.16	0.21
South African Union .. ..	0.01	0.11	0.21	2.01	5.65
Straits Settlements .. ..	0.60	0.61	0.93	1.31	1.24
Other British Possessions .. ..	0.13	0.38	0.44	0.68	0.61
Total British Possessions .. ..	12.12	13.42	12.75	18.35	22.15
Total British Countries .. ..	70.88	73.83	72.52	65.49	59.25
Foreign Countries—					
Belgium .. ..	1.09	1.84	2.57	0.14	0.00
Bismarck Archipelago, Hawaiian Islands, New Caledonia, New Hebrides and other South Sea Islands .. ..	0.38	0.38	0.34	0.57	0.77
Chile and Peru .. ..	0.08	0.05	0.07	0.28	0.03
China .. ..	0.64	0.16	0.12	0.28	0.28
France .. ..	1.28	1.02	0.81	0.25	0.14
Germany .. ..	6.41	7.02	6.44	0.37	0.00
Italy .. ..	0.40	0.45	0.52	0.47	0.16
Japan .. ..	0.74	1.04	1.20	5.62	8.09
Java .. ..	1.65	0.71	1.26	1.58	1.78
Netherlands .. ..	0.15	0.30	0.35	0.09	0.06
Norway .. ..	1.08*	0.70	0.89	0.89	0.62
Philippine Islands .. ..	0.22	0.18	0.17	0.21	0.11
Sweden .. ..	*	0.25	0.73	0.75	0.49
United States of America .. ..	13.59	11.55	11.37	21.84	27.29
Other Foreign Countries .. ..	1.41	0.52	0.64	1.17	0.93
Total Foreign Countries .. ..	29.12	26.17	27.48	34.51	40.75
Total .. ..	100	100	100	100	100

\* Norway and Sweden combined for these years.

3. Imports from the United Kingdom.—The foregoing table shews broadly the extent to which the export trade of the United Kingdom to this country has been affected by the concentration of British industry on the war, and it also shews the increased value of imports from the United States of America and from Japan. The

diversion of Australian trade from Great Britain is more fully dealt with in paragraph 12 of this section. The values of the principal imports of United Kingdom origin during the year 1918-19 are as follows :—

Ale and beer, £51,612 ; apparel and textiles—apparel—blouses, skirts, &c., £189,198, boots and shoes, £89,634, corsets, £164,286, gloves, £115,320, hats and caps, £90,074, shirts, collars, etc., £151,125, socks and stockings, £701,439, trimmings, £150,522, other apparel, £665,986, textiles—piece goods—canvas and duck, £492,668, cotton—grey, unbleached, £460,240, white, bleached, £2,917,911, dyed or printed n.e.i., £6,577,031, lace for attire, £411,688, linen n.e.i., £338,753, silk, £187,412, velvets, £363,917, woollens, £2,563,849, other piece goods, £829,667, sewing and embroidery silks, £848,814, other textiles, £1,394,048 ; arms, ammunition, and explosives, £369,996 ; bags, baskets, etc., £39,692 ; books and periodicals, £558,920 ; brushware, £51,134 ; cocoa and chocolate, £11,283 ; cordage, £172,548 ; drugs and chemicals—alkalis (soda), £351,729, cyanide of potassium, £111,490, dyes, £140,506, insecticides, etc., £107,175, medicines, £155,794, other drugs, etc., £663,310 ; earthenware, £211,558 ; electrical materials, £190,382 ; fancy goods, £95,321 ; fish, fresh and preserved, £9,427 ; glass, etc., £131,964 ; glue, gelatine, £52,892 ; indiarubber and manufactures, £299,040 ; instruments—musical, £26,152 ; surgical and dental, £82,818 ; jewellery and precious stones, £125,072 ; leather and manufactures, £198,756 ; machines and machinery—electrical, £208,452 ; machine tools, £179,471, motive power, £196,354, other, £553,524, metals, manufactures of—cutlery, £251,336, electrical and gas appliances, £131,452, iron and steel—pig iron, £7,198, bar, hoop, ingot, etc., £253,223, girders, beams, etc., £15,812, plate and sheet—corrugated, galvanized, £154,816, galvanized, not corrugated, £136,539, plain, not galvanized, £174,461, pipes and tubes, £456,206, rails, fishplates, etc., £4,444, tinned plates, plain, £2,108,754, tools of trade, £291,082, wire, £40,257, wire rope, hawsers, etc., £171,942, vehicles—bicycles, £78,304, motors, £20,287, other vehicles, £148,769, other metal manufactures, £1,002,962 ; mustard, £30,364 ; oils (not essential), £12,775 ; paints and varnishes, £185,966 ; paper, £543,799 ; photographic materials, £29,447 ; pickles, sauces, etc., £95,448 ; pipes, smoking, £74,727 ; soap, £30,825 ; spirits, £904,164 ; stationery, £190,536 ; tobacco, £60,155 ; wax matches, £104,691 ; yarns, £1,081,786.

4. Imports shipped from British Possessions.—The growth of the value of imports from other British possessions during the past twenty years has been such as to increase the proportion to total imports from 12.12 per cent. in the years 1899-1903 to 22.15 per cent. in 1918-19, the actual values being respectively £4,766,160 in the earlier period and £22,657,617 in 1918-19. Of the total imports from British possessions during 1918-19, 10.68 per cent., or 2.37 per cent. of all imports, was from New Zealand ; 33.36 per cent., or 7.39 per cent. of all imports, from India ; 10.08 per cent., or 2.23 per cent. of all imports, from Canada ; and 7.19 per cent., or 1.59 per cent. of all imports, from Ceylon. The imports from Canada shew an increase of £1,125,145, or 97.09 per cent. over those of 1913, and an increase of £1,426,845, or 166.47 per cent., over the average of the period 1909-13. The relatively large imports from the South African Union during 1918-19 were due to a shipment of gold (£4,943,296) to Western Australia to be minted.

5. Principal Imports, the Produce of British Possessions, 1918-19.—These are as follows :—

(i) *Canada.* Apparel and textiles—corsets, £53,491, other, £61,003 ; boots and shoes, £30,212 ; carbide of calcium, £7,048 ; cutlery, £14,681 ; fish, £189,438 ; indiarubber and manufactures, £185,162 ; iron and steel—bar, rod, &c., £44,610 ; agricultural implements and machinery, £334,929 ; other machines and machinery, £26,064 ; metal manufactures, £99,642 ; musical instruments, £10,881 ; paints and varnishes, £25,990 ; paper—printing, £548,380, wrapping, £98,559, other paper, £93,240 ; pipes and tubes, wrought, £126,866 ; timber, £50,576 ; motor chassis, £387,165 ; other vehicles, £39,348 ; whisky, £127,165 ; wire, £88,765.

(ii) *Ceylon.* Cocoa and chocolate, £45,116 ; coir fibre, £6,607 ; nuts, £39,787 ; rubber and manufactures, £23,068 ; tea, £1,227,650. The large increase in the imports from Ceylon—from an average of £481,627 per year during the years 1899-1903, to £1,628,939 in 1918-19—is due to the displacement of China teas in the Australian markets by those of India and Ceylon. Of the total imports of tea during the year 1918-19, 62.49 per cent. of the value was the produce of Ceylon.

(iii) *Egypt*. Apparel, £54,523; biscuits, £57,355; butter, £52,240; copper, ingots, £85,950; lead, pig, £41,970; meats—frozen, £1,638,368, other, £865,162; milk and cream, £158,756; fruits, preserved, £39,265; grain—wheat, £2,838,490; flour, £1,464,141; leather and manufactures thereof, £16,160; tallow, £61,558; tobacco and cigarettes, £29,753; wool, £613,814.

(iv) *Fiji*. Bananas, £78,796; copra, £23,220; sugar—produce of cane, £47,862; molasses, £12,636; crude rubber, £5,272.

(v) *Hong Kong*. Bacon and hams, £11,471; biscuits, £10,245; butter, £28,618; coal, £6,079; flour, £226,971; lead, pig, £77,426; leather, £31,754; sandalwood, £92,518; soap, £5,686; tin, ingots, £18,188.

(vi) *India*. Bags and sacks, £3,930,043; hessians, £675,262; cameos, precious stones unset, £24,562; carpets, mats, &c., £53,374; coal, £51,012; coffee and chicory, £45,266; cordage and twine, £105,270; cotton, raw, £10,085; jute, £30,388; other unmanufactured fibres, £77,216; gums and resins, £37,502; gold bullion, £1,498,074; grain—beans and peas, £8,369; linseed, £505,599; oils—castor, £4,285, linseed, £61,704; rice, £33,950; skins and hides, £241,745; spices, £17,963; tea, £313,967; wax, paraffin, £85,447; yarns, £39,761.

(vii) *New Zealand*. Apparel and textiles, £5,885; animals—horses, £20,647, sheep, £4,657; beans and peas, £18,320; coal, £19,280; flax and hemp fibre, £173,314; fish, £21,048; gold bullion, matte, and ore, £514,694; implements and machinery (agricultural), £2,199; machines and machinery, £7,534; meats, £11,503; milk and cream, £30,269; seeds, £84,809; silver—bar, ingot, £74,864; skins and hides, £354,264; timber, £634,091; twine, reaper and binder, £19,141.

(viii) *Papua*. Copra, £118,801; gold bullion, £26,535; fibres, flax and hemp, £8,816; copper ore, £9,510; india-rubber, £27,704.

(ix) *South African Union*. Bark, tanning, £39,874; brandy, £6,258; coal, £27,773; explosives, £92,407; gold—bullion, £4,943,296, contained in matte, £394,550; maize, £69,127; precious stones, £236,138.

(x) *Straits Settlements*. Bamboo, clouded, £7,045; copra, £6,063; rubber and rubber manufactures, £187,681; spices, £32,004; sago and tapioca, £63,268.

6. Imports Shipped from Foreign Countries.—The imports direct from foreign countries during the year 1918–19 represented 40.75 per cent. of the total imports, as compared with 29.12 per cent. during the years 1899–1903. Of the total imports into Australia shipped from foreign countries during 1918–19, 66.97 per cent.—27.29 per cent. of all imports—was from the United States, and 19.86 per cent.—8.09 per cent. of all imports—was from Japan. Further reference to the increased trade with the United States and Japan will be found hereinafter.

7. Principal Imports the Produce of Foreign Countries, 1918–19.—(i) *Austria*. Trade with Austria was suspended on the outbreak of war, and has not since been resumed.

(ii) *Belgium*. Apparel, £196; textiles, £670; cameos and precious stones, £196; drugs and chemicals, £236; glass and glassware, £809; paper, £2,423.

(iii) *Brazil*. Cocoa beans, £4,088; india-rubber, £153,646; nuts, £6,216; tobacco, £3,382; waxes, £3,232.

(iv) *Chile*. Soda nitrate, £30,704.

(v) *China*. Alcoholic liquors, £12,710; apparel and textiles, £341,349; bamboo, cane, etc., £9,633; cotton, raw, £15,025; drugs and chemicals, £23,314; fireworks, £9,432; fish, £21,125; fruit, £17,230; ginger, £24,741; grass straw for hats, £21,218; rice, £67,862; nuts, £29,414; oils, £35,867; tea, £61,061; tobacco, £24,895.

The decline in the value of imports from China during the past twenty years is due to the loss of the tea trade, which now draws its supplies mainly from India and Ceylon.

(vi) *Denmark*. Ale and beer and spirits, £1,314; rennet, £3,848; whiting, £1,597.

(vii) *France*. Apparel and textiles, £912,808; cream of tartar, £162,651; tartaric acid, £16,678; other drugs and chemicals, £74,348; fancy goods, £42,780; jewellery, £19,232; liquorice, £830; musical instruments, £10,746; oils, essential, £30,901; pipes, smoking, etc., £76,761; paper and stationery, £57,196; perfumery, £13,388; perfumed spirits and bay rum, £18,042; rubber tyres, £84,899; leather, £952; machinery and manufactures of metal, £12,200; musical instruments, £10,746; seeds, £6,519; spirits, £46,816; wine, £19,081.

(viii) *Germany*.—Trade with Germany was suspended on the outbreak of war, and has not since been resumed.

(ix) *Italy*. Apparel and textiles—buttons, buckles, &c., £13,212, gloves, £49,424, hats and caps, £18,259, piece goods—silk, £164,510, other, £9,252, other apparel and textiles, £16,358; flax and hemp, £14,759; marble and stone, £17,909; oils—essential, £25,920; nuts, £28,076; rubber tyres, £31,464; cream of tartar, £33,683; tartaric acid, £95,592; wines, £3,291.

(x) *Japan*. Apparel—hats and caps, £62,324, gloves, £72,446, socks and stockings, £105,545, shirts, collars, £91,411, other, £228,885, textiles—carpets, matting, £119,205, piece goods—canvas and duck, £328,315, cotton and linen, £1,535,770, silk, £1,861,866, quilts, etc., £73,941, other textiles, £306,413; bags, baskets, etc., £44,663; brushware, £97,551; cable and wire, covered, £292,669; carbide of calcium, £136,161; chinaware, £207,297; earthenware, £60,663; fancy goods, £235,239; fibres—cotton waste, £92,019; fish, £13,957; furniture, £6,035; glass and glassware, £207,589; grass straw for hats, £66,925; ores and metal manufactures—electrical appliances, £70,666, enamelled ware, £47,945, wire rope, hawsers, £50,385, other, £377,337; matches, £226,116; nuts, £4,833; oils and waxes, £120,315; paper, £126,225; stationery, £51,646; rice, £459; spices, £5,072; sulphate of copper, £25,646; sulphur, £238,787; tea, £2,767; wood and wicker, etc., £119,627; yarns, £79,884; tobacco, £15,177.

Further reference is made in a later page to the imports from Japan.

(xi) *Netherlands*. Cocoa and chocolate, £1,461; cameos and precious stones, £59,733; drugs and chemicals, £7,317; electrical appliances, £139,820; paper, £3,681; spirits, £40,354.

(xii) *Netherlands East Indies*. Bananas, £10,478; coffee, raw, £30,256; drugs and chemicals, £22,434; flax and hemp, £3,308; hides, cattle, £45,403; kapok, £184,632; manganese ore, £7,052; oils and waxes—China oil, £18,224, kerosene, £50,520, paraffin wax, £39,232, petroleum, £985,017, residual oil, £77,681, turpentine substitutes, £22,453; rubber, crude, £95,927; rice, £287; sago and tapioca, £14,521; seeds, £9,410; tobacco, £18,442; tea, £341,004; sugar, £858,881; spices, unground, £50,728.

(xiii) *New Caledonia*. Copra, £11,325; cotton, raw, £10,802; maize, £2,859; meats, preserved in tins, £10,263; manganese ore, £7,556; skins, £29,840; tallow, £5,712.

(xiv) *Norway*. Drugs and chemicals, £27,241; machinery and manufactures of metals, £6,038; matches, £26,286; paper, £566,763; wood pulp, £24,936.

(xv) *Peru*. Imports from Peru during 1918–19 amounted to only £1,093.

(xvi) *Philippine Islands*. Flax and hemp, £80,165; cigars, £24,501; tobacco, unmanufactured, £5,812.

(xvii) *Russia*. Drugs and chemicals, £1,512; furs, £6,958; seeds, £3,287.

(xviii) *Spain*. Corks, etc., £43,703; nuts, £545; olive oil, £9,864; quicksilver, £3,600; wine, £4,626.

(xix) *Sweden*. Cream separators, £153,241; other machines and machinery, £21,482; horseshoe nails, £65,167; primus stoves, £7,757; manufactures of metals, £25,019; matches and vests, £20,625; timber, £9,900; paper, £179,615; wood manufactures, £8,362; wood pulp, £9,129; rennet, £11,893.

(xx) *Switzerland*. Apparel and textiles—trimmings, £536,073, piece goods—silk, £74,796, lace for attire, £189,394, other, £111,858; drugs and chemicals, £27,149; grass straw for hats, £41,584; machinery and metal manufactures, £61,823; surgical instruments, £36,674; talking machines, £4,562; watches, £150,820.

(xxi) *United States of America*. Apparel—boots, shoes, etc., £75,373, corsets, £197,129, furs, dressed, £51,927, gloves, £198,498, hats and caps, £68,026, hosiery and knitted articles, £138,900, shirts, collars, etc., £75,877, socks and stockings, £963,949; trimmings, £97,937, other apparel, £164,993; textiles—floor coverings, £165,120, piece goods—canvas and duck, £165,032, cotton and linen, £1,215,444, other, £324,816, sewing silks, £139,220, other textiles, £52,562; arms, £62,003; ammunition and explosives, £293,955; bags, baskets, etc., £40,333; brushware, £39,415; cameras, £56,008; caramel, £86,227; clocks and watches, £130,205; cocoa and chocolate, £77,310; drugs and chemicals, cream of tartar—£290,839, drugs and medicinal preparations, £75,750, dyes, £54,790, medicines, £105,974, other, £461,959; electrical materials—accumulators, £107,331, arc lamps and carbons, £116,120, cable and wire, covered, £123,423; fancy goods, £79,161; fish, £106,790; fruit, £69,091; furniture, £39,447; glass and glassware, £477,029; india-rubber manufactures, £550,431; jewellery and precious stones, £57,244; kinematograph films, £152,042; leather, £458,971; meats, £97,107; machines and machinery—agricultural, £284,757, engines, £156,583, electrical, £374,169, machine tools, £115,577, sewing, £294,067, typewriters, £121,068, other, £872,123; metals and manufactures—bolts, nuts, £89,907, copper, plate and sheet, etc., £116,743, cutlery, £75,310, iron and steel—bars, ingots, hoops, etc., £256,911, girders, beams, £46,254, plate and sheet—corrugated, galvanized, £654,250, galvanized, not corrugated, £350,130, plain, not galvanized, £439,503, lampware, £108,403, nails, £183,113, pipes and tubes, £270,996, telephones, £69,596, tools of trade, £488,505, wire, £524,785, other, £1,300,819; musical instruments, £305,887; oils, fats, and waxes—benzine and gasoline, £806,387, kerosene, £658,818, lubricating oils and greases, £777,562, waxes, £86,958, turpentine, £115,362; paints and varnishes, £326,615; paper—printing, £811,113, wrapping, £1,193,797, writing and typewriting, £613,067, other, £503,929; perfumery, £114,373; resin, £120,639; soda—carbonate, £149,676, caustic, £31,131, stationery, £320,427; surgical and dental instruments, £98,637; talking machines, £87,395; timber, £1,056,108; tobacco, cigars, etc., £1,527,937; vehicles—motors and parts, £1,159,554, other vehicles and parts, £412,780; vessels, £417,399; wood and wicker manufactures, £113,620.

The imports from America are again referred to in a later page.

8. *Direction of Exports*.—The following tables shew that, prior to the war, a constantly decreasing proportion of Australian exports was being consigned to the United Kingdom. This was not entirely due to the relatively smaller purchases of Australian produce by the United Kingdom, but was in some measure the effect of an increasing tendency towards direct shipment of wool, skins, etc., to the consuming countries—notably to Belgium, France, and Germany—instead of distributing the trade through London as formerly. The figures given below, however, do not, even for the later pre-war years, denote the total purchases by European countries of Australian produce, as large quantities were still distributed from London. It should be noted, too, that the exports to India and Ceylon consisted largely of gold shipped on London account, and which was, therefore, virtually an export to the United Kingdom. The reservation to the United Kingdom of the first call on our primary products increased the proportion

of our exports which was shipped to that country during the war period, and, to a greater extent, the proportion shipped to other parts of the Empire, notably to Egypt and to India.

## TRADE OF THE COMMONWEALTH WITH VARIOUS COUNTRIES, 1899 TO 1918-19.

## EXPORTS (INCLUDING BULLION AND SPECIE).

Country.	Yearly Average for Quinquennial Periods.				Year 1918-19.
	1899-1903.	1904-8.	1909-13.	1914-5/1918-9.	
	£	£	£	£	£
United Kingdom ..	23,432,513	30,114,565	34,028,258	45,839,346	61,603,958
British Possessions—					
Canada .. ..	67,776	201,832	125,942	1,835,850	891,529
Ceylon .. ..	2,223,487	4,050,826	3,194,757	330,221	648,426
Fiji .. ..	205,731	284,636	402,877	442,794	443,981
Hong Kong .. ..	403,776	747,025	741,365	654,371	1,551,679
India .. ..	2,348,420	2,828,280	2,231,306	4,492,414	7,741,081
Mauritius .. ..	40,425	46,378	32,424	16,650	40,108
New Zealand .. ..	1,432,227	2,060,900	2,385,078	3,525,124	4,156,860
Papua .. ..	48,720	50,174	120,401	165,559	205,193
South African Union ..	4,276,976	2,065,014	1,799,435	1,995,940	2,347,367
Straits Settlements ..	105,824	391,409	834,156	853,765	1,563,056
Other British Possessions	41,941	70,843	75,913	†3,351,006	†10,069,993
Total British Possessions	11,195,303	12,797,317	11,943,654	17,663,694	29,659,273
Total British Countries	34,627,816	42,911,882	45,971,912	63,503,040	91,263,231
Foreign Countries—					
Argentina Republic ..	25,398	40,094	126,142	22,491	2,218
Belgium .. ..	1,667,396	3,930,612	6,172,958	182,053	104,890
Bismarck Archipelago, Hawaiian Islands, New Caledonia, New Hebrides and other South Sea Islands .. ..	789,966	442,050	631,465	778,687	1,060,767
Chile and Peru .. ..	299,097	624,168	616,704	241,512	204,466
China .. ..	237,376	340,726	161,527	180,913	314,008
France .. ..	2,754,889	5,686,867	8,183,825	2,159,912	1,045,182
Germany .. ..	2,549,266	5,140,556	6,938,358	96,001	1,608
Italy .. ..	159,017	207,218	525,903	2,321,900	1,724,801
Japan .. ..	198,434	869,350	1,194,271	3,262,745	3,846,951
Java .. ..	153,439	209,310	480,984	985,472	2,277,887
Netherlands .. ..	107,914	299,231	298,879	8,274	1,264
Norway .. ..	*1,192	4,624	2,039	163,702	453,731
Philippine Islands ..	229,414	463,283	525,443	453,967	653,653
Spain .. ..	15,383	59,264	23,540	91,232	3,679
Sweden .. ..	*	4,219	4,888	146,595	731,282
United States of America	3,270,940	2,483,637	2,067,313	9,807,368	9,009,425
Other Foreign Countries..	194,127	522,911	1,456,269	1,338,051	1,264,933
Total Foreign Countries	12,653,248	21,328,120	29,410,508	22,240,875	22,700,745
Total .. ..	47,281,064	64,240,002	75,382,420	85,743,915	113,963,976

\* Norway and Sweden combined for these years. † Includes Egypt, which prior to 1914-15 was included with "Other Foreign Countries."



If each item be expressed as a percentage on the total export, the results will be as follows:—

**COMMONWEALTH EXPORTS.—PERCENTAGES OF THE EXPORTS TO EACH COUNTRY ON THE TOTAL EXPORTS, 1899 TO 1918-19.**

Country.	Yearly Average for Quinquennial Periods.				1918-19.
	1899-1903.	1904-8.	1909-13.	1914-5/1918-9.	
	per cent.	per cent.	per cent.	per cent.	per cent.
United Kingdom ..	49.56	46.88	45.14	53.46	54.06
British Possessions—					
Canada .. ..	0.14	0.31	0.17	2.14	0.78
Ceylon .. ..	4.70	6.32	4.24	0.38	0.57
Fiji .. ..	0.44	0.44	0.53	0.52	0.39
Hong Kong .. ..	0.85	1.16	0.98	0.76	1.36
India .. ..	4.97	4.40	2.96	5.24	6.79
Mauritius .. ..	0.09	0.07	0.04	0.02	0.03
New Zealand .. ..	3.03	3.21	3.16	4.11	3.65
Papua .. ..	0.10	0.08	0.16	0.19	0.18
South African Union ..	9.05	3.21	2.39	2.33	2.06
Straits Settlements ..	0.22	0.61	1.11	1.00	1.37
Other British Possessions	0.09	0.11	0.10	3.91	8.84
Total British Possessions	23.68	19.92	15.84	20.60	26.02
Total British Countries	73.24	66.80	60.98	74.06	80.08
Foreign Countries—					
Argentine Republic ..	0.05	0.06	0.17	0.03	0.00
Belgium .. ..	3.53	6.12	8.19	0.21	0.09
Bismarck Archipelago, Hawaiian Islands, New Caledonia, New Hebrides and other South Sea Islands .. ..	1.67	0.69	0.84	0.91	0.93
Chile and Peru .. ..	0.63	0.97	0.82	0.28	0.18
China .. ..	0.50	0.53	0.20	0.21	0.28
France .. ..	5.83	8.85	10.86	2.52	0.92
Germany .. ..	5.39	8.00	9.21	0.11	0.00
Italy .. ..	0.34	0.32	0.70	2.70	1.51
Japan .. ..	0.42	1.35	1.58	3.81	3.38
Java .. ..	0.32	0.33	0.64	1.15	2.00
Netherlands .. ..	0.23	0.47	0.40	0.01	0.00
Norway .. ..	0.00*	0.01	0.00	0.19	0.40
Philippine Islands ..	0.49	0.72	0.70	0.53	0.57
Spain .. ..	0.03	0.09	0.03	0.11	0.00
Sweden .. ..	*	0.01	0.01	0.17	0.64
United States of America	6.92	3.87	2.74	11.44	7.91
Other Foreign Countries..	0.41	0.81	1.93	1.56	1.11
Total Foreign Countries	26.76	33.20	39.02	25.94	19.92
Total .. ..	100	100	100	100	100

\* Norway and Sweden combined for these years. † See note to preceding table.

9. Exports to the United Kingdom.—The principal exports to the United Kingdom during the year 1918-19 were as follows:—Apparel and textiles, £353,072; butter, £2,433,351; cheese, £64,691; eucalyptus oil, £54,711; other drugs, £42,222; fibres—rags, £41,936; fruits—apples, £135,934, dried, £164,262, preserved in liquid, £319,467; gold specie, £1,948,019; grain and pulse—beans and peas, £79,599, wheat, £2,242,260, flour, £1,504,850; hair, £3,186; honey, £198,848; jams and jellies, £772,242; jewellery and precious stones, £76,070; lard, etc., £153,778; leather, £1,530,062; meat—frozen beef, £958,164, mutton, £973,924, lamb, £108,722, rabbits and hares, £272,724, other

frozen meat, £354,591, potted meat, £316,482, meat preserved in tins, £1,790,552; milk, £45,645; minerals and metals—copper—ingots, £1,914,248, lead—pig, £2,155,381, tin—ingots, £169,821, zinc—concentrates, £269,144, antimony, £43,557, molybdenite, £86,311, scheelite, £54,844, wolfram, £161,771; pearl shell, £119,752; skins—cattle, hides, £538,012, rabbit and hare, £395,640, sheep, £1,899,705, other skins, £10,058,892; stearine, £46,973; tallow, £1,417,355; wine, £71,545; wool—greasy, £24,504,674, scoured, £10,058,892.

10. **Principal Exports to British Possessions, 1918-19.**—(i) *Canada.* Butter, £11,589; hides and skins—rabbit and hare, £210,787, other £116,557; meats—sausage casings, £31,017, other, £12,069; platinum, £21,226; honey, £17,682; wheat, £71,959; tin—ingots, £16,238; wool, £238,924; tallow, £119,991.

(ii) *Ceylon.* Butter, £9,946; coconut oil, £46,955; lard, £3,239, meats, £17,307; milk, £7,662; cameos and precious stones, £4,762; wheat, £534,292.

(iii) *Egypt.* Apparel and attire, £54,523; biscuits, £57,355; butter, £52,240; copper, £65,950; flour, £1,461,141; fruits preserved in liquid, £39,265; jams and jellies, £338,950; lead—pig, £41,970; leather, £16,160; meats—frozen—beef, £1,415,713, mutton, £176,551; preserved in tins, £801,380, other, £109,886; gold specie, £1,300,000; milk, £158,756; tallow, £61,558; tobacco, cigars, etc., £29,753; wheat, £2,838,490; wool—greasy, £608,029, scoured, £5,785.

(iv) *Fiji.* Apparel and textiles—apparel, £26,101, textiles, £30,199, bags, sacks, and cordage, £11,376; biscuits, £24,491; coal, £15,339; drugs and chemicals—fertilizers, £22,551, other, £14,439; grain, prepared—bran and pollard, £36,113, flour, £28,485, rice, £12,092; machines and machinery, £11,735; metal manufactures, £24,122; meat, preserved in tins, £9,240; oils, fats, and waxes, £8,150; silver specie, £25,950; spirits and alcoholic liquors, £20,375; soap, £5,734; timber, undressed, £4,490; tobacco, £11,625; vehicles, £4,214.

(v) *Hong Kong.* Biscuits, £10,245; butter, £28,618; fish, £47,707; flour, £226,971; gold specie, £864,300; lead, pig, £77,426; leather, £31,756; meats, £22,073; milk and cream, £56,429; sandalwood, £92,518; soap, £5,686; tin, ingots, £18,188.

(vi) *India.* Biscuits, £64,266; boots and shoes, £43,194; coal, £14,438; copper, ingots, £270,660; fruits, preserved, in liquid, £70,043; gold specie, £2,000,480; horses, £146,758; hay and chaff, £3,188; grain and pulse—wheat, £1,039,316, oatmeal, £15,907, flour, £255,662; jams and jellies, £87,557; leather, £45,544; meats, £1,280,236; milk £91,268; wool, £78,336; zinc—bars, £79,994.

(vii) *New Zealand.* Apparel and textiles, etc.—boots and shoes, £233,434, other apparel, £74,363, textiles, £189,020, bags and sacks, £8,944; arms, ammunition, etc., £41,174; bark, tanning, £13,801; books and periodicals, £49,529; cameras, kinematographs and films, talking machines, etc., £35,049; photographic goods, £31,052; coal, £208,467; confectionery, £46,567; drugs and chemicals—fertilizers, £136,185, medicines, £71,135, other drugs, etc., £179,380; electrical materials, £8,913; fodders, £1,404; fruit—fresh, £37,068, dried, £34,650, preserved in liquid, £43,212; glass and glassware, £21,266; grain—barley, £17,425, flour, £25,809, oats, £11,915, rice, £37,789, wheat, £408,270; hides and skins, £15,595; horses, £4,600; india-rubber manufactures, £153,931; jewellery, £51,030; cameos and precious stones, £41,504; lead, pig, £11,969; leather and leather manufactures, £114,430; matches, £30,100; agricultural implements and machinery, £17,017; other machines and machinery, £106,188; other manufactures of metals, £155,591; motor vehicles and parts, £6,094; milk, £19,047; oils, etc., £95,380; onions, £15,269; paints, varnishes, £85,102; plants, trees, and bulbs, £2,670; paper, £47,333; potatoes, £32,028; salt, £72,815; seeds, £22,344; soap, £74,892; specie, silver, £25,975; spirits, £91,846; stationery, £21,846; sugar, £6,610; tea, £122,370; timber, £85,018; tin, ingots, £56,492; tobacco, £134,693; wine, £38,441; wood and wicker articles, £25,026.

(viii) *Papua.* Ale and beer, £3,440; apparel and textiles, £16,391; biscuits, £3,659; butter, £2,316; coal, £3,940; fish, £4,241; flour, £5,185; machinery and manufactures of metal, £35,648; meats, £11,652; oils, etc., £13,814; rice, £27,056; timber, £2,908; tobacco, £14,097.

(ix) *South African Union*.—Animals—sheep, breeding, £16,247; butter, £4,498; copper—bars and ingots, £29,403; cordage and twine, reaper and binder, £81,425; other, £59,635; drugs and chemicals—eucalyptus oil, £8,551, glycerine, etc., £47,496; other, £51,098; fruits—dried, currants, £29,209; gold, specie, £1,000,000; grain—wheat, £145,147, flour, £176,540; hops, £11,187; jams and jellies, £4,432; leather, £73,322; machinery and manufactures of metal, £182,047; meats, preserved, in tins, £17,912; milk and cream, £122,699; pickles and sauces, £13,038; rails, fishplates, etc., £45,082; starch, £19,581; tallow, unrefined, £75,933; timber, £75,358; zinc, sheet, £88,591.

(x) *Straits Settlements*. Biscuits, £26,558; butter, £90,400; coal, £25,174; gold, specie, £50,000; grain, flour, £374,839; iron and steel, bar, etc., £12,988; jams and jellies, £10,058; leather, £36,916; machines and machinery—mining, £126,627, other, £31,647; meats, £112,268; milk and cream, £372,609; rails, fishplates, £67,186; sandalwood, £22,063; soap, £14,418.

# 11. Principal Exports to Foreign Countries, 1918-19.—These are as follows:—

(i) *Argentine Republic*. Agricultural implements and machinery, £1,268; sheep, for breeding, £750.

(ii) *Bismarck Archipelago*. Ale, beer, £18,593; apparel, £8,585; textiles, £27,969; fibres, £6,532; fish, £9,098; machinery and manufactures of metals, £22,762; meats, £19,970; oils, £14,624; rice, £21,461; silver, specie, £13,300; tobacco, £22,668.

(iii) *China*. Butter, £56,271; flour, £13,873; jams and jellies, £13,202; lead—pig, £30,672; sheet and piping, £14,440; leather, £25,414; meats, £14,124; sandalwood, £18,767; stearine, £13,491.

(iv) *Dutch East Indies*. *Java*. Apparel, textiles, etc., £34,344; butter, £368,019; biscuits, £40,151; coal, £31,533; coke, £6,527; confectionery, £9,178; grain, etc., barley, £9,143, flour, £391,793, oats, £13,637, other, £17,492; fertilizers, £270,241; fruits, fresh, £8,457; lard, £11,015; horses, £17,018; jams and jellies, £19,855; leather and manufactures, £90,056; milk and cream, £94,832; machinery, mining, £38,396, other, £43,712; metal manufactures—bolts, nuts, etc., £35,146; iron—bar and ingots, £232,712, nails, £10,601, rails, fishplates, £200,932, vehicles £15,632, other, £40,382; meats, £43,716; wine, £27,060.

(v) *Other East Indies*. Biscuits, £17,919; butter, £56,205; flour, £109,518; machines and metal manufactures, £64,825; meats, £20,595; milk and cream, £17,323; soap, £8,675; stearine, £7,467.

(vi) *France*. Cameos, £21,796; copra, £14,791; fruits, preserved in liquid, £12,998; honey, £8,216; jams and jellies, £225,979; leather, £151,219; tallow, unrefined, £94,454; milk, £5,968; wheat, £160,856; wool, £304,410.

(vii) *Italy*. Flour, £389,796; tallow, £80,656; wheat, £705,242; wool, £548,142.

(viii) *Japan*. Bones, £28,302; concentrates, zinc, £158,557; hoofs, £11,275; glue pieces and sinews, £3,830; grain—barley, £20,992, flour, £18,743, wheat, £422,028; other, £170,775; hair, £9,896; hides and skins, cattle, £15,479, rabbit and hare, £56,282, fur, hatters', £21,127, other skins, £26,659; lead, pig, £563,035; leather, £19,211; manures, £50,532; milk and cream, £34,897; oils, £12,914; pearlshell, £66,070; tin—ingots, £23,110; pig iron, £42,657; rags, £27,634; tallow, £300,952; wool, £1,400,192; zinc, bar, etc., £18,758.

(ix) *New Caledonia*. Apparel, £28,204; textiles, £27,009; coal, £22,542; coke, £40,206; flour, £50,289; leather, £9,187; machinery and manufactures of metal, £47,182; oils, greases, etc., £14,476; potatoes, £6,754; rice, £16,794; sugar, £23,035; wine, £23,408.

(x) *Peru*. Coal, £3,138; wheat, £187,549.

(xi) *Philippine Islands*. Biscuits, £32,780; butter, £48,658; coal, £8,568; flour, £412,642; fodder, £5,846; jams and jellies, £6,170; leather, £11,296; meats—bacon and hams, £22,986, beef, £44,225, other meats, £12,693; milk, concentrated, £8,097.

(xii) *United States of America*. Copra, £452,752; flour, £44,373; hair, £7,593; jams and jellies, £335,434; leather, £11,653; sausage casings, £151,550; oils—cocoanut, £63,533, eucalyptus, £6,942; pearlshell, £126,145; skins—rabbit and hare, £648,549, other, £351,229; timber, £41,867; tin—ingots, £664,703; wheat, £1,002,524; wool, £4,952,258.

### § 7. Development of Export Trade to Eastern Countries.

1. Trade with Eastern Countries.—The following tables shew the expansion in the value of exports from the Commonwealth to Eastern countries since the inception of the Commonwealth in 1901. The principal countries concerned in this trade are China, India, Ceylon, Japan, East Indies, Philippine Islands, Straits Settlements, and Hong Kong, and the particulars given in the tables apply to these countries only :—

#### VALUE OF PRINCIPAL ITEMS OF MERCHANDISE EXPORTED FROM THE COMMONWEALTH TO EASTERN COUNTRIES, 1901-19.

Article.	1901.	1909-1913. †	1915-16.	1916-17.	1917-18.	1918-19.
	£	£	£	£	£	£
Antimony .. .. .	..	100	25,161	19	1,834	1,313
Butter .. .. .	64,838	200,107	219,058	356,760	420,551	659,743
Coal .. .. .	155,120	275,480	121,997	66,811	41,496	85,792
Concentrates—						
Silver and silver-lead .. .. .	..	..	82,544	30,850	..	..
Zinc .. .. .	..	180	186,703	419,282	236,465	158,557
Copper .. .. .	39,375	54,994	230,879	279,520	595,877	280,598
Grain and Pulse—						
Wheat .. .. .	46,685	74,181	1,873	399	258,641	1,997,299
Flour .. .. .	135,092	609,065	316,931	540,757	1,286,979	1,811,476
Other (prepared and unprepared) .. .. .	4,806	18,216	10,202	11,753	122,846	289,854
Hay, chaff, and compressed fodder .. .. .	13,081	41,871	28,678	20,227	23,251	19,542
Horses .. .. .	101,866	177,774	262,917	323,876	481,370	176,239
Lead, Pig .. .. .	10,454	308,492	448,892	592,623	560,100	681,473
Leather .. .. .	13,197	41,757	111,695	122,530	144,950	229,695
Meats .. .. .	194,071	273,962	286,265	531,509	1,483,663	1,581,192
Pearl shell .. .. .	20,440	410	25,064	48,124	53,863	70,007
Sandalwood .. .. .	77,237	59,473	71,493	88,049	99,943	138,468
Skins, hoofs, horns, bones, sinews, tallow .. .. .	16,419	79,023	64,912	205,372	235,320	464,544
Sulphate of ammonia .. .. .	..	19,780	80,059	104,991	194,921	325,793
Tin ore .. .. .	4,096	298,723	239,561	222,281	28,385	..
Timber, undressed .. .. .	79,915	319,924	427	37,047	12,817	5,258
Wool .. .. .	56,618	539,003	2,619,533	2,558,274	1,862,869	1,481,315
Other merchandise .. .. .	192,903	390,533	573,899	*1,190,961	*2,420,876	*3,653,227
Total merchandise .. .. .	1,226,213	3,783,048	6,008,243	7,752,015	10,566,547	14,111,385
Specie and gold and silver bullion .. .. .	3,339,953	5,665,514	1,322,096	1,241,460	5,064,507	4,854,609
Total exports .. .. .	4,566,166	9,448,562	7,330,339	8,993,475	15,631,054	18,965,994

The following tables shew the value of the principal articles exported to each of the undermentioned Eastern countries during the year 1901 and from 1909 to 1918-19 :—

#### VALUE OF COMMONWEALTH EXPORTS OF MERCHANDISE TO PRINCIPAL EASTERN COUNTRIES, 1901-1919.

Country.	1901.	1909-1913. †	1915-16.	1916-17.	1917-18.	1918-19.
	£	£	£	£	£	£
China .. .. .	33,906	131,318	124,337	105,993	225,828	313,908
East Indies .. .. .	204,315	552,935	567,863	866,784	1,203,472	2,645,840
Hong Kong .. .. .	31,853	737,595	374,728	303,965	391,525	685,256
India and Ceylon .. .. .	417,291	904,270	927,516	1,779,250	3,696,023	4,452,771
Japan .. .. .	123,355	525,443	3,287,979	3,726,788	3,340,064	3,846,901
Philippine Islands .. .. .	302,086	688,278	189,480	224,435	826,722	653,653
Straits Settlements .. .. .	113,407	243,209	536,340	744,800	882,913	1,513,056
Total .. .. .	1,226,213	3,783,048	6,008,243	7,752,015	10,566,547	14,111,385

\* The unusually large amount of other merchandise is due to shipments of jams, biscuits, cheese, fruits, milk, etc., to the order of the Imperial Government for military purposes.

† Annual average for the quinquennial period.

## BUTTER.

Country.	1901.	1909-1913.	1915-16.	1916-17.	1917-18.	1918-19.
	£	£	£	£	£	£
China .. ..	1,987	23,175	25,532	35,096	77,743	56,271
East Indies .. ..	12,172	75,813	133,596	234,999	196,594	424,458
Hong Kong .. ..	8,555	22,010	13,632	23,333	33,298	28,618
India and Ceylon .. ..	9,696	10,353	10,990	11,265	7,526	10,168
Japan .. ..	1,504	5,680	2,076	2,868	691	1,170
Philippine Islands .. ..	21,061	34,581	6,998	18,499	26,504	48,658
Straits Settlements .. ..	9,863	28,495	26,234	30,700	78,195	90,400
Total .. ..	64,838	200,107	219,058	356,760	420,551	659,743

The exports of butter given above for the year 1918-19 were shipped from the several States as follows:—New South Wales, £161,233; Victoria, £465,099; Queensland, £20,038; Western Australia, £13,373.

## COAL.

Country.	1901.	1909-1913.	1915-16.	1916-17.	1917-18.	1918-19.
	£	£	£	£	£	£
China .. ..	..	2,573	..	..	..	..
East Indies .. ..	43,280	80,119	50,727	16,355	8,133	31,533
Hong Kong .. ..	7,653	4,684	..	..	..	6,079
India and Ceylon .. ..	17,639	37,120	40,703	22,421	16,043	14,438
Japan .. ..	1	12	..	..	..	..
Philippine Islands .. ..	59,936	78,130	5,361	..	8,725	8,568
Straits Settlements .. ..	26,611	72,842	25,206	28,035	8,595	25,174
Total .. ..	155,120	275,480	121,997	66,811	41,496	85,792

These exports of coal are chiefly from New South Wales.

## COPPER.

Country.	1901.	1909-1913.	1915-16.	1916-17.	1917-18.	1918-19.
	£	£	£	£	£	£
China .. ..	..	19,260	..	..	..	1,876
East Indies .. ..	..	64	..	..	..	..
Hong Kong .. ..	..	5,796	14,794	..	..	..
India and Ceylon .. ..	39,375	26,512	216,085	279,520	595,877	270,695
Japan .. ..	..	2,378	..	..	..	8,027
Philippine Islands .. ..	..	106	..	..	..	..
Straits Settlements .. ..	..	878	..	..	..	..
Total .. ..	39,375	54,994	230,879	279,520	595,877	280,598

The copper exported to the East during 1918-19 was shipped from New South Wales, £276,564; and Victoria, £4,034.

\* Annual average for the quinquennial period.

## GRAIN AND PULSE.—WHEAT.

Country.	1901.	1909-1913.*	1915-16.	1916-17.	1917-18.	1918-19.
	£	£	£	£	£	£
China .. ..	..	6	..	..	..	..
East Indies .. ..	9	18	7	5	..	48
Hong Hong .. ..	..	3	..	..	..	..
India and Ceylon .. ..	35,660	4,687	91	377	54,500	1,573,608
Japan .. ..	11,016	62,683	..	..	204,141	422,028
Philippine Islands .. ..	..	6,776	1	17	19	71
Straits Settlements .. ..	..	8	1,274	..	..	1,544
Total ..	46,685	74,181	1,373	399	258,660	1,997,299

The exports of wheat given for the year 1918-19 were shipped from the following States:—New South Wales, £851,864; Victoria, £527,009; Queensland, £1; South Australia, £617,072; and Western Australia, £1,353.

## GRAIN AND PULSE.—FLOUR.

Country.	1901.	1909-1913.*	1915-16.	1916-17.	1917-18.	1918-19.
	£	£	£	£	£	£
China .. ..	1,147	11,416	5,142	3,463	14,812	13,873
East Indies .. ..	82,566	275,516	183,466	266,925	299,398	508,071
Hong Kong .. ..	4,489	22,793	17,162	7,971	49,567	226,971
India and Ceylon .. ..	22,275	34,367	4,579	1,248	11	256,337
Japan .. ..	7,206	4,387	633	3,715	47,109	18,743
Philippine Islands .. ..	4,046	124,960	42,169	129,015	518,650	412,642
Straits Settlements .. ..	13,363	135,626	63,780	128,420	357,443	374,839
Total ..	135,092	609,065	316,931	540,757	1,286,990	1,811,476

The flour exported during 1918-19, as above, was shipped from the several States as follows:—New South Wales, £933,052; Victoria, £399,942; South Australia, £110,977; Western Australia, £367,505.

## GRAIN AND PULSE, OTHER THAN WHEAT AND FLOUR.

Country.	1901.	1909-1913.*	1915-16.	1916-17.	1917-18.	1918-19.
	£	£	£	£	£	£
China .. ..	43	477	..	1,946	1,474	5,028
East Indies .. ..	..	1,738	1,319	3,173	3,680	41,378
Hong Kong .. ..	777	76	3	21	1,867	5,663
India and Ceylon .. ..	3,033	8,708	7,128	4,404	42,722	25,532
Japan .. ..	7	58	130	..	47,354	191,767
Philippine Islands .. ..	946	6,151	1,211	1,280	16,001	7,518
Straits Settlements .. ..	..	1,008	411	929	9,748	12,968
Total ..	4,806	18,216	10,202	11,753	122,846	289,854

The exports given above for 1918-19 were shipped from the following States:—New South Wales, £58,790; Victoria, £223,088; Queensland, £8; Western Australia, £7,968.

\* Annual average for the quinquennial period.

## HAY AND CHAFF, AND COMPRESSED FODDER.

Country.	1901.	1909-1913.*	1915-16.	1916-17.	1917-18.	1918-19.
	£	£	£	£	£	£
China .. ..	2,934	174	..	..	..	..
East Indies .. ..	14	1,285	702	613	323	1,655
Hong Kong .. ..	28	556	642	164	680	1,596
India and Ceylon .. ..	5,848	13,463	17,267	14,037	12,711	4,874
Japan .. ..	57	150	87	10	..	135
Philippine Islands .. ..	2,582	21,774	8,251	3,861	8,771	8,168
Straits Settlements .. ..	1,618	4,469	1,729	1,444	1,078	3,114
Total .. ..	13,081	41,871	28,678	20,129	23,563	19,542

The exports given above for the year 1918-19 were shipped from the several States as follows :—New South Wales, £1,546; Victoria, £17,042; Western Australia, £954.

## HORSES.

Country.	1901.	1909-1913.*	1915-16.	1916-17.	1917-18.	1918-19.
	£	£	£	£	£	£
China ... ..	4,460	274	..	..	..	..
East Indies .. ..	2,105	16,845	5,352	3,818	..	18,336
Hong Kong .. ..	775	345	..	..	..	80
India and Ceylon .. ..	78,723	137,810	250,710	312,721	479,520	146,758
Japan .. ..	100	1,904	1,900	850	750	1,350
Philippine Islands .. ..	190	7,116	1,200	60	200	3,800
Straits Settlements .. ..	15,513	13,480	3,755	6,427	900	5,915
Total .. ..	101,866	177,774	262,917	323,876	481,370	176,239

The horses exported to the above countries during 1918-19 were shipped from the following States :—New South Wales, £77,408; Victoria, £26,855; Queensland, £60,445; South Australia, £9,831; Western Australia, £1,700.

## LEAD, PIG.

Country.	1901.	1909-1913.*	1915-16.	1916-17.	1917-18.	1918-19.
	£	£	£	£	£	£
China .. ..	6,102	35,269	18,564	19,941	27,568	30,672
East Indies .. ..	18	363	..	..	1,146	2,945
Hong Kong .. ..	1,257	69,159	165,643	45,414	76,968	77,426
India and Ceylon .. ..	315	41,574	56,658	92,020	..	7,145
Japan .. ..	2,750	159,462	206,261	435,248	454,118	563,035
Philippine Islands .. ..	12	2,289	61	..	300	..
Straits Settlements .. ..	..	376	1,705	..	..	250
Total .. ..	10,454	308,492	448,892	592,623	560,100	681,473

\* Annual average for the quinquennial period.

## MEATS.—PRESERVED BY COLD PROCESS.

Country.	1901.	1909-1913.*	1915-16.	1916-17.	1917-18.	1918-19.
	£	£	£	£	£	£
China .. ..	..	220	6	..	..	..
East Indies .. ..	98	2,507	18	..	131	21
Hong Kong .. ..	3,195	8,687	5,715	9,481	6,501	7,465
India and Ceylon .. ..	5,907	5,626	8,102	10,483	14,270	7,696
Japan .. ..	19	634	1	..	4	..
Philippine Islands .. ..	153,250	160,003	89,408	13,143	36,587	56,617
Straits Settlements .. ..	..	34,812	52,123	66,983	65,206	62,374
Total ..	162,469	212,489	155,373	100,090	122,699	134,173

The exports to the above-mentioned Eastern countries during 1918-19 of meats preserved by cold process were shipped from the following States :—New South Wales, £63,531 ; Queensland, £66,935 ; Northern Territory, £3,707.

## MEATS.—OTHER THAN MEATS PRESERVED BY COLD PROCESS.

Country.	1901.	1909-1913.*	1915-16.	1916-17.	1917-18.	1918-19.
	£	£	£	£	£	£
China .. ..	491	5,523	1,075	1,646	9,317	14,124
East Indies .. ..	15,035	14,130	9,263	19,476	25,177	52,567
Hong Kong .. ..	571	3,039	1,859	3,096	13,325	14,608
India and Ceylon .. ..	11,464	11,008	100,901	382,150	1,251,929	1,289,847
Japan .. ..	893	1,394	975	853	338	2,335
Philippine Islands .. ..	2,617	19,475	10,590	14,645	17,575	23,644
Straits Settlements .. ..	531	6,904	6,229	9,553	43,303	49,894
Total ..	31,602	61,473	130,892	431,419	1,360,964	1,447,019

The exports given above for the year 1918-19 were shipped from the following States :—New South Wales, £946,944 ; Victoria, £172,633 ; Queensland, £325,407 ; South Australia, £90 ; Western Australia, £1,945.

## SANDALWOOD.

Country.	1901.	1909-1913.*	1915-16.	1916-17.	1917-18.	1918-19.
	£	£	£	£	£	£
China .. ..	7,905	8,814	9,316	5,554	9,857	18,767
East Indies .. ..	..	..	..	..	..	2,032
Hong Kong .. ..	53,991	42,566	51,087	71,460	76,093	92,518
India and Ceylon .. ..	..	3,836	4,602	4,429	1,275	1,588
Japan .. ..	..	..	78	102	482	1,500
Straits Settlements .. ..	15,341	4,257	6,410	6,504	12,236	22,063
Total ..	77,237	59,473	71,493	88,049	99,943	138,468

The exports of sandalwood in 1918-19 were shipped from New South Wales, £9,101 ; Victoria, £506 ; Queensland, £22,596 ; Western Australia, £106,155 ; and Northern Territory, £110.

\* Annual average for the quinquennial period.



## SKINS, HOOFS, HORNS, BONES, SINEWS, AND TALLOW.

Country.	1901.	1909-1913.*	1915-16.	1916-17.	1917-18.	1918-19.
	£	£	£	£	£	£
China .. ..	..	336	128	..	..	20
East Indies .. ..	..	1,013	318	2	6	..
Hong Kong .. ..	1,234	409	8	427	1,183	1,247
India and Ceylon .. ..	2,761	9,477	6,736	6,647	78	11,719
Japan .. ..	11,829	66,755	57,015	198,040	233,941	447,454
Philippine Islands .. ..	165	510	312	91	..	18
Straits Settlements .. ..	430	523	395	165	112	4,086
Total .. ..	16,419	79,023	64,912	205,372	235,320	464,544

The above exports of skins, &c., in 1918-19 were shipped from the several States as follows:—New South Wales, £376,220; Victoria, £45,762; Queensland, £42,063; South Australia, £496; Western Australia, £3.

## TIN ORE.

Country.	1901.	1909-1913.*	1915-16.	1916-17.	1917-18.	1918-19.
	£	£	£	£	£	£
Japan .. ..	..	..	104	..	..	..
Straits Settlements .. ..	4,096	298,723	239,457	222,281	28,385	..
Total .. ..	4,096	298,723	239,561	222,281	28,385	..

The export of tin ore to the Straits Settlements—the centre of the world's tin production—was for the purpose of treatment, and was shipped from the several States during 1917-18 as follows:—New South Wales, £7,359; Queensland, £17,926; Northern Territory, £3,100. All Australian tin ore is now treated in the Commonwealth.

## TIMBER, UNDRESSED.

Country.	1901.	1909-1913.*	1915-16.	1916-17.	1917-18.	1918-19.
	£	£	£	£	£	£
China .. ..	4,090	8,712	..	2	..	..
East Indies .. ..	22	708	31	3	83	..
Hong Kong .. ..	..	10,562	..	..	8	2,197
India and Ceylon .. ..	61,246	288,442	233	36,041	..	650
Japan .. ..	418	897	63	967	11,827	2,276
Philippine Islands .. ..	9,278	8,997	..	..	..	..
Straits Settlements .. ..	4,861	1,606	100	34	899	135
Total .. ..	79,915	319,924	427	37,047	12,817	5,258

The above exports of timber during 1918-19 from the several States were shipped as follows:—New South Wales, £4,473; Western Australia, £785.

\* Annual average for the quinquennial period.

## WOOL.

Country.	1901.	1909-1913.*	1915-16.	1916-17.	1917-18.	1918-19.
	£	£	£	£	£	£
China .. ..	..	162	..	..	..	..
East Indies .. ..	112	..	..	..	..	..
Hong Kong .. ..	..	5	..	..	..	..
India and Ceylon .. ..	7,853	22,308	32,442	87,860	66,780	78,336
Japan .. ..	48,653	516,528	2,587,091	2,470,414	1,796,089	1,400,192
Philippine Islands .. ..	..	..	..	..	..	2,787
Total .. ..	56,618	539,003	2,619,533	2,558,274	1,862,869	1,481,315

The wool exported to the East by the several States during 1918-19 was shipped as follows :—New South Wales, £1,078,923 ; Victoria, £101,280 ; Queensland, £301,112.

\* Annual average for the quinquennial period.

## § 8. Trade of Commonwealth since Federation.

1. Classified Summary of Australian Trade.—The following tables present the trade of the Commonwealth arranged in classes according to the nature of the goods since the inauguration of the Commonwealth :—

## STATISTICAL CLASSIFICATION OF IMPORTS AND EXPORTS.

Class.	Articles.
I.	FOODSTUFFS of animal origin but excluding living animals.
II.	FOODSTUFFS of vegetable origin.
III.	BEVERAGES (non-alcoholic), and substances used in making.
IV.	SPIRITUOUS AND ALCOHOLIC LIQUORS.
V.	TOBACCO, and preparations thereof.
VI.	LIVE ANIMALS.
VII.	ANIMAL SUBSTANCES (mainly unmanufactured), not foodstuffs.
VIII.	VEGETABLE SUBSTANCES and fibres.
IX.	(a) APPAREL ; (b) TEXTILES ; AND (c) MANUFACTURED FIBRES.
X.	OILS, FATS, AND WAXES.
XI.	PAINTS AND VARNISHES.
XII.	STONES AND MINERALS, used industrially.
XIII.	ORES AND METALS, unmanufactured or partly manufactured.
XIV.	(a) MACHINES AND MACHINERY ; (b) OTHER MANUFACTURES OF METAL.
XV.	(a) INDIARUBBER AND INDIARUBBER MANUFACTURES ; (b) LEATHER AND MANUFACTURES of leather, and substitutes therefor.
XVI.	WOOD AND WICKER, raw and manufactured.
XVII.	EARTHENWARE, CEMENTS, CHINA, GLASS, AND STONEWARE.
XVIII.	(a) PAPER ; (b) STATIONERY.
XIX.	JEWELLERY, TIMEPIECES, AND FANCY GOODS.
XX.	OPTICAL, SURGICAL, AND SCIENTIFIC INSTRUMENTS.
XXI.	DRUGS, CHEMICALS, AND FERTILIZERS.
XXII.	MISCELLANEOUS.
XXIII.	GOLD AND SILVER ; AND BRONZE SPECIE.

## COMMONWEALTH IMPORTS ARRANGED IN CLASSES, 1901 TO 1918-19.

Classes.	Annual Average.				
	1901-1903.	1904-1908.	1909-1913.	1914-15-1918-19.	1918-1919.
	£	£	£	£	£
I. Animal foodstuffs, &c. ..	968,856	712,311	885,408	1,177,020	585,562
II. Vegetable foodstuffs, &c. ..	3,769,481	1,702,919	2,925,919	3,978,036	2,464,925
III. Beverages (non-alcoholic), &c. ..	973,568	1,249,103	1,685,232	2,170,138	2,454,323
IV. Alcoholic liquors, &c. ..	1,481,061	1,318,719	1,712,009	1,493,960	1,263,324
V. Tobacco, &c. ..	647,073	646,062	889,118	1,099,573	1,864,594
VI. Live animals ..	75,051	99,131	247,027	100,742	39,785
VII. Animal substances, &c. ..	189,529	404,924	354,867	826,099	1,710,058
VIII. Vegetable substances, &c. ..	537,574	744,791	1,281,460	2,553,477	3,200,509
IX. Apparel, &c. ..	11,002,146	13,170,748	17,730,327	24,114,559	36,237,171
X. Oils, &c. ..	1,032,453	1,041,449	1,771,160	3,018,753	4,099,649
XI. Paints, &c. ..	325,583	378,840	533,954	570,006	553,630
XII. Stones, &c. ..	106,862	101,046	245,370	160,612	181,326
XIII. Ores and Metals, unmanufactured ..	1,145,808	878,026	1,493,406	1,123,048	772,880
XIV. Machinery and Metals, manufactured ..	7,576,311	8,931,724	15,854,262	14,199,421	16,995,544
XV. Rubber, Leather, &c. ..	530,645	840,740	1,501,435	1,802,306	2,373,188
XVI. Wood, &c. ..	1,553,010	1,849,229	3,028,794	2,075,254	2,185,786
XVII. Earthenware, &c. ..	747,604	719,529	1,202,949	1,181,223	1,467,886
XVIII. Paper, &c. ..	1,587,568	1,918,023	2,727,725	3,743,319	5,543,880
XIX. Jewellery, &c. ..	959,417	1,048,601	1,534,322	1,204,037	1,600,886
XX. Instruments, &c. ..	190,979	235,014	526,916	663,680	745,717
XXI. Drugs, &c. ..	1,548,739	1,831,693	2,377,190	3,378,667	4,425,073
XXII. Miscellaneous ..	2,292,798	2,849,614	5,185,447	3,726,612	4,101,780
XXIII. Gold and silver; and bronze specie ..	1,060,736	1,621,922	1,518,100	2,209,711	7,467,700
Grand Total ..	40,307,852	44,344,158	67,212,398	76,570,253	102,335,159

The exports are shewn according to the same classification, and the usual distinction is made between exports of Australian produce and re-exports.

## COMMONWEALTH EXPORTS ARRANGED IN CLASSES, AND DISTINGUISHING AUSTRALIAN PRODUCE AND THE PRODUCE OF OTHER COUNTRIES, 1901 TO 1918-19.

Classes.	Annual Average.				
	1901-1903.	1904-1908.	1909-1913.	1914-15-1918-19.	1918-1919.

## AUSTRALIAN PRODUCE.

	£	£	£	£	£
I. Animal foodstuffs, &c. ..	3,321,043	5,014,822	8,546,155	12,816,939	13,969,397
II. Vegetable foodstuffs, &c. ..	2,671,745	6,211,212	10,312,256	13,406,386	21,277,964
III. Beverages (non-alcoholic), &c. ..	2,827	3,099	5,176	31,128	58,435
IV. Alcoholic liquors, &c. ..	133,487	117,871	136,031	200,269	363,839
V. Tobacco, &c. ..	6,347	51,568	72,826	145,997	197,651
VI. Live animals ..	317,775	320,374	287,447	405,887	238,650
VII. Animal substances, &c. ..	15,973,950	24,837,934	31,085,926	32,404,434	47,656,915
VIII. Vegetable substances, &c. ..	138,341	247,020	222,629	224,600	310,701
IX. Apparel, &c. ..	33,772	57,736	75,536	431,860	1,047,515
X. Oils, &c. ..	712,633	1,006,387	2,020,913	1,654,822	2,679,540
XI. Paints, &c. ..	1,434	3,167	6,023	39,581	122,191
XII. Stones, &c. ..	999,282	1,057,163	1,000,080	503,403	441,278
XIII. Ores and metals, unmanufactured ..	3,557,990	6,819,097	8,243,943	8,524,490	7,478,178
XIV. Machinery and metals, manufactured ..	121,519	163,301	285,674	495,278	1,184,125
XV. Rubber, Leather, &c. ..	630,388	542,334	617,904	1,413,123	2,336,884
XVI. Wood, &c. ..	695,301	944,402	1,011,771	408,936	259,870
XVII. Earthenware, &c. ..	11,178	24,125	14,620	46,095	71,545
XVIII. Paper, &c. ..	27,273	47,103	64,917	70,096	97,093
XIX. Jewellery, &c. ..	71,865	134,888	155,936	75,987	193,931
XX. Instruments, &c. ..	1,123	2,704	6,337	24,137	43,138
XXI. Drugs, &c. ..	125,531	198,157	282,923	657,154	1,055,084
XXII. Miscellaneous ..	85,545	112,846	191,061	449,540	778,116
XXIII. Gold and silver; and bronze specie ..	15,249,414	13,574,770	7,741,881	7,456,014	4,164,761
Grand Total ..	44,889,813	61,492,640	72,396,965	81,886,156	106,026,801

COMMONWEALTH EXPORTS ARRANGED IN CLASSES, AND DISTINGUISHING  
AUSTRALIAN PRODUCE AND THE PRODUCE OF OTHER COUNTRIES,  
1901 TO 1918-19—*continued*.

Classes.	Annual Average.				
	1901-1903.	1904-1908.	1909-1913.	1914-15- 1918-19.	1918-1919.
<b>OTHER PRODUCE.</b>					
I. Animal foodstuffs, &c. . .	£ 83,729	£ 27,859	£ 22,818	£ 94,614	£ 127,446
II. Vegetable foodstuffs, &c. . .	100,548	223,539	186,289	279,724	224,358
III. Beverages (non-alcoholic), &c. . .	52,423	63,514	80,534	151,476	166,101
IV. Alcoholic liquors, &c. . .	44,650	31,120	32,420	69,833	73,264
V. Tobacco, &c. . .	51,175	38,604	54,075	82,756	89,886
VI. Live animals . . .	1,355	3,943	5,305	4,311	14
VII. Animal substances, &c. . .	18,258	11,172	6,356	143,866	7,340
VIII. Vegetable substances, &c. . .	21,602	15,939	32,169	199,802	520,835
IX. Apparel, &c. . .	192,777	199,583	198,951	414,000	510,476
X. Oils, &c. . .	44,587	49,450	47,616	92,068	103,770
XI. Paints, &c. . .	10,635	8,394	7,617	8,675	8,903
XII. Stones, &c. . .	1,821	2,229	2,102	1,433	737
XIII. Ores and metals, unmanufactured . . .	20,854	48,963	38,225	25,044	18,999
XIV. Machinery and metals, manufactured . . .	215,794	214,577	282,981	297,817	268,116
XV. Rubber, Leather, &c. . .	16,439	29,602	60,754	62,769	84,461
XVI. Wood, &c. . .	28,970	32,999	34,057	26,199	28,125
XVII. Earthenware, &c. . .	19,636	19,751	15,390	17,070	15,493
XVIII. Paper, &c. . .	52,357	56,031	81,368	70,712	77,193
XIX. Jewellery, &c. . .	63,433	54,727	107,295	35,732	46,762
XX. Instruments, &c. . .	11,369	26,223	67,011	74,459	65,750
XXI. Drugs, &c. . .	47,866	48,706	59,322	117,152	161,327
XXII. Miscellaneous . . .	96,667	149,545	230,039	264,856	312,377
XXIII. Gold and silver; and bronze specie . . .	1,196,856	1,390,893	1,342,361	1,323,390	5,025,442
Grand Total . . .	2,393,801	2,747,363	2,995,055	3,857,758	7,937,175

**TOTAL EXPORTS.**

	£	£	£	£	£
I. Animal foodstuffs, &c. . .	3,404,772	5,042,681	8,568,973	12,911,553	14,096,843
II. Vegetable foodstuffs, &c. . .	2,772,293	6,434,751	10,498,545	13,686,110	21,502,322
III. Beverages (non-alcoholic), &c. . .	55,250	66,613	85,710	182,604	224,536
IV. Alcoholic liquors, &c. . .	178,137	148,991	168,451	270,102	437,103
V. Tobacco, &c. . .	57,522	90,172	126,901	228,753	287,537
VI. Live animals . . .	319,130	324,317	292,752	410,198	238,664
VII. Animal substances, &c. . .	15,992,208	24,849,106	31,092,282	32,548,300	47,664,255
VIII. Vegetable substances, &c. . .	159,943	262,959	254,798	424,402	831,536
IX. Apparel, &c. . .	226,549	257,319	274,487	845,860	1,557,991
X. Oils, &c. . .	757,270	1,055,837	2,077,529	1,746,890	2,789,310
XI. Paints, &c. . .	12,069	11,561	13,640	48,256	131,094
XII. Stones, &c. . .	1,001,103	1,059,392	1,002,182	504,836	442,015
XIII. Ores and metals, unmanufactured . . .	3,578,844	6,868,060	8,282,168	8,549,534	7,497,177
XIV. Machinery and metals, manufactured . . .	337,313	377,878	568,655	793,095	1,452,241
XV. Rubber, Leather, &c. . .	646,827	572,436	678,658	1,475,892	2,421,345
XVI. Wood, &c. . .	724,271	977,401	1,045,828	435,135	287,995
XVII. Earthenware, &c. . .	30,814	43,876	30,010	63,165	87,038
XVIII. Paper, &c. . .	79,630	103,134	146,285	140,808	174,286
XIX. Jewellery, &c. . .	135,293	189,615	263,231	111,719	240,693
XX. Instruments, &c. . .	12,492	28,987	73,348	98,596	108,888
XXI. Drugs, &c. . .	173,397	246,863	342,245	774,306	1,216,411
XXII. Miscellaneous . . .	182,212	262,391	421,100	714,306	1,090,493
XXIII. Gold and silver; and bronze specie . . .	16,446,270	14,965,663	9,084,242	8,779,404	9,190,203
	47,283,614	64,240,003	75,392,020	85,743,914	113,963,976

## § 9. Movement of Specie and Bullion.

1. Specie and Bullion.—The following tables shew the value of gold and silver bullion, and specie, including bronze specie, imported and exported during the years 1901 to 1918-19:—

## COMMONWEALTH IMPORTS AND EXPORTS OF SPECIE AND BULLION, 1901-19.

Items.	Annual Average.				
	1901-1903.	1904-1908.	1909-1913.	1914-15-1918-19.	1918-19.
IMPORTS.					
Gold—Specie .. ..	£ 36,339	£ 26,515	£ 98,974	£ 52,042	£ 152
Bullion .. ..	1,080,679*	1,412,807	1,166,709	1,875,287	6,969,849
Total .. ..	1,117,018	1,439,322	1,265,683	1,927,329	6,970,001
Silver—Specie .. ..	93,939	162,348	231,563	152,585	24,760
Bullion .. ..	52	9,757	4,567	34,688	75,678
Total .. ..	93,991	172,105	236,130	187,273	100,438
Bronze—Specie .. ..	6,982	10,495	15,527	14,225	600
GRAND TOTAL .. ..	1,217,991	1,621,922	1,517,340	2,128,827	7,071,039
EXPORTS.					
Gold—Specie .. ..	£ 10,657,061	£ 9,166,017	£ 5,977,965	£ 7,293,168	£ 7,166,029
Bullion .. ..	5,088,338*	4,598,568†	1,808,324	264,895	2,132
Total .. ..	15,745,399	13,764,585	7,786,289	7,558,063	7,168,161
Silver—Specie .. ..	28,905	26,409	48,580	66,206	83,991
Bullion .. ..	812,184†	682,354	489,510	827,776	1,938,001
Total .. ..	841,089	708,763	538,090	893,982	2,021,992
Bronze—Specie .. ..	735	2,337	217	231	50
Total—					
Australian Produce ..	15,390,368	13,085,033	6,982,406	7,128,886	4,164,761
Other Produce .. ..	1,196,855	1,390,652	1,342,190	1,323,390	5,025,442
GRAND TOTAL .. ..	16,587,223	14,475,685	8,324,596	8,452,276	9,190,203

\* Includes gold contained in matte.

† Includes gold contained in matte up to the year 1906. The value of gold contained in matte exported during 1907 was £350,601; 1908, £761,100; 1909-13, £477,908; and 1914-15-1918-19, £112,850.

‡ Includes silver contained in matte. The value of silver contained in matte exported during 1904-1908 was £267,638; 1909-1913, £281,740; and 1914-15-1918-19, £214,278.

## COMMONWEALTH IMPORTS AND EXPORTS OF SPECIE AND GOLD AND SILVER BULLION FROM AND TO VARIOUS COUNTRIES, 1918-19.

Country.	Imports.			Exports.		
	Specie.	Bullion.	Total.	Specie.	Bullion.	Total.
	£	£	£	£	£	£
United Kingdom ..	20,512	239	20,751	1,953,895	243	1,954,138
Canada ..	..	3	3	..	..	..
Ceylon ..	..	..	..	..	400	400
Egypt ..	..	..	..	1,300,000	..	1,300,000
Hong Kong ..	..	..	..	864,300	2,123	866,423
India ..	600	1,498,074	1,498,674	2,000,480	1,935,856	3,936,336
New Zealand ..	..	574,188	574,188	25,975	330	26,305
Pacific Islands—						
Fiji ..	..	..	..	25,950	1,181	27,131
Gilbert Islands ..	..	..	..	2,385	..	2,385
Solomon Islands ..	..	..	..	5,150	..	5,150
Papua ..	..	26,830	26,830	390	..	390
South African Union ..	..	4,943,296	4,943,296	1,000,000	..	1,000,000
Straits Settlements ..	..	..	..	50,000	..	50,000
Total British Countries ..	21,112	7,042,630	7,063,742	7,228,525	1,940,133	9,168,658
China ..	..	..	..	100	..	100
East Indies—						
Moluccas Islands ..	..	..	..	1,100	..	1,100
Timor (Portuguese) ..	..	..	..	200	..	200
Japan ..	..	..	..	50	..	50
Pacific Islands—						
Bismarck Archipelago ..	4,400	..	4,400	13,320	..	13,320
Marshall Islands ..	..	..	..	1,050	..	1,050
New Caledonia ..	..	..	..	912	..	912
New Hebrides ..	..	..	..	3,783	..	3,783
Pleasant Island ..	..	..	..	1,000	..	1,000
United States of America ..	..	2,897	2,897	30	..	30
Total Foreign Countries ..	4,400	2,897	7,297	21,545	..	21,545
GRAND TOTAL	25,512	7,045,527	7,071,039	7,250,070	1,940,133	9,190,203

## § 10. Effects of Prices on the Values of Exports.

1. *Significance of Price in Totals.*—In comparing the value of exports from, and also imports into, any country for a series of years, the question naturally arises as to how much any variation in the aggregate value is due to fluctuations in prices, and how much to increase or decrease of actual quantities, for, in aggregates expressed only in value—the only possible method when the commodities differ—the two sources of variation are confused.

The scheme of comparison adopted has been to take an annual average, for an extended period, of the quantities of all such articles of export as are recorded by quantity, and to apply to the average quantities so obtained the average prices in each year. The quantities used to produce the following results are the averages for 19½ years, viz., from 1st January, 1897, to 30th June, 1916, which it is considered may be taken as representing

the general quantitative composition or norm of the exports from the Commonwealth. The results published in issues of this work prior to No. 12, 1919, were ascertained by applying to the quantities exported during each year the average price per unit ruling in some year arbitrarily taken for the purposes of comparison as the basic year. The advantage of the method now adopted is that the results are comparable throughout, whereas under the method previously followed each year was comparable with the basic year only.

**2. Effect of Prices.**—The following table shews the values of exports as actually recorded in each year, together with the values computed on the assumption that the prices of 1901 were maintained. The table also shews the yearly "price-levels" based upon the results so ascertained.

This table obviously furnishes a measure of the influence of prices on the value of exports of each year since 1901. Column IV.—values computed on 1901 prices—represents the volume of exports (less specie and gold bullion), expressed in the common denomination of value, and from the figures therein it will be seen that, had the prices of 1901 remained constant, the value of the exports of merchandise during the year 1918–19 for example, would have been £52,489,805 only, instead of £106,711,774—the value actually recorded. The difference between these amounts (£54,221,969) results from a rise of 103.3 per cent. (i.e., from 1,000 to 2,033) in the price of commodities for the period intervening between 1901 and 1918–19.

It will be seen from the column of "Price-Levels" that prices as indicated by the Commonwealth exports rose steadily from the beginning of the decade to the year 1907. The financial crisis in the United States of America caused a pronounced fall in the prices of 1908. Owing to the large proportion of the aggregate value of exports represented by wool and wheat, any change in the price of these commodities has a marked effect on the index-numbers for the total group of exports, and it is to their influence that the fall of prices in 1911 is mainly due.

#### EFFECT OF PRICES ON THE VALUE OF COMMONWEALTH EXPORTS, AND EXPORT PRICE LEVELS FOR THE PERIOD 1901 TO 1919-20.

Year.	Exports of Specie and Gold Bullion.	Other Exports.		Total Exports (including Specie and Gold Bullion).		Price- Levels,* Year 1901 = 1,000.
		Values as Recorded.	Values Computed on Mass Prices of 1901.	Values as Recorded.	Values Computed on Mass Prices of 1901.	
I.	II. £	III. £	IV. £	V. £	VI. £	VII.
1901 ..	14,347,776	35,348,396	35,348,396	49,696,172	49,696,172	1000
1902 ..	14,568,640	29,346,447	26,948,068	43,915,087	41,516,708	1089
1903 ..	18,408,702	29,841,410	25,881,535	48,250,112	44,290,237	1153
1904 ..	16,914,691	40,571,224	35,620,038	57,485,915	52,534,729	1139
1905 ..	10,977,111	45,863,924	38,219,936	56,841,035	49,197,047	1200
1906 ..	16,895,059	52,842,704	42,005,330	69,737,763	58,900,389	1258
1907 ..	10,571,263	62,252,984	47,594,024	72,824,247	58,165,287	1308
1908 ..	13,608,531	50,702,527	42,607,165	64,311,058	56,215,696	1190
1909 ..	8,390,376	56,928,460	47,718,742	65,318,836	56,109,118	1193
1910 ..	4,178,097	70,313,053	57,351,593	74,491,150	61,529,690	1226
1911 ..	11,561,639	67,920,619	58,501,825	79,482,258	70,063,464	1161
1912 ..	11,881,216	67,214,874	53,218,427	79,096,090	65,099,643	1263
1913 ..	3,164,105	75,407,664	58,455,553	78,571,769	61,619,658	1290
1914-15 ..	2,474,197	58,118,379	44,740,861	60,592,576	47,215,058	1299
1915-16 ..	10,391,019	64,387,302	40,469,705	74,778,321	50,860,724	1591
1916-17 ..	11,521,815	86,433,667	43,985,398	97,955,482	55,507,213	1965
1917-18 ..	6,483,265	74,945,956	35,962,551	81,429,221	42,445,816	2084
1918-19 ..	7,252,202	106,711,774	52,489,805	113,963,976	59,742,007	2033
1919-20† ..	5,393,198	143,171,325	64,520,000	148,564,523	69,913,198	2219†

\* These are index-numbers for the total group of exports, excluding specie and gold bullion.

† Preliminary figures, subject to alteration.

The following table of index-numbers shews the variations in price of the different classes of goods exported grouped according to their industrial origin :—

PRICE-LEVELS OF COMMONWEALTH EXPORTS, 1901-19.

Year.	Agricultural Produce.	Pastoral Produce.	Dairy Produce.	Mineral Produce.	Miscellaneous.	All Classes.
1901 .. ..	1,000	1,000	1,000	1,000	1,000	1,000
1902 .. ..	1,161	1,117	1,165	842	1,106	1,089
1903 .. ..	1,201	1,200	944	819	1,167	1,153
1904 .. ..	1,127	1,232	906	851	946	1,139
1905 .. ..	1,193	1,291	995	920	920	1,200
1906 .. ..	1,155	1,344	1,021	1,113	991	1,258
1907 .. ..	1,184	1,403	1,044	1,148	1,035	1,308
1908 .. ..	1,445	1,212	1,115	896	1,002	1,190
1909 .. ..	1,461	1,219	1,031	891	1,079	1,193
1910 .. ..	1,436	1,266	1,072	900	1,195	1,226
1911 .. ..	1,243	1,193	1,085	944	1,227	1,161
1912 .. ..	1,388	1,268	1,198	1,133	1,254	1,263
1913 .. ..	1,324	1,334	1,124	1,114	1,329	1,290
1914-15 ..	1,480	1,323	1,176	1,066	1,221	1,299
1915-16 ..	1,927	1,589	1,488	1,393	1,106	1,591
1916-17 ..	1,726	2,131	1,690	1,650	1,357	1,965
1917-18 ..	1,954	2,250	1,624	1,760	1,401	2,084
1918-19 ..	1,864	2,166	1,855	1,692	1,775	2,033

The high index-numbers for mineral produce during 1906 and 1907 reflect the world's prices for that period, when prices registered for all the principal industrial metals touched a point higher than any previously recorded for many years.

The lower index for agricultural produce exported during 1916-17 is due to the lower price registered for wheat, viz., 4s. 10d. per bushel as against 5s. 6d. per bushel for 1915-16.

## § 11. External Trade of Australia and other Countries.

1. **Essentials of Comparisons.**—Direct comparisons of the external trade of any two countries are possible only when the general conditions prevailing therein, and the scheme of record, are sensibly identical. For example, in regard to the mere matter of record, it may be observed that in one country the value of imports may be the value at the port of shipment, while in another the cost of freight, insurance, and charges may be added thereto. Or again, the values of imports and exports in the one may be declared by merchants, whereas in the other they may be the official prices, fixed from time to time by a commission constituted for the purpose. The figures relating to the external trade of any country are also affected in varying degree by the extent to which they include transit or re-export trade. Including bullion and specie, the transit trade of Belgium, for example, represented, prior to the war, approximately 40 per cent. of the gross trade recorded; of Switzerland, 45 per cent.; of France, 20 per cent.; and of the United Kingdom, 15 per cent.; whereas in Australia the same element represents, normally, about 4 per cent., and in New Zealand even less.



2. "Special Trade" of Various Countries.—Special trade may be defined, agreeably to the practice of the British Board of Trade, as (a) imports entered for consumption in the country (as distinguished from imports for transshipment or re-export) and (b) exports of domestic products.

**TRADE OF VARIOUS COUNTRIES (IMPORTS FOR HOME CONSUMPTION AND EXPORTS OF DOMESTIC PRODUCTS, INCLUDING BULLION AND SPECIE) FOR LATEST AVAILABLE YEAR.**

Country.	Year ended	Trade.			Trade per Inhabitant.		
		Imports.	Exports.	Total.	Imports.	Exports.	Total.
		£	£	£	£ s. d.	£ s. d.	£ s. d.
C'wealth of Australia	30/6/19	94,073,000	106,027,000	200,100,000	18 14 0	21 1 6	39 15 6
United Kingdom (a)	31/12/13	76,323,000	75,113,000	151,436,000	15 17 11	15 12 10	31 10 9
Canada (a)	31/12/13	1,467,680,000	798,373,000	2,265,953,000	34 7 5	18 14 0	53 1 5
New Zealand (a)	31/3/19	671,285,000	525,461,000	1,196,726,000	14 11 8	11 8 4	26 0 0
United States of America	31/3/14	188,312,000	249,961,000	438,273,000	21 6 3	28 5 10	49 12 1
Argentina Republic	31/12/13	132,019,000	89,915,000	221,934,000	16 13 6	11 7 2	28 0 8
Austria-Hungary	31/12/10	30,309,000	51,887,000	82,176,000	24 14 0	42 5 5	66 19 5
Belgium	31/12/13	21,879,000	22,578,000	44,457,000	20 10 7	21 3 8	41 14 3
Brazil	30/6/18	628,709,000	1,264,718,000	1,893,427,000	5 17 11	11 17 2	17 15 1
Denmark	30/6/14	391,780,000	493,182,000	884,962,000	4 0 0	5 0 8	9 0 8
France	31/12/18	36,740,000	160,310,000	197,050,000	4 8 8	19 7 0	23 15 8
German Empire	31/12/12	149,026,000	121,345,000	270,371,000	2 19 4	2 8 4	5 7 8
Italy	31/12/19	157,275,000	71,165,000	228,440,000	20 15 5	9 8 0	30 8 5
Japan	31/12/12	210,211,000	160,054,000	370,265,000	27 15 3	21 2 10	48 18 1
Netherlands	31/12/19	80,905,000	132,100,000	213,005,000	2 18 11	4 16 2	7 15 1
Norway	31/12/12	63,425,000	74,649,000	138,074,000	2 12 1	3 1 2	5 13 3
Portugal	31/12/19	131,844,000	38,442,000	170,286,000	43 9 5	12 13 6	56 2 11
Spain	31/12/12	41,954,000	33,940,000	75,894,000	14 19 8	12 2 5	27 2 1
Sweden	31/12/19	936,867,000	274,059,000	1,210,926,000	23 12 0	6 18 1	30 10 1
Switzerland	31/12/12	350,482,000	281,495,000	631,977,000	8 16 9	7 1 11	15 18 8
Uruguay	31/12/12	541,675,000	447,392,000	989,067,000	8 3 9	6 15 3	14 19 0
	31/12/19	431,305,000	135,468,000	566,773,000	11 14 0	3 13 9	15 8 6
	31/12/12	149,113,000	97,536,000	246,649,000	4 5 2	2 15 8	7 0 10
	31/12/19	285,986,000	238,260,000	524,246,000	3 13 5	3 1 2	6 14 7
	31/12/12	66,007,000	57,972,000	123,979,000	1 5 3	1 2 2	2 7 5
	31/12/19	291,251,000	153,019,000	444,270,000	43 6 3	22 15 1	66 1 4
	31/12/17	92,235,000	43,779,000	136,074,000	35 1 4	16 12 8	51 4 0
	31/12/12	28,755,000	18,147,000	46,903,000	11 15 9	7 8 10	19 4 7
	31/12/12	17,035,000	7,867,000	24,902,000	3 0 10	1 8 2	4 9 0
	31/12/17	42,039,000	41,826,000	83,915,000	2 2 9	2 2 6	4 5 3
	31/12/12	46,617,000	75,025,000	121,642,000	8 0 9	12 18 8	20 19 5
	31/12/12	44,095,000	42,257,000	86,352,000	7 17 4	7 10 10	15 8 2
	31/12/19	154,862,000	142,652,000	297,514,000	39 6 8	36 4 8	75 11 4
	31/12/12	11,577,000	55,629,000	137,206,000	21 6 7	14 10 1	35 17 6
	31/12/11	9,333,000	8,840,000	18,173,000	7 18 6	7 10 1	15 8 7

(a) Excluding Bullion and Specie.

In the above table the figures relate, as nearly as is possible, to imports entered for consumption in the various countries quoted, and to exports of their domestic products. It is to be noted, however, that these figures do not unequivocally denote the same thing throughout, since, in the United Kingdom and other manufacturing countries, raw or partly manufactured materials are imported as for home consumption, and, after undergoing some process of manufacture or further modification, are re-exported as domestic production, and further, the statistical records of many countries do not distinguish between bullion and specie imported for the use of the particular country (home consumption) and the amount in transit, nor between the exports of that produced within the country and that re-exported. Nevertheless, a comparison of this character reveals approximately the extent of the external trade which otherwise would not be manifest.

3. External Trade as a Measure of Prosperity.—External trade is not necessarily a measure of the prosperity of a country. It is, for example, obvious that the external trade of a community depends not only upon the aggregate of its requirements, but also upon the extent to which it fails to supply requirements from its own resources. A community largely self-contained, for example, may have but a small external trade per head, and yet, by virtue of its capacity to produce and manufacture its own raw material, may

actually enjoy greater prosperity and a higher standard of living than another country whose external trade per head is much greater. The same observation applies equally to comparisons of the trade of the same country at different periods. A young country, the industries and export trade of which are mainly connected with raw or natural products, may, for example, through internal development, find the growth of its external trade diminishing per head of population without necessarily suffering any real diminution in the well-being of its people. In this regard it is interesting to contrast the trade per head of say, Belgium, New Zealand, and the United States of America. Prior to the war trade per unit of population for any year was greatest in Belgium (£48 18s. 1d. in 1912), with New Zealand next (£41 14s. 3d.), whereas for the United States the trade was only £9 0s. 8d. per inhabitant. Belgium and New Zealand represent conditions almost directly opposite to one another in the scheme of industrial development, yet the trade per head of each was abnormally high in comparison with that of most other countries. The large trade of Belgium was attained by the export of the products of highly organised manufacturing industries, based on the supplies of coal and iron within the country, in exchange for the raw materials for those industries and for food. In New Zealand the circumstances are reversed, inasmuch as in that country the energies of the people are mainly applied to primary industries, the produce of which, being largely in excess of local requirements, is exported in exchange for manufactured goods. The relatively small trade per head of population of the United States, as compared with Belgium or New Zealand, does not indicate that the people of the United States are in an inferior condition, but rather that their industries are more nearly balanced, with the result that a large proportion of the requirements of the nation is supplied from within its own territory, and consequently a smaller foreign trade is sufficient to supply the fewer remaining wants of the people, or, in other words, it indicates that as a nation the United States is more nearly self-contained.

The small foreign trade per inhabitant of Japan, Spain, and Portugal is, undoubtedly, due in some measure to a lower standard of living, but to what extent this factor is responsible, and how much is due to the capacity to supply all kinds of material wants from their own resources, could be ascertained only from a consideration of the general social and industrial conditions prevailing in each country. It is further obvious that circumstances may arise when enlargement of both imports and exports is actually a consequence of temporary economic difficulties. For example, in 1903, owing to shortage in the local supply, it became necessary to import wheat and flour into Australia to the value of £2,556,968, and to meet the charges for this by equivalent exports, the effect, considered *per se*, being to enlarge both. In this case the increase is not an evidence of prosperity. Even more pronounced instances of the same nature are furnished by the post-war trade figures for the United Kingdom and some European countries as shown in the foregoing table. The depletion of stocks during the war period made it necessary to import larger quantities of essential goods. The effect of the larger imports was accentuated by the higher prices due to the combined effects of the scarcity of goods and inflated currency. The resultant large increases in the recorded value of the trade cannot, under such circumstances, be taken as an indication of greater prosperity.

## § 12. Trade of the United Kingdom with Australia, compared with Competing Countries.

1. *Proportion of Trade from United Kingdom and Competing Countries.*—The failure of the United Kingdom to maintain the position formerly held in the import trade of Australia has been a matter of more than ordinary interest for some years. Since 1908, a permanent resident Commissioner, appointed by the British Board of Trade, has been established in Australia for the purpose of advising manufacturers and merchants in the United Kingdom with regard to Australian trade affairs. From the 8th August, 1907, the Commonwealth Customs Tariffs have provided special rates in

favour of goods from the United Kingdom, with the object of assisting the British manufacturer to retain or improve his position in this market. The percentages given in the following table shew the proportions of the imports into Australia from the United Kingdom, and from other countries mentioned, during each of the years 1886 to 1918-19:—

**PROPORTION OF COMMONWEALTH IMPORT TRADE FROM VARIOUS COUNTRIES,  
1886 TO 1918-19.**

Year.	Percentage Proportions from—					Year.	Percentage Proportions from—				
	United K'dom.	British Poss'ns.	Germ'y.	United States.	Total Foreign C'tries.		United K'dom.	British Poss'ns.	Germ'y.	United States.	Total Foreign C'tries.
1886 ..	73.37	11.23	2.05	6.11	15.40	1903 ..	52.51	13.17	6.24	16.84	34.32
1887 ..	72.26	12.50	2.28	5.37	15.24	1904 ..	60.68	12.22	7.17	12.40	27.10
1888 ..	71.62	12.03	2.71	6.48	16.35	1905 ..	60.17	14.04	6.42	11.70	25.79
1889 ..	68.98	13.45	3.65	6.67	17.57	1906 ..	59.39	15.09	7.16	10.36	25.52
1890 ..	68.08	12.66	4.77	6.54	19.26	1907 ..	61.59	12.93	6.85	11.33	25.48
1891 ..	70.15	11.40	4.53	6.79	18.45	1908 ..	60.10	12.83	7.05	12.13	27.07
1892 ..	70.74	11.37	4.32	6.04	17.89	1909 ..	60.92	13.45	6.51	9.78	25.63
1893 ..	72.78	12.14	3.40	4.98	15.08	1910 ..	61.06	13.11	6.30	10.82	25.83
1894 ..	71.92	11.96	3.78	5.39	16.12	1911 ..	58.98	12.86	6.63	11.57	28.16
1895 ..	71.62	11.46	4.42	5.95	16.92	1912 ..	58.76	12.26	6.58	12.09	28.98
1896 ..	68.28	10.74	5.31	8.59	20.98	1913 ..	59.70	12.42	6.22	11.94	27.88
1897 ..	66.22	10.72	5.75	10.10	23.06	1914-15	58.82	14.64	2.02	14.89	26.54
1898 ..	66.62	10.88	5.86	10.16	22.50	1915-16	51.26	16.39	0.65	19.81	32.35
1899 ..	61.85	11.75	6.07	13.00	26.40	1916-17	52.47	16.03	0.06	20.37	31.50
1900 ..	61.28	11.28	6.54	12.16	27.44	1917-18	39.90	21.26	0.02	24.38	38.84
1901 ..	59.47	11.22	6.59	13.80	29.31	1918-19	37.10	22.15	0.00	27.29	40.75
1902 ..	58.64	13.22	6.53	12.27	28.14						

In order to draw accurate conclusions from the above table, however, special attention must be given to the nature of imports from the United States, since the imports from that country have in some years been increased by imports of breadstuffs, a trade in which the United Kingdom could not participate. The years affected by the imports of breadstuffs were 1886, 1889, 1896, 1897, 1903 and 1914-15. Increased imports of such items as kerosene oil and timber also tend to increase the proportion of imports from the United States without any prejudicial effect on the trade of the United Kingdom. Similar modification is not necessary in regard to Germany, as the nature of the imports from that country was substantially the same as from the United Kingdom. The inclusion of specie and bullion, which have been received mainly from New Zealand and other British possessions, also obscures to some extent the essential facts. Nevertheless the figures presented indicate general tendencies. It will be noticed that although in the earlier years under review the proportion of imports which were shipped from the United Kingdom declined in a very marked degree from 73.37 per cent. in 1886 to 61.85 per cent. in 1899, from the latter year to the outbreak of war the proportion has been well sustained at about 60 per cent. of the whole.

It has already been pointed out in this chapter that, prior to the year 1905, imports into the Commonwealth were recorded only against the country whence they were directly imported. Although the values of direct imports do not afford satisfactory data, it is necessary for any comparison extending further back than 1905 to use such figures. These figures are unsatisfactory on account of the varying proportions of indirect trade.

In order to furnish a comparison free from such trade as, from its nature, is not open to the United Kingdom, the following table, shewing the direct imports during the years 1886, 1906, 1913, and 1918-19 of the principal classes of goods which enter largely into the trade of the countries named, has been prepared. It may be mentioned that the imports for the year 1886 were extracted from the "Statistical Registers" of the several States for a comparison—published in a previous issue—with the year 1906, and as their compilation involved a large amount of labour they are again utilised for comparison with the later years.

PRINCIPAL *DIRECT* IMPORTS INTO THE COMMONWEALTH FROM THE UNITED KINGDOM, GERMANY, AND THE UNITED STATES, 1886, 1906, 1913, AND 1918-19.

Nature of Imports.	Year.	United Kingdom.	Germany.	United States.	All Countries.
		£	£	£	£
Foodstuffs of animal origin. .	1886	348,950	5,603	70,959	674,296
	1906	293,950	24,319	146,781	697,830
	1913	385,307	61,096	269,826	947,697
	1918-19	29,780	..	216,925	585,562
Alcoholic liquors ..	1886	1,801,200	82,185	82,730	2,126,877
	1906	1,003,394	91,460	2,491	1,278,194
	1913	1,487,818	205,670	2,940	1,947,248
	1918-19	1,068,053	..	120,408	1,263,324
Apparel, textiles, etc. (including boots) ..	1886	9,845,182	54,350	15,336	10,316,989
	1906	10,978,396	418,235	219,793	13,417,928
	1913	15,356,950	575,303	392,084	19,559,304
	1918-19	21,832,938	41	4,029,770	36,237,171
Metals unmanufactured and partly manufactured* ..	1886	403,809	2,241	..	430,950
	1906	696,331	62,945	34,927	927,785
	1913	1,191,583	113,152	106,731	1,899,846
	1918-19	308,108	248	354,008	772,880
Manufactures of metal (including machinery) ..	1886	4,616,924	94,832	311,342	5,190,901
	1906	5,532,151	954,094	1,454,746	8,480,290
	1913	12,625,218	1,396,906	3,374,215	19,152,660
	1918-19	6,515,219	1,061	8,890,278	16,995,544
Paper and stationery ..	1886	1,260,531	21,038	39,700	1,340,627
	1906	1,207,729	261,684	288,509	1,838,474
	1913	2,083,736	255,234	230,803	3,134,750
	1918-19	1,277,622	370	2,749,160	5,543,880
Jewellery, timepieces, fancy goods ..	1886	659,833	24,206	57,477	789,127
	1906	740,850	140,950	59,151	1,045,164
	1913	964,966	182,040	90,508	1,410,555
	1918-19	626,828	259	321,785	1,600,868
Earthenware, cements, etc.	1886	755,907	78,762	24,711	938,476
	1906	313,112	225,321	37,227	683,094
	1913	695,650	454,822	58,616	1,568,531
	1918-19	391,065	138	585,566	1,467,886
Drugs, chemicals, fertilizers, etc. ..	1886	511,216	8,660	33,382	766,243
	1906	954,507	216,224	105,842	1,866,651
	1913	1,072,607	264,768	122,435	2,715,127
	1918-19	1,949,231	142	1,158,313	4,425,073
Leather, and mfs. thereof (excluding boots) and substitutes therefor, including indiarubber ..	1886	285,601	6,357	53,588	363,332
	1906	682,238	70,028	116,356	924,968
	1913	889,870	243,471	289,285	1,749,046
	1918-19	633,047	3	995,498	2,373,188
Total above-mentioned imports ..	1886	20,489,153	378,234	689,225	22,937,818
	1906	22,402,658	2,465,260	2,465,823	31,160,378
	1911	33,071,796	3,332,789	4,393,572	47,566,734
	1913	36,753,705	3,752,462	4,937,443	54,084,764
	1915-16	33,059,034	28,567	9,136,621	51,837,633
	1916-17	32,384,785	34,089	10,235,362	53,634,416
	1917-18	22,342,509	9,511	10,258,722	44,359,445
	1918-19	34,631,891	2,262	19,421,711	71,265,376
Total imports (less bullion and specie) ..	1886	24,974,939	699,075	2,087,213	33,885,284
	1906	26,437,768	3,202,990	4,633,331	42,413,995
	1911	39,145,829	4,427,153	7,747,470	64,934,538
	1913	47,422,225	4,956,828	9,522,502	78,196,109
	1915-16	39,508,832	1,296,917	15,358,433	76,740,899
	1916-17	39,983,227	47,675	15,526,998	75,954,890
	1917-18	24,825,067	11,553	15,193,157	60,675,683
	1918-19	37,950,595	2,356	27,927,188	94,867,459

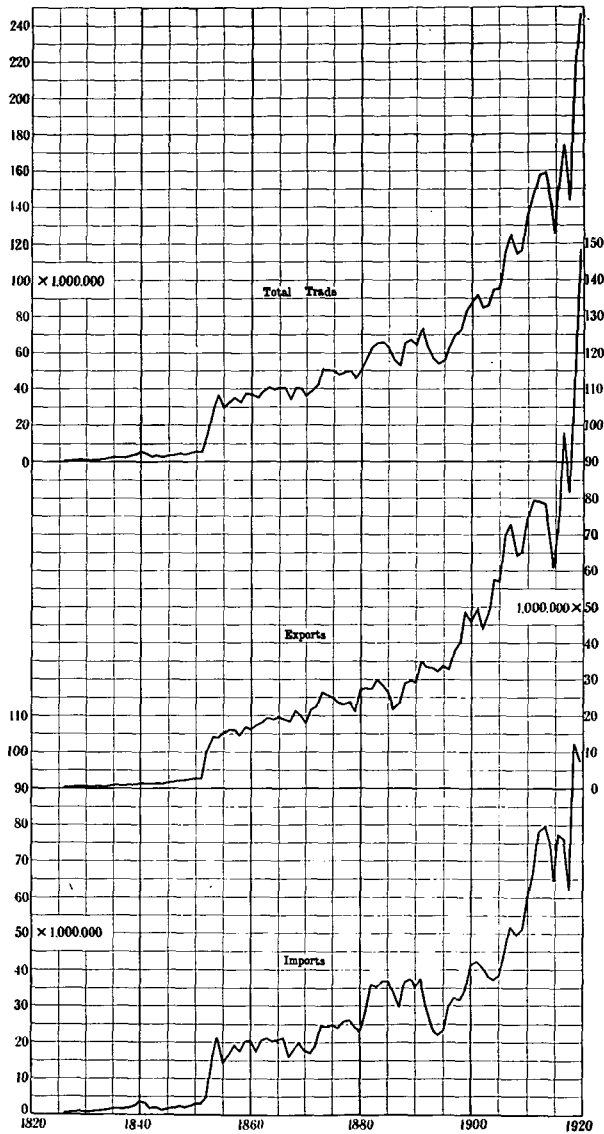
\* Mainly pig iron and bar and rod iron. Gold and silver bullion not included.

PERCENTAGE ON TOTAL COMMONWEALTH IMPORTS OF PRINCIPAL *DIRECT* IMPORTS FROM UNITED KINGDOM, GERMANY, AND UNITED STATES, 1886, 1906, 1913, AND 1918-19.

Nature of Imports.	Year.	United Kingdom.	Germany.	United States.	All Countries.
Foodstuffs of animal origin ..	1886	51.75	0.83	10.52	100
	1906	42.12	3.48	21.02	100
	1913	40.66	6.45	28.47	100
	1918-19	5.09	..	37.05	100
Alcoholic liquors .. ..	1886	84.69	3.86	3.89	100
	1906	78.50	7.16	0.19	100
	1913	76.41	10.56	0.15	100
	1918-19	84.54	..	9.53	100
Apparel, textiles, etc. (including boots) .. ..	1886	95.44	0.53	0.15	100
	1906	81.82	3.12	1.64	100
	1913	78.51	2.94	2.00	100
	1918-19	60.25	0.00	11.12	100
Metals unmanufactured and partly manufactured ..	1886	93.72	0.52	..	100
	1906	75.06	6.78	3.76	100
	1913	62.73	5.96	5.62	100
	1918-19	39.86	0.03	45.80	100
Manufactures of metals ..	1886	88.93	1.83	6.00	100
	1906	65.24	11.25	17.15	100
	1913	65.92	7.29	17.62	100
	1918-19	38.33	0.01	52.31	100
Paper and stationery .. ..	1886	94.03	1.57	2.96	100
	1906	65.69	14.23	15.69	100
	1913	66.47	8.14	7.36	100
	1918-19	23.05	0.01	49.59	100
Jewellery, timepieces, and fancy goods .. ..	1886	83.62	3.07	7.28	100
	1906	70.89	13.48	5.66	100
	1913	68.42	12.91	6.42	100
	1918-19	39.16	0.02	20.10	100
Earthenware, cements, etc. ..	1886	80.55	8.39	2.63	100
	1906	45.84	32.99	5.45	100
	1913	44.35	29.00	3.74	100
	1918-19	26.64	0.01	39.89	100
Drugs, chemicals, fertilizers ..	1886	66.71	1.13	4.36	100
	1906	51.13	11.58	5.67	100
	1913	39.50	9.75	4.51	100
	1918-19	44.05	0.00	26.18	100
Leather and mfs. thereof, and substitutes therefor, including indiarubber .. ..	1886	78.60	1.75	15.30	100
	1906	73.75	7.60	12.58	100
	1913	50.88	13.92	16.54	100
	1918-19	26.67	0.00	41.95	100
Total above-mentioned imports	1886	89.31	1.65	3.01	100
	1906	71.89	7.91	7.91	100
	1911	69.53	7.01	9.24	100
	1913	67.96	6.94	9.13	100
	1915-16	63.77	0.06	17.62	100
	1916-17	60.38	0.06	19.08	100
	1917-18	50.37	0.02	23.13	100
Total imports (less bullion and specie) .. ..	1918-19	48.60	0.00	27.25	100
	1886	73.71	2.06	6.16	100
	1906	62.34	7.55	10.92	100
	1911	60.28	6.82	11.93	100
	1913	60.66	6.34	12.18	100
	1915-16	51.47	1.69	20.01	100
	1916-17	52.64	0.06	20.44	100
	1917-18	40.91	0.02	25.04	100
	1918-19	40.00	0.00	29.44	100

The foregoing table shews that the share of the United Kingdom, as indicated by the records according to "Country of Shipment," in the trade of those classes of goods enumerated—representing about 90 per cent. of the total imports from that country—has declined from 89.31 per cent. of the whole in 1886 to 48.60 per cent. in 1918-19. The value of these imports from the United Kingdom has increased from £20,489,153 in 1886 to

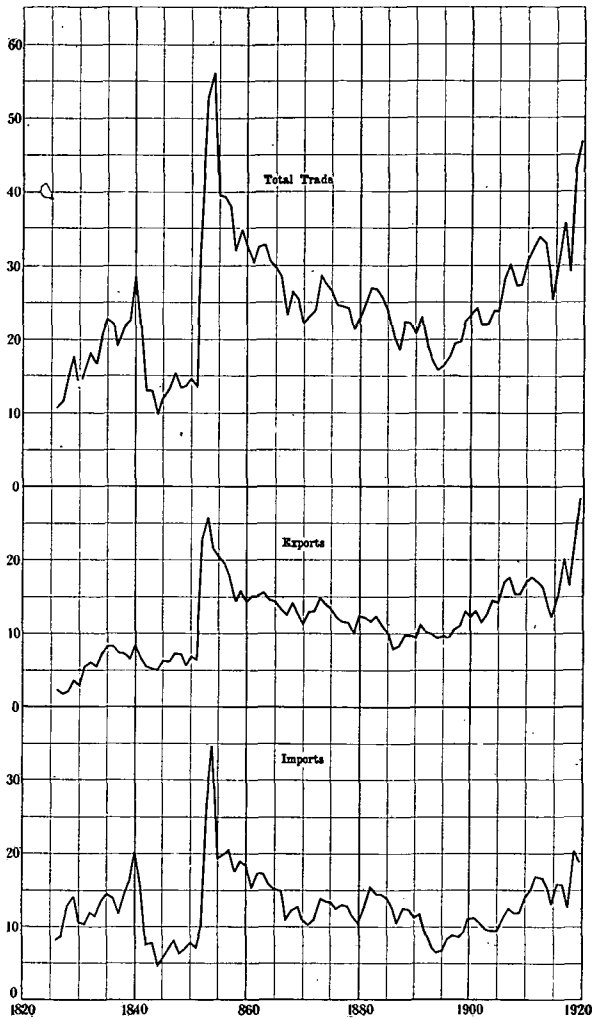
GRAPH SHEWING VALUES OF TOTAL TRADE, EXPORTS, AND IMPORTS OF  
COMMONWEALTH, 1826 TO 1918-19.



(See pages 577 and 578.)

EXPLANATION OF GRAPH.—The base of each square represents an interval of five years, and the vertical height five million pounds sterling for Imports and Exports, and ten million pounds sterling for Total Trade.

GRAPH SHEWING THE VALUES PER HEAD OF POPULATION OF TOTAL TRADE, EXPORTS,  
AND IMPORTS OF COMMONWEALTH, 1826 TO 1918-19.



(See pages 577 and 578.)

EXPLANATION OF GRAPH.—The base of each square represents an interval of five years, and the vertical height five pounds per head of the population.

only £34,631,891 in 1918-19, or by 69.03 per cent., while the total value of similar imports had increased from £22,937,818 to £71,265,376, or by 210.69 per cent. The figures for the last five years, however, are of little value for comparison with earlier periods, as it was not to be expected that, under the circumstances, the manufacturers of the United Kingdom would maintain their pre-war share of the Australian trade during the war period.

The following table gives an analysis of the imports from 1908-12 to 1918-19, according to the countries of origin of the goods.

**IMPORTS INTO THE COMMONWEALTH OF PRODUCTS OR MANUFACTURES OF THE UNITED KINGDOM, FRANCE, GERMANY, JAPAN, AND THE UNITED STATES OF AMERICA DURING THE YEARS 1908-12 TO 1918-19.**

Nature of Imports.	Year.	United Kingdom.	France.	Germany.	Japan.	U.S. of America.	All Countries.
		£	£	£	£	£	£
Foodstuffs of animal origin ..	1908-12	269,073	4,269	8,253	5,747	242,640	862,778
	1913 ..	301,025	3,093	12,071	6,988	289,229	947,697
	1916-17	208,010	2,024	189	16,262	344,306	1,556,816
	1917-18	6,576	102	..	29,908	521,020	1,080,249
	1918-19	26,218	115	..	23,034	205,063	585,562
Alcoholic liquors ..	1908-12	1,039,501	295,122	85,092	905	2,370	1,618,769
	1913 ..	1,227,561	343,403	143,477	1,755	2,805	1,947,248
	1916-17	1,449,841	186,327	313	1,267	24,649	1,860,407
	1917-18	1,053,479	108,869	..	309	27,597	1,348,574
	1918-19	961,875	65,897	..	993	15,826	1,263,324
Apparel (including boots), textiles, etc.	1908-12	10,473,807	820,485	1,503,797	396,687	450,903	16,565,629
	1913 ..	11,920,600	960,377	1,698,283	475,954	621,954	19,559,304
	1916-17	15,265,550	796,051	11,289	1,612,222	1,697,515	24,011,759
	1917-18	12,361,312	706,577	906	2,513,380	1,586,102	21,752,258
	1918-19	19,880,413	912,808	42	4,810,637	4,109,844	36,237,171
Metals unmanufactured or partly manufactured*	1908-12	859,907	2,550	185,406	230	56,685	1,300,458
	1913 ..	1,202,514	3,674	302,466	..	108,000	1,898,816
	1916-17	709,102	2,725	2,285	22,819	554,597	1,478,252
	1917-18	213,378	12	123	18,362	320,617	628,555
	1918-19	305,242	2	416	22,053	335,340	772,880
Manufactures of metals ..	1908-12	8,827,472	213,358	1,498,489	3,352	2,777,564	14,220,815
	1913 ..	12,027,377	211,610	1,962,154	7,601	3,680,720	19,152,660
	1916-17	6,805,914	39,167	21,565	181,670	5,181,874	13,261,424
	1917-18	3,187,295	16,405	11,937	285,854	5,313,696	9,698,970
	1918-19	6,325,224	12,200	3,010	524,280	8,509,002	16,995,544
Paper and stationery	1908-12	1,463,233	18,665	279,868	7,902	203,820	2,547,761
	1913 ..	1,789,577	21,930	266,483	10,656	403,679	3,134,750
	1916-17	2,050,520	25,474	2,670	52,680	845,780	4,462,400
	1917-18	990,444	36,256	201	85,020	879,076	3,003,538
	1918-19	1,293,255	57,196	1,380	177,871	2,442,333	5,543,880
Jewellery, timepieces, and fancy goods..	1908-12	532,749	133,828	263,526	17,129	152,454	1,472,740
	1913 ..	506,608	85,430	250,846	19,192	136,965	1,410,555
	1916-17	368,712	90,419	5,512	128,658	193,378	1,126,320
	1917-18	244,232	73,738	481	185,624	226,615	1,065,432
	1918-19	303,948	139,792	263	258,312	319,656	1,600,868
Earthenware, cements, glass, etc.	1908-12	490,818	31,081	271,406	16,220	55,039	1,067,217
	1913 ..	650,867	40,188	457,810	21,493	62,895	1,568,531
	1916-17	409,147	8,024	3,410	263,056	246,624	1,108,339
	1917-18	234,742	3,508	207	333,937	181,998	780,219
	1918-19	387,472	1,886	138	476,007	587,569	1,467,886
Drugs, chemicals, fertilizers ..	1908-12	952,747	227,744	217,554	111,498	163,631	2,242,610
	1913 ..	1,020,141	245,413	303,447	139,106	205,123	2,715,127
	1916-17	1,265,743	226,961	7,023	367,212	509,035	3,301,363
	1917-18	1,174,544	186,153	1,313	584,996	696,950	3,358,003
	1918-19	1,530,004	316,008	501	519,327	1,284,402	4,425,073
Leather and manufactures thereof and substitutes thereof including indiarubber (excluding boots)	1908-12	472,166	59,356	221,768	1,581	324,991	1,338,033
	1913 ..	515,169	68,746	347,550	692	435,071	1,749,046
	1916-17	426,546	20,228	290	16,243	978,588	1,667,696
	1917-18	317,585	30,511	148	11,800	764,585	1,643,647
	1918-19	497,796	86,486	3	21,198	1,009,402	2,373,188
Total above-mentioned imports ..	1908-12	25,381,473	1,806,458	4,535,249	561,260	4,520,097	43,245,810
	1913 ..	31,161,439	1,983,864	5,744,587	683,437	5,946,441	54,084,764
	1916-17	29,049,085	1,397,400	54,546	2,662,089	10,576,346	53,634,416
	1917-18	19,785,587	1,162,131	15,406	4,049,280	10,518,256	44,359,445
	1918-19	31,511,447	1,592,390	5,753	6,833,712	18,818,527	71,265,376
Total imports (less bullion and specie)	1908-12	30,371,178	2,015,324	5,547,984	760,616	7,987,532	59,777,620
	1913 ..	40,948,803	2,222,631	7,029,325	950,300	10,907,512	78,196,109
	1916-17	36,236,491	1,492,552	70,396	3,373,684	15,873,483	75,954,890
	1917-18	22,030,579	1,219,270	18,055	4,977,085	15,453,665	60,675,683
	1918-19	34,563,860	1,651,833	6,556	8,203,725	27,180,656	94,867,459

\* Mainly pig iron and bar and rod iron. Gold and silver bullion not included.

Note.—Figures for the years 1905-10 will be found in previous issues.



**PERCENTAGE ON TOTAL COMMONWEALTH IMPORTS OF IMPORTS OF  
PRODUCTS OR MANUFACTURES OF THE UNITED KINGDOM, FRANCE,  
GERMANY, JAPAN, AND THE UNITED STATES OF AMERICA DURING  
THE YEARS 1908-12 TO 1918-19.**

Nature of Imports.	Year.	United Kingdom.	France.	Germany.	Japan.	U.S. of America.	All Countries.
Foodstuffs of animal origin .. ..	{ 1908-12	31.19	0.49	0.96	0.67	28.12	100
	{ 1913 ..	31.77	0.33	12.74	0.74	30.52	100
	{ 1916-17	17.98	0.17	0.02	1.40	29.77	100
	{ 1917-18	0.61	0.01	..	2.77	48.23	100
	{ 1918-19	4.48	0.02	..	3.93	35.02	100
Alcoholic liquors ..	{ 1908-12	64.22	18.23	5.26	0.05	0.15	100
	{ 1913 ..	63.04	17.64	7.37	0.09	0.14	100
	{ 1916-17	77.93	10.02	0.02	0.07	1.32	100
	{ 1917-18	78.12	8.07	..	0.02	2.05	100
	{ 1918-19	76.14	5.22	..	0.08	1.25	100
Apparel (including boots), textiles, etc.	{ 1908-12	63.23	4.95	9.08	2.30	2.72	100
	{ 1913 ..	60.94	4.91	8.68	2.43	3.18	100
	{ 1916-17	63.58	3.32	0.05	6.71	7.07	100
	{ 1917-18	56.83	3.25	0.00	11.55	7.29	100
	{ 1918-19	54.86	2.52	0.00	13.28	11.34	100
Metals unmanufactured or partly manufactured	{ 1908-12	65.67	0.19	14.16	0.02	4.33	100
	{ 1913 ..	63.29	0.19	15.92	..	5.69	100
	{ 1916-17	47.97	0.18	0.15	1.54	37.52	100
	{ 1917-18	33.95	0.00	0.02	2.92	51.01	100
	{ 1918-19	39.49	0.00	0.54	2.85	43.39	100
Manufactures of metals ..	{ 1908-12	62.07	1.50	10.54	0.02	19.53	100
	{ 1913 ..	62.80	1.10	10.24	0.04	19.22	100
	{ 1916-17	51.32	0.30	0.16	1.37	39.07	100
	{ 1917-18	32.86	1.69	1.23	2.95	54.79	100
	{ 1918-19	37.22	0.07	0.02	3.08	50.07	100
Paper and stationery	{ 1908-12	57.43	0.73	10.98	0.31	11.53	100
	{ 1913 ..	57.41	0.70	8.50	0.34	12.88	100
	{ 1916-17	45.95	0.57	0.06	1.18	18.95	100
	{ 1917-18	32.98	1.21	0.01	2.83	29.27	100
	{ 1918-19	23.33	1.03	0.02	3.21	44.05	100
Jewellery, timepieces and fancy goods	{ 1908-12	36.18	9.09	17.90	1.16	10.35	100
	{ 1913 ..	35.92	6.06	17.77	1.36	9.71	100
	{ 1916-17	32.74	8.03	0.49	11.41	17.17	100
	{ 1917-18	22.92	6.92	0.05	17.42	21.27	100
	{ 1918-19	18.99	8.73	0.02	16.14	19.97	100
Earthenware, cements, glass, etc.	{ 1908-12	46.99	2.91	25.43	1.52	5.16	100
	{ 1913 ..	41.49	2.56	29.19	1.37	4.01	100
	{ 1916-17	45.04	0.72	0.31	23.73	22.25	100
	{ 1917-18	30.09	0.45	0.03	42.80	23.33	100
	{ 1918-19	26.40	0.13	0.01	32.43	40.03	100
Drugs, chemicals, and fertilizers ..	{ 1908-12	42.48	10.16	9.70	4.97	7.30	100
	{ 1913 ..	37.57	9.04	11.18	5.12	7.55	100
	{ 1916-17	38.34	6.87	0.21	11.12	15.42	100
	{ 1917-18	34.98	5.54	0.04	17.42	20.75	100
	{ 1918-19	34.58	7.14	0.00	11.74	29.03	100
Leather and manufactures thereof, and substitutes therefor, including Indiarubber (excluding boots)	{ 1908-12	35.29	4.43	16.57	0.12	24.29	100
	{ 1913 ..	29.45	3.93	19.87	0.04	24.88	100
	{ 1916-17	22.84	1.08	0.02	0.87	52.40	100
	{ 1917-18	19.32	1.86	0.01	0.72	46.51	100
	{ 1918-19	20.98	3.64	0.00	0.89	42.53	100
Total above-mentioned articles	{ 1908-12	58.69	4.18	10.49	1.30	10.45	100
	{ 1913 ..	57.62	3.67	10.62	1.26	10.99	100
	{ 1916-17	54.16	2.61	0.10	4.96	19.72	100
	{ 1917-18	44.60	2.62	0.03	9.13	23.71	100
	{ 1918-19	44.22	2.23	0.01	9.59	26.41	100
Total Imports (less bullion and specie)	{ 1908-12	50.81	3.37	9.28	1.27	13.36	100
	{ 1913 ..	52.37	2.84	8.99	1.21	13.95	100
	{ 1916-17	47.71	1.97	0.09	4.44	20.90	100
	{ 1917-18	36.31	2.01	0.03	8.20	25.47	100
	{ 1918-19	36.43	1.74	0.01	8.65	28.65	100

As already stated in connexion with the preceding table, the imports from the United Kingdom during the last few years were, obviously, so affected by the war that the trade of that period affords no indication of what the tendencies will be when international trade again finds its readiest channels.

Apart from the decline of imports from the United Kingdom and the collapse of the trade with Belgium and Germany in consequence of the war, the most striking feature of the figures given above, perhaps, is the increased proportion of the trade which has fallen to the United States and to Japan. It may be mentioned here that the value of the imports from the United States and from Japan during the later year are somewhat understated, inasmuch as the values have been converted from the currencies of those countries on the basis of a par of exchange, whereas the actual exchange rates were considerably in their favour. This method of conversion, which is applied to values for Customs duty also, is an advantage to Japan and to the United States in the Australian market. In the latest pre-war year (1913), the share of the United States in the "competitive" groups was £5,946,441, or 10.99 per cent., whereas in 1918-19 it was £18,818,527, or 26.41 per cent. The following are some of the principal lines in which United States' sales to Australia during 1918-19 were increased over those of 1913, and the amount of such increases:—Cocoa and chocolate, and confectionery, £132,386; potable spirits, £13,005; apparel and textiles, £3,480,540; mixed metals—brass, bronze, &c., £27,167; iron and steel unmanufactured or partly manufactured, £151,757; manufactured metals and machinery (including vehicles), £4,828,172; glass and glassware, £443,383; indiarubber and manufactures thereof, £424,892; leather and manufactures of (excluding boots and shoes), £152,306; paper and stationery, £2,038,654; fancy goods, £93,791; jewellery, £48,916; drugs and chemicals, £1,079,369; ammunition and explosives, £242,022; brushware, £27,034; electrical materials, £315,086; pianos and parts thereof, £246,448; paints and varnishes, £245,629; ships, £417,399; talking machines, £86,457; yarns, £36,493.

Although the value of the imports of competitive goods from Japan is much less than from America, the rate of increase has been far greater—from £683,437 in 1913 to £6,833,712 in 1918-19, equal to 900 per cent. The classes of goods chiefly responsible for this increase and the amount of the increase due to each are as follows:—Apparel and textiles, £4,311,318; metal manufactures and machinery, £538,732; china and porcelain ware, £197,396; earthenware, £57,895; glass and glassware, £199,324; paper, £122,893; stationery, £44,622; fancy goods, £221,264; optical, surgical, and scientific instruments, £26,418; sulphur, £158,174; brushware, £79,175; matches, £225,746; electric cable and wire, covered, £292,669; cotton waste, £85,705; oils in bulk, £64,375; leather and rubber manufactures, £20,506; yarns, wool, £78,884.

**2. Preferential Tariff.**—The Tariff Act of 1908 provided preferential tariff rates in favour of goods produced or manufactured in the United Kingdom. Subsequent amendments of the Tariff have extended the list of articles to which the preferential rates apply. In the schedule submitted to Parliament on the 3rd December, 1914, the extension of the number of preferential rates was very material, and was accompanied in many instances by an increase of the margin in favour of the United Kingdom.

This favorable treatment of the United Kingdom was again extended in both directions by the Tariff of the 25th March, 1920, which also included a new feature of Australian Tariffs in the form of an Intermediate Tariff. In submitting the schedule to Parliament, the Minister for Trade and Customs made the following statement of the object of the Intermediate Tariff:—" . . . the Minister is empowered under the Bill to enter into reciprocal arrangements with other Dominions of the British Crown. The Minister will be able, if we can arrange a satisfactory reciprocal agreement, to extend to other Dominions on individual items the British preference rate, or the intermediate rate, or, it may be, the general rate. Such agreements will be subject to the ratification of Parliament. The provision simply means that if any of our sister self-governing Dominions desires to enter into reciprocal trade relationships with us, the Minister, with the British Preference Tariff, the Intermediate Tariff, and the General Tariff before him, may bargain with the sister Dominion and come to an agreement, which, as I say, must subsequently be ratified by Parliament. . . . There is a provision of a somewhat similar character in regard to other countries than the Dominions, the only difference being that the Minister is empowered to extend to countries other than the Dominions only the Intermediate Tariff; that is to say, in entering into such negotiations, he is precluded from offering to those countries what we might term, for the purposes of this Bill, the Empire rate. He is confined in his negotiations with these other countries to the Intermediate Tariff."

Hitherto the Union of South Africa has been the only British Dominion with which the Commonwealth has had a reciprocal tariff arrangement. The Commonwealth

Customs Tariff (South African Preference) Act, No. 17 of 1906, and subsequent amending Acts have provided preferential rates of duty to be applied to certain imported goods "when those goods are imported from and are the produce or manufacture of any of the British South African Colonies or Protectorates which are included within the South African Customs Union."

On the introduction of the preferential treatment of British goods, it was required that British material or labour should represent not less than one-fourth the value of such goods. From the 1st September, 1911, it has been required, in regard to goods only partially manufactured in the United Kingdom, that the final process or processes of manufacture shall have been performed in the United Kingdom, and that the expenditure in material of British production and/or British labour shall have been not less than one-fourth of the factory or works' cost of the goods in the finished state.

Number 8 and previous editions of this Year Book contained exhaustive analyses of the imports into the Commonwealth, for the purpose of measuring the effect of the preferential treatment of British goods. The method adopted was to contrast the relative proportion of the trade supplied by the United Kingdom in respect to goods subject to Preferential Tariff rates with the proportion of goods of the same class supplied in unrestricted competition under the General Tariff. The most satisfactory data for the purpose were furnished by two classes of goods, viz., "Apparel and Textiles" and "Machinery and Manufactures of Metals." Under the existing Tariff, preferential treatment has been so extended as to cover practically all goods of these classes, and consequently the basis of comparison no longer exists. Prior to the Tariff of 1914, just about one-half of all imports and about 60 per cent. of imports from the United Kingdom were affected by the Preferential Tariff, whereas under the Tariff of 1914 nearly 80 per cent. of all imports, and about 90 per cent. of imports of United Kingdom origin were affected by the Preferential Tariff.

3. **Preferential Tariffs of the British Empire.**—In the Official Year Book No. 11, pages 601-3, will be found an outline of the systems of Preferential Tariffs within the British Empire and the Tariff arrangements between British Dominions or Colonies and Foreign Countries, together with a list of countries with whom Great Britain had concluded commercial treaties for "Most-Favoured-Nation" treatment.

### § 13. Rates of Duty in Australia and other Countries.

The following table shews the proportion of the total imports of merchandise entered for "home consumption" free of duty, in the undermentioned countries, and also the equivalent *ad valorem* rates of duty charged:—

PROPORTION OF FREE GOODS AND RATES OF IMPORT DUTY.

Particulars.	Australia.			Canada. (a)	New Zealand.	U.S. of America.
	31/12/06	31/12/13	30/6/19	31/3/19	31/12/18	30/6/18
Year ended .. .. .						
Percentage of free merchandise ..	35.18	42.30	38.30	42.55	54.97	73.91
Equivalent <i>ad val.</i> rates of duty on—	%	%	%	%	%	%
Spirits, wines and malt liquors ..	153.23	136.62	96.76	82.46	99.93	66.42
Tobacco, and preparations thereof ..	168.65	133.70	84.72	6.83b	100.00	57.28d
Other dutiable merchandise ..	17.04	20.92	16.88	29.73	21.85	21.51
Other merchandise dutiable and free	10.75	11.72	10.20	17.25	8.96	5.38
Total dutiable merchandise ..	27.14	28.47	20.74	30.00	33.13	24.11
Total merchandise dutiable and free	17.59	16.42	12.80	17.20	14.92	6.30
Customs duty per head .. ..	£ s. d. 1 15 10	£ s. d. 2 12 8	£ s. d. 2 6 8	£ s. d. 3 13 6	£ s. d. 3 0 7c	£ s. d. 0 6 11

(a) Including war tax, £9,190,532. (b) Unmanufactured tobacco is admitted to Canada free of duty. (c) Exclusive of Maoris, and residents of Cook and other Pacific Islands. (d) Tobacco is admitted free of Customs duty from the Philippine Islands.

The figures given for the year ended 30th June, 1906, represent the results of the last full year of operation of the tariff of 1902.

From the results given in the above table, it will be seen that the scheme of taxation, by means of import duties, varies materially between the countries named. In Australia and Canada, taxation is spread more widely over imported commodities than in New Zealand or the United States of America. In the latter country, 73.91 per cent. of all

imports are free of duty, whereas in the Commonwealth, about 38 per cent. only of the total imports were exempt from taxation during the year 1918-19. A considerable restriction of the free list in this country was necessary to raise the revenue required by the exigencies of the war, though even prior to the war (in 1913) free goods represented only 42.30 per cent. of the total imports, while in New Zealand they comprised 52 per cent.

The comparatively large percentage of free goods in the imports of 1913 was not entirely the effect of Tariff changes, but was in some measure due to the inclusion in the free imports of that year of warships to the value of £2,495,000 and of mercantile ships to the value of £1,500,000. Imports of ships to such a value in any one year are, of course, unusual.

The relatively low average *ad valorem* rate of duty collected in 1918-19 was due to higher prices of goods subject to specific rates. For instance, in 1913 a duty of 14s. per gallon represented an *ad valorem* equivalent of 215 per cent. on a gallon of bulk whisky valued at 6s. 6d. per gallon, whereas in 1918-19 the higher duty of 25s. per gallon represented only 108 per cent. on a cost of 23s. 4d. per gal.

VALUE OF GOODS (EXCLUDING BULLION AND SPECIE) ENTERED FOR CONSUMPTION IN THE COMMONWEALTH, AND DUTY COLLECTED THEREON, 1918-19.

Classification of Imports.	Value Entered for Consumption.			Duty Collected, less Refunds.	Equivalent <i>ad valorem</i> Rate per cent. on—	
	Dutiable.	Free (Net Imports).	Total.		Dutiable Imports.	All Imports.
	£	£	£	£	%	%
I. Foodstuffs of animal origin, but excluding living animals ..	491,487	108,560	600,047	72,600	14.77	12.10
II. Foodstuffs of vegetable origin ..	1,729,454	122,756	1,852,210	396,494	22.93	21.41
III. Beverages (non-alcoholic) and substances used in making ..	183,986	2,093,430	2,277,416	54,309	29.52	2.38
IV. Spirituous and alcoholic liquors ..	1,462,879	..	1,462,879	1,415,431	96.76	96.76
V. Tobacco and preparations thereof ..	1,498,345	..	1,498,345	1,269,334	84.72	84.72
VI. Live animals ..	14,253	25,611	39,864	29	0.20	0.07
VII. Animal substances (mainly unmanufactured) not foodstuffs ..	133,842	1,562,980	1,696,822	8,283	6.19	0.49
VIII. Vegetable substances and fibres ..	518,355	2,104,633	2,622,988	65,350	12.61	2.49
IX. (a) Apparel, (b) textiles, and (c) manufactured fibres ..	18,159,318	17,389,623	35,548,941	3,597,603	19.81	10.12
X. Oils, fats, and waxes ..	3,382,471	707,792	4,090,263	293,032	8.66	7.16
XI. Paints and varnishes ..	465,411	48,151	513,562	57,204	12.29	11.14
XII. Stones and minerals used industrially ..	68,069	110,603	178,672	11,082	16.28	6.20
XIII. Ores and metals unmanufactured or partly manufactured ..	357,723	415,255	772,978	21,233	5.94	2.75
XIV. (a) Machines and machinery, (b) other manufactures of metal ..	11,963,805	4,708,270	16,672,075	1,884,842	15.75	11.31
XV. (a) Indianrubber and indianrubber manufactures, (b) leather and manufactures of leather and substitutes therefor ..	1,665,225	691,182	2,356,407	418,750	25.15	17.77
XVI. Wood and wicker, raw and manufactured ..	2,087,924	53,401	2,141,325	207,211	9.92	9.68
XVII. Earthenware, cements, china, glass, and stoneware ..	1,364,103	54,963	1,419,076	223,498	16.75	16.10
XVIII. (a) Paper, and (b) stationery ..	4,310,551	1,122,292	5,432,843	514,251	11.93	9.47
XIX. Jewellery, timepieces, and fancy goods ..	1,085,854	461,178	1,547,032	314,644	28.98	20.34
XX. Optical, surgical, and scientific instruments ..	404,980	296,442	701,422	85,015	20.99	12.12
XXI. Drugs, chemicals, and fertilizers ..	2,619,090	1,760,703	4,379,793	276,214	10.55	6.31
XXII. Miscellaneous ..	2,573,008	1,252,931	3,825,939	536,443	20.85	14.02
Total merchandise ..	56,540,138	35,090,761	91,630,899	11,727,832	20.74	12.80
Merchandise, excluding stimulants and narcotics ..	53,578,914	35,090,761	88,669,675	9,043,087	16.88	10.20

## SECTION XVI.

### SHIPPING.

#### § 1. General.

NOTE.—Owing to the general disorganisation of shipping in consequence of the war, the figures relating to the war period given in the following tables are of little comparative significance.

1. **Record of Shipping before Federation.**—Prior to Federation it was customary for each State to regard the matter of shipping purely from the State standpoint, and vessels arriving from or departing to countries beyond Australia, *via* other Australian States, were recorded as if direct from or to the oversea country. Thus, a mail steamer from the United Kingdom, which made Fremantle her first port of call in Australia, would be recorded not only there, but again in Adelaide, Melbourne, and Sydney, as an arrival from the United Kingdom. Consequently, any aggregation, especially of the recent shipping records of the different States, would repeatedly include a large proportion of the shipping visiting Australia. In earlier years, when many vessels sailed from the various State ports direct for their destination, the error of repeated inclusion was less serious, but as the commerce of Australia developed, more and more ports of call were included in the voyage of each vessel, and the mere aggregation of State records hence became correspondingly misleading. Failure to recognise this was at times responsible for erroneous deductions from the statistical records as then compiled.

2. **Shipping since Federation.**—With the inauguration of the Commonwealth, the statistics of its shipping, especially of its oversea shipping, became of greater intrinsic importance. As an index of the position of Australia among the trading countries of the world, such statistics had a constitutional importance commensurate with Commonwealth interests, and correspondingly greater than those of individual States, and the nationality of the shipping trading with Australia became also a matter of greater moment.

3. **Difficulties of Comparisons of Total Shipping.**—From what is said in sub-section 1 above, it is obviously impossible to obtain results for Australia for pre-federal years not subject to the defect of repeated inclusions of the same vessels. Unfortunately, the statistical records of the first three years of Federal history are also subject to the same defect, and do not admit of direct comparison with those now kept. A careful estimate of the extent and effect of repeated inclusion has, however, been made and applied to the records of the earlier years, so as to extend the comparative results to those years. The error of such estimation will be negligible for comparative purposes.

4. **Present System of Record.**—The present system of record treats Australia as a unit, and counts, therefore, only one entry and one clearance for each visit to the Commonwealth. Repeated voyages of any vessel are, of course, included.

On arrival of every vessel at a port in the Commonwealth, whether from an oversea country or from another port within the Commonwealth, the master is required to deliver to the Customs officer a form giving all particulars necessary for statistical purposes in regard to the ship, passengers, and crew. Similarly, on departure from a port, a form

containing corresponding information is lodged. These forms, which provide a complete record of the movements of every vessel in Commonwealth waters, are at the end of each month forwarded by the Customs officer at each port to the Commonwealth Bureau of Statistics, and furnish the material for the compilation of the Shipping and Migration Returns.

Under the system previously in force it was found that the estimates of population, in so far as they were based on seaward movement, were very unsatisfactory, and it is believed that the method referred to above gives decidedly better results.

From the 1st July, 1914, the statistical year for the record of Trade and Shipping of the Commonwealth was altered from the calendar year to agree with the fiscal year.

In all instances the tonnage quoted is the net tonnage.

## § 2. Oversea Shipping.

1. **Total Oversea Shipping.**—In order to extend, as indicated, the comparison of the oversea shipping to the earliest years for which any records are available, an estimate of its probable amount has been made. This estimate is based on a comparison of the results obtained by merely aggregating State statistics, with the defect of multiple records, and the results obtained under the present system, which avoids the multiple record. From the nature of the case it is obvious that the ratio of repeated inclusion to the total traffic has been continually advancing, and this fact has been duly taken into account in deducing the results in the following table :—

### TOTAL OVERSEA SHIPPING ENTERED AND CLEARED THE COMMONWEALTH, 1822 TO 1918-19 (MULTIPLE RECORD EXCLUDED BY ESTIMATION PRIOR TO 1904).

Year.	Vessels.	Tons.	Year.	Vessels.	Tons.	Year.	Vessels.	Tons.
1822 ..	73	30,683	1855 ..	3,239	1,449,657	1887 ..	3,454	3,764,430
1823 ..	76	30,543	1856 ..	2,669	1,195,794	1888 ..	3,933	4,464,895
1824 ..	71	29,029	1857 ..	2,842	1,530,202	1889 ..	3,897	4,460,426
1825 ..	80	30,786	1858 ..	2,607	1,378,050	1890 ..	3,363	4,150,027
1826 ..	65	23,587	1859 ..	2,759	1,403,210	1891 ..	3,778	4,726,307
1827 ..	95	29,301	1860 ..	2,464	1,288,518	1892 ..	3,432	4,239,500
1828 ..	124	38,367	1861 ..	2,466	1,149,476	1893 ..	3,046	4,150,433
1829 ..	185	56,735	1862 ..	2,917	1,389,231	1894 ..	3,397	4,487,546
1830 ..	195	56,185	1863 ..	3,378	1,564,369	1895 ..	3,331	4,567,883
1831 ..	185	52,414	1864 ..	3,344	1,537,433	1896 ..	3,309	4,631,266
1832 ..	206	59,628	1865 ..	3,005	1,317,934	1897 ..	3,279	4,709,697
1833 ..	241	72,647	1866 ..	3,378	1,470,728	1898 ..	3,222	4,681,398
1834 ..	249	77,068	1867 ..	2,927	1,277,679	1899 ..	3,356	5,244,197
1835 ..	310	96,928	1868 ..	3,080	1,350,573	1900 ..	3,719	5,894,173
1836 ..	310	93,974	1869 ..	3,107	1,472,837	1901 ..	4,028	6,541,991
1837 ..	442	113,432	1870 ..	2,877	1,381,878	1902 ..	3,608	6,234,460
1838 ..	471	132,038	1871 ..	2,748	1,312,642	1903 ..	3,441	6,027,843
1839 ..	652	191,507	1872 ..	2,788	1,380,466	1904 ..	3,700	6,632,011
1840 ..	915	277,335	1873 ..	3,159	1,609,067	1905 ..	4,088	7,444,417
1841 ..	900	278,738	1874 ..	3,153	1,728,269	1906 ..	4,155	7,966,658
1842 ..	862	232,827	1875 ..	3,437	1,914,462	1907 ..	4,394	8,822,866
1843 ..	736	183,427	1876 ..	3,295	1,863,343	1908 ..	4,051	8,581,151
1844 ..	629	155,654	1877 ..	3,157	1,930,434	1909 ..	3,910	8,516,751
1845 ..	735	164,221	1878 ..	3,372	2,127,518	1910 ..	4,048	9,333,140
1846 ..	888	211,193	1879 ..	3,344	2,151,338	1911 ..	4,174	9,984,841
1847 ..	1,033	245,358	1880 ..	3,078	2,177,877	1912 ..	4,052	10,275,314
1848 ..	1,182	305,840	1881 ..	3,234	2,549,364	1913 ..	3,985	10,601,948
1849 ..	1,137	355,886	1882 ..	3,652	3,010,944	1914-15	3,211	8,599,258
1850 ..	1,300	425,206	1883 ..	3,857	3,433,102	1915-16	3,324	8,538,322
1851 ..	1,576	515,061	1884 ..	4,315	4,064,947	1916-17	2,986	7,694,442
1852 ..	1,896	844,243	1885 ..	4,052	3,999,917	1917-18	2,197	5,031,750
1853 ..	3,364	1,490,422	1886 ..	3,793	3,853,246	1918-19	2,614	6,180,486
1854 ..	3,781	1,744,251						

It will be borne in mind that while the above figures in themselves have no absolute significance, nevertheless, on the assumption that the element of duplication has been in fairly constant ratio, they furnish the best available indication of the growth of Australian oversea shipping.

2. **Comparison with other Countries.**—The place of Australia among various countries in regard to oversea shipping, in normal times, is indicated in the following table, both absolutely and in respect of tonnage per head of population. Figures relating to the shipping of many of the European countries for years subsequent to the war are not available, consequently it is necessary to restrict any comparison to pre-war years.

#### OVERSEA SHIPPING OF VARIOUS COUNTRIES.

Country.	Year.	Tonnage Entered and Cleared.	
		Total.	Per Inhabitant.
Argentine Republic .. .. .	1912	23,372,714	3.2
Belgium .. .. .	1912	32,672,989	4.3
Canada .. .. .	1914	25,402,568*	3.1
Commonwealth .. .. .	1913	10,601,948	2.2
Denmark .. .. .	1912	18,537,064	6.6
France .. .. .	1912	62,775,775	1.6
Germany .. .. .	1912	51,065,940	0.8
Italy .. .. .	1912	56,889,048	1.6
Japan .. .. .	1912	43,492,604	0.8
New Zealand .. .. .	1913	3,438,792	3.2
Norway .. .. .	1912	10,806,050	4.4
Sweden .. .. .	1912	25,511,890	4.6
Union of South Africa .. .. .	1914	9,961,583	1.5
United Kingdom .. .. .	1913	164,809,581	3.6
United States .. .. .	1914	79,795,501*	0.8

\* Exclusive of vessels trading on lakes and rivers between Canada and the United States.

3. **Shipping Communication with various Countries.**—Particulars of the number and tonnage of vessels recorded between Australia and various countries, distinguishing British from foreign countries, are given in the following tables—the next table shewing the tonnage of vessels which were recorded as having entered the Commonwealth from the particular countries mentioned; that on page 622 shews the tonnage of vessels which were recorded as having cleared the Commonwealth for the particular countries, while on page 623 is shewn the total tonnage of vessels recorded as entered and cleared from and to the countries named.

The smaller tonnage which entered and cleared Commonwealth ports during the last four years, together with its altered distribution among the various countries, was, of course, almost entirely due to the war. The principal factor in reducing shipping tonnage was the immediate withdrawal of ships of enemy countries. During 1913, German ships to and from the Commonwealth aggregated a tonnage of 1,211,404 tons, whereas the figures for 1914-15 include only 172,679 tons of German shipping. This latter tonnage represents vessels which arrived and departed between the 1st July, 1914, and the outbreak of war, together with a few vessels that arrived later in ignorance of the opening of hostilities. Any German ships now entering the Commonwealth are operated under the British or Allied flags, and are classified accordingly.

The control of shipping by the Imperial Government for war purposes materially lessened the number of voyages of mail boats to and from England, and the tonnage of the Messageries Maritimes line was reduced from similar causes, whereas the increase shown in the tonnage to and from India and Ceylon and "Other British Countries" represents vessels engaged in war transport services.

**SHIPPING TONNAGE ENTERED AND CLEARED THE COMMONWEALTH FROM  
AND TO VARIOUS COUNTRIES, 1904 TO 1918-19.**

**ENTERED.**

Country.	Annual Average.		1915-16.	1916-17.	1917-18.	1918-19.
	1904-8.	1909-13.				
United Kingdom	1,041,195	1,463,600	1,193,044	1,234,526	456,420	830,751
Canada ..	69,100	107,596	143,275	114,246	107,923	68,502
Fiji ..	45,482	68,235	72,612	67,981	67,463	55,010
Hong Kong ..	87,830	28,465	16,740	26,879	17,672	19,483
India and Ceylon ..	79,556	114,053	232,019	253,157	196,001	263,269
Mauritius ..	15,504	33,047	17,198	26,585	4,036	4,839
New Zealand ..	673,204	836,250	758,622	654,747	471,234	492,618
Papua ..	18,540	63,421	66,134	76,063	25,031	9,453
South Sea Islands	36,220	55,892	44,191	27,552	39,321	29,364
Straits Settlements ..	100,977	98,917	105,531	78,433	65,326	92,064
Union of South Africa ..	231,438	200,034	93,262	86,465	65,678	56,838
Other British Countries ..	9,938	6,423	300,958	73,547	152,397	386,202
<b>Total British Countries ..</b>	<b>2,408,984</b>	<b>3,075,933</b>	<b>3,043,586</b>	<b>2,720,181</b>	<b>1,668,502</b>	<b>2,308,393</b>
Africa, Portugese East ..	54,111	74,235	4,812	34,517	8,668	3,698
Belgium ..	7,393	13,394	..	..	..	..
Chile ..	180,098	131,987	19,165	6,581	5,703	1,179
Dutch East Indies	32,816	69,812	83,648	107,311	47,126	84,151
France ..	77,355	81,545	40,652	32,779	87,635	28,464
Germany ..	246,587	344,527	..	..	..	..
Hawaiian Islands	24,609	22,761	1,653	..	..	150
Japan ..	159,761	153,079	189,200	164,383	116,438	148,436
Mexico ..	26,815	21,342	..	..	..	..
New Caledonia ..	62,999	72,230	30,906	30,782	46,551	41,706
Norway ..	36,909	34,883	29,530	15,967	7,705	17,920
Peru ..	35,552	33,450	5,790	3,953	..	..
Philippine Islands	107,163	52,913	8,399	..	..	2,980
South Sea Islands (foreign) ..	23,560	52,002	77,309	73,530	46,469	49,814
Sweden ..	17,775	58,827	19,576	20,861	6,904	11,938
United States of America ..	377,985	396,318	570,918	470,624	332,966	432,430
Other Foreign Countries ..	85,263	210,186	144,340	169,823	82,090	107,801
<b>Total Foreign Countries ..</b>	<b>1,556,751</b>	<b>1,823,491</b>	<b>1,225,898</b>	<b>1,131,111</b>	<b>788,255</b>	<b>930,667</b>
<b>Total all Countries ..</b>	<b>3,965,735</b>	<b>4,899,424</b>	<b>4,269,484</b>	<b>3,851,292</b>	<b>2,456,757</b>	<b>3,239,060</b>



SHIPPING TONNAGE ENTERED AND CLEARED, ETC.—*continued.*

## CLEARED.

Country.	Annual Average.		1915-16.	1916-17.	1917-18.	1918-19.
	1904-8.	1909-13.				
United Kingdom	1,037,903	1,413,768	894,628	1,862,460	322,344	1,073,433
Canada ..	38,721	59,259	101,485	95,215	84,586	52,060
Fiji ..	88,716	74,901	81,731	83,514	78,077	56,746
Hong Kong ..	141,005	31,826	17,047	18,742	14,240	21,442
India and Ceylon	12,721	141,644	112,989	108,928	112,655	136,446
Mauritius ..	30,911	5,086	2,817	1,558	1,040	3,512
New Zealand ..	759,739	1,056,476	894,618	640,703	438,288	398,288
Papua ..	17,254	61,299	58,378	82,816	28,070	3,034
South Sea Islands	31,833	45,473	74,027	43,828	46,287	36,425
Straits Settlements ..	116,290	143,249	114,831	74,538	55,527	78,833
Union of South Africa ..	135,578	87,671	90,546	79,054	46,667	58,578
Other British Countries ..	2,202	1,039	807,481	30,982	721,726	343,700
<b>Total British Countries ..</b>	<b>2,412,873</b>	<b>3,121,691</b>	<b>3,250,578</b>	<b>3,122,338</b>	<b>1,949,507</b>	<b>2,262,497</b>
Africa, Portuguese East ..	19,190	10,929	..	..	..	..
Belgium ..	52,896	146,585	..	..	..	..
Chile ..	399,824	388,723	159,797	80,832	24,178	25,784
Dutch East Indies	32,191	125,475	112,912	95,283	56,917	108,589
France ..	78,336	101,505	29,591	35,820	7,828	10,748
Germany ..	216,244	329,719	..	..	..	..
Hawaiian Islands	51,711	32,923	16,286	7,014	..	19,997
Japan ..	61,564	102,009	135,876	119,198	103,729	119,548
Mexico ..	28,891	14,975	..	..	..	..
New Caledonia ..	68,401	68,371	51,893	52,297	54,747	43,062
Peru ..	68,917	55,457	18,584	21,698	8,826	9,255
Philippine Islands	135,581	95,103	18,385	2,032	9,791	8,344
South Sea Islands (foreign) ..	23,185	45,737	55,855	50,615	46,314	52,688
United States of America ..	208,676	154,111	337,179	173,052	242,398	186,292
Other Foreign Countries ..	75,205	49,655	81,902	82,971	70,758	94,622
<b>Total Foreign Countries ..</b>	<b>1,520,812</b>	<b>1,721,277</b>	<b>1,018,260</b>	<b>720,812</b>	<b>625,486</b>	<b>678,929</b>
<b>Total all Countries ..</b>	<b>3,933,685</b>	<b>4,842,968</b>	<b>4,268,838</b>	<b>3,843,150</b>	<b>2,574,993</b>	<b>2,941,426</b>

The figures in the above table represent the tonnage of shipping recorded as having cleared the Commonwealth for the particular countries named. In the following sub-section countries have been grouped according to larger geographical divisions with the purpose of depicting more clearly the general trend of Australian shipping.

The unusual excess of tonnage entered over that cleared during the year 1918-19 was due to the strikes of seamen and waterside workers, which caused many ships to be detained in Commonwealth ports over the end of that year.

**SHIPPING TONNAGE ENTERED AND CLEARED THE COMMONWEALTH FROM  
AND TO VARIOUS COUNTRIES, 1904 TO 1918-19.**

Country.	Annual Average.		1915-16.	1916-17.	1917-18.	1918-19.
	1904-8.	1909-13.				
United Kingdom ..	2,079,098	2,877,368	2,087,672	3,096,986	778,764	1,904,184
Canada ..	107,821	166,855	244,760	209,461	192,509	120,562
Fiji ..	134,198	143,136	154,343	151,495	145,540	111,766
Hong Kong ..	228,835	60,291	33,787	45,621	31,912	40,925
India and Ceylon ..	92,277	255,697	345,008	362,085	308,656	399,715
Mauritius ..	46,415	38,133	20,015	28,143	5,076	8,351
New Zealand ..	1,432,943	1,892,726	1,653,240	1,295,450	909,522	890,906
Papua ..	35,794	124,720	124,512	158,879	53,101	12,487
South Sea Islands ..	68,453	101,365	118,218	71,380	85,608	65,789
Straits Settlements ..	217,267	242,166	220,362	152,971	120,853	170,897
Union of South Africa ..	367,016	287,705	183,808	165,519	112,345	115,416
Other British Countries ..	12,140	7,462	1,108,439	104,529	874,123	729,902
<b>Total British Countries</b>	<b>4,821,857</b>	<b>6,197,624</b>	<b>6,294,164</b>	<b>5,842,519</b>	<b>3,618,009</b>	<b>4,570,890</b>
Africa, Portuguese East ..	73,301	85,164	4,812	34,517	8,668	3,698
Belgium ..	60,289	159,979	..	..	..	..
Chile ..	579,920	520,710	178,962	87,413	29,881	26,963
Dutch East Indies ..	65,007	195,287	196,560	202,594	104,043	192,740
France ..	155,691	183,050	70,243	68,599	95,463	39,212
Germany ..	462,831	674,246	..	..	..	..
Hawaiian Islands ..	76,320	55,685	17,939	7,014	..	20,147
Japan ..	221,325	255,088	325,076	283,581	220,167	267,984
Mexico ..	55,706	36,317	..	..	..	..
New Caledonia ..	131,400	140,601	82,799	83,079	101,298	84,768
Norway ..	36,909	35,383	32,222	15,967	7,705	17,920
Peru ..	104,469	88,907	24,374	25,651	8,826	9,255
Philippine Islands ..	242,744	148,016	26,784	2,032	9,791	11,324
South Sea Islands (foreign)	46,745	97,739	133,164	124,145	92,783	102,502
Sweden ..	18,563	59,644	19,576	20,861	6,904	11,938
United States ..	586,661	550,429	908,097	643,676	575,364	618,722
Other Foreign Countries ..	159,682	258,523	223,550	252,794	152,848	202,423
<b>Total Foreign Countries</b>	<b>3,077,563</b>	<b>3,544,768</b>	<b>2,244,158</b>	<b>1,851,923</b>	<b>1,413,741</b>	<b>1,609,596</b>
<b>Total all Countries</b>	<b>7,899,420</b>	<b>9,742,392</b>	<b>8,538,322</b>	<b>7,694,442</b>	<b>5,031,750</b>	<b>6,180,486</b>

In respect of these tables it may be pointed out that the statistics for any country do not fully disclose the extent of its shipping communication with particular countries. The reason for this is that vessels are recorded as arriving from, or departing to, a particular country, whereas, as a matter of fact, many regular lines of steamers call and transact business at the ports of several countries in the course of a single voyage. The lines of steamers trading between Australia and Japan, for example, often call at New Guinea, the Philippine Islands, China, etc., but, being intermediate ports, these countries are not referred to in the statistical records. Similarly, in the case of the large mail steamers passing through the Suez Canal, a steamer may call at Colombo, Aden, Port Said, Genoa, Marseilles, London, and in ordinary times, Antwerp and Bremerhaven, yet obviously can only be credited as cleared for one of these ports, to the consequent exclusion of all the other ports from the records.

**4. General Trend of Shipping.**—A grouping of countries into larger geographical divisions, as in the following tables, shews more readily the general direction of Australian shipping, and, to some extent, avoids the limitations of the records in relation to particular countries, by covering more closely the main trade routes.

**GENERAL DIRECTION OF THE SHIPPING OF THE COMMONWEALTH,  
1904 TO 1918-19.**

Countries.	Annual Average.		1916-17.	1917-18.	1918-19.	
	1904-8.	1909-13.				
TONNAGE ENTERED.						
United Kingdom and European Countries	Cargo	1,343,869	1,939,579	1,004,820	436,867	607,680
	Ballast	92,372	88,072	374,380	188,347	348,711
New Zealand .. ..	Cargo	530,683	674,799	559,604	394,986	393,927
	Ballast	142,521	161,450	95,143	76,248	98,691
Asiatic Countries and Islands in the Pacific	Cargo	459,612	727,817	782,563	641,756	619,171
	Ballast	355,196	147,919	206,671	62,419	296,264
Africa .. ..	Cargo	31,852	29,233	38,373	80,574	107,607
	Ballast	280,168	289,991	163,096	85,260	254,878
North and Central America	Cargo	378,147	488,737	584,870	440,889	490,592
	Ballast	98,628	36,693			14,895
South America .. ..	Cargo	3,861	17,834	9,294	5,703	1,179
	Ballast	248,826	297,300	32,478	43,708	5,454
	Cargo	2,748,024	3,877,999	2,979,524	2,000,775	2,220,159
	Ballast	1,217,711	1,021,425	871,768	455,982	1,018,901
Total .. ..		3,965,735	4,899,424	3,851,292	2,456,757	3,239,060

<b>TONNAGE CLEARED.</b>						
United Kingdom and European Countries	Cargo	1,397,960	2,010,192	1,878,530	884,418	1,122,890
	Ballast	3,223	41	37,211	34,444	33,446
New Zealand .. ..	Cargo	701,987	1,004,924	612,509	427,512	373,058
	Ballast	57,751	51,552	28,194	10,776	25,230
Asiatic Countries and Islands in the Pacific	Cargo	808,409	922,035	706,062	606,504	672,306
	Ballast	37,309	51,922	79,535	34,878	43,618
Africa .. ..	Cargo	149,462	112,918	126,071	198,806	387,550
	Ballast	2,421	78	156	4,463	7,270
North and Central America	Cargo	243,618	195,497	225,580	332,000	235,228
	Ballast	40,692	32,849	43,306	2,976	5,791
South America .. ..	Cargo	482,774	455,136	100,148	38,216	33,709
	Ballast	8,079	5,824	5,848	..	1,330
	Cargo	3,784,210	4,700,702	3,648,900	2,487,456	2,824,741
	Ballast	149,475	142,266	194,250	87,537	116,685
Total .. ..		3,933,685	4,842,968	3,843,150	2,574,993	2,941,426

<b>TONNAGE ENTERED AND CLEARED.</b>						
Countries.		Annual Average.		1916-17.	1917-18.	1918-19.
		1904-8.	1909-13.			
United Kingdom and European Countries		2,837,424	4,037,884	3,294,941	1,544,076	2,112,735
New Zealand .. ..		1,432,942	1,892,725	1,295,450	909,522	890,906
Asiatic Countries and Islands in the Pacific		1,660,526	1,849,693	1,774,831	1,845,557	1,631,362
Africa .. ..		463,903	432,220	327,696	369,103	757,305
North and Central America		761,085	753,776	853,756	775,885	746,506
South America .. ..		743,540	776,094	147,768	87,627	41,672
Cargo .. ..		6,532,234	8,578,701	6,628,424	4,488,231	5,044,900
Ballast .. ..		1,367,186	1,163,691	1,066,018	543,519	1,135,586
Total .. ..		7,899,420	9,742,392	7,694,442	5,031,750	6,180,486

5. **Nationality of Oversea Shipping.**—As will be seen from the following table, the greater part of the shipping visiting the Commonwealth is of British nationality. The proportion which British shipping represented of the total tonnage which entered and cleared the Commonwealth has risen, mainly by reason of the withdrawal of German ships, from 73.53 per cent. during the years 1909–13 to 78.90 per cent. in 1918–19 though the actual amount of British tonnage engaged fell by 31.94 per cent. during the same period. On the other hand Japanese tonnage increased from 160,580 tons to 331,872 tons (106.6 per cent.), and United States tonnage from 83,892 tons to 344,795 (311 per cent.). From the table given on page 627 it will be seen that the Japanese and American tonnage was, during 1918–9 engaged almost entirely between the Commonwealth and its home ports.

**NATIONALITY OF ALL VESSELS WHICH ENTERED AND CLEARED THE COMMONWEALTH FROM AND TO OVERSEA COUNTRIES, 1904 TO 1918-19.**

Nationality.	Tonnage.				
	Annual Average.		1916-17.	1917-18.	1918-19.
	1904-8.	1909-13.			
<b>BRITISH—</b>					
Australian .. ..	608,432	810,482	887,577	967,178	855,941
United Kingdom .. ..	4,406,092	5,224,923	4,980,205	2,501,028	3,725,351
New Zealand .. ..	788,614	1,097,384	335,467	229,271	254,575
Other British .. ..	17,330	31,476	69,701	80,342	40,775
Cargo .. ..	4,952,083	6,448,777	5,448,832	3,386,991	3,896,477
Ballast .. ..	868,385	715,488	824,118	390,828	980,165
Total British .. ..	5,820,468	7,164,265	6,272,950	3,777,819	4,876,642
Per cent. on total .. ..	73.68	73.53	81.53	75.08	78.90
<b>FOREIGN—</b>					
Austro-Hungarian .. ..	5,909	18,337	..	..	..
Danish .. ..	14,135	7,816	18,950	40,137	15,497
Dutch .. ..	28,149	148,112	285,508	150,448	131,627
French .. ..	474,312	432,891	120,269	305,123	138,064
German .. ..	745,862	1,028,630	..	..	..
Italian .. ..	106,944	70,582	79,925	17,176	30,459
Japanese .. ..	47,280	160,580	272,460	252,614	331,872
Norwegian .. ..	359,622	500,950	100,394	106,865	174,825
Russian .. ..	46,295	51,248	26,352	15,893	43,973
Swedish .. ..	29,731	49,642	43,866	41,641	64,158
United States .. ..	207,438	83,892	424,628	311,753	344,795
Other Foreign .. ..	13,275	25,447	49,140	12,281	28,574
Cargo .. ..	1,580,151	2,129,923	1,179,592	1,101,240	1,148,423
Ballast .. ..	498,801	448,204	241,900	152,691	155,421
Total Foreign .. ..	2,078,952	2,578,127	1,421,492	1,253,931	1,303,844
Per cent. on total .. ..	26.32	26.47	18.47	24.92	21.10
Cargo .. ..	6,532,234	8,578,700	6,628,424	4,488,231	5,044,900
Per cent. on total .. ..	82.68	88.04	86.15	89.20	81.63
Ballast .. ..	1,367,186	1,163,692	1,066,018	543,519	1,135,586
Per cent. on total .. ..	17.32	11.96	13.85	10.80	18.37
<b>Grand Total</b> .. ..	<b>7,899,420</b>	<b>9,742,392</b>	<b>7,694,442</b>	<b>5,031,750</b>	<b>6,180,486</b>

It is satisfactory to note the increased tonnage of Australian-owned ships engaged in the oversea carrying trade. During the years 1904-8 the Australian tonnage so engaged represented 7.70 per cent. of the total tonnage which entered and cleared the Commonwealth. In the following quinquennial period the proportion of Australian tonnage was 8.32 per cent. and in 1918-19 it rose to 13.85 per cent. The tonnage for the latter year was, certainly, increased by the diversion to the oversea trade of Australian ships usually engaged in the coastal trade. The growing operations of the Commonwealth Government Shipping line will, however, tend to increase the Australian tonnage in the oversea trade in future.

The diversion of New Zealand ships to meet the exigencies of the war necessitated a reduction of the services between the Commonwealth and the Dominion with the result that the tonnage of New Zealand ships entered and cleared the Commonwealth has been much reduced as compared with pre-war years.

The relative proportion of British and foreign tonnage which entered and cleared the Commonwealth during the last fifteen years, apart from tonnage in ballast, is given below. From these figures, which may be considered to indicate more closely the proportion of the actual carrying trade done than does the total tonnage, it will be seen that the proportion of foreign tonnage declined materially in the earlier years of the war owing to the complete withdrawal of ships under the German and Austrian flags and to the greatly reduced tonnage of French and Norwegian ships which were precluded from following their usual employment. This position, however, was not long maintained, and during the years 1917-18 and 1918-19 the proportion of foreign shipping had, in consequence of the activities of Japanese and United States ship-owners almost attained its pre-war dimensions. While the tonnage of British ships carrying cargo to and from the Commonwealth fell from 6,406,393 tons in 1914-15 to 3,896,477 tons in 1918-19, or by 39.7 per cent., foreign tonnage was but slightly reduced from 1,274,937 tons to 1,148,423 tons, or by 10 per cent.

**PROPORTION OF TONNAGE OF BRITISH AND FOREIGN NATIONALITY ENTERED AND CLEARED THE COMMONWEALTH WITH CARGO, 1904 TO 1918-19.**

Nationality.	Annual Average.		1914-15.	1915-16.	1916-17.	1917-18.	1918-19.
	1904-8.	1909-13.					
British .. ..	75.80	75.18	83.40	82.26	82.20	75.46	77.24
Foreign .. ..	24.20	24.82	16.60	17.74	17.80	24.54	22.76
Total .. ..	100.00	100.00	100.00	100.00	100.00	100.00	100.00

It is of interest to observe that, as already pointed out in connexion with American and Japanese shipping, most of the foreign tonnage which enters the Commonwealth is employed between its home ports or the colonies of its own country and the Commonwealth, *e.g.*, French shipping is engaged chiefly between the Commonwealth, France and New Caledonia, while Dutch ships are employed almost entirely between the Commonwealth and the Dutch East Indies. Norwegian shipping is an exception to this rule. The greater part of Norwegian tonnage engaged in trade with Australia is composed of sailing ships operating under charters. Of the 93,980 tons of Norwegian shipping which entered the Commonwealth during 1918-19, 16,227 tons (17.26 per cent.) were in ballast, and 54,910 tons (58.42 per cent.) arrived from the United States of America. These ships cleared the Commonwealth mainly with cargoes of wheat and flour for Europe and the United States.

The following table shows the direction of the activities of the principal foreign countries engaged in the oversea carrying trade of the Commonwealth. A similar analysis with regard to German ships will be found in previous issues.

**SHIPPING OF PRINCIPAL FOREIGN NATIONS BETWEEN AUSTRALIA AND OTHER COUNTRIES DURING 1918-19.**

Countries.	Nationality.					
	Japanese.		Norwegian.		United States.	
	Entered.	Cleared.	Entered.	Cleared.	Entered.	Cleared.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
<b>EUROPEAN COUNTRIES—</b>						
United Kingdom ..	..	1,888	..	24,548	..	..
France ..	2,021	1,954	..	..	..	..
Other European Countries..	..	..	17,920	9,536	..	2,540
NEW ZEALAND ..	..	..	746	..	8,753	..
<b>ASIATIC COUNTRIES AND ISLANDS IN THE PACIFIC—</b>						
Dutch East Indies ..	2,920	23,073	..	8,761	1,769	..
Japan ..	148,436	119,548	..	..	..	..
New Caledonia ..	..	150	1,492	3,545	..	1,140
Pacific Islands ..	150	..	..	1,308	..	28,528
Straits Settlements ..	9,577	15,266	..	..	..	..
Other Asiatic Countries ..	1,620	1,295	3,458	..	2,980	4,863
<b>AFRICAN COUNTRIES</b> ..	..	3,974	8,340	6,277	2,994	..
<b>NORTH AMERICAN COUNTRIES—</b>						
United States ..	..	..	54,910	24,413	157,215	123,451
Other N. American Countries	..	..	3,341	..	1,288	1,105
<b>SOUTH AMERICAN COUNTRIES—</b>						
Argentine Republic ..	..	..	..	..	..	..
Chile ..	..	..	..	..	..	..
Peru ..	..	..	..	..	..	6,205
Other S. American Countries	..	..	3,683	..	..	..
<b>OVERSEA COUNTRY UNSPECIFIED</b> ..	..	..	..	2,547	..	1,964
With Cargo ..	164,574	167,148	77,663	79,627	160,436	152,172
In Ballast ..	150	..	16,227	1,308	14,563	17,624
<b>Total</b> ..	<b>164,724</b>	<b>167,148</b>	<b>93,890</b>	<b>80,935</b>	<b>174,999</b>	<b>169,796</b>

A further analysis is appended, distinguishing between steam and sailing vessels of British and foreign nationality, which entered and cleared the Commonwealth during the years 1904 to 1918-19.

**STEAM AND SAILING VESSELS ENTERED AND CLEARED, 1904 TO 1918-19.**

Description and Nationality of Vessels.	Annual Average.				1916-17.		1917-18.		1918-19.	
	1904-8.		1909-13.							
	Ton-nage.	Per-centage.	Ton-nage.	Per-centage.	Ton-nage.	Per-centage.	Ton-nage.	Per-centage.	Ton-nage.	Per-centage.
Steam—										
British ..	4,773,674	82	6,677,412	80	6,154,313	85	3,600,197	82	4,717,362	85
Foreign ..	1,055,015	18	1,690,773	20	1,068,404	15	771,304	18	826,041	15
Total Steam..	5,828,689	100	8,368,185	100	7,222,717	100	4,371,501	100	5,543,403	100
		(74)		(86)		(94)		(87)		(90)
Sailing—										
British ..	1,046,794	51	486,853	35	118,637	25	177,622	27	159,280	25
Foreign ..	1,023,938	49	887,354	65	353,088	75	482,627	73	477,803	75
Total Sailing	2,070,732	100	1,374,207	100	471,725	100	660,249	100	637,083	100
		(28)		(14)		(6)		(13)		(10)
Steam and Sailing—										
British ..	5,820,468	74	7,164,265	74	6,272,950	82	3,777,819	75	4,876,642	79
Foreign ..	2,078,953	26	2,578,127	26	1,421,492	18	1,253,931	25	1,303,844	21
Total ..	7,899,421	100	9,742,392	100	7,694,442	100	5,031,750	100	6,180,486	100

**6. Tonnage in Ballast.**—The following table shows the tonnage of oversea vessels which entered and cleared the Commonwealth in ballast during the years 1904 to 1918-19:—

**TONNAGE ENTERED AND CLEARED IN BALLAST, 1904 TO 1918-19.**

Year.	Entered.			Cleared.		
	British.	Foreign.	Total.	British.	Foreign.	Total.
1904-8* ..	785,396	432,315	1,217,711	82,990	66,486	149,476
1909-13* ..	632,751	388,675	1,021,426	82,737	59,529	142,266
1914-15 ..	441,908	129,305	571,213	238,314	108,401	346,715
1915-16 ..	595,591	49,153	644,744	196,033	172,746	368,779
1916-17 ..	720,040	151,728	871,768	104,078	90,172	194,250
1917-18 ..	322,807	133,175	455,982	68,021	19,516	87,537
1918-19 ..	886,494	132,407	1,018,901	93,671	23,014	116,685

**PROPORTION OF TOTAL BRITISH AND FOREIGN TONNAGE WHICH ENTERED AND CLEARED IN BALLAST, 1904 TO 1918-19.**

Year.	Entered.			Cleared.		
	British.	Foreign.	Total.	British.	Foreign.	Total.
	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.
1904-8* ..	26.51	41.08	30.36	2.86	6.05	3.71
1909-13* ..	17.67	30.50	21.06	2.36	4.93	3.03
1914-15 ..	12.88	17.36	13.68	6.51	14.12	7.84
1915-16 ..	17.02	6.38	15.10	5.63	21.95	8.64
1916-17 ..	22.95	21.25	22.64	3.32	12.75	5.05
1917-18 ..	17.65	21.23	18.56	3.49	3.11	3.40
1918-19 ..	34.55	19.68	31.46	4.05	3.65	3.97

The tonnage which entered each State of the Commonwealth, in ballast, during 1918-19, was as follows:—

**TONNAGE OF OVERSEA VESSELS IN BALLAST WHICH ENTERED EACH STATE AND THE NORTHERN TERRITORY DURING 1918-19.**

State.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	N. Ter.	C'wealth.
Tonnage ..	170,198	103,070	11,031	136,622	591,871	204	5,905	1,018,901
Percentage on total ..	16.70	10.12	1.08	13.41	58.09	0.02	0.58	100.00

In normal times the large exports of coal from New South Wales afford special inducements to vessels in search of freights. During 1913, 600,050 tons, or 59.88 per cent. of all ballast tonnage arriving in Australia, entered in New South Wales, 463,134 tons having entered at the coal port of Newcastle. The tonnage in ballast into New South Wales is mainly for coal cargo, into Victoria for wheat, into South Australia for wheat and ore, and into Western Australia for timber and wheat. War conditions have, however, completely deranged the shipping of the Commonwealth, and the relatively large tonnage entering Western Australian ports in ballast consisted largely of vessels on military transport service.

### § 3. Shipping of Ports.

1. **Shipping of Ports.**—Appended is an abstract of the total shipping tonnage—oversea and coastwise—which entered the more important ports of Australia during the year 1918–19, together with similar information in regard to some of the ports of New Zealand for the year 1918 and of the United Kingdom for the year 1917 :—

#### SHIPPING OF PORTS, AUSTRALIA, NEW ZEALAND, AND THE UNITED KINGDOM.

Port.	Tonnage Entered.	Port.	Tonnage Entered.
<b>AUSTRALIA—</b>		<b>ENGLAND AND WALES—</b>	
Melbourne .. ..	5,513,968	Liverpool (inc. Birkenhead)	9,587,380
Sydney .. ..	5,152,866	London .. ..	9,448,092
Newcastle .. ..	2,970,687	Tyne Ports .. ..	4,970,786
Fremantle .. ..	1,526,951	Cardiff .. ..	4,950,018
Brisbane .. ..	1,263,817	Falmouth .. ..	2,310,763
Adelaide* .. ..	1,263,419	Newport .. ..	2,017,472
Albany .. ..	716,003	Hull .. ..	1,907,747
Townsville .. ..	673,513	Swansea .. ..	1,901,432
Pirie .. ..	381,715	Beaumaris .. ..	1,752,137
Mackay .. ..	342,867	Manchester (inc. Runcorn)	1,642,837
Bowen .. ..	342,183	Middlesbrough ..	1,551,011
Cairns .. ..	304,477	Bristol .. ..	1,380,181
Rockhampton ..	264,280	Sunderland .. ..	1,330,098
Geelong .. ..	262,206	Southampton ..	1,295,729
Hobart .. ..	251,375	Cowes .. ..	940,916
Thursday Island ..	201,062	<b>SCOTLAND—</b>	
Burnie .. ..	188,591	Glasgow .. ..	3,318,253
Wallaroo .. ..	180,732	Leith .. ..	618,806
<b>NEW ZEALAND—</b>		<b>IRELAND</b>	
Wellington .. ..	2,668,699	Dublin .. ..	2,701,942
Auckland .. ..	1,276,003	Belfast .. ..	2,375,100
Lyttelton .. ..	1,202,273	Cork (inc. Queenstown) ..	1,009,582
Dunedin .. ..	400,220		

\* Exclusive of coastal shipping, particulars of which are not available.

### § 4. Vessels Built and Registered.

1. **Vessels Registered.**—The following table shews the number and net tonnage of steam, sailing, and other vessels on the registers of the various States and of the Northern Territory of the Commonwealth of Australia :—

#### VESSELS ON THE REGISTER, 31st DECEMBER, 1919.

State.	Steam.				Sailing.				Barges, Hulks, Dredges, etc., not Self-propelled.	Total.		
	Dredges and Tugs.		Other.		Fitted with Auxiliary Power.		Other.					
	No.	Net Tons.	No.	Net Tons.	No.	Net Tons.	No.	Net Tons.		No.	Net Tons.	No.
New South Wales ..	45	1,336	552	104,395	102	1,946	302	19,709	46	10,182	1,047	137,568
Victoria ..	25	2,992	155	126,388	29	1,116	72	5,389	70	27,358	351	163,243
Queensland ..	21	3,353	69	13,409	22	212	116	1,936	34	4,158	262	23,068
South Australia ..	19	807	88	33,279	9	341	74	3,684	64	10,620	254	48,731
Western Australia ..	11	176	35	16,371	12	206	337	5,154	26	6,912	421	28,819
Tasmania ..	5	302	56	10,571	46	1,114	84	3,076	2	563	193	15,626
Northern Territory ..	..	..	1	53	1	17	29	355	..	..	31	425
Total ..	126	8,966	956	304,466	221	4,952	1,014	30,303	242	59,793	2,559	417,480



2. **Vessels Built.**—The following tables shew the number and tonnage of vessels built in the Commonwealth during each of the years 1901–1919, so far as such information can be ascertained from the Shipping Registers of the various States. The Merchant Shipping Act, under which vessels are registered in Australia, however, does not make it compulsory to register vessels under 15 tons burthen if engaged in river or coastal trade. Larger vessels are also exempt from registration if not engaged in trade. Yachts and small trading vessels may be, and frequently are, registered at the request of the owners. As the Shipping Registers have been, and are, the source of information, it follows that the figures given below will be subject to additions in the future, inasmuch as vessels already built may be added to the register at some future date.

## VESSELS BUILT IN THE COMMONWEALTH, 1901 TO 1919.

## NUMBER.

Year.	Steamers built of—					Oil Motor Vessels.	Sailing.	Pontoons, Dredges, etc.	Total.
	Wood.	Iron.	Steel.	Com- posite.	Total.				
1901 ..	18	..	1	..	19	4	45	..	68
1902 ..	29	..	..	1	30	8	78	1	117
1903 ..	15	1	2	..	18	17	158	2	195
1904 ..	14	..	1	1	16	13	76	..	105
1905 ..	15	..	4	..	19	22	17	2	60
1906 ..	12	1	1	..	14	23	21	3	61
1907 ..	17	..	..	1	18	12	37	1	68
1908 ..	13	..	3	..	16	18	18	2	54
1909 ..	10	..	..	..	10	12	38	1	61
1910 ..	9	3	2	..	14	12	35	4	65
1911 ..	14	1	2	1	18	8	37	4	67
1912 ..	9	..	3	2	14	12	30	2	58
1913 ..	17	..	2	..	19	13	29	..	61
1914 ..	17	..	..	..	17	9	28	2	56
1915 ..	4	..	2	..	6	6	4	..	16
1916 ..	2	..	..	..	2	5	2	..	9
1917 ..	3	..	..	1	4	2	5	..	11
1918 ..	2	..	..	..	2	3	..	..	5
1919 ..	1	..	2	..	3	2	8	..	13

## TONNAGE.

Year.	Steamers.		Oil Motor Vessels.		Sailing.		Pontoons, Dredges, etc.		Total.	
	Gross.	Net.	Gross.	Net.	Gross.	Net.	Gross.	Net.	Gross.	Net.
1901 ..	2,270	1,251	41	33	1,169	1,027	..	..	3,480	2,311
1902 ..	3,166	1,849	96	82	2,482	2,148	64	64	5,808	4,143
1903 ..	1,569	956	624	455	3,211	2,758	285	350	5,789	4,519
1904 ..	2,094	1,240	161	125	1,641	1,416	..	..	3,896	2,781
1905 ..	2,444	1,462	291	214	338	290	967	896	4,040	2,862
1906 ..	1,426	735	276	196	501	428	546	536	2,749	1,895
1907 ..	2,381	1,305	108	93	840	778	152	145	3,481	2,321
1908 ..	2,492	1,317	265	199	510	428	260	260	3,527	2,204
1909 ..	1,351	735	184	151	814	686	98	98	2,447	1,670
1910 ..	1,944	1,105	141	128	807	691	688	646	3,580	2,570
1911 ..	2,123	1,130	143	115	779	694	762	720	3,807	2,659
1912 ..	2,592	1,592	391	304	673	579	612	287	4,268	2,762
1913 ..	2,227	1,189	322	226	510	484	..	..	3,059	1,899
1914 ..	3,041	1,595	142	119	510	452	148	148	3,841	2,314
1915 ..	914	385	194	129	194	183	..	..	1,302	697
1916 ..	125	63	79	66	39	28	..	..	243	157
1917 ..	619	300	30	23	229	161	..	..	878	484
1918 ..	378	201	448	349	..	..	..	..	826	550
1919 ..	7,402	4,644	27	24	1,010	864	..	..	8,439	5,532

### § 5. Interstate Shipping.

1. **Total Vessels and Tonnage.**—In the following tables are shewn the number and tonnage of vessels recorded as having entered each State of the Commonwealth from any other State therein, and similarly, the number and tonnage cleared from each State to other Commonwealth States. The table gives results from 1901 to 1918–19. The shipping on the Murray River, between the States of New South Wales, Victoria, and South Australia, is not included.

#### INTERSTATE SHIPPING, 1901 TO 1918–19.—NUMBER OF VESSELS.

State.	1901.	1906.	1911.	1915–16.	1916–17.	1917–18.	1918–19.
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##### ENTERED.

New South Wales ..	1,611	1,575	1,791	1,947	1,607	1,469	1,461
Victoria ..	1,502	1,561	1,648	1,736	1,423	1,335	1,239
Queensland ..	430	478	567	570	525	524	529
South Australia ..	719	752	789	631	539	429	445
Western Australia ..	446	335	415	350	385	144	309
Tasmania ..	713	840	864	864	728	761	727
Northern Territory	*	*	39	39	29	29	28
Total ..	5,421	5,541	6,113	6,137	5,236	4,691	4,738

##### CLEARED.

New South Wales ..	1,473	1,417	1,728	1,871	1,572	1,438	1,402
Victoria ..	1,569	1,610	1,765	1,906	1,580	1,430	1,369
Queensland ..	395	431	572	547	479	498	528
South Australia ..	826	802	900	657	579	464	516
Western Australia ..	456	363	394	325	310	168	310
Tasmania ..	694	809	836	845	717	751	725
Northern Territory	*	*	40	42	23	26	27
Total ..	5,413	5,432	6,235	6,193	5,260	4,775	4,877

##### TOTAL.

New South Wales ..	3,084	2,992	3,519	3,818	3,179	2,907	2,863
Victoria ..	3,071	3,171	3,413	3,642	3,003	2,765	2,608
Queensland ..	825	909	1,139	1,117	1,004	1,022	1,057
South Australia ..	1,545	1,554	1,689	1,288	1,118	893	961
Western Australia ..	902	698	809	675	695	312	619
Tasmania ..	1,407	1,649	1,700	1,709	1,445	1,512	1,452
Northern Territory	*	*	79	81	52	55	55
Total ..	10,834	10,973	12,348	12,330	10,496	9,466	9,615

\* Included with South Australia.

## INTERSTATE SHIPPING, 1901 TO 1918-19.—TONNAGE.

State.	1901.	1906.	1911.	1916-17.	1917-18.	1918-19.
ENTERED.						
New South Wales ..	2,031,089	2,456,269	3,318,605	3,104,717	2,502,174	2,291,462
Victoria ..	1,956,900	2,473,771	2,959,551	2,254,634	1,665,921	1,393,549
Queensland ..	545,469	692,354	840,052	963,931	768,769	700,617
South Australia ..	1,135,714	1,582,802	1,970,490	1,302,537	796,627	707,248
Western Australia ..	973,474	968,664	1,378,800	1,373,625	475,840	944,088
Tasmania ..	485,023	721,240	895,546	525,862	432,208	442,457
Northern Territory ..	*	*	64,518	52,663	61,464	53,607
Total ..	7,127,669	8,895,100	11,427,562	9,577,969	6,703,003	6,533,028

CLEARED.						
New South Wales ..	1,856,501	2,177,496	3,209,723	2,994,899	2,397,160	2,207,435
Victoria ..	2,038,424	2,617,966	3,233,531	2,755,961	2,031,503	1,874,484
Queensland ..	440,659	578,561	855,776	779,017	648,207	690,694
South Australia ..	1,377,399	1,772,356	2,343,269	1,490,529	939,485	1,090,760
Western Australia ..	977,846	1,051,629	1,303,359	1,162,325	646,071	1,081,973
Tasmania ..	433,735	636,944	728,170	479,182	408,497	426,879
Northern Territory ..	*	*	66,357	43,607	50,961	49,043
Total ..	7,124,564	8,834,952	11,740,185	9,705,520	7,121,884	7,421,268

TOTAL.						
New South Wales ..	3,887,590	4,633,765	6,528,328	6,099,616	4,899,334	4,498,897
Victoria ..	3,995,324	5,091,737	6,193,082	5,010,595	3,697,424	3,268,033
Queensland ..	986,128	1,270,915	1,695,828	1,742,948	1,416,976	1,391,311
South Australia ..	2,513,113	3,355,158	4,313,759	2,793,066	1,736,112	1,798,008
Western Australia ..	1,951,320	2,020,293	2,682,159	2,535,950	1,121,911	2,026,061
Tasmania ..	918,758	1,358,184	1,623,716	1,005,044	840,705	869,336
Northern Territory ..	*	*	130,875	96,270	112,425	102,650
Total ..	14,252,233	17,730,052	23,167,747	19,283,489	13,824,887	13,954,296

\* Included with South Australia.

The figures presented in the above table include overseas vessels—largely mail boats—passing from one State to another. This renders the results somewhat unsatisfactory.

In the earlier part of this chapter attention was drawn to the custom in vogue prior to Federation of recording vessels from or to "oversea countries *via* other Commonwealth States" as *direct* from or to the oversea country. At each port in Australia these vessels were, on the inward voyage (to Australia), entered as from the oversea country, and

cleared to the next Australian port as "interstate"; on the return journey—the outward voyage—they were entered as "interstate," and cleared as for the oversea country. In order to preserve the continuity of the records of the shipping communication of the several States with oversea countries this method has been followed in continuation of the pre-existing practice, excepting that vessels arriving or departing *via* other Commonwealth States are now so recorded instead of as "direct."

From the above it will be seen that while certain movements of the vessels referred to are included in the interstate shipping, other movements of the same vessels, between the same ports, are not so included.

To ascertain the aggregate movement of shipping between the States during the year 1918-19, including the total interstate movements of oversea vessels, the figures in the following table must be added to those in the table preceding:—

**SHIPPING ENTERED AND CLEARED FROM AND TO OVERSEA COUNTRIES VIA OTHER COMMONWEALTH STATES, 1918-19.**

State.	Entered.		Cleared.		Total.		
	Vessels.	Tonnage.	Vessels.	Tonnage.	Vessels.	Tonnage.	
New South Wales ..	282	1,047,000	234	813,835	516	1,860,835	
Victoria ..	292	1,043,836	207	651,136	499	1,694,972	
Queensland ..	60	299,572	63	298,833	123	598,405	
South Australia ..	154	592,885	120	344,728	274	937,613	
Western Australia ..	1	1,888	..	..	1	1,888	
Tasmania ..	14	58,421	20	61,476	34	119,897	
Northern Territory ..	..	..	1	5,905	1	5,905	
Total {	1918-19	803	3,043,602	645	2,175,913	1,448	5,219,515
	1908 ..	1,262	4,142,907	1,250	4,115,111	2,512	8,258,018

2. *Vessels Engaged Solely in Interstate Trade.*—The elimination of the element of oversea vessels, included in the interstate shipping returns, cannot be accurately effected; nevertheless, a close approximation is furnished if it be assumed that vessels *entered* in the several States as from "oversea countries *via* other Commonwealth States" have really been *cleared* from other States as "interstate," and further, that the vessels *cleared* to "oversea countries *via* other Commonwealth States" have likewise been *entered* as "interstate." Applying this suggestion, and so eliminating all interstate movements of oversea vessels, the number and tonnage movement of vessels engaged solely in the interstate trade for the Commonwealth as a whole during the years 1911 to 1918-19 were as follows:—

**NUMBER AND TONNAGE OF VESSELS ENGAGED SOLELY IN INTERSTATE TRADE, 1911 TO 1918-19.**

Year.	Entered.		Cleared.	
	No.	Tons.	No.	Tons.
1911 .. .. .	4,794	6,548,069	4,811	6,570,019
1912 .. .. .	5,000	6,809,428	4,990	6,809,426
1913 .. .. .	5,174	8,080,267	5,187	8,105,988
1914-15 .. .. .	5,143	8,140,155	5,142	8,112,005
1915-16 .. .. .	5,121	7,175,175	5,112	7,139,451
1916-17 .. .. .	4,303	6,093,634	4,311	6,127,726
1917-18 .. .. .	4,171	4,856,751	4,152	4,765,957
1918-19 .. .. .	4,093	4,357,115	4,074	4,377,666

Similar information cannot be given for the States singly, as the records do not disclose the relationship of the movements of the vessels to the States concerned.

3. Total Interstate Movement of Shipping.—From the foregoing it is apparent that the interstate movement of shipping includes two very different elements, viz. :— (i) Oversea ships moving from State to State, and (ii) the movement of ships engaged solely in the interstate carrying trade. These two elements are approximately as follows :—

#### TOTAL INWARD INTERSTATE MOVEMENT OF SHIPPING, 1912 TO 1918-19.

Vessels.	1912.	1913.	1914-15.	1915-16.	1916-17.	1917-18.	1918-19.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
Oversea vessels moving inter-state ..	10,711,434	11,472,490	8,737,804	8,017,918	7,062,129	4,202,179	5,219,515
Vessels solely interstate.	6,809,428	8,080,267	8,140,155	7,175,175	6,093,634	4,856,751	4,357,115
Total ..	17,520,862	19,552,757	16,877,959	15,193,093	13,155,763	9,058,930	9,576,630

The following table shews the number and tonnage of vessels which entered and cleared each State during 1918-19, including the coastal movements of oversea vessels :—

#### INTERSTATE SHIPPING OF EACH STATE, 1918-19.

State.	Entered.		Cleared.		Total.		
	Vessels.	Tonnage.	Vessels.	Tonnage.	Vessels.	Tonnage.	
New South Wales ..	1,743	3,338,462	1,636	3,021,270	3,379	6,359,732	
Victoria .. ..	1,531	2,437,385	1,576	2,525,620	3,107	4,963,005	
Queensland .. ..	589	1,000,189	591	989,527	1,180	1,989,716	
South Australia ..	599	1,300,133	636	1,435,488	1,235	2,735,621	
Western Australia ..	310	945,976	310	1,081,973	620	2,027,949	
Tasmania .. ..	741	500,878	745	488,355	1,486	989,233	
Northern Territory ..	28	53,607	28	54,948	56	108,555	
Total {	1918-19	5,541	9,576,630	5,522	9,597,181	..	..
	1908 ..	7,218	14,219,635	7,166	14,174,357	..	..

4. **Interstate and Coastal Services.**—The foundation of the coastal steamship services in Australia dates back to the year 1851, when a regular trade was established between Melbourne and Geelong by the small screw steamer *Express*. Early in the fifties a company was formed in Tasmania with a capital of £40,000 for the purpose of purchasing steamboats, and employing them in the carriage of passengers and goods between Hobart and Melbourne. This service was commenced in 1852, and was thus the first regular interstate service in Australia. About this time, the great influx of population, and the increase in commerce caused chiefly by the gold discoveries, emphasised the desirability of establishing more regular and quicker means of communication between the principal ports of Australia, and in 1862 the regular interstate service between New South Wales and Victoria was inaugurated by the s.s. *You Yangs*, which was put into commission in regular service between Melbourne, Sydney, and Newcastle. In 1875 a company was formed in Adelaide for the purpose of supplying suitable steamers for the requirements of the trade between Adelaide and Melbourne. The first two steamers of the company were named the *South Australian* and the *Victorian*, and were small vessels of only 400 tons burthen. From the start, success attended these enterprises, and the services thus initiated were rapidly extended and their operations broadened. Numerous other companies were formed to cope with the increasing trade between ports in the Commonwealth, and the companies engaged from time to time added to their fleets of steamers by the acquisition of more modern and faster vessels, until at the end of the year 1915 the total net tonnage owned by the 23 companies from whom returns have been received amounted to over 205,000 tons. Owing to the war this tonnage has been temporarily reduced by the withdrawal of vessels from the coastal trade for transport and other deep-sea services. A summary of the various mail services carried on during the year 1919 is given in Section XVIII. of this work.

The subjoined table gives particulars, so far as they are available, of all steamships engaged in regular interstate or coastal services at the end of each of the years 1901 and 1914 to 1919. The figures for 1914 and subsequent years include particulars relating to a number of smaller companies which did not supply returns for 1901, though they were, for the most part, carrying on business in that year.

**PARTICULARS OF STEAMSHIPS ENGAGED IN REGULAR INTERSTATE AND COASTAL SERVICES IN THE COMMONWEALTH, 1901 AND 1914 TO 1919.**

Particulars.	1901.	1914.	1915.	1916.	1917.	1918.	1919.
Number of companies making returns ..	11	23	23	23	23	23	23
Number of steamships ..	113	174	174	169	148	142	143
Tonnage .. { Gross ..	184,574	340,852	340,443	337,068	241,611	208,700	250,610
Net ..	114,080	206,424	205,795	204,357	145,424	126,444	143,143
Horse-power { Nominal ..	18,237	35,723	35,787	34,038	26,430	25,073	27,841
Indicated ..	122,519	288,856	289,488	283,471	207,150	182,404	211,361
Number of passengers for which licensed { 1st class ..	4,617	8,068	9,557	9,077	5,459	4,674	5,220
2nd class and steerage ..	4,490	8,666	6,808	6,578	5,029	4,325	5,524
Complement of Crew { Masters and officers ..	403	622	623	606	510	460	493
Engineers ..	332	527	532	519	415	378	409
Crew ..	2,875	5,493	5,508	5,385	3,910	3,365	3,971

5. **Lighthouses and Lights on the Coast of the Commonwealth.**—See Year Book No. 2.

6. **Ports of the Commonwealth.**—See Year Book No. 3.

### § 6. Shipwrecks.

The following statement shows the number and tonnage of vessels wrecked, or otherwise lost, on the coast or elsewhere under the jurisdiction of the several States, during the years 1901 and 1910 to 1919 :—

#### NUMBER AND TONNAGE OF VESSELS WRECKED,\* 1901 AND 1910 TO 1919.

Year.	Class of Vessel.	Number and Tonnage of Vessels.										Passengers and Crew.	Lives Lost.
		Under 50 tons.		50 to 500 tons.		500 to 2,000 tons.		Over 2,000 tons.		Total.			
		No.	Tons.	No.	Tons.	No.	Tons.	No.	Tons.	No.	Tons.		
1901	Steam ..	7	189	5	949	2	2,811	..	..	14	3,949	250	40
	Sailing ..	11	217	6	785	5	5,800	..	..	22	6,802	172	10
	Total ..	18	406	11	1,734	7	8,611	..	..	36	10,751	422	50
1910	Steam ..	1	34	5	941	1	958	2	9,307	9	11,240	624	2
	Sailing ..	5	115	2	205	2	3,095	..	..	9	3,415	94	20
	Total ..	6	149	7	1,146	3	4,053	2	9,307	18	14,655	718	22
1911	Steam ..	4	109	5	681	3	5,194	..	..	12	5,984	275	161
	Sailing ..	7	103	4	642	4	5,100	..	..	15	5,845	128	25
	Total ..	11	212	9	1,323	7	10,294	..	..	27	11,829	403	186
1912	Steam ..	1	11	6	866	..	..	1	2,182	8	3,059	227	151
	Sailing ..	4	44	3	407	5	7,836	..	..	12	8,287	111	19
	Total ..	5	55	9	1,273	5	7,836	1	2,182	20	11,346	338	170
1913	Steam ..	1	25	2	237	..	..	..	..	3	262	23	..
	Sailing ..	10	175	5	359	..	..	..	..	15	534	51	7
	Total ..	11	200	7	596	..	..	..	..	18	796	74	7
1914	Steam ..	3	130	4	926	2	2,721	1	3,558	10	7,335	205	18
	Sailing ..	10	184	11	1,124	2	2,297	..	..	23	3,605	160	34
	Total ..	13	314	15	2,050	4	5,018	1	3,558	33†	10,940	365	52
1915	Steam ..	1	38	3	792	1	1,057	..	..	5	1,887	90	1
	Sailing ..	12	245	4	600	..	..	..	..	16	845	82	13
	Total ..	13	283	7	1,392	1	1,057	..	..	21	2,732	172	14
1916	Steam ..	3	107	6	582	..	..	1	2,529	10	3,218	87	6
	Sailing ..	10	240	1	114	..	..	1	3,087	12	3,441	78	19
	Total ..	13	347	7	696	..	..	2	5,616	22	6,659	165	25
1917	Steam ..	4	72	4	551	1	1,015	2	8,763	11	10,401	415	18
	Sailing ..	14	293	4	378	2	1,296	..	..	20	1,967	88	8
	Total ..	18	365	8	929	3	2,311	2	8,763	31	12,368	503	26
1918	Steam ..	2	68	6	867	1	648	..	..	9	1,583	130	12
	Sailing ..	13	239	4	548	..	..	..	..	17	787	109	25
	Total ..	15	307	10	1,415	1	648	..	..	26	2,370	239	37
1919	Steam ..	2	46	7	1,792	..	..	..	..	9	1,838	189	21
	Sailing ..	7	142	2	138	..	..	..	..	9	280	38	1
	Total ..	9	188	9	1,930	..	..	..	..	18	2,118	227	22

\* In some cases the vessels included in the above return were subsequently recovered.

† Not including two dredges, particulars of tonnage of which are not available.

### § 7. Control of Commonwealth Shipping.

A brief statement relating to the control of Commonwealth shipping will be found in Year Book No. 11, page 637.

### § 8. Commonwealth Government Shipping Activities.

1. **Local Building Programme.**—The original programme of the Commonwealth Government for building ships in Australia provided for the construction of 48 vessels as follows :—

#### STEEL VESSELS.

Locality.	Number.	Builders.	Type.
Williamstown ..	6	Commonwealth Ship Construction Branch	Steel Cargo Steamers
Walsh Island ..	6	New South Wales Government ..	" "
Cockatoo Island	2	Commonwealth Navy Department	" "
Maryborough (Q.)	4	Walkers Limited .. ..	" "
Adelaide ..	4	Poole and Steel .. ..	" "
Tasmania ..	2	Mersey Shipbuilding Company Ltd.	" "

#### WOODEN VESSELS.

Sydney ..	6	Hughes, Martin and Washington Ltd.	Auxiliary Schooner
Fremantle ..	6	W.A. Shipbuilding Company ..	" "
Sydney ..	6	Wallace Power Boat Company ..	Auxiliary Barquentine
„ ..	6	Kidman and Mayoh .. ..	" "

The contracts for the construction of the wooden vessels, with the exception of two five-masted schooners (originally intended to be barquentines), which are under construction by Messrs. Kidman and Mayoh, have been cancelled. It was originally intended that these two vessels should be fitted with auxiliary propelling machinery, but arrangements have since been made for its omission. They will be built of Australian hardwoods, and their dimensions will be :—Length, 250 feet ; beam, 45 feet ; and moulded depth, 24 ft. 5 in. Their dead-weight capacity will be about 2,600 tons on a load draught of about 19 ft. 10 in.

With regard to the steel steam vessels, the first part of the programme to be put into execution consisted of six vessels, of the three island or well deck type, 331 feet long by 48 feet by 26 ft. 1 in. deep, moulded to the upper deck, with a dead-weight capacity of about 5,500 tons on a 21 ft. 9½ in. draught and a cubic capacity of about 282,000 feet. These vessels are fitted with single-screw engine and Babcock and Wilcox boilers, with an indicated horse-power of about 2,200, which will give a speed of 10½ knots at sea. The names of these ships and the places of construction are :—*Dromana* and *Dumosa*, Commonwealth Dockyard, Williamstown ; *Delungra*, *Dinoga*, and *Dilga*, Government Dockyard, Walsh Island, Newcastle ; *Dundula*, Commonwealth Dockyard, Cockatoo Island, Sydney.

These vessels have been completed and handed over to the Commonwealth Line of Steamers.

The second part of the programme, consisting of fourteen, since extended to cover fifteen, steel steamships, has been commenced. These will be built in the following yards :—

3 at Commonwealth Dockyard, Williamstown ; 3 at Government Dockyard, Walsh Island ; 1 at Commonwealth Dockyard, Cockatoo Island ; 4 at Walkers Limited, Maryborough, Queensland ; and 4 at Poole and Steel's, Adelaide, South Australia.

Four of these vessels have been launched as follows :—*Eurelia* and *Enoggera*, Government Dockyard, Walsh Island ; *Eudunda*, Commonwealth Dockyard, Cockatoo Island ; and *Emita*, Commonwealth Dockyard, Williamstown.



The vessels of this programme will be of the shelter-deck type and will be 331 feet long B.P., by 48 feet, by 33 ft. 7 in. in depth, moulded to the shelter deck. They will carry about 6,000 tons dead-weight on 23 ft. 8½ in. draught, and the total cubic capacity of each will be about 338,000 feet. The driving machinery will be the same as for the vessels referred to under the first part of the programme. Provision will be made for the carriage of oil fuel, and the boilers will be suitable for burning either oil or coal. One of these vessels is on the point of completion, and it is anticipated that three others will be completed by January, 1921; two by March, 1921; six more by August, 1921; and the balance by March, 1922. These vessels will cost approximately £155,000 each. All the above-mentioned steel vessels will be built on the Isherwood system of longitudinal framing.

Arrangements have been completed for the construction, at the Cockatoo Island Dockyard, of two larger vessels, the dimensions being:—Length over all, 520 feet; breadth, 63 feet; moulded depth, 44 feet. Negotiations are proceeding for the building of two other similar vessels at Walsh Island. These vessels will be of the shelter-deck type, with a long bridge and forecastle above the shelter deck and three complete decks laid. It is estimated that they will carry about 12,700 tons dead-weight on a load draught of 29 feet 9 inches. Twin-screw quadruple engines, with cylinders 23½ inches, 34 inches, 48 inches, and 73 inches, and stroke 51 inches will be fitted, and steam will be generated by an ample installation of water-tube or Scotch boilers. The machinery will develop 7,300 horse-power, with a speed of 15 knots under trial conditions, and a speed at sea, fully loaded over a long voyage, of 13 knots. The total cubic capacity will be about 700,000 tons, which will include about 250,000 cubic feet of insulated space for the carriage of frozen meat or chilled produce. Liberal accommodation will be provided for officers and crew. The cargo arrangements will be of the most modern description, to facilitate rapid loading and discharge. Provision will also be made in these vessels for the carriage of oil fuel, and the boilers will be suitable for burning either oil or coal. It is anticipated that these vessels will be in commission in two years.

**2. Steel Vessels to be Built in Great Britain.**—In addition to the foregoing, a contract has been signed with Vickers, in Great Britain, for the building of three vessels of 12,000 tons dead-weight capacity, and 900,000 cubic feet, of which 370,000 cubic feet are to be insulated. The length of these vessels will be 520 feet by 68 feet beam. They are to be built to burn oil or coal as required. The speed is to be 15 knots. These vessels are due for delivery in January, June, and October, 1921, respectively.

A similar contract has been entered into with Beardmore's for two steamers alike in all respects to those referred to above as being built by Vickers.

**3. Wooden Vessels Built in America.**—A contract was arranged with the Sloan Shipyards Corporation at Seattle for the construction of four wooden, full-powered motor vessels. These vessels were completed and delivered as follows:—*Cethana*, 18th July, 1918; *Culburra*, 26th August, 1918; *Challamba*, 2nd October, 1918; *Coolcha*, 26th October, 1918.

A further contract was arranged with the Patterson McDonald Shipbuilding Company for the construction of ten wooden steamers. Of these, the *Bellata* was delivered on 8th October, 1918; the *Bundarra* on 11th December, 1918; the *Bethanga* on 5th May, 1919; and the *Birriwa* on the 6th August, 1919. With regard to the remaining vessels, an alteration in the motive power was decided upon, Diesel engines being substituted for steam engines originally provided for. Of these vessels, the *Benowa* was delivered on 15th June, 1919, and the *Babinda* in August.

The motor vessels—*Cethana*, *Culburra*, *Challamba*, *Coolcha*, *Benowa*, and *Babinda* and the uncompleted vessels *Balcatta*, *Boobyalla*, and *Borrika* were sold to American buyers on the 2nd September, 1919. On the 3rd October, 1919, the wooden steamers *Bundarra*, *Bellata*, *Bethanga*, *Birriwa*, and *Berringa* were also sold to American buyers, but, owing to the default of the latter, reverted to the Commonwealth Government and are being operated on the Australian coast.

4. **Vessels Purchased.**—In July, 1916, the Right Honourable W. M. Hughes, P.C., K.C., Prime Minister, purchased the following vessels for the Commonwealth of Australia :—

## VESSELS PURCHASED.

Class.	Old Name.	New Name.	D.W. Capacity.
			Tons.
100 *A1 .. ..	<i>Strathendrick</i> ..	<i>Australdale</i> † ..	7180
„ .. ..	<i>Strathspey</i> ..	<i>Australpeak</i> ..	7180
„ .. ..	<i>Strathdee</i> ..	<i>Australrange</i> ..	7180
†B.C. .. ..	<i>Strathbeg</i> ..	<i>Australmount</i> ..	7180
100 *A1 .. ..	<i>Strathleven</i> ..	<i>Australcrag</i> ..	7180
†B.C. .. ..	<i>Strathesk</i> ..	<i>Australbrook</i> ..	7180
100 *A1 .. ..	<i>Strathavon</i> ..	<i>Australford</i> ..	7180
„ .. ..	<i>Strathgarry</i> ..	<i>Australbush</i> † ..	7180
„ .. ..	<i>Strathairly</i> ..	<i>Australpool</i> ..	7180
„ .. ..	<i>Strathord</i> ..	<i>Australglen</i> ..	7180
„ .. ..	<i>Daltonhall</i> ..	<i>Australstream</i> § ..	5723
„ .. ..	<i>Kirkoswald</i> ..	<i>Australmead</i> ..	7740
†B.C. .. ..	<i>Ardangorm</i> ..	<i>Australport</i> ..	6650
„ .. ..	<i>Ardanmhor</i> ..	<i>Australplain</i> ..	7180
„ .. ..	<i>Vermont</i> ..	<i>Australfield</i> § ..	6800

\* Classed at Lloyd's. † British Corporation. ‡ Lost through enemy action. § Sold.

The sailing vessels *John Murray* (1,600 tons), *Shandon* (2,200 tons) and *Speedway* (1,100 tons) were also acquired by the Commonwealth Government, but the former was totally wrecked on Malden Island on the 22nd May, 1918, her crew being saved. The *Speedway* has since been sold.

The following steel steamers, all class 100 A1, have been added to the fleet :—

Name of Vessel.	Dead Weight Capacity.	When Delivered by the Builders.
	Tons.	
<i>Dromana</i> .. ..	5,600	27th August, 1919
<i>Delungra</i> .. ..	5,604	30th October, 1919
<i>Dumosa</i> .. ..	5,608	8th March, 1920
<i>Dundula</i> .. ..	5,600	28th April, 1920
<i>Dilga</i> .. ..	5,604	4th May, 1920
<i>Dinoga</i> .. ..	5,647	12th December, 1920

5. **Control of Enemy Vessels.**—In addition to the above, the management of the Commonwealth Government line of steamers controls eighteen ex-enemy vessels of a dead-weight capacity of approximately 133,545 tons, and one ex-enemy sailing vessel of 2,300 tons capacity.

6. **Managing Staff.**—The principal officers on the managing staff operating the line are as follows :—General manager, Mr. H. B. G. Larkin ; assistant manager, Mr. G. H. Kneen ; head office, Australia House, Strand, London, W.C. 2. Manager for Australia, Mr. E. A. Eva.

## SECTION XVII.

## ROADS AND RAILWAYS.

## § 1. Roads and Bridges.

1. **Introduction.**—In Year Books No. 1 (pages 541 to 551) and No. 2 (pages 675 to 685), a brief historical account was given of the construction and development of roads in Australia. It is not proposed to repeat that account in the present issue of the Year Book.

In the publication "Local Government in Australia," issued by the Commonwealth Statistician in 1919, the subject of roads is also fully discussed.

2. **Expenditure on Roads and Bridges.**—Figures shewing the total expenditure on roads and bridges in the States are not available. The subjoined statement, however, gives the amounts of total loan expenditures by the State Governments up to the 30th June, 1919 :—

**ROADS AND BRIDGES.—TOTAL GOVERNMENT LOAN EXPENDITURE TO THE 30th JUNE, 1919.**

State.	N.S.W. <sup>a</sup>	Victoria.	Q'land. <sup>b</sup>	S. Aust.	W. Aust.	Tasmania.	All States.
	£	£	£	£	£	£	£
Expenditure . .	1,834,546	1,942,462	931,775	1,743,350	421,554 <sup>d</sup>	3,493,835	10,367,522 <sup>c</sup>

(a) Including punts. (b) Including amounts from surplus revenue on which no interest is payable. (c) Including W.A. to 30th June, 1918. (d) To 30th June, 1918.

The following table shews the annual expenditure from loans on roads and bridges by the central Governments in each State during the years 1914-15 to 1918-19 :—

**ROADS AND BRIDGES.—LOAN EXPENDITURE BY STATE GOVERNMENTS, 1915 TO 1919.**

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	All States.
	£	£	£	£	£	£	£
1914-15 ..	8,609	274,362	..	37,910	31,974	..	..
1915-16 ..	421	495,062	..	102,226	18,450	..	..
1916-17 ..	5,428	252,836	..	54,939	5,878	..	..
1917-18 ..	22,374	241,892	..	43,693	2,601	..	..
1918-19 ..	13,089	360,524	..	22,008	(a)	90,101	485,722 <sup>b</sup>

(a) Not available. (b) Exclusive of W.A.

The two tables given above shew only a small proportion of the actual expenditure upon roads and bridges in the different States, for the reason that (a) there have been large expenditures from revenue, both by the central Governments and by local authorities, and (b) the State Governments have in many cases voted grants and subsidies on the amount of rates collected, and have issued loans to local authorities either for the express purpose of the construction of roads and bridges or for the general purpose of public works construction. Returns of expenditure, where available, are given below for each

State. Although no revenue is now derived directly from roads and bridges, they are indirectly of great value to the community, forming, next to railways and public lands, the most considerable item of national property.

3. **New South Wales.**—The control of all roads, bridges, and ferries in New South Wales is now regulated by the Local Government Act No. 41, 1919, which came into force on the 1st January, 1920. Under the provisions of this Act, the eastern and central divisions of the State are divided into shires and municipalities for the general purposes of local government, for the endowment of which a sum of not less than £150,000 is payable annually out of the consolidated revenue on the basis of a percentage subsidy on the proceeds of the general rates received by the local governing bodies concerned. The control of all roads, bridges, and ferries (except those proclaimed "National" and those in the unincorporated areas of the Western Division) has been transferred from the Roads Department to the respective shires and municipal councils, who are now responsible for their construction and maintenance. Up to December, 1918, 58 miles of roads, 282 bridges, 55 wharves, 99 jetties, and 16 ferries have been proclaimed as "National" works. Power is given to construct new roads, to widen or close existing roads, to make by-laws for the regulation of traffic, etc.; and in the case of the acquisition of land for the purpose of constructing new roads or of widening existing roads, the provisions of the *Roads Act 1902* are incorporated. The Minister for Works is empowered to pay subsidies to the local authorities to maintain the roads. The roads leading to and within areas of lands which are made available for closer settlement will be constructed by the Government prior to transfer to the shires, as also will roads required mainly for tourists in districts not likely to produce revenue in rates to the local authorities.

(i) **Principal Main Roads.** The four principal main roads in New South Wales run in the same direction as, and are roughly contiguous to, the four State-owned main railway lines. (a) *The Southern Road*, 385 miles in length, runs from Sydney to Albury, and before the days of railway construction formed part of the highway over which the interstate traffic between Melbourne and Sydney used to flow. (b) *The South Coast Road*, 250 miles long, runs from Campbelltown along the top of the coast range and across the Illawarra district as far as Bega, from which place it extends as a minor road to the southern limits of the State. (c) *The Western Road*, 513 miles long, runs through Bathurst, Orange, and many other important towns as far as Bourke, on the Darling River. (d) *The Northern Road*, 405 miles in length, runs from Morpeth, near Maitland, as far as Maryland, on the Queensland border.

(ii) **Length and Classification of Roads and Bridges.** The length of roads in the State (exclusive of 58 miles proclaimed as "National" works) in 1918 was approximately 99,481 miles, of which 10,214 miles were controlled by municipalities, 83,309 by shires, and 5,958 miles were in the unincorporated areas of the Western Division. The following table gives particulars for the year 1918 (the latest year for which figures are available), of roads classified according to whether metalled, etc., formed only, cleared only, or natural surface :—

#### NEW SOUTH WALES.—APPROXIMATE LENGTH OF ROADS, 1918.

Classification.	Metalled, Ballasted, Gravelled, etc.	Formed only.	Cleared only.	Natural surface.	Total.
	Miles.	Miles.	Miles.	Miles.	Miles.
Metropolitan .. .. .	1,428	417	168	171	2,184
Country municipalities .. .. .	2,834	1,514	1,952	1,730	8,030
Shires .. .. .	15,427	11,949	25,522	30,411	83,309
Western Division (unincorporated) .. .. .	176	117	2,999	2,666	5,958
Total .. .. .	19,865	13,997	30,641	34,978	99,481

(iii) *Bridges, Culverts, and Ferries.* The more important bridges have been proclaimed under the provisions of the Local Government Act as "National" works (see above), and these, together with the bridges, etc., in the Western Division, remain under the control of, and are maintained by the Public Works Department. Particulars of bridges, culverts, and ferries in the State in 1918, the latest year for which figures are available, are given in the following table :—

NEW SOUTH WALES.—BRIDGES, CULVERTS, AND FERRIES, 1918.

Particulars.	Bridges.		Culverts.		Ferries.
	No.	Length.	No.	Length.	No.
		Feet.		Feet.	
" National " works .. .. .	282	108,034	..	..	17
Metropolitan .. .. .	86	5,549	818	40,939	1
Country municipalities .. .. .	643	34,212	3,549	90,532	11
Shires .. .. .	3,567	219,643	34,557	314,079	98
Western Division (unincorporated) ..	97	13,166	209	2,035	..
Total .. .. .	4,675	380,604	39,133	447,585	127

(iv) *Expenditure on Roads and Bridges.* Since the year 1857 the total expenditure by the Roads Department and Road Trusts on roads and bridges is £25,449,714. In this expenditure is included the cost of administering the Department, services for other Departments, and payments on account of punt approaches and similar works incidental to the road traffic of the country. The amount expended from 1857 to the 30th June, 1914, and for each succeeding financial year up to 1919, is given below. Until recent years, the expenditure on these works increased at a much faster rate than the population.

NEW SOUTH WALES.—EXPENDITURE BY ROADS DEPARTMENT AND ROAD TRUSTS, 1857 TO 1919.

Period.	Expenditure by Roads Department.	Expenditure by Trustees.	Total.
	£	£	£
1857 to 30th June, 1914 .. .. .	23,765,192	1,288,691	25,053,883
1914-15 .. .. .	92,729	..	92,729
1915-16 .. .. .	65,928	..	65,928
1916-17 .. .. .	74,124	..	74,124
1917-18 .. .. .	74,459	..	74,459
1918-19 .. .. .	88,591	..	88,591
Total .. .. .	24,161,023	1,288,691	25,449,714

The expenditure by the Department is now limited to the construction of roads in closer settlement areas and to the construction and maintenance of national bridges and ferries, and of works in the unincorporated areas of the Western Division.

4. *Victoria.*—Under the Local Government Act 1915, the control, construction, and maintenance of all roads, streets, and bridges are in the hands of Municipal Councils, which are empowered to open new roads, and to close, divert, or increase the width of any existing street or road, provided that no new road less than one chain in width may be opened without the consent of the Minister. The councils are also authorised to make and repair streets, lanes, or passages on private property, or to form means of back access to private property, and may compel the owners of such

property to pay the cost of so doing. Footways in front of houses or grounds may be kerbed, flagged, paved, or asphalted, and the owners of such houses or grounds must bear half the cost of so doing. The revenue of the councils is derived from rates, which may be either ordinary or special. The councils are empowered to raise loans for the purpose of making or opening new streets and roads, and for diverting, altering, or increasing the width of streets and roads, provided that the amount of such loan does not exceed ten times the average income of the council during the three years immediately preceding from general rates not exceeding 1s. 6d. in the pound of annual value.

(i) *Country Roads Board.* With the object of improving the main roads of the State, an Act (No. 2415) was passed on 23rd December, 1912, which empowers the Governor in Council to appoint a board, to consist of three members.

The duties of the board are to ascertain by survey and investigation what roads are main roads; the nature and extent of the resources of Victoria in metals, minerals, and materials suitable for the purposes of road-making and maintenance, and the most effective and economical methods for dealing with the same, and for supplying and utilising the material in any part of Victoria; the most effective methods of road construction and maintenance; what deviations (if any) in existing roads or what new roads should be made so as to facilitate communication and improve the conditions of traffic; and to record, publish, and make available for general information the results of all such surveys and investigations. The duty of furnishing information that may be required is imposed on the municipal authorities.

The construction of permanent works and the maintenance of main roads are likewise to be carried out by the municipalities to the satisfaction of the board. The total cost of the works, in the first instance, is to be paid by the Treasury, but subsequently one-half to two-thirds of the amount expended on permanent works and maintenance is to be refunded by the municipalities affected.

For the construction of developmental or feeder roads to the main road system the Developmental Roads Act (No. 2944) was passed in 1918. Under the authority of this Act the Country Roads Board is empowered to spend a sum of £500,000 over a period of five years on some of the more important roads in the less developed and neglected parts of the State. It is intended that a further sum of £1,500,000 for the same purpose will be provided later on. The amount expended during the year 1918-19 under this Act was £47,562.

For the purpose of making permanent works, power is given to the Governor in Council to issue stock or debentures to the amount of £400,000 a year for five years, and the principal and interest are a charge upon the Consolidated Revenue of the State. The money so raised is to be placed to the credit of an account to be called "the Country Roads Board Loan Account," which will be debited with all payments made by the Treasurer towards the cost of permanent works. A sinking fund of 1 per cent. per annum on half the amount borrowed is authorised to be paid out of the Consolidated Revenue until half of the amount borrowed is redeemed. An annual payment to the Treasurer of 6 per cent. on the amount due by each municipality in respect of permanent works is provided for, and the cost of maintenance allocated to each municipality must be paid before the 1st July in each year. A special rate, not to exceed 6d. in the £1 on the net annual value of ratable property, to meet the cost of permanent works and maintenance, may be levied in any ward or riding of a municipality as the council may direct. In the event of default of payment by a municipality, the board may levy a rate to meet the amount owing. All fees and fines paid under the Motor Car Act, all moneys standing to the credit of the Municipal Fees and Fines Trust Fund, all fees paid on the registration or renewal of the registration of traction engines, and all fees received by the Crown after the 30th June, 1912, under the Unused Roads and Water Frontages Act 1903 (which has been incorporated in the Local Government Act 1915), are to be credited to the Country Roads Board Fund.

Up to the 30th June, 1918, there were 6,500 miles of declared main roads, agreed to by the councils, and gazetted. The total amount expended during 1918-19 for permanent works was £284,734, and for maintenance work £179,133, a total of £463,867. The net receipts for the year were £261,655, of which amount the chief items were motor registration and license fees, £67,666, unused roads and water frontages license fees, £22,374, contributions by municipalities for permanent works, £29,841; ditto for maintenance works, £82,453; and appropriation for maintenance Main Roads Act No. 2986, £50,000.

(ii) *General and Local Government Expenditure.* The gross amount expended directly by the State Government of Victoria on roads and bridges was £8,806,565 up to the end of June, 1919. The annual expenditure from ordinary revenue by municipalities is not returned separately, but is included in Public Works Construction and Maintenance (see Section xxvi., *Local Government*). The subjoined table shows the cost from general revenue of municipalities of private streets, roads, etc., and also shews the amounts of municipal loan expenditure in 1901 and from 1915 to 1919 :—

**VICTORIA.—EXPENDITURE ON ROADS AND BRIDGES, 1901 AND 1915 TO 1919.**

Financial Year.(a)	Annual Expenditure by State Government.	Municipal Loan Expenditure.		Formation of Private Roads, Streets, Lanes, etc.(b)	
		Cities, Towns, and Boroughs.	Shires.	Cities, Towns, and Boroughs.	Shires.
	£	£	£	£	£
1901 .. ..	72,890	16,844	12,928	18,829	4,521
1915 .. ..	47,898	103,124	40,129	53,365	8,647
1916 .. ..	25,651	92,198	44,945	64,481	3,543
1917 .. ..	16,514	41,686	7,279	60,277	3,222
1918 .. ..	19,782	22,037	19,007	72,506	2,968
1919 .. ..	20,591	(c)	(c)	(c)	(c)

(a) The financial years of Melbourne and Geelong end on the 31st December and the 31st August respectively ; those of all other municipalities on the 30th September.

(b) Including the cost of flagging, asphaltting footpaths, etc., but exclusive of loan expenditure.

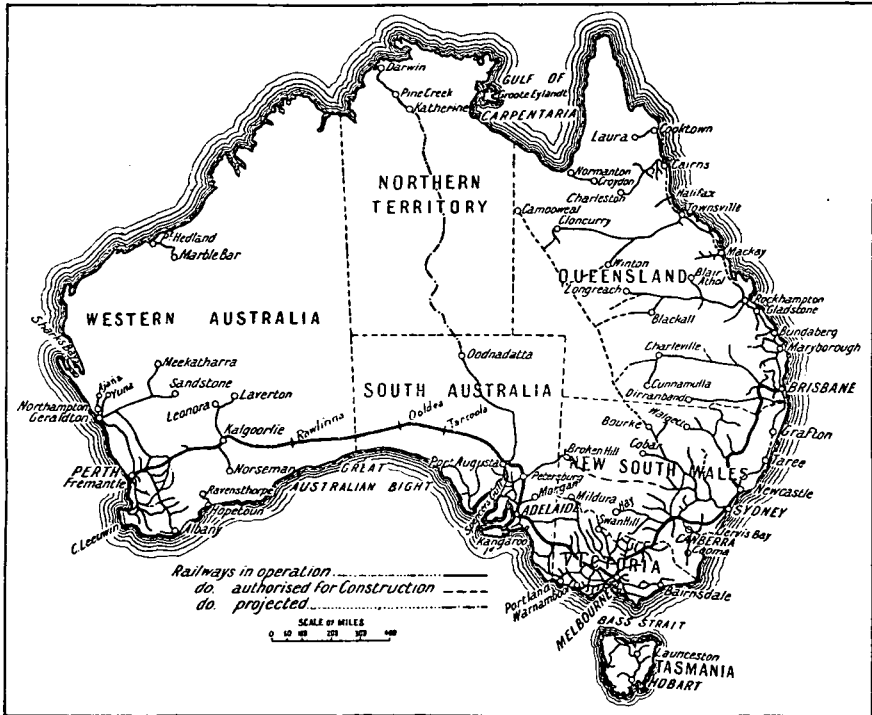
(c) Not available.

5. *Queensland.*—In Queensland the construction and maintenance of public roads are controlled under a system of local self-government, for the purposes of which the whole State is divided into (a) cities, (b) towns, and (c) shires. The duties, rights, and responsibilities of the local authorities with regard to roads, streets, and bridges are regulated by the Local Authorities Act of 1902 and subsequent amendments. The councils are invested with full powers to open, close, divert, or widen streets, roads, and bridges, and to make by-laws for the regulation of traffic, etc. The members of the councils are elected by the ratepayers, and with the aid of executive officers they undertake the supervision and control of all necessary constructions and improvements of roads and bridges within their district. The rates which the councils are empowered to levy are supplemented by Government grants. Separate returns as to the expenditure by towns and shires on roads and bridges are not available, the amounts being included in the returns of expenditure on public works, particulars as to which expenditure may be found in Section XXVI., *Local Government*, hereinafter.

6. *South Australia.*—Of the several Australian States, South Australia has by far the largest unincorporated area, no less than 88 per cent. of the whole area of the State being in this condition. This area is, however, very sparsely populated and much of it is entirely unoccupied. The remainder of the State is for purposes of local government under the control of Municipal Corporations and District Councils. Under the provisions of the District Councils Acts 1914, 1916, and 1918, the Municipal Corporations Acts 1890 to 1918, and of the Roads Acts 1884 to 1915, the councils are invested with full powers as to the opening and making of new streets and roads, and the diverting, altering, or increasing the width of existing roads ; as to raising, lowering, or altering the ground or soil of any street or road ; and as to the construction, purchase, and management of bridges, culverts, ferries, and jetties.

(i) *Main Roads and District Roads.* All the roads in each district are classified either as main roads or as district roads. Both classes of roads are under the direct control either of Municipal Corporations or of District Councils, but in the case of main roads the expenditure on construction and maintenance is chiefly provided for by Government grants, which are paid into a Government grants account, while the expenditure on district roads is paid for out of general rates, and out of subsidies on the amount of such rates granted by the central Government. Under the Main Roads Act 1915, a number of roads were declared to be main roads.

THE GOVERNMENT RAILWAY SYSTEMS OF THE COMMONWEALTH  
AS AT 30TH JUNE, 1919.



EXPLANATION OF MAP.—The continuous lines denote the existing railway lines of Australia, the heavier lines being the main routes between the capital cities.

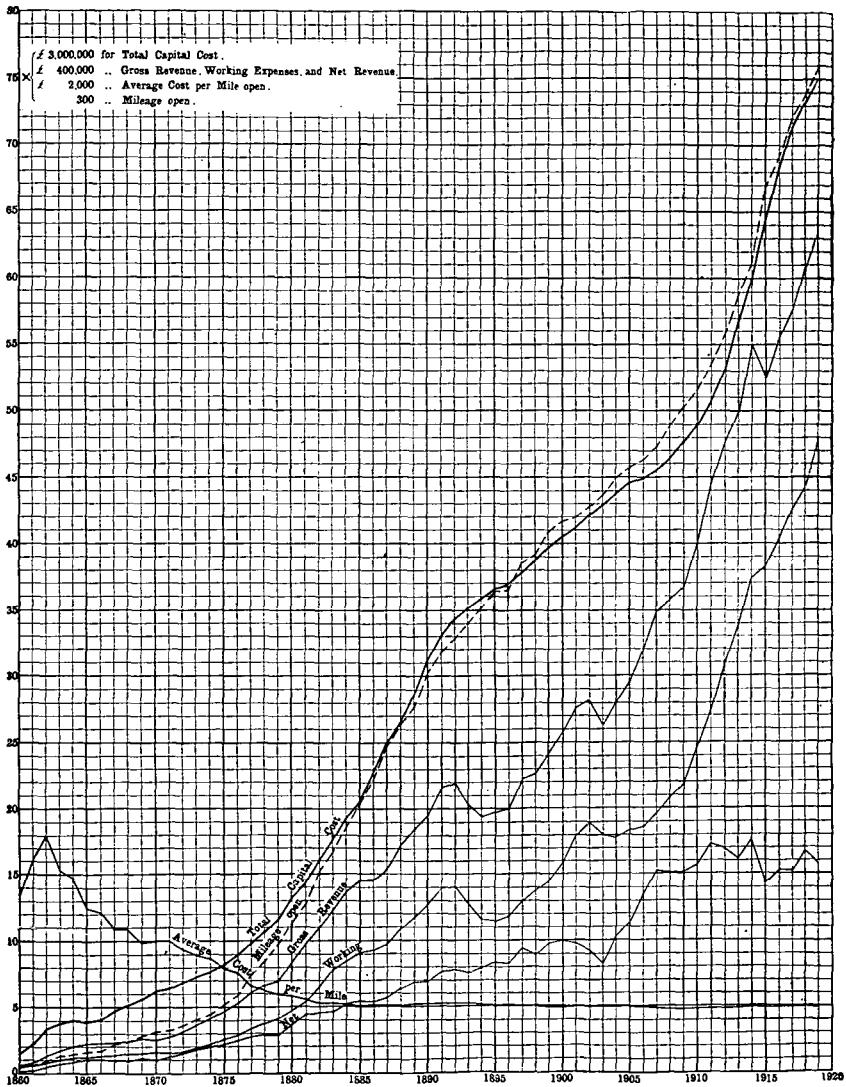
Of the two trans-continental lines, viz., one joining the railways of South and Western Australia, thus connecting continuously by railway Queensland, New South Wales, Victoria, South Australia, and Western Australia, and one connecting Oodnadatta in South Australia with Katherine in the Northern Territory, the former has been constructed, and is shown ———; while the latter, the construction of which is to be deferred for the present, is shown - - - - -.

LIST OF PRINCIPAL SECTIONS OF RAILWAYS.

Miles.	Miles.	Miles.
Townsville to Winton .. 368	Sydney to Nimmitabel .. 291	Adelaide to Broken Hill .. 334½
Townsville to Selwyn .. 552	Sydney to Melbourne (17½ hours) .. 592	Adelaide to Oodnadatta .. 688
Rockhampton to Longreach .. 426½	Adelaide to Melbourne (16 hours) .. 483	Port Lincoln to Cape .. 269½
Brisbane to Cunnamulla .. 604	Melbourne to Merbein .. 358½	Port Augusta to Kalgoorlie .. 1,051½
Sydney to Brisbane (27½ hours) .. 715½	Melbourne to Swan Hill .. 214½	Perth to Laverton .. 586
Newcastle to Inverell .. 410	Melbourne to South Australian border via Murrayville .. 369½	Perth to Meekatharra .. 600
Sydney to Bourke .. 511		Perth to Albany .. 341
Sydney to Hay .. 466		Hobart to Launceston .. 133



GRAPH SHEWING THE FINANCIAL POSITION OF THE GOVERNMENT RAILWAYS OF THE COMMONWEALTH, 1860 TO 1919.



(See page 672.)

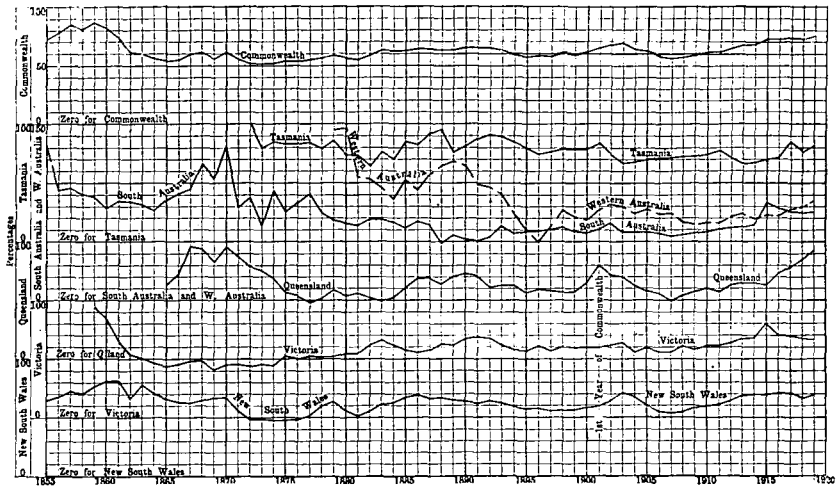
EXPLANATION OF GRAPH.—In the above diagram the base of each small square represents throughout one year. The significance of the vertical height of each square varies, however, according to the nature of the several curves.

In the heavy curve denoting the total capital cost of the railways of the Commonwealth, the vertical side of each square denotes £3,000,000.

In the three lighter curves, representing (i) gross revenue, (ii) working expenses, and (iii) net revenue, the vertical height of each small square denotes £400,000. For the curve of average cost per mile open, the vertical side of the small square denotes £2,000. The mileage open is shewn by a dotted curve, the vertical side of each square representing 300 miles.

For the curves shewing the percentage of working expenses to gross revenue, and the percentage of net revenue to capital cost, see graphs on pages 647 and 648 respectively.

GRAPH SHEWING PERCENTAGES OF WORKING EXPENSES TO GROSS REVENUE OF GOVERNMENT RAILWAYS OF STATES AND COMMONWEALTH, 1855 TO 1919.

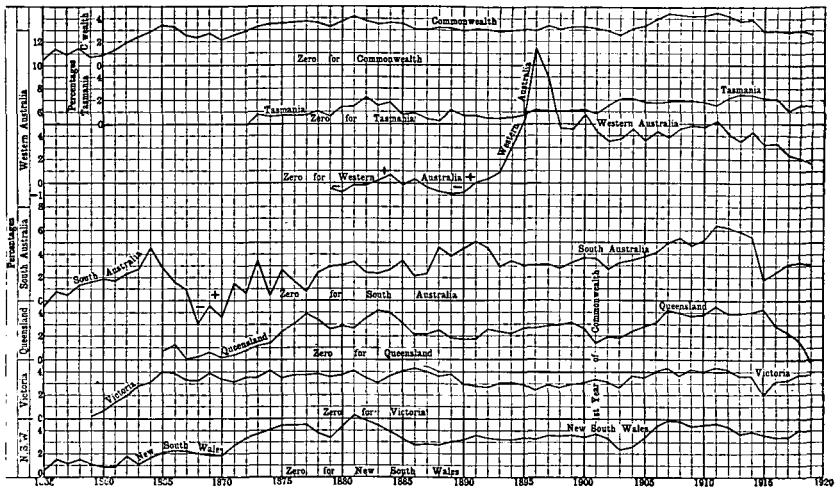


(See page 679.)

EXPLANATION OF GRAPH.—In the above diagram the base of each small square represents throughout one year. The vertical side of a small square denotes throughout 10 per cent., the heavy zero lines being different for each State and the Commonwealth, with, however, one exception, viz., that the zero line for South Australia and Western Australia is identical.

The curve for New South Wales commences in 1855; that for Victoria commences in 1859; that for Queensland in 1865; that for Tasmania in 1872; and that for Western Australia in 1879, these being the years in which the Government Railway systems of the several States were inaugurated.

GRAPH SHEWING PERCENTAGES OF NET REVENUE TO CAPITAL COST OF GOVERNMENT RAILWAYS OF STATES AND COMMONWEALTH, 1855 TO 1919.



(See page 681.)

EXPLANATION OF GRAPH.—In the above diagram the base of each small square represents throughout one year. The vertical side of a small square denotes 1 per cent., the thick zero lines, however, for each State and for the Commonwealth being different. This was necessary to avoid confusion of the curves.

Where the curve for any State falls below that State's zero line, loss is indicated, the working expenses having exceeded the gross revenue.

The curve for New South Wales commences in 1855; that for Victoria commences in 1859; that for Queensland in 1865; that for Tasmania in 1872; and that for Western Australia in 1879, these being the years in which the Government railway systems of the several States were inaugurated.

The total estimated length of streets and roads in the incorporated area in South Australia up to the 30th June, 1919, was as follows :—

**SOUTH AUSTRALIA.—ESTIMATED LENGTH OF ROADS AND STREETS IN THE INCORPORATED AREA, 1919.**

Particulars .. .. .	Woodblocked.	Macadamised.	Other.	Total.
Miles .. .. .	10	10,529	32,855	43,394

(ii) *Expenditure by Corporations on Main and District Roads.* The following table shows the expenditure by municipal corporations on both main and district roads for each year from 1915 to 1919 inclusive :—

**SOUTH AUSTRALIA.—EXPENDITURE BY CORPORATIONS ON STREETS, ROADS AND BRIDGES, 1915 TO 1919.**

Year ended 30th November—	District Roads.		Main Roads Fund.			
	Expenditure.		Receipts.		Expenditure.	
	Con- struction.	Main- tenance.	From Main Road Grants.	Total.	Con- struction.	Main- tenance.
	£	£	£	£	£	£
1915 .. ..	31,732	74,887	12,084	12,820	26	11,502
1916 .. ..	25,483	73,118	9,669	12,098	88	13,679
1917 .. ..	15,952	80,106	14,299	15,787	619	13,073
1918 .. ..	13,983	89,657	10,490	13,033	1,990	12,524
1919 .. ..	14,535	99,567	12,466	14,734	..	15,263

(iii) *Expenditure by District Councils on Main and District Roads.* The following table gives similar information with respect to main and district roads under the control of District Councils :—

**SOUTH AUSTRALIA.—EXPENDITURE BY DISTRICT COUNCILS ON STREETS, ROADS, AND BRIDGES, 1915 TO 1919.**

Year ended 30th June.	District Roads.		Main Roads Fund.			
	Expenditure.		Receipts.		Expenditure.	
	Con- struction.	Main- tenance.	From Main Road Grants.	Total.	Con- struction.	Main- tenance.
	£	£	£	£	£	£
1915 .. ..	51,625	85,119	114,722	114,781	15,571	102,679
1916 .. ..	41,283	79,515	83,264	84,738	12,493	61,172
1917 .. ..	47,337	79,377	109,044	111,567	18,809	72,644
1918 .. ..	62,280	103,219	126,682	126,865	41,319	103,312
1919 .. ..	67,194	108,862	120,635	120,790	28,481	97,991

7. *Western Australia.*—In Western Australia the construction, maintenance, and management of roads and bridges throughout the State are under the control of Municipalities constituted by the Municipal Corporation Acts 1906–1919, and District Road Boards constituted by the Road Districts Act 1919.

(i) *District Roads and Bridges.* Under the provisions of the Road Districts Act any part of the State, not within a municipality, may be constituted by the Governor in Council into a Road District, under the control of a board of not less than five nor more than thirteen members elected by the ratepayers. The board is invested with full powers for controlling and managing all roads and bridges within the district, and is empowered to make by-laws for the general regulation of traffic, to control the weight of engines and machines permitted to cross any bridge or culvert, to regulate the speed limits of vehicles, lights to be carried by vehicles, the lighting of streets and roads, and the licensing of bicycles and motor cars. A District Road Board may not, however, construct any road or street less than sixty-six feet wide without the consent of the Minister. The construction of the more important bridges and culverts is generally carried out by the Government, the work, after completion, being handed over to the Road Board for maintenance. In case of land being required for the purpose of constructing a new street or road, or for widening an existing street or road, the provisions of the Public Works Act of 1902 are incorporated in the Road Districts Act. A board may levy general rates within its district not exceeding two shillings, nor less than ninepence in the £ on the annual ratable value, and, if valued on the basis of unimproved values of lands, the general rate must not be over threepence nor under one penny in the £ on the capital unimproved value. Boards are also empowered to raise loans for works or undertakings or to liquidate existing loans, but the amount of such loans must not be greater than seven times the average ordinary revenue of the board. For the purpose of paying the interest on money borrowed a board may levy a special rate. District Road Boards may also exercise the powers of Drainage Boards under the provisions of the Land Drainage Act of 1900.

(ii) *Municipal Streets, Roads, and Bridges.* As regards roads, streets, and bridges within municipalities, these are under the control of local authorities elected under the provisions of the Municipal Corporations Acts 1906-15. The municipal councils are invested with full powers for making, maintaining, and managing all streets, roads, and bridges within the municipal area, and may request the Governor to declare any such land reserved, used, or by purchase or exchange acquired for a street or way, to be a public highway, and on such request the Governor may, by notice in the *Gazette*, proclaim such highway absolutely dedicated to the public.

(iii) *Length of Roads, Number of Bridges, and Expenditure on Roads and Bridges.* The following table gives particulars of the operations of the Road Boards since the 1st July, 1913 :—

**WESTERN AUSTRALIA.—PARTICULARS OF ROADS UNDER CONTROL OF DISTRICT ROAD BOARDS, 1914 TO 1918.**

Year ended 30th June.	Road Districts.	Area.	Revenue.				Expenditure.	Length of Cleared Roads.(d)				No. of Bridges and Culverts.	
			From Rates.	From Grants and Subsidies.	From other Sources.	Total.		Cleared only.	Cleared and Formed.	Metalled or otherwise Constructed.	Total.	Bridges.	Culverts.
1914	112	No. Sq. m.	£	£	£	£	£	Miles.	Miles.	Miles.	Miles.	No.	No.
1914	112	975,815	93,705	63,671	46,023	203,399	187,800	19,921	4,626	3,804	28,351 <sup>c</sup>	731 <sup>a</sup>	6,450 <sup>a</sup>
1915	112	975,815	88,569	27,753	47,571	163,893	193,033	19,641	4,674	4,039	28,354 <sup>a</sup>	781	6,649
1916	113	975,827	104,345	24,397	38,820	167,562	166,340	19,258	4,503	5,076	28,837 <sup>a</sup>	760	6,907
1917	117	975,828	113,686	30,226	55,363	199,295	189,177	19,903	5,680	4,359	29,942 <sup>b</sup>	839 <sup>b</sup>	7,433 <sup>b</sup>
1918	116	975,830	116,245	32,594	46,187	195,026	206,165	20,691	5,937	4,390	31,018 <sup>a</sup>	906 <sup>a</sup>	7,817 <sup>a</sup>

(a) Exclusive of two Boards which have not supplied the information. (b) Exclusive of three Boards.  
(c) Exclusive of four Boards. (d) Approximate only.

The following table gives similar information with reference to roads controlled by municipalities under the Municipal Corporations Act 1906 :—

**WESTERN AUSTRALIA.—PARTICULARS OF STREETS, ROADS, AND BRIDGES  
UNDER THE CONTROL OF MUNICIPALITIES, 1914 TO 1918.**

Year ended the 31st October.	No. of Municipalities.	Length of Streets and Roads.(a)					Revenue.		Expenditure.	
		Paved, Metalled, or Gravelled.	Formed only.	Cleared only.	Not Cleared.	Total.	From Rates.	From Grants.	Works and Improvements.	Street Lighting and Watering.
		Miles.	Miles.	Miles.	Miles.	Miles.	£	£	£	£
1914 ..	33	551	95	257	290	1,193	153,686	13,142	223,098	19,056
1915 ..	31	570	92	254	279	1,195	170,675	10,309	190,739	24,959
1916 ..	30	559	88	253	238	1,138	166,617	9,462	120,411	24,952
1917 ..	28	562	94	244	238	1,138	167,997	7,813	73,991	23,481
1918 ..	25	562	103	231	224	1,120	171,315	1,870	75,086	25,580

(a) Approximate only.

8. *Tasmania.*—(i) *Construction.* In Tasmania the cost of construction of roads, tracks, and bridges (and in earlier days of streets) has been borne almost entirely by the Central Government.

Up to the 30th June, 1919, the loan expenditure on these works has been £3,493,835. In addition, half the proceeds of the sale of land has formed a Crown Lands Fund for the construction of roads to new holdings. Under this provision £639,111 has been expended. This fund has in recent years more than met the demands on it, and expenditure therefrom since 1918 has been limited to £10,000 annually, the balance being used for redemption of debt.

**ROADS, STREETS, TRACKS, AND BRIDGES—EXPENDITURE ON CONSTRUCTION.**

Period.	Expenditure.		New-road Mileage.		New Bridges.
	Loans.	Crown Lands Fund.	Cleared.	Metalled.	
	£	£	Miles.	Miles.	No.
Total up to 31st December, 1902 ..	1,932,919	332,845	..	..	..
Yearly average—					
1903–7 .. ..	30,611	26,845	103	26	11
1907–11 .. ..	92,416	21,946	205	105	13
1911–15 .. ..	160,730	18,233	234	208	50
1915–19 .. ..	105,097	6,186	94	113	49
Year 1918–19 .. ..	90,101	6,995	81	89	36
Total to 30th June, 1919 .. ..	3,493,835	639,111	..	..	..

The total length of roads at the end of 1919 may be taken as approximately 12,000 miles, of which about half is metalled or gravelled.

(ii) *Maintenance.* The maintenance of roads and bridges is undertaken by the municipalities with some assistance from the Central Government, chiefly by way of subsidy. Under the Aid to Road Rates Act £11,000 are distributed annually among the municipalities, in proportion as the cost of maintenance falls on their resources. Under the Main Roads Maintenance Act 1918 a further sum of £5,000 was provided out of Consolidated Revenue, which, with the addition of the Motor Tax, less 5 per cent., made a total of £13,000 available in 1919, this amount, with a contribution from municipalities, being expended on the upkeep of main roads. The work is carried out in most cases by municipalities, under the general direction of an Advisory Board, on which the Government, the municipalities, and the motorists are all represented. The Government also provides for repair of the more important bridges and for emergency work.

The municipal expenditure on roads (excluding Hobart and Launceston streets) is practically supplied by the road rate, which must by law be between sixpence and eighteen pence in the pound of annual value. The average road rate actually collected has slightly increased from 10.7 pence in the pound in 1908 (the first year of the present municipalities) to 11.6 pence in the pound in 1918.

**EXPENDITURE ON MAINTENANCE OF ROADS AND BRIDGES IN MUNICIPALITIES  
(EXCLUDING HOBART AND LAUNCESTON).**

Year.					From Municipal Road Rate.	From State Revenue.
					£	£
1908	..	..	..	..	42,240	17,339
Average 1909-12	..	..	..	..	48,759	19,259
Average 1913-17	..	..	..	..	55,722	20,123
1918	..	..	..	..	58,626	23,062
1919	..	..	..	..	(a)	29,986

(a) Not available.

## § 2. Railways.

### (A) General.

1. **Introduction.**—In the issues of the Commonwealth Year Book, Nos. 1-7, the statistics of all Government railway systems were treated under the head of *Government Railways*. In the following issues, Nos. 8 to 12, the greater part of those statistics relating to State-owned lines was dealt with separately from those under the control of the Commonwealth Government. This arrangement is continued in the present issue. The State railways are referred to throughout as "State" and the Commonwealth railways as "Federal" railways. There is, however, a summary of the working of the Federal and States' railways in part (E) of the present section.

2. **Railway Statistics.**—In some of the earlier issues of the Year Book will be found a condensation of the report issued in 1909 by the Commonwealth Statistician to the Minister for Home Affairs on the subject of *The Desirability of Improved Statistics of Government Railways in Australia* (see Year Book No. 7, page 598).

3. **Railway Communication in the Commonwealth.**—An account of the progress in railway construction in Australia since the opening of the first line in 1854 will be found in Year Book No. 6, p. 681. In the eastern, south-eastern, and southern parts of Australia there now exists a considerable network of railway lines converging from the various agricultural, pastoral and mining districts towards the principal ports, which are themselves connected by systems of lines running approximately parallel to the coast. These are shewn on the map on page 645. In the east, lines radiating from Cairns, Townsville, Rockhampton, Brisbane, and Sydney extend inland in various directions for distances ranging up to over 600 miles; in the south-east there are numerous lines, those in Victoria converging towards Melbourne, while others in New South Wales have their terminus in Sydney; in the south there are four main lines, with numerous branches, running from Melbourne, while from Adelaide one main line, with several branches to the coastal towns, runs inland in a northerly direction for a distance of nearly 700 miles, and another line runs in a south-easterly direction to various ports, meeting the main line from Melbourne on the border of South Australia and Victoria near Serviceton. The South Australian and Victorian railway systems also meet on the border at two other points, one near Pinnaroo, and the other at Rennick near Mount Gambier. By the opening, in 1917, of the Trans-Australian railway from Port Augusta to Kalgoorlie, through communication by rail was established between the eastern States and the Western Australian railway system. The main interstate line (indicated by a heavier line in the map), which permits of direct communication between the five capital cities—Brisbane, Sydney, Melbourne, Adelaide, and Perth—covers a distance from end to end of 3,474.65 miles or 3,479.67 miles via Newcastle. The scheduled time for the journey from Brisbane to Perth is six days and forty-seven minutes. In the opposite direction the journey is scheduled to occupy five days, eighteen hours and forty minutes. Both of these are the times taken over all.

In the following tables particulars are given of the gauges of lines, changing stations and duration of stops thereat, arrival and departure times, distances and average speeds on the journey from Brisbane to Perth, and *vice versa* :—

## BRISBANE TO PERTH.

Gauge of Line.	Terminal or Changing Stations.	Times.		Day on Journey. (a)	Actual Time.	Duration of Stops at Changing Stations.	Intermediate Distance.	Total Distance from Brisbane.	Average Speed. (b)
		Arr.	Dep.						
ft. in.					h. m.	h. m.	miles.	miles.	m.p.h.
3 6	Brisbane ..	—	8.5 a.m.	Monday..	—	—	—	—	—
4 8½	Wallangarra ..	5.55 p.m.	6.17 p.m.	" ..	9 50	0 22	223.46	223.46	22.72
4 8½	Sydney ..	11.25 a.m.	7.25 p.m.	Tuesday	17 8	8 00	4497.38	720.84	29.03
4 8½	Albury ..	7.23 a.m.	7.47 a.m.	Wednesday	11 58	0 24	401.62	1,122.46	33.56
5 3	Melbourne ..	12.51 p.m.	4.30 p.m.	" ..	5 4	3 39	190.50	1,812.96	37.60
5 3	Adelaide ..	9.55 a.m.	10.45 a.m.	Thursday	17 55	0 50	483.05	1,796.01	26.96
5 3	Terowie ..	3.40 p.m.	4.10 p.m.	" ..	4 55	0 30	139.81	1,935.82	28.44
3 6	Port Augusta ..	10.5 p.m.	10.40 p.m.	" ..	5 55	0 35	119.33	2,055.15	20.17
4 8½	Kalgoorlie..	10.23 a.m.	3.25 p.m.	Saturday	37 13	5 02	1,051.30	3,106.45	28.25
3 6	Perth ..	6.52 a.m.	—	Sunday	15 27	—	373.22	3,479.67	24.16
				Total ..	125 25	19 22	3,479.67	—	27.74

## PERTH TO BRISBANE.

Gauge of Line.	Terminal or Changing Stations.	Times.		Day on Journey. (a)	Actual Time.	Duration of Stops at Changing Stations.	Intermediate Distance.	Total Distance from Perth.	Average Speed. (b)
		Arr.	Dep.						
ft. in.					h. m.	h. m.	miles.	miles.	m.p.h.
3 6	Perth ..	—	10.0 p.m.	Monday..	—	—	—	—	—
4 8½	Kalgoorlie..	1.30 p.m.	2.15 p.m.	Tuesday	15 30	0 45	373.22	373.22	24.08
4 8½	Port Augusta ..	5.0 a.m.	8.35 a.m.	Thursday	37 15	3 35	1,051.30	1,424.52	28.22
3 6	Terowie ..	2.46 p.m.	3.16 p.m.	" ..	6 11	0 30	119.33	1,543.85	19.30
5 3	Adelaide ..	7.50 p.m.	8.30 p.m.	" ..	4 34	0 40	139.81	1,683.66	30.62
5 3	Melbourne ..	1.3 p.m.	5.0 p.m.	Friday ..	16 3	3 57	483.05	2,166.71	30.10
5 3	Albury ..	10.21 p.m.	10.40 p.m.	" ..	5 21	0 19	190.50	2,357.21	35.61
4 8½	Sydney ..	10.45 a.m.	3.30 p.m.	Saturday	12 5	4 45	401.62	2,758.83	33.24
4 8½	Wallangarra ..	9.5 a.m.	9.30 a.m.	Sunday	17 35	0 25	4497.38	3,256.21	28.29
3 6	Brisbane ..	6.40 p.m.	—	" ..	9 10	—	223.46	3,479.67	24.38
				Total ..	123 44	14 56	3,479.67	—	28.12

(a) The days here given are for the purposes of time table interpretation. They are not the only days on which the service is provided. (b) Inclusive of stops between changing stations. (c) Runs via Newcastle. (d) 11.53 a.m. on Mondays.

The time allowed for the journey from Port Augusta to Kalgoorlie, 37 hours 13 minutes (actual), gives an average speed of 28.25 miles per hour throughout inclusive of stoppages. Exclusive of stoppages, which aggregate slightly under three hours, the average speed is about 30.72 miles per hour. In the opposite direction the gross time is 37 hours 15 minutes (actual), which gives an average speed of 28.22 miles per hour. Exclusive of stoppages, which aggregate about 3 hours 10 minutes, the average speed is 30.84 miles per hour.

The average speed inclusive of all stops is 24.03 miles per hour on the journey from Brisbane to Perth, and 25.12 miles per hour on the return journey.

The longest railway journey which can be undertaken in Australia, on one continuous line of railway, is from Longreach in Queensland to Meekatharra in Western Australia, a total distance of 4,760.16 miles.

In Western Australia there is a connected system of main or trunk lines between the ports of the State and the agricultural, pastoral, and mining districts, while there are also two short lines, one on the north-west, the other on the south coast, which are unconnected with the main system. In the northern parts of Queensland and in the Northern Territory there are also several disconnected lines running inland from the more important ports. In Tasmania the principal towns are connected by a system of lines, and there are also, more especially in the western districts, several lines which have been constructed for the purpose of opening up mining districts.



**4. Standard Times in Australia.**—In Year Book No. 12, p. 630, particulars are given in regard to standard times now in use in the Australian States, and an explanation is made as to the mode in which the difference of time between Adelaide and Perth is dealt with on the Trans-Australian Railway. Owing to limits of space it has not been possible to repeat this information in the present volume.

**5. Non-conformity of Gauge.**—With but few exceptions, all the railway lines in the Commonwealth open for general traffic are now owned and managed by the respective States in whose territory they run, or by the Commonwealth Government; but, unfortunately for the purpose of interstate traffic, the construction of the various systems in different parts of Australia has proceeded without uniformity of gauge. In 1846 Mr. Gladstone, then Colonial Secretary, recommended in a despatch to the Governor of New South Wales that the 4-ft. 8½-in. gauge should be adopted. In 1850, however, the engineer to the Sydney Railroad and Tramway Company strongly advocated the adoption of the 5-ft. 3-in. gauge, and in 1852 an Act was passed making it compulsory that all railways in New South Wales should be constructed to the wider gauge, the Governors of Victoria and South Australia being duly advised of the step that had been taken. In 1852, however, the company mentioned having changed its engineer, also changed its views as to the gauge question, and in the following year succeeded in obtaining the repeal of the Act of 1852 and in securing the passing of another, under the provisions of which the narrower gauge was made imperative. This step was taken without the concurrence of the other States concerned, and a considerable amount of ill-feeling arose, especially in Victoria, where two private companies had already placed large orders for rolling stock to be constructed to the broad gauge originally chosen. The result was that it was decided in Victoria to adhere to the 5-ft. 3-in. gauge as the standard gauge for the State, while the Sydney Railroad and Tramway Company proceeded with the construction of its lines to the 4-ft. 8½-in. gauge, and these two gauges have since been adhered to as the standard gauges of the respective States. The Queensland Government had, at the outset, adopted a gauge of 3-ft. 6-in. as being best suited to the requirements of the colony, and has since adhered to that gauge throughout the State, so that all goods requiring conveyance into New South Wales or *vice versa* have to be transhipped at the boundary between the two States. In June, 1914, however, the Queensland Government purchased two short lengths of line laid on a 2-ft. gauge. In South Australia the 5-ft. 3-in. gauge was adopted, but in 1870, on the grounds of economy, the 3-ft. 6-in. gauge was introduced, and many of the lines in South Australia have been constructed with that gauge. The interstate line between Adelaide and Melbourne was opened as a through route in January, 1887, and is of the 5-ft. 3-in. gauge throughout. At the 30th June, 1919, of the 2,289.98 miles of State Government railways in South Australia 1,209.59 miles were of 3-ft. 6-in. gauge, exclusive of 477.96 miles of the same gauge from Port Augusta to Oodnadatta belonging to the Federal Government. In the Northern Territory the line from Darwin to Katherine, 199.56 miles in length, is of 3-ft. 6-in. gauge. In Western Australia the 3-ft. 6-in. gauge was also adopted. In Tasmania the first line made had a gauge of 5-ft. 3-in., but it was converted in 1887 to 3-ft. 6-in., which, with the exception of three short lines with a 2-ft. gauge, is the present gauge of the Government and most of the privately-owned lines. It was recognised in both these States that the construction of railways was essential to their proper development, but as their financial resources would not bear a heavy initial expenditure in connexion with the establishment of railway lines, it was decided to adopt the narrow gauge. In Victoria, short lengths of light railways have been constructed to a gauge of 2-ft. 6-in. of an aggregate length of 121.90 miles.

**6. Interstate Communication.**—Until the railway systems of the eastern States were connected at the common boundaries, the inconvenience of non-conformity of gauge was not felt. Since then, however, the necessary transshipments of both passengers and goods have been a source of increasing trouble, delay, and expense. On the 14th June, 1883, a railway bridge over the River Murray at Wodonga was opened for traffic, and railway communication was then established between Melbourne and Sydney. On the 19th January, 1887, the last section of the Victorian line to Serviceton, on the South Australian border, was completed, and a junction was thus effected with the South Australian line to Adelaide. On the 16th January, 1888, a junction was effected between the New South Wales and Queensland lines at Wallangarra, but there was still a break in the

line from Sydney at the Hawkesbury River, thirty-six miles from Sydney. This last link was, however, completed on the 1st May, 1889, by the opening of the Hawkesbury River bridge, 2,900 feet in length, and railway communication was thus established between the four capital cities, Brisbane, Sydney, Melbourne, and Adelaide.

By the opening of the Trans-Australian railway, to which reference has already been made, Western Australia is now linked to the other States, and an unbroken line of communication established from one side of the continent to the other. The construction, moreover, of lines decided upon, and in some cases already made, connecting Victoria with the Riverina district in New South Wales and with the wheat-growing districts of South Australia, will undoubtedly facilitate interstate exchange and will allow the produce of inland areas to find its natural outlet at the nearest port.

**7. Unification of Gauge.**—The development of the railway systems of the Commonwealth has shewn that the adoption of different gauges on the main lines in the several States was a serious error. As already mentioned, the extra cost, delay, and inconvenience incurred by the necessity of transferring through-passengers and goods at places where there are breaks of gauge are becoming more serious as the volume of business increases. As an indication of the extra cost thus involved, the junction charges on interstate traffic between New South Wales and Victoria range from 1s. 6d. to 2s. 6d. per ton.

Although the cost of alteration to a uniform gauge would be great, many propositions have from time to time been put forward with the object of securing such a gauge, and attention has been drawn to the importance of the unification of gauges before further expenditure on railway construction is incurred by the States. The problem is, however, one which is by no means easy of solution, and the difficulties are increased by the introduction of what may be called questions of local or State policy.

The first question that naturally arises in considering the problem is as to which gauge should be adopted as the universal gauge of the Commonwealth. As regards State Government railways, the 4-ft. 8½-in. gauge has a mileage of 4,784.58, all in New South Wales; Victoria and South Australia have a combined mileage of 5,148.01 of 5-ft. 3-in. gauge; while New South Wales, Queensland, South Australia, and Western Australia have together 10,228.01 miles of 3-ft. 6-in. gauge. In addition, the Commonwealth Government has (i) of 4-ft. 8½-in. gauge 4.94 miles in the Federal Territory, 597.36 miles in South Australia, and 453.94 miles in Western Australia, and (ii) of 3-ft. 6-in. gauge 477.96 miles in South Australia, and 199.56 miles in the Northern Territory. By far the greater part of the mileage of private railways open for general traffic has also been constructed to the 3-ft. 6-in. gauge. The mere question of preponderance of mileage, therefore, indicates the 3-ft. 6-in. gauge for adoption. But this question is obviously subordinate to those involving engineering and economic considerations. Thus, the relative efficiency from the widest point of view, the relative costs of alterations of the permanent way and rolling stock, of carrying capacity and speed, that is to say, questions of a technical nature about which figures are not available, enter into the grounds for decision.

Many conferences on the subject of the unification of gauge have taken place from time to time both between the Railways Commissioners and also between the Premiers of the States concerned, and references to these conferences have been made in previous issues of the Year Book (see No. 11, pp. 657-8). A conference between the engineers of the Commonwealth and States Railways was held in Melbourne in August, 1918. Much consideration was given to the devices to deal with the break-of-gauge question, which had been submitted to the conference, but all of them failed to meet the requirements of the conditions laid down by the conference in order to ensure both safety and celerity of action in train working.

In June, 1920, a conference took place at Sydney between the Commonwealth and State Railway Engineers. Four proposals were dealt with, of which the third was considered the most satisfactory compromise for present conditions of traffic. This proposal favored the conversion of existing lines between the capitals and the construction of such new lines as are advisable, to the 4-ft. 8½-in. gauge, the cost of which was estimated at £26,581,000, of which £8,154,000 would be for new line construction.

In July, 1920, a conference took place at Melbourne between the Commonwealth and State representatives of three Governments, and a decision was arrived at under which a committee, consisting of two experts from abroad and an Australian representative not connected with the Railways, was to consider the whole question of gauge unification and report to the various Governments concerned as to the best course to be adopted.

8. **Rolling Stock Gauges.**—Allied to the question of the gauges of the railways of Australia is that of the rolling stock gauges which are in use, the rolling stock gauge being the maximum transverse dimensions to which the rolling stock may be constructed. In the following table will be found particulars of the rolling stock gauges, together with maximum length and weights of vehicles, at present in use on the Government railways, State and Federal :—

**STATE AND FEDERAL GOVERNMENT RAILWAYS.—ROLLING STOCK GAUGES  
IN USE, 1919.**

**PASSENGER ROLLING STOCK.**

Railway.	Gauge of Track.	Maximum Rolling Stock Gauge.			Maximum Tare.
		Width.	Height above Rail Level.	Length over all.	
	ft. in.	ft. in.	ft. in.	ft. in.	t. c. q.
New South Wales .. ..	4 8½	9 8	14 0	74 4½	44 2 1
Victoria .. ..	5 3	10 0	14 2	74 1½	47 16 0
" .. ..	2 6	7 0½	10 4½	31 8	8 11 0
Queensland .. ..	3 6	9 4	12 9	53 5	26 17 0
" .. ..	2 0	6 3½	10 0	22 0	3 0 0
South Australia .. ..	5 3	10 4½	14 1½	74 1½	40 11 0
" .. ..	3 6	9 4½	12 1	62 6	24 18 0
Western Australia .. ..	3 6	8 10	12 7	61 8	31 10 0
Tasmania .. ..	3 6	9 6	12 5	64 0	30 0 0
" .. ..	2 0	6 6	10 0	30 2	5 10 1
Federal—					
Trans-Australian .. ..	4 8½	10 6	14 6	78 9½	50 0 0
Northern Territory .. ..	3 6	9 4	12 9	33 6	11 0 0
Oodnadatta .. ..	3 6	10 2	12 4	33 6	11 0 0

**GOODS ROLLING STOCK.**

Railway.	Gauge of Track.	Maximum Rolling Stock Gauge.			Maximum—	
		Width.	Height above Rail Level.	Length over all.	Tare.	Carrying Capacity.
	ft. in.	ft. in.	ft. in.	ft. in.	t. c. q.	t. c. q.
New South Wales .. ..	4 8½	9 8	13 6	60 11	20 10 3	40 0 0
Victoria .. ..	5 3	9 7½	13 7½	55 4½	20 13 1	30 0 0
" .. ..	2 6	6 5½	9 7½	27 3½	7 12 2½	10 0 0
Queensland .. ..	3 6	8 0	12 0	45 5	11 10 0	21 8 0
" .. ..	2 0	6 6	9 0	22 0	4 10 0	16 0 0
South Australia .. ..	5 3	10 0½	12 10½	43 6	16 0 0	30 0 0
" .. ..	3 6	8 6	12 1	38 9	11 15 0	25 0 0
Western Australia .. ..	3 6	8 8	12 6	44 9	17 18 0	27 0 0
Tasmania .. ..	3 6	8 6	11 0	40 10	12 5 0	30 0 0
" .. ..	2 0	6 0	6 6	27 0	5 15 2	20 0 0
Federal—						
Trans-Australian .. ..	4 8½	10 6	14 6	45 0	15 0 0	40 0 0
Northern Territory .. ..	3 6	9 4	12 9	32 6	6 0 0	10 0 0
Oodnadatta .. ..	3 6	10 2	12 4	18 0	5 0 0	12 0 0

In the above tables the transverse dimensions given are not necessarily those of one particular vehicle, but are the greatest employed on any vehicle.

It will be observed that the dimensions adopted by the Federal Government for the Trans-Australian Railway are in excess of those at present in use on the 5-ft. 3-in. gauge lines of Victoria and South Australia, and the 4-ft. 8½-in. gauge lines of New South Wales. It is, however, the intention of the latter State to adopt the Federal standard as soon as possible, and with that end in view a commencement has been made in the Sydney suburban area in the enlargement of bridges, tunnels, buildings and platforms to enable the larger rolling stock to be employed. The question of standard couplings on the New South Wales lines is also receiving attention.

**9. Mileage Open for Traffic.**—In all the States of the Commonwealth the principle that the control, construction, and maintenance of the railways should be in the hands of the Government has long been adhered to, excepting in cases presenting unusual circumstances. In various parts of the Commonwealth, lines have been constructed and managed by private companies, but at the present time nearly the whole of the railway traffic in the Commonwealth is in the hands of the various State Governments or of the Commonwealth Government. A large proportion of the private lines which are at present running have been laid down for the purpose of opening up forest lands, mining districts, or sugar areas, and are not generally used for the conveyance of passengers or the public conveyance of goods. (See (F) *Private Railways*, hereinafter.)

*Mileage of Government and Private Lines, 1855 to 1919.* The subjoined table shows the mileage of Commonwealth Government, State Government, and private lines open for traffic (exclusive of sidings and cross-overs) in each State at different periods since the inauguration of railways in Australia in 1854 up to the year 1919. The railway mileage given for each State includes both Commonwealth and State Government railways in that State, and in this table and in those on the following page, is estimated from the geographic point of view and not from that of ownership. The figures from 1855 to 1881 are given to the end of the calendar year; the later figures are to the end of the financial year ended on the 30th June, unless otherwise stated, excepting the mileages for private lines, which are in most cases taken for the calendar year:—

**GOVERNMENT AND PRIVATE RAILWAYS.—MILEAGE OPEN, 1855 TO 1919.**

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	Federal Territory	Nor. Ter.	C'wealth.
	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.
1855 ..	14	2½	..	6½ <sup>a</sup>	..	..	..	..	23¼
1861 ..	73	114	..	56	..	..	..	..	243
1871 ..	358	276	218	133	12	45	..	..	1,042
1881 ..	1,040	1,247	800	845	92	168	..	..	4,192
1890-1	2,263	2,763	2,205	1,666	656 <sup>b</sup>	425 <sup>b</sup>	..	145	10,123
1900-1	2,926	3,238	2,904	1,736	1,984	618 <sup>c</sup>	..	145	13,551
1910-11	4,027	3,574	4,390	1,993	3,208	675	..	145	18,012
1913-14	4,246	3,886	5,213	2,357	3,910	766½	5	146	20,529½
1914-15	4,439	3,936½	5,449½	2,955	4,553	779½	5	146	22,263½
1915-16	4,491½	4,152½	6,452½	3,060½	4,707½	758½	5	146	23,773½
1916-17	4,781½	4,176½	6,702½	3,241½	4,878½	783½	5	199½	24,769
1917-18	5,025	4,222½	6,769½	3,356½	4,904½	781½	5	199½	25,264½
1918-19	5,170	4,260½	6,841½	3,404	4,965½	811	5	199½	25,657

<sup>a</sup> The line between Goolwa and Port Elliot was opened in 1854 as a horse tramway, but now forms part of the railway system. <sup>b</sup> To the 31st December, 1891. <sup>c</sup> To the 31st December, 1901.

It will be seen from the above table that the rate of construction up to the year 1871 was very slow, the average annual length of lines opened from 1861 to 1871 being only 80 miles for the whole Commonwealth. By the middle of the following decade, however, the principal mountain ranges had been crossed, and the work of construction could be proceeded with at a greater rate, and at a less cost per mile. A great period of activity was from 1881 to 1891, when the average annual length opened for traffic was 593 miles for the whole Commonwealth; the corresponding figures for the periods from June, 1891, to June, 1901, and from June, 1901, to June, 1911, were 343 and 446 miles respectively. Since June, 1911, the average annual length opened for traffic has been 765 miles.

10. **Comparative Mileage of Government and Private Lines, 1919.**—The subjoined table shews for each State (a) the length of lines owned by the State Government, and by the Commonwealth Government in that State, all of which lines are open for general use by the public, (b) the length of private lines available for general use by the public, and (c) the length not so available. The mileages specified in the case of Government lines are to the 30th June, 1919; those given for private lines are as nearly as possible to the 31st December, 1918:—

**GOVERNMENT AND PRIVATE RAILWAYS.—MILEAGE OF GOVERNMENT LINES, OF PRIVATE LINES AVAILABLE FOR GENERAL TRAFFIC, AND OF PRIVATE LINES NOT SO AVAILABLE, 1918-19.**

State or Territory.	Government Lines—		Private Lines available for General Traffic.	Total Open for General Traffic.	Private Lines used for Special Purposes only.	Grand Total.
	State.	Federal.				
	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.
New South Wales	4,824.67	..	184.32	5,008.99	160.83	5,169.82
Victoria ..	4,189.52	..	24.94	4,214.46	46.12	4,260.58
Queensland ..	5,469.45	..	440.85	5,910.30	931.11	6,841.41
South Australia	2,289.98	1,075.32	33.80	3,399.10	5.00	3,404.10
Western Australia	3,538.23	453.94	278.35	4,270.52	694.96	4,965.48
Tasmania ..	601.54	..	162.86	764.40	46.63	811.03
Federal Territory	..	4.94	..	4.94	..	4.94
Northern Territory	..	199.56	..	199.56	..	199.56
Total ..	20,913.39	1,733.76	1,125.12	23,772.27	1,884.65	25,656.92

11. **Comparative Railway Facilities in Different States and Territories, 1919.**—The relations to populations and areas respectively of the mileage of line open to the public for general traffic (including both Government and private lines) on the 30th June, 1919, are shewn in the subjoined statement for each State, the Federal and Northern Territories, and also for the Commonwealth:—

**GOVERNMENT AND PRIVATE RAILWAYS.—COMPARISON OF RAILWAY FACILITIES IN DIFFERENT STATES AND TERRITORIES, 1919.**

State or Territory.	Population, 30th June, 1919.	Area.	Mileage of Railway.	
			Per 1,000 of Population.	Per 1,000 sq. miles of Territory.
	Number.	Sq. miles.	Miles.	Miles.
New South Wales ..	1,963,203	309,432	2.63	16.71
Victoria ..	1,467,188	87,884	2.90	48.48
Queensland ..	712,829	670,500	9.60	10.20
South Australia ..	455,944	380,070	7.47	8.96
Western Australia ..	323,220	975,920	15.36	5.09
Tasmania ..	210,881	26,215	3.85	30.94
Federal Territory ..	2,357	940	2.10	5.26
Northern Territory ..	4,921	523,620	40.55	0.38
Commonwealth ..	5,140,543	2,974,581	4.99	8.63

12. **Classification of Lines according to Gauge, 1918-19.**—The subjoined table gives a classification, according to gauge, of the total mileage, exclusive of sidings and cross-overs, of (i) Commonwealth Government railways, given in the State or Territory in which situated; (ii) State Government railways; (iii) Private railways open to the

public for general traffic; and (iv) Private lines open for special purposes. Particulars of Government railways are up to the 30th June, 1919, of private railways open for general traffic to the 31st December, 1918, and of private railways open for special purposes to the 31st December, 1918, as nearly as possible.

### GOVERNMENT AND PRIVATE RAILWAYS.—CLASSIFICATION ACCORDING TO GAUGE, 1918-19.

State or Territory in which situated.	Route Mileage having a Gauge of—							Total.
	5 ft. 3 in.	4 ft. 8½ in.	3 ft. 6 in.	3 ft. 0 in.	2 ft. 6 in.	2 ft. 0 in.	1 ft. 8 in.	

#### FEDERAL RAILWAYS.

	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.
South Australia ..	..	597.36	477.96	..	..	..	..	1,075.32
Western Australia ..	..	453.94	..	..	..	..	..	453.94
Federal Territory ..	..	4.94	..	..	..	..	..	4.94
Northern Territory ..	..	..	199.56	..	..	..	..	199.56
Total ..	..	1,056.24	677.52	..	..	..	..	1,733.76

#### STATE RAILWAYS.

New South Wales ..	..	4,784.58	40.09	..	..	..	..	4,824.67
Victoria ..	4,067.62	..	..	..	121.90	..	..	4,189.52
Queensland ..	..	..	5,440.10	..	..	29.35	..	5,469.45
South Australia ..	1,080.39	..	1,209.59	..	..	..	..	2,289.98
Western Australia ..	..	..	3,538.23	..	..	..	..	3,538.23
Tasmania ..	..	..	577.96	..	..	23.58	..	601.54
Total ..	5,148.01	4,784.58	10,805.97	..	121.90	52.93	..	20,913.39

#### PRIVATE RAILWAYS OPEN FOR GENERAL TRAFFIC.

New South Wales ..	45.00	76.40	36.67	..	..	26.25	..	184.32
Victoria ..	13.94	..	..	11.00	..	..	..	24.94
Queensland ..	..	..	253.22	..	7.00	180.63	..	440.85
South Australia ..	..	..	33.80	..	..	..	..	33.80
Western Australia ..	..	..	278.35	..	..	..	..	278.35
Tasmania ..	..	..	152.87	..	..	9.99	..	162.86
Total ..	58.94	76.40	754.91	11.00	7.00	216.87	..	1,125.12

#### PRIVATE RAILWAYS OPEN FOR SPECIAL PURPOSES.

New South Wales ..	..	157.33	3.50	..	..	..	..	160.83
Victoria ..	28.83	..	..	4.29	..	13.00	..	46.12
Queensland ..	..	..	202.97	..	10.00	718.14	..	931.11
South Australia ..	..	..	..	..	..	5.00	..	5.00
Western Australia ..	..	..	616.06	..	..	50.00	28.00	694.06
Tasmania ..	..	..	31.63	..	..	15.00	..	46.63
Total ..	28.83	157.33	855.06	4.29	10.00	801.14	28.00	1,884.65

#### ALL RAILWAYS.

New South Wales ..	45.00	5,018.31	80.26	..	..	26.25	..	5,169.82
Victoria ..	4,110.39	..	..	15.29	121.90	13.00	..	4,260.58
Queensland ..	..	..	5,896.29	..	17.00	928.12	..	6,841.41
South Australia ..	1,080.39	597.36	1,721.35	..	..	5.00	..	3,404.10
Western Australia ..	..	453.94	4,433.54	..	..	50.00	28.00	4,965.48
Tasmania ..	..	..	762.46	..	..	48.57	..	811.03
Federal Territory ..	..	4.94	..	..	..	..	..	4.94
Northern Territory ..	..	..	199.56	..	..	..	..	199.56
GRAND TOTAL	5,235.78	6,074.55	13,093.46	15.29	138.90	1,070.94	28.00	25,656.92

**(B) Federal Railways.**

**1. General.**—On the 1st January, 1911, the Commonwealth Government took over the Northern Territory from the South Australian Government, and at the same time the railways from Darwin to Pine Creek, in the Northern Territory, and from Port Augusta to Oodnadatta, in South Australia, came under its control. Subsequently, the construction of a transcontinental line from Port Augusta, in South Australia, to Kalgoorlie, in Western Australia, was undertaken by the Commonwealth Government, while a line has been constructed in the Federal Territory, connecting Canberra with the New South Wales railway system at Queanbeyan. In 1917 an Act was passed by which all the Federal railways are vested in a Commissioner.

**2. Trans-Australian Railway (Kalgoorlie to Port Augusta).**—A Federal Act passed in 1907 provided for the expenditure of a sum of £20,000 for a preliminary survey of a railway line connecting Western Australia with the eastern States. This survey was commenced in 1908, and completed in March, 1909. The route *via* Tarcoola was, for several reasons, chosen in preference to that *via* Gawler Range and Fowler's Bay. The estimated cost of construction and equipment of the line on the basis of a 4-ft. 8½-in. gauge, from Port Augusta in South Australia to Kalgoorlie in the Western Australian goldfields, a distance of 1,063 miles, was £4,045,000. In September, 1911, a Bill was introduced into the Commonwealth Parliament to authorise the construction of the line, and it became law in December following. In South Australia an Act was passed enabling the Commonwealth to acquire lands for the railway in South Australia not exceeding one-eighth of a mile wide on either side of the line, but no town lands are to be included at any time. In Western Australia, an Act was also passed by which all necessary lands are to be granted to the Commonwealth for railway purposes. A Railway Construction Department was created by the Federal Government to carry out the work, which was commenced at Port Augusta in September, 1912. On 12th September the ceremony of cutting the first sod was performed at Port Augusta by the Governor-General, Lord Denman, in the presence of a representative gathering, and on the 12th February, 1913, a like ceremony was performed at Kalgoorlie by the Prime Minister of the Commonwealth (the Right Hon. Andrew Fisher), and the line was thus commenced at both ends.

On the 17th October, 1917, the eastern and western divisions met at 621 miles 58 chains *ex* Kalgoorlie, and railway communication between Western Australia and the eastern States was thus established.

In the issue of the Year Book for 1918 (No. 11, pp. 663 to 666 and p. 1213) a short description was given of the country through which the line passes between Kalgoorlie and Port Augusta, together with particulars of the rate of construction, permanent way, water supply, rolling stock, etc.

On the 22nd October, 1917, the first through train left Port Augusta with an official party on board for Kalgoorlie. It should be mentioned that owing to deviations from the original route, the length of this line was reduced from 1,063.39 miles to 1,051.30 miles, a saving of 12.09 miles.

**3. Oodnadatta Line.**—This line was taken over by the Commonwealth Government from 1st January, 1911, but was held under lease by the South Australian Government until 31st December, 1913. From the 1st January, 1914, the line has been worked by the South Australian Government for and on behalf of the Commonwealth. It is provided in the Northern Territory Acceptance Act that the Commonwealth shall annually reimburse the State with the interest payable on the amount of loans raised by the State for the purpose of constructing the railway, and the agreement for working the line prescribes that the Commonwealth is responsible to the State for any financial loss incurred by the State in the working and management of the railway, but is entitled to receive from the State any profit made in such working and management.

**4. Federal Territory Railway—Queanbeyan-Canberra.**—This line was built by the Railway Construction Branch of the Public Works Department, New South Wales, and was completed and taken over by the Chief Commissioner of Railways for that State, who has since worked the line for and on behalf of the Commonwealth Government. The line was opened for departmental goods traffic on 25th May, 1914. It connects with the New South Wales railway system at Queanbeyan, is 4.94 miles in length, and has sidings of an aggregate length of 2.00 miles.

5. **Northern Territory Railway (Darwin to Katherine).**—On the 1st January, 1911, the line from Darwin to Pine Creek came under the jurisdiction of the then Department of External Affairs, and was worked under the Administrator of the Northern Territory. As mentioned above, the management of this railway is now vested in the Commissioner.

In the Northern Territory Acceptance Act, the construction of a transcontinental line from South Australia is provided for. The extension of the line from Pine Creek to Katherine River has been completed, and the first train ran through to Katherine on 13th May, 1917.

6. **Summary of Federal Railways.**—The following table shows the railway lines open for traffic under the control of the Commonwealth at 30th June, 1919, together with the lines which have been or are being surveyed :—

**FEDERAL GOVERNMENT RAILWAYS, 30th JUNE, 1919.**

Terminals.					Miles.
OPEN FOR TRAFFIC.					
Trans-Australian—Port Augusta to Kalgoorlie	..	..	..	..	1,051.30
Port Augusta to Oodnadatta (South Australia)	..	..	..	..	477.96
Canberra to Queanbeyan (Federal Territory)	..	..	..	..	4.94
Darwin to Katherine (Northern Territory)	..	..	..	..	199.56
Total opened for traffic	..	..	..	..	1,733.76
SURVEYED, OR BEING SURVEYED.					
Katherine River to Mataranka (Northern Territory)	..	..	..	..	64.50
Mataranka to Daly Waters (Northern Territory)	..	..	..	..	95.00
Kingoomya to Boorthanna (South Australia)	..	..	..	..	176.44
Canberra to Jervis Bay (Federal Territory)	..	..	..	..	140.23
Canberra (Federal Territory) to Federal Territory Border in the direction of Yass (New South Wales)	..	..	..	..	11.67
Daly Waters (Northern Territory) to Oodnadatta (South Australia)	..	..	..	..	851.50
Port Augusta to Crystal Brook (South Australia)	..	..	..	..	69.25
Total surveyed or being surveyed	..	..	..	..	1,408.59

7. **Mileage open for traffic, Average miles worked and Train miles run.**—The following table shows the length of the Federal railways open for traffic, average miles worked, and the train miles run in the years 1915 to 1919 .—

**FEDERAL RAILWAYS.—MILEAGE OPEN FOR TRAFFIC, AVERAGE MILES WORKED AND TRAIN MILES RUN, 1915-1919.**

Year ended 30th June.	Railway.				Total.
	Trans- Australian.	Oodnadatta.	Federal Territory.	Northern Territory.	
MILES OPEN FOR TRAFFIC.					
	Miles.	Miles.	Miles.	Miles.	Miles.
1915 .. ..	564	478	5	146	1,193
1916 .. ..	773	478	5	146	1,402
1917 .. ..	958	478	5	200	1,641
1918 .. ..	1,051	478	5	200	1,734
1919 .. ..	1,051	478	5	200	1,734



**FEDERAL RAILWAYS.—MILEAGE OPEN FOR TRAFFIC, AVERAGE MILES WORKED AND TRAIN MILES RUN, 1915-1919—continued.**

Year ended 30th June.	Railway.				Total.
	Trans- Australian.	Oodnadatta.	Federal Territory.	Northern Territory.	
AVERAGE MILES WORKED.					
	Miles.	Miles.	Miles.	Miles.	Miles.
1915 .. ..	370	478	5	146	999
1916 .. ..	668	478	5	146	1,297
1917 .. ..	865	478	5	187	1,535
1918 .. ..	1,051	478	5	200	1,734
1919 .. ..	1,051	478	5	200	1,734
TRAIN MILES RUN.					
1915 .. ..	497,553	273,488	(a) 6,000	39,652	816,693
1916 .. ..	622,919	276,690	1,080	52,424	953,113
1917 .. ..	570,493	254,927	1,169	87,652	914,241
1918 .. ..	475,936	259,838	1,127	112,648	849,549
1919 .. ..	368,886	221,763	1,015	83,209	674,873

(a) Estimated.

8. **Cost of Construction and Equipment of Federal Railways.**—In the following table particulars are given of the cost of construction and equipment for traffic of the under-mentioned railways for each of the years 1914-15 to 1918-19:—

**FEDERAL RAILWAYS.—CAPITAL COST OF CONSTRUCTION AND EQUIPMENT, 1915-1919.**

Year ended 30th June.	Railway.				Total.
	Trans- Australian.	Oodnadatta.	Federal Territory.	Northern Territory.	
TOTAL COST OF CONSTRUCTION AND EQUIPMENT OF LINES OPEN.					
	£	£	£	£	£
1915 .. ..	2,846,090	2,155,156	46,108	1,040,702	6,088,056
1916 .. ..	4,747,062	2,158,355	47,103	1,055,754	8,008,274
1917 .. ..	6,079,313	2,281,271	52,591	1,664,370	10,077,545
1918 .. ..	6,674,278	2,281,939	47,883	1,695,556	10,699,656
1919 .. ..	6,911,624	2,282,973	48,124	1,707,392	10,950,113
COST PER MILE OPEN.					
1915 .. ..	5,046	4,509	9,222	7,128	5,103
1916 .. ..	6,141	4,515	9,421	7,231	5,712
1917 .. ..	6,353	4,773	10,651	8,340	6,141
1918 .. ..	6,349	4,774	9,693	8,496	6,171
1919 .. ..	6,574	4,776	9,742	8,556	6,316

9. **Gross Revenue.**—(i) *Total, per average mile worked, and per train mile run.* The following table shows the total revenue from all sources, the revenue per average mile worked and the revenue per train mile run for each of the undermentioned railways for the financial years from 1915 to 1919 inclusive:—

**FEDERAL RAILWAYS.—GROSS REVENUE, TOTAL, PER AVERAGE MILE WORKED  
AND PER TRAIN MILE RUN, 1915-1919.**

Year ended 30th June.	Railway.				Total.
	Trans-Australian.	Oodnadatta.	Federal Territory.	Northern Territory.	

**TOTAL GROSS REVENUE.**

	£	£	£	£	£
1915 .. ..	142,159	66,664	1,088	22,143	232,054
1916 .. ..	273,959	64,518	1,040	31,518	371,035
1917 .. ..	290,750	66,429	592	28,695	386,466
1918 .. ..	175,039	69,231	705	32,511	277,486
1919 .. ..	175,134	58,286	407	32,237	266,064

**GROSS REVENUE PER AVERAGE MILE WORKED.**

1915 .. ..	384	140	218	152	232
1916 .. ..	410	135	208	216	286
1917 .. ..	336	139	120	153	252
1918 .. ..	166	145	141	163	160
1919 .. ..	167	122	82	162	153

**GROSS REVENUE PER TRAIN MILE RUN.**

	d.	d.	d.	d.	d.
1915 .. ..	68.57	58.50	43.52	134.02	68.19
1916 .. ..	105.55	55.96	231.11	144.29	93.43
1917 .. ..	122.32	62.54	121.54	78.57	101.45
1918 .. ..	88.27	63.95	150.13	69.27	78.39
1919 .. ..	113.94	63.08	96.24	92.98	94.62

**(ii) Coaching, Goods, and Miscellaneous receipts, and percentages on total revenue.**

The gross revenue is composed of (a) receipts from coaching traffic, including the carriage of mails, horses, parcels, etc., by passenger trains; (b) receipts from the carriage of goods and live stock and (c) rents and miscellaneous items. The subjoined table shews the gross revenue for 1915-19 classified according to the three chief sources of receipts, together with their percentages on the total revenue. The respective totals of the three items have already been given in the preceding paragraph.

**FEDERAL RAILWAYS.—COACHING, GOODS, AND MISCELLANEOUS RECEIPTS,  
AND PERCENTAGES ON TOTAL REVENUE, 1915-1919.**

Year ended 30th June.	Receipts.				Total.	Percentages.				Total.
	Trans-Australian.	Oodnadatta.	Federal Territory.	Northern Territory.		Trans-Australian.	Oodnadatta.	Federal Territory.	Northern Territory.	

**COACHING TRAFFIC RECEIPTS.**

	£	£	£	£	£	%	%	%	%	%
1915 .. ..	4,502	14,703	28	5,098	24,331	3.17	22.06	2.57	23.02	10.49
1916 .. ..	3,582	14,501	37	4,633	22,753	1.31	22.48	3.56	14.70	6.13
1917 .. ..	4,411	15,447	39	5,412	25,309	1.52	23.25	6.59	18.86	6.55
1918 .. ..	72,352	14,586	31	5,341	92,310	41.33	21.07	4.40	16.43	33.27
1919 .. ..	93,867	12,455	34	5,250	111,606	53.60	21.37	8.25	16.28	41.95

**GOODS AND LIVE STOCK RECEIPTS.**

	£	£	£	£	£	%	%	%	%	%
1915 .. ..	122,601	50,121	1,060	9,341	183,213	86.30	75.18	97.43	42.19	78.95
1916 .. ..	249,129	48,482	1,003	16,735	315,349	90.94	75.14	96.44	53.10	84.99
1917 .. ..	271,013	48,026	553	17,152	336,744	93.21	72.30	93.41	59.77	87.13
1918 .. ..	77,339	51,213	674	19,539	148,765	41.19	73.97	95.60	60.10	53.61
1919 .. ..	50,485	43,194	373	19,076	113,728	28.83	74.11	91.75	61.04	42.74

**MISCELLANEOUS RECEIPTS.**

	£	£	£	£	£	%	%	%	%	%
1915 .. ..	14,966	1,840	..	7,704	24,510	10.53	2.76	..	34.79	10.56
1916 .. ..	21,248	1,535	..	10,150	32,933	7.75	2.38	..	32.20	8.88
1917 .. ..	15,326	2,956	..	6,131	24,413	5.27	4.45	..	21.37	6.32
1918 .. ..	25,348	3,432	..	7,631	36,411	14.48	4.96	..	23.47	13.12
1919 .. ..	30,783	2,636	..	7,311	40,730	17.57	4.52	..	22.68	15.31

10. *Working Expenses.*—(i) *Total.* The following table shows the total annual expenditure on (a) maintenance of ways, works and buildings; (b) locomotives, carriages and wagons repairs and renewals, (c) traffic expenses, and (d) compensation, general and miscellaneous charges, and the percentages of the total of those expenses upon the corresponding gross revenues of each railway for each year 1915 to 1919 :—

**FEDERAL RAILWAYS.—TOTAL WORKING EXPENSES, AND PERCENTAGES OF WORKING EXPENSES ON GROSS REVENUE, 1915 TO 1919.**

Year ended 30th June.	Railway.				Total.
	Trans-Australian.	Oodnadatta.	Federal Territory.	Northern Territory.	
TOTAL WORKING EXPENSES.					
	£	£	£	£	£
1915 .. ..	147,846	95,871	1,635	27,796	273,148
1916 .. ..	273,959	95,069	1,638	47,953	418,619
1917 .. ..	290,750	102,298	1,446	39,771	434,265
1918 .. ..	232,468	100,179	1,496	53,482	387,625
1919 .. ..	243,988	111,362	1,288	50,617	407,255
PERCENTAGE OF WORKING EXPENSES ON REVENUE.					
	%	%	%	%	%
1915 .. ..	104.00	143.81	150.28	125.53	117.71
1916 .. ..	100.00	147.35	157.50	152.14	112.82
1917 .. ..	100.00	153.99	244.26	138.60	112.37
1918 .. ..	132.81	144.70	212.20	164.50	139.69
1919 .. ..	139.31	191.06	316.45	157.02	153.07

(ii) *Working Expenses per average mile worked and per train-mile run.* The following table shows the working expenses per average mile worked and per train-mile run for each railway for the years 1915 to 1919 :—

**FEDERAL RAILWAYS.—WORKING EXPENSES PER AVERAGE MILE WORKED, AND PER TRAIN-MILE RUN, 1915 TO 1919.**

Year ended 30th June.	Railway.				Total.
	Trans-Australian.	Oodnadatta.	Federal Territory.	Northern Territory.	
WORKING EXPENSES PER AVERAGE MILE WORKED.					
	£	£	£	£	£
1915 .. ..	399	201	327	190	273
1916 .. ..	410	199	328	328	323
1917 .. ..	336	214	293	212	283
1918 .. ..	221	198	299	267	220
1919 .. ..	232	233	261	254	235
WORKING EXPENSES PER TRAIN-MILE RUN.					
	d.	d.	d.	d.	d.
1915 .. ..	71.31	84.13	65.40	168.24	80.27
1916 .. ..	105.55	82.46	364.00	219.53	105.41
1917 .. ..	122.32	96.31	296.87	108.90	114.00
1918 .. ..	117.23	87.25	318.58	113.95	107.89
1919 .. ..	158.74	120.52	304.55	145.99	145.00

(iii) *Distribution of Working Expenses.* The subjoined table shews the distribution of working expenses among four chief heads of expenditure for the years 1915-1919 :—

**FEDERAL RAILWAYS.—DISTRIBUTION OF WORKING EXPENSES, 1915-1919.**

Year ended 30th June.	Railway.				Total.
	Trans- Australian.	Oodnadatta.	Federal Territory.	Northern Territory.	
MAINTENANCE.					
	£	£	£	£	£
1915 .. ..	36,592	52,818	817	11,953	102,180
1916 .. ..	66,820	38,742	942	25,291	131,795
1917 .. ..	69,232	46,921	768	18,858	135,779
1918 .. ..	64,990	39,673	609	23,699	128,971
1919 .. ..	71,309	45,284	601	21,500	138,694
LOCOMOTIVE, CARRIAGE, AND WAGON CHARGES.					
1915 .. ..	79,786	32,679	614	9,963	123,042
1916 .. ..	156,818	45,672	389	16,738	219,617
1917 .. ..	179,817	44,487	361	15,983	240,648
1918 .. ..	121,574	42,582	544	22,309	187,009
1919 .. ..	118,163	52,377	351	20,796	191,687
TRAFFIC EXPENSES.					
1915 .. ..	28,515	8,957	204	3,504	41,180
1916 .. ..	47,211	9,106	307	3,942	60,566
1917 .. ..	37,808	9,295	317	4,930	52,350
1918 .. ..	41,022	10,400	343	5,704	57,469
1919 .. ..	47,572	11,471	336	7,104	66,483
OTHER CHARGES.					
1915 .. ..	2,953	1,417	..	2,376	6,746
1916 .. ..	3,110	1,549	..	1,982	6,641
1917 .. ..	3,893	1,595	..	..	5,488
1918 .. ..	4,882	1,804	..	1,769	8,455
1919 .. ..	6,944	2,230	..	1,217	10,391

11. *Passenger Journeys and Tonnage of Goods and Live Stock.*—In the next table particulars are given of the passenger journeys, and tonnage of goods and live stock carried on the Federal Railways during the years 1915-1919 :—

**FEDERAL RAILWAYS.—PASSENGER JOURNEYS, AND TONNAGE OF GOODS AND LIVE STOCK CARRIED, 1915-1919.**

Year ended 30th June.	Railway.				Total.
	Trans-Australian.	Oodnadatta.	Federal Territory.	Northern Territory.	
PASSENGER JOURNEYS.					
	No.	No.	No.	No.	No.
1915 .. ..	12,324	(a)	(a)	3,857	(b) 16,181
1916 .. ..	7,667	(a)	1,079	4,718	(c) 13,464
1917 .. ..	4,160	(a)	1,578	8,034	(c) 13,772
1918 .. ..	17,934	(a)	300	11,546	(c) 29,780
1919 .. ..	23,942	51,516	93	5,842	81,393
TONNAGE OF GOODS AND LIVE STOCK CARRIED.					
	tons.	tons.	tons.	tons.	tons.
1915 .. ..	282,471	(a)	(a)	11,995	(b) 294,466
1916 .. ..	248,744	(a)	12,114	30,007	(c) 290,865
1917 .. ..	583,250	(a)	6,586	27,529	(c) 617,365
1918 .. ..	124,806	(a)	7,261	40,862	(c) 172,929
1919 .. ..	116,971	57,565	4,385	35,124	214,045

(a) Not available.

(b) Exclusive of Oodnadatta and Federal Territory lines.

(c) Exclusive of Oodnadatta line.

12. Number and Description of Rolling Stock, 1919.—The following table shows the numbers of locomotives and rolling stock in use on the Federal railways, classified according to gauge:—

**FEDERAL RAILWAYS.—CLASSIFICATION OF LOCOMOTIVES AND ROLLING STOCK, 1918-19.**

Railway.	Gauge.		Total.	Gauge.		Total.	Gauge.		Total.
	4 ft. 8½ in.	3 ft. 6 in.		4 ft. 8½ in.	3 ft. 6 in.		4 ft. 8½ in.	3 ft. 6 in.	
	LOCOMOTIVES.			PASSENGER VEHICLES.			VEHICLES OTHER THAN PASSENGER.		
Trans-Australian	49	..	49	31	..	31	744	..	744
Oodnadatta (a)	..	1	1	..	..	..	..	31	31
Federal Territory (b)	..	..	..	..	..	..	..	..	..
Northern Territory	..	13	13	..	4	4	..	313	313
Total	49	14	63	31	4	35	744	344	1,088

(a) Worked by South Australian Government Railways.

(b) Worked by New South Wales Government Railways.

13. Number of Railway Employees.—The following table shows the number of employees on the Federal railways at 30th June in each year, 1915 to 1919 inclusive, classified according to salaried and wages staffs.

**FEDERAL RAILWAYS.—NUMBER OF EMPLOYEES ON RAILWAYS, 1915-19.**

Railway.	30th June—									
	1915.		1916.		1917.		1918.		1919.	
	Salaried Staff.	Wages Staff.	Salaried Staff.	Wages Staff.	Salaried Staff.	Wages Staff.	Salaried Staff.	Wages Staff.	Salaried Staff.	Wages Staff.
Trans-Australian	No. 226	No. 3,501	No. 82	No. 873	No. 157	No. 2,981	No. 201	No. 913	No. 194	No. 846
Oodnadatta	(a)	(a)	(a)	(a)	(a)	(a)	(a)	(a)	(a)	(a)
Federal Territory	1	3	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
Northern Territory	9	90	11	129	16	161	12	164	20	150
Total	236	3,594	93	1,002	173	3,142	213	1,077	214	996

(a) Worked by South Australian Government Railways.

(b) Worked by New South Wales Government Railways.

14. Accidents.—Number of Killed and Injured.—The subjoined table gives particulars of the number of persons killed and injured through train accidents and the movement of rolling stock in each year ended 30th June, 1915 to 1919, on the Federal railways:—

**FEDERAL RAILWAYS.—TOTAL NUMBER OF PERSONS KILLED AND INJURED ON FEDERAL RAILWAYS, 1915-19.**

Railway.	1915.	1916.	1917.	1918.	1919.
NUMBER OF PERSONS KILLED.					
Trans-Australian	..	13	1	3	3
Oodnadatta	..	2	..	1	..
Federal Territory	..	..	..	..	..
Northern Territory	..	..	1	..	..
Total	..	15	2	4	3
NUMBER OF PERSONS INJURED.					
Trans-Australian	..	34	16	37	104
Oodnadatta	..	2	6	4	8
Federal Territory	..	..	..	..	..
Northern Territory	..	..	1	2	3
Total	..	36	23	43	115

15. **Passenger Fares, Goods Rates, and Parcel Rates.**—(i) *Passenger Fares.* In the following table the fares for certain specified distances on the Trans-Australian, Oodnadatta, and Northern Territory Railways are set out :—

**FEDERAL RAILWAYS.—ORDINARY PASSENGER MILEAGE RATES, 1919.**

Miles.	Trans-Australian Railway.				Oodnadatta Railway.				Northern Territory Railway.			
	First Class.		Second Class.		First Class.		Second Class.		First Class.		Second Class.	
	Fare.	Average per Passenger Mile.	Fare.	Average per Passenger Mile.	Fare.	Average per Passenger Mile.	Fare.	Average per Passenger Mile.	Fare.	Average per Passenger Mile.	Fare.	Average per Passenger Mile.
50	s. d.	d.	s. d.	d.	s. d.	d.	s. d.	d.	s. d.	d.	s. d.	d.
100	8 4	2.00	5 7	1.34	8 4	2.00	5 7	1.34	10 5	2.50	7 0	1.68
200	16 8	2.00	11 1	1.33	16 9	2.01	11 3	1.35	20 10	2.50	13 10	1.66
300	33 4	2.00	22 3	1.34	33 6	2.01	22 3	1.34	41 8	2.50	27 10	1.67
400	50 0	2.00	33 4	1.33	50 0	2.00	33 6	1.34	..	..	..	..
500	64 7	1.94	43 1	1.29	66 9	1.98	44 6	1.34	..	..	..	..
600	77 1	1.85	51 5	1.23	..	..	..	..	..	..	..	..
700	89 7	1.79	59 9	1.20	..	..	..	..	..	..	..	..
800	102 1	1.75	68 1	1.17	..	..	..	..	..	..	..	..
900	110 5	1.66	73 8	1.11	..	..	..	..	..	..	..	..
1,000	117 9	1.57	78 6	1.05	..	..	..	..	..	..	..	..
1,051	122 11	1.48	81 11	0.98	..	..	..	..	..	..	..	..
1,051	125 0	1.43	83 4	0.95	..	..	..	..	..	..	..	..

In the case of the Trans-Australian railway, through passengers have to pay for sleeping berths and meals in addition to the ordinary fares. For the first class the charge is ten shillings for a night or part of a night, the corresponding charge for the second class being five shillings. There is a fixed scale of charges made in respect of the meals served to other than through passengers between Port Augusta and Kalgoorlie. It will be observed that both the first and second class fares on the Trans-Australian railway have a constant rate for distances up to 300 miles and then have a tapering character beyond that distance; while those for the Oodnadatta and the Northern Territory railways are practically uniform for all distances.

(ii) *Goods Rates.* The rates for agricultural produce and ordinary goods on the Trans-Australian and Northern Territory railways are set out in the following tables :—

**FEDERAL RAILWAYS.—RATES FOR AGRICULTURAL PRODUCE IN TRUCK LOADS, 1919.**

For a haul of—	Northern Territory Railway.		Trans-Australian Railway.		For a haul of—	Trans-Australian Railway, <i>contd.</i>	
	Rate per Ton in Truck Loads.	Average per Ton Mile.	Rate per Ton in Truck Loads.	Average per Ton Mile.		Rate per Ton in Truck Loads.	Average per Ton Mile.
50 miles	s. d.	d.	s. d.	d.	600 miles	s. d.	d.
100 "	8 8	2.08	6 11	1.66	700 "	38 4	0.77
200 "	15 3	1.83	12 2	1.46	800 "	42 6	0.73
300 "	19 3	1.16	15 5	0.93	900 "	46 8	0.70
400 "	..	..	21 8	0.87	1,000 "	50 5	0.67
500 "	..	..	27 6	0.83	1,051 "	53 9	0.65
	..	..	33 4	0.80	1,051 "	55 0	0.63

## FEDERAL RAILWAYS.—ORDINARY GOODS MILEAGE RATES, 1919.

For a Haul of—	Northern Territory Railway.						Trans-Australian Railway.						For a Haul of—	Trans-Australian Railway, <i>contd.</i>					
	Class of Freight.						Class of Freight.							Class of Freight.					
	Highest.			Lowest.			Highest.			Lowest.				Highest.			Lowest.		
	Rate per Ton.	Average per Ton Mile.		Rate per Ton.	Average per Ton Mile.		Rate per Ton.	Average per Ton Mile.		Rate per Ton.	Average per Ton Mile.			Rate per Ton.	Average per Ton Mile.		Rate per Ton.	Average per Ton Mile.	
Miles.	s.	d.	d.	s.	d.	d.	s.	d.	d.	s.	d.	d.	Miles.	s.	d.	d.	s.	d.	d.
50	39	5	9.46	6	9	1.62	31	6	7.56	5	5	1.30	600	223	9	4.48	38	4	0.77
100	71	11	8.63	10	11	1.31	57	6	6.90	8	9	1.05	700	239	5	4.10	42	6	0.73
200	133	2	7.99	19	3	1.16	106	6	6.39	15	5	0.93	800	255	0	3.83	46	8	0.70
300	..	..	..	..	..	..	143	0	5.72	21	8	0.87	900	269	1	3.59	50	5	0.67
400	..	..	..	..	..	..	172	2	5.17	27	6	0.83	1,000	281	7	3.38	53	9	0.65
500	..	..	..	..	..	..	201	4	4.83	33	4	0.80	1,051	287	6	3.28	55	0	0.63

In the above tables it will be seen that the average rates per ton-mile are of a tapering character.

(iii) *Parcel Rates.* On the Trans-Australian railway, parcels weighing between 85 and 112 lbs. are taken by passenger train 500 miles for thirteen shillings and threepence.

## (C) State Railways.

1. *Mileage Open, 1915 to 1919.*—The following table shows the length of State railways open for traffic on the 30th June in the years 1915 to 1919 :—

## STATE RAILWAYS.—MILEAGE OPEN FOR TRAFFIC, 1915 TO 1919.

Year ended 30th June.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	All States.
	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.
1915 .. .. .	4,134	3,875	4,838	2,157	3,332	533	18,869
1916 .. .. .	4,188	4,100	4,967	2,187	3,332	562	19,336
1917 .. .. .	4,437	4,123	5,214	2,221	3,425	581	20,001
1918 .. .. .	4,678	4,152	5,295	2,242	3,491	588	20,446
1919 .. .. .	4,825	4,190	5,469	2,290	3,538	601	20,913

The following statement shows the actual mileage opened for traffic in the year 1918-19, and also the annual average increase in mileage opened since 1909 in each State :—

## STATE RAILWAYS.—MILEAGE OPENED ANNUALLY.

Mileage.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	Total all States.
Mileage opened during 1918-19 .. ..	146.38	37.88	174.30 <sup>a</sup>	48.40	47.15	13.54	467.65
Average annual mileage increase in 10 years to 30th June, 1919 ..	120.21	77.97	197.19	40.19	149.37	13.86	598.79

(a) Inclusive of 102.73 miles acquired on 20th June, 1919.

(i) *New South Wales.* During the year ended 30th June, 1919, the following lines were opened for traffic :—Caroline Mine Branch (3.49 miles); Tottenham to Mount Royal Mine (0.38 mile); Albert to Iron Duke Mine (2.61 miles); Condobolin to near Trida (129.50 miles); and Matakana to Mount Hope (10.40 miles), making a total of 146.38 miles.

(ii) *Victoria*. The following lines were opened for traffic during 1918-19:—North Geelong to Fyansford (2.93 miles); Shelley to Beetoomba (9.73 miles); Nayook to Noojee (5.99 miles); Nandaly to Mittyack (11.07 miles); and Kanagulk to Balmoral (8.16 miles); a total of 37.88 miles. The opening of the electric tramway from Sandringham to Black Rock (2.41 miles) is referred to under the head of "Electric Tramways."

(iii) *Queensland*. The increase of 174.30 miles in the mileage opened for traffic in 1918-19 was due to the opening of the following lines:—Mitchelton to Samford (8.70 miles); Samford to Samsonvale (7.55 miles); Evanslea to Cecil Plains (19.71 miles); Marlborough to Styx (23.01 miles); Moongabulla to Coolbie (6.45 miles); and Coolbie to Bambaroo (6.15 miles); a total of 71.57 miles, and to the acquisition of the line from Mareeba Junction to Mungana (102.73 miles).

(iv) *South Australia*. The lines opened for traffic in this State during the year 1918-19 were on the 5-ft. 3-in. gauge, from Riverton to Clare (27.62 miles); and Balhannah to Mount Pleasant (20.78 miles); a total of 48.40 miles.

(v) *Western Australia*. In the year 1918-19 the following new lines were opened for traffic:—Bokal to Bowelling (28.14 miles); and Calingiri to Piawaning (19.01 miles); a total of 47.15 miles.

(vi) *Tasmania*. During the year 1918-19 the line from Branhholm to Herrick (13.54 miles) was opened for traffic.

**2. Average Mileage Worked, Train Miles Run, Number of Passenger Journeys, and Tonnage of Goods and Live Stock Carried, on State Government Railways.**—The table on page 668 gives the total mileage open for traffic at the end of each financial year, but, in considering the returns relating to revenue and expenditure, and other matters, it is desirable to know the average number of miles actually worked during each year. The next table shews the average number of miles worked, the total number of train miles run, the number of passenger journeys, and the tonnage of goods and live stock carried by the Government railways of each State during the years 1915 to 1919 inclusive:—

**STATE RAILWAYS.—AVERAGE MILEAGE WORKED, TRAIN MILES RUN, NUMBER OF PASSENGER JOURNEYS, AND TONNAGE OF GOODS AND LIVE STOCK CARRIED, 1915 TO 1919.**

Year ended 30th June.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania. (a)	All States.
<b>AVERAGE MILEAGE WORKED.</b>							
1915 ..	4,057	3,848	4,730	2,026	3,096	536	18,293
1916 ..	4,189	3,955	4,939	2,185	3,332	552	19,132
1917 ..	4,313	4,104	5,067	2,193	3,370	577	19,624
1918 ..	4,551	4,139	5,281	2,235	3,463	591	20,260
1919 ..	4,137	4,159	5,324	2,285	3,507	599	20,611
<b>TRAIN MILES RUN.</b>							
1915 ..	20,420,023	15,303,209	11,988,521	5,580,679	5,404,814	1,005,145	59,702,391
1916 ..	21,556,034	13,826,538	11,571,746	5,630,984	5,149,289	1,051,511	58,786,102
1917 ..	20,300,717	14,022,040	10,729,187	5,730,539	4,500,211	1,080,459	56,363,153
1918 ..	18,143,267	13,626,371	10,319,694	5,440,515	4,094,510	1,056,373	52,680,730
1919 ..	19,935,202	13,031,655	9,942,744	5,412,924	4,256,627	1,107,890	53,687,042
<b>NUMBER OF PASSENGER JOURNEYS.</b>							
1915 ..	88,774,451	117,259,926	24,257,552	18,831,273	18,635,327	1,750,905	269,509,434
1916 ..	92,850,938	115,771,238	24,438,905	20,512,753	18,884,541	2,078,228	274,536,503
1917 ..	96,709,846	108,341,540	24,837,714	19,107,015	17,466,744	1,971,888	267,434,747
1918 ..	94,304,516	105,753,073	25,682,368	18,936,104	16,081,695	1,874,029	262,631,785
1919 ..	98,568,768	111,904,786	26,414,817	20,176,544	17,325,424	1,889,102	276,279,441
<b>TONNAGE OF GOODS AND LIVE STOCK CARRIED.</b>							
1915 ..	11,920,881	5,410,045	4,970,873	2,076,230	2,523,859	408,069	27,310,007
1916 ..	11,915,500	5,829,835	4,570,883	2,396,938	2,554,358	388,782	27,656,796
1917 ..	11,732,864	5,962,602	4,035,379	2,822,401	2,400,246	401,076	27,354,568
1918 ..	11,293,060	6,231,093	4,154,441	2,767,734	2,259,070	407,405	27,112,803
1919 ..	12,714,012	6,515,470	3,783,334	2,618,510	2,379,403	472,926	28,483,655

(a) The average mileage worked in some cases is greater than the actual mileage open, owing to the fact that the Government railways have running powers over certain private lines.



3. **Length and Gauge of Railway Systems in each State.**—A map shewing the State railway lines, and also some private lines open to the public for general traffic, in the different States of the Commonwealth is given on page 645 hereinbefore. In all the States the Government railways are grouped, for the convenience of administration and management, into several divisions or systems. A summary shewing concisely the gauge and length of the main and branch lines included in each division or system of the different States of the Commonwealth for the year ended the 30th June, 1918, was given in Year Book No. 12, pp. 646 and 651 to 653. Owing to limitations of space this information for the year ended 30th June, 1919, is not included in the present volume, but may be found in Transportation Bulletin No. 11, pp. 23-25 issued by this Bureau.

4. **Administration and Control of State Railways.**—In each State of the Commonwealth the policy has been established that the railways should be under the control of the Government. This policy, as has been shewn, was adopted early in the railway history of Australia, and, excepting in cases presenting unusual circumstances, may be regarded as the settled policy of the country. In earlier issues of the Year Book (see No. 6, p. 693) will be found a description of the methods adopted by the various State Governments in the control and management of their railways.

5. **Lines under Construction, and Authorised Lines, 1919.**—The following statement gives particulars up to the 30th June, 1919, of the mileage of State railways (a) under construction, and (b) authorised for construction but not commenced:—

**STATE RAILWAYS.—MILEAGE UNDER CONSTRUCTION AND AUTHORISED,  
30th JUNE, 1919.**

Particulars.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	All States.
Mileage under construction .. ..	a 204.90	104.38	b 413.00	67.01	113.25	74.45	976.99
Mileage authorised but not commenced ..	374.15	32.25	1,203.00	143.75	92.50	..	1,845.65

(a) Exclusive of 223.46 miles on which work was suspended.

(b) Exclusive of 227 miles on which work has been suspended.

(i) *Lines under Construction.* In spite of the great extension of State railways which has taken place since the year 1875 throughout the Commonwealth, there are still, in some of the States, tracts of country of immense area which are as yet practically undeveloped, and in which little in the nature of permanent settlement has been accomplished; the general policy in the States is to extend the existing lines inland, in the form of light railways, as settlement increases, and although it is true that lines which were not likely to be commercially successful in the immediate future have been constructed from time to time for the purpose of encouraging settlement, the general principle that the railways should be self-supporting is kept in view.

(a) In *New South Wales* the lines under construction are chiefly of the "pioneer" class, and are made with a view to affording railway communication over level country to districts in which the traffic would not warrant the expenditure necessary to provide thoroughly equipped lines. As the traffic increases, the permanent way is strengthened in order to allow the heavier types of engines to run over it. The line under construction on 30th June, 1919, from Kempsey to Macksville (29.79 miles), when completed, will form part of an alternative main route between Newcastle and Brisbane. Other lines under construction at that date were as follow:—Henty to Billabong (33.00 miles), Craboon to Coolah (23.95 miles), Matakana to Mount Hope (10.40 miles), Tottenham to the Mines (6.47 miles), Broken Hill to Menindie (73.29 miles), and

Humula to Tumberumba (28.00 miles), a total distance of 204.90 miles. The following lines have also been under construction, but further work thereon has been suspended for the present:—Nimitabel to Bombala (37.85 miles), Sydenham to Botany (6.20 miles), Werris Creek to Binnaway (88.11 miles), Macksville to Raleigh (20.68 miles), Coff's Harbor to Glenreagh (26.37 miles), and Glenreagh to Dorrigo (44.25 miles), a total distance of 223.46 miles.

(b) *Victoria.* In this State the following lines were under construction by the Board of Land and Works on the 30th June, 1919:—5-ft. 3-in. gauge: Beetomba to Cudgewa (9.91 miles), Cavendish to Balmoral (25.29 miles), Koo-wee-rup to McDonald's Track (30.75 miles), Mittyack to Kulwin (8.43 miles), Manangatang to Bryden's Tank (14.25 miles), and Piangil to Pine Tank (15.75 miles), making in all 104.38 miles.

(c) *Queensland.* In December, 1910, the North Coast Railway Act was passed. Under this Act a series of lines, when constructed, will link up a number of existing lines in such a way that a through line will be obtained from Rockhampton to Cairns, via Mackay and Townsville, a total distance of 630 miles. By the completion of this line it will be possible to travel from Cairns to the southern border of the State at Wallangarra, a total distance of about 1,250 miles. At the same time the Great Western Railway Act was passed. Under this Act provision is made for the extension in a westerly or south-westerly direction of the lines already constructed to Quilpie, Yaraka, Winton, and Dajarra, in such a manner that they will form junctions with a line to be made running north-westerly from Eromanga to Camooweal. These extensions, together with the north-westerly line, will make an aggregate distance of 990 miles to be constructed. With the completion of both these schemes, the railways of this State will be brought into direct communication with each other on both their east and west boundaries. On the 30th June, 1919, the following lines, of an aggregate length of 413 miles, were under construction:—Samsonvale to Dayborough (8 miles), Goondoon to Kalliwa (31 miles), Murgon to Proston (26 miles), Colton Vale to Soldiers' Settlement (13 miles), and Orallo to Injune Creek (33 miles). Of the Great Western Railway the following parts were under construction:—Section B, Yaraka to Powell's Creek (27 miles); and Section D: Dajarra to Moonah Creek (41 miles). Of Section C, the part from Winton to Elderslie (37 miles) has been under construction but operations have been suspended. The following parts of the North Coast Railway were under construction:—Section A: Styx towards St. Lawrence (20 miles); Section B: Koumala to St. Lawrence (58 miles); Mackay northwards towards Proserpine (24 miles); Section D: From Moongabulla to Ingham (28 miles); Section E: From Moolaba to Tully River (46 miles). In the northern division the line from Merinda to Bowen coalfields, 50 miles long, and the second section of the line from Milanda to Millaa Millaa, 8 miles long, were also under construction. The following lines were under construction during the year, but work was suspended:—Kalbar to Mount Edwards (10 miles), Tara to Surat (50 miles); Longreach to Winton (109 miles); Proserpine southward towards Mackay (21 miles); and Winton to 37-Mile (37 miles); a total of 227 miles.

(d) *South Australia.* In this State the lines under construction on the 30th June, 1919, were as follow:—Clare to Spalding (23.62 miles), and Monarto to Sedan (43.39 miles), 5-ft. 3-in. gauge—an aggregate distance of 67.01 miles.

(e) In *Western Australia* the following lines were in course of construction by the Public Works Department on the 30th June, 1919:—Esperance northward (60 miles), and Narembeen to Merredin (53.25 miles), a total distance of 113.25 miles.

(f) *Tasmania.* At 30th June, 1919, the following lines were under construction:—Stanley to Trowutta (26.54 miles); Branhholm to David's Creek (13.91 miles); Myalla to Stanley (27.14 miles); Irishtown to Smithton (5.61 miles); Abattoirs to Zinc Works (0.63 mile); and Ulverstone to Ulverstone Wharf (0.62 mile); a total of 74.45 miles.

(ii) *Lines Authorised for Construction.* (a) *New South Wales.* At the 30th June, 1919, the following lines had been authorised for construction but not commenced:—Mirrool to Hillston (62.18 miles), Barmedman to Rankin Springs (70.91 miles),

Coonabarabran to Burren Junction (95.36 miles), Gilgandra to Collie (24 miles), Canowindra to Eugowra (26.70 miles), Grafton to South Grafton (2.34 miles), Roslyn to Taralga (15.82 miles), and Molong to Dubbo (76.84 miles); a total distance of 374.15 miles.

(b) In *Victoria* the following lines were authorised, but their construction had not been commenced up to the end of June, 1919:—5-ft. 3-in. gauge: Merbein to Yelta (10 miles), Alberton to Won Wron (12.25 miles), and Bittern to Red Hill (10 miles), a total of 32.25 miles.

(c) *Queensland*. In addition to the new lines upon which work has been commenced, Parliament has also authorised the construction of the following parts of the Great Western Railway: Section A, from Quilpie to Eromanga (120 miles); Section B, from Powell's Creek (224 miles); Section C, from 37 miles to Springvale (324 miles); and Section D, from Moonah Creek (217 miles); and on the North Coast Railway, Section D, from Ingham to Cardwell (33 miles); Section E, from Tully River southwards to Cardwell (23 miles). The following lines were also authorised for construction: Branch to Windera (12 miles), Inglewood to Texas and Silverspur (44 miles), Mount Edwards to Maryvale (28 miles), Lanefield to Rosevale (17 miles), Gatton to Mount Sylvia (11 miles), Juandah to Taroom (42 miles), Dirranbandi extension (52 miles), Mundubbera to the Northern Burnett (32 miles), Mount Molloy extension (8 miles), and Yarraman to Nanango (16 miles), a total of 1,203 miles.

(d) In *South Australia*, Parliament has authorised the construction of lines on the 5-ft. 3-in. gauge (i) from Paringa to Renmark, a distance of 2.50 miles, and (ii) from Long Plains to Red Hill, a distance of 61 miles, and also of lines on the 3-ft. 6-in. gauge (i) from Wandana to Penong (54 miles), and (ii) from Kielpa to Mangalo Hall (26.25 miles). The latter line, however, cannot be proceeded with except by resolution of both Houses of Parliament. The conversion of certain 3-ft. 6-in. gauge lines in the north-west of the State to 5-ft. 3-in. gauge has also been authorised. About 175 miles of line are involved in this scheme.

(e) In *Western Australia* the following lines were authorised for construction up to the 30th June, 1919:—Busselton-Margaret River (37.75 miles), Dwarda-Narrogin (33 miles), and Nyabing-Pingerup (21.75 miles), a distance of 92.50 miles.

(f) In *Tasmania* there were no lines authorised for construction which were not being proceeded with at the 30th June, 1919.

6. *Cost of Construction and Equipment of State Railways.*—The total cost of construction and equipment of the State railways of Australia at the 30th June, 1919, amounted to £213,971,595, or to an average cost of £10,243 per mile open for traffic. Particulars as to the capital expenditure incurred in each State on lines open for traffic are given in the following table:—

STATE RAILWAYS.—MILEAGE AND COST TO 30th JUNE, 1919.

State.	Length of Line Open (Route).	Total Cost of Construction and Equipment.	Average Cost per Mile Open.	Cost per Head of Population.	Mileage per 1,000 of Population.
	Miles.	£	£	£	Miles.
New South Wales (a) ..	4,824.67	76,601,591	15,877	39.02	2.46
Victoria .. ..	4,189.52	(b) 57,403,576	(b) 13,743	39.12	2.86
Queensland .. ..	5,469.45	38,244,494	6,992	53.65	7.67
South Australia (a) ..	2,289.98	(c) 18,649,979	(c) 8,186	40.90	5.02
Western Australia (a) ..	3,538.23	17,995,941	5,086	55.68	10.95
Tasmania .. ..	601.54	5,076,014	8,438	24.07	2.85
All States .. ..	20,913.39	213,971,595	10,243	41.68	4.07

(a) Exclusive of Federal railways.

(b) Exclusive of cost of line from Murrayville to South Australian border (12.53 miles).

(c) Exclusive of cost of line from Mount Gambier to Victorian border (11.79 miles).

It will be seen that the lowest average cost per mile open, £5,086, is in Western Australia, which is slightly less than one-third of the highest average cost, namely, £15,877 in New South Wales, compared with an average of £10,243 for all the State Government railways. In Western Australia there have been comparatively few engineering difficulties to contend with; moreover, the system was adopted in several instances in that State of giving contractors the right to carry traffic during the period of their contracts, with the result that, at least in all goldfields railway contracts, the cost of construction was considerably lessened.

In the above table the figures relating to cost of construction and equipment do not include the discounts and flotation charges on loans allocated to the railways. This will explain the reason for the differences between the amounts shewn above for Queensland and South Australia and those shewn in the railway reports for these States.

(i) *Reduction of Cost per Mile in Recent Years.* The average cost per mile of the lines constructed lately in the Commonwealth is very much less than the figure given in the above table, in consequence of the construction of light "pioneer" lines, which have already been referred to, and which it was originally considered in New South Wales could be laid down at a cost of £1,750 per mile (exclusive of stations and bridges). It should also be remembered that in the early days of railway construction there were considerable engineering difficulties to overcome, and that labour was scarce and dear. Since 1892 many hundreds of miles of the "pioneer" lines have been opened in New South Wales, the average cost ranging from about £2,000 to £7,500 per mile, according to the difficulties met in the country traversed. The lowest cost per mile for any line previously constructed had been that of the line from Nyngan to Cobar and the Peak, the average cost of which, to the end of June, 1919, was £3,786. In Victoria also the cost of construction has been greatly reduced in recent years. The total cost to the 30th June, 1919, of the narrow gauge (2 ft. 6 in.) lines, having a length of one hundred and twenty-two miles, was only £342,142, which gives an average cost per mile of only £2,807. In the other States the cost of construction per mile has been similarly reduced by building light railways as cheaply as possible. Fairly substantial permanent way is laid down with reduced ballast, and, as settlement progresses and traffic increases, the road is strengthened, and the stations and siding accommodation enlarged. The subjoined table gives examples of some of the more expensive lines, most of which were built in the early days of railway construction in Australia:—

**STATE RAILWAYS.—EXAMPLES OF LINES CONSTRUCTED AT LARGE CAPITAL EXPENDITURE PER MILE OPEN.**

Line.	Gauge.	Length.			Total Cost.	Average Cost per Mile.	Date of Opening.
		Double Lines and over.	Single Line.	Total.			
	ft. in.	Miles.	Miles.	Miles.	£	£	
<b>NEW SOUTH WALES—</b>							
Perrith to Bathurst ..	4 8½	88.50	22.55	111.05	4,133,414	37,221	1876
Sydney to Nowra ..	4 8½	39.90	57.79	97.69	4,467,087	45,727	1887
Homebush to Waratah ..	4 8½	95.71	..	95.71	3,559,024	37,185	1889
<b>VICTORIA—</b>							
Melbourne to Bendigo ..	5 3	100.89	..	100.89	4,952,521	49,088	1862
North Geelong to Ballarat ..	5 3	41.45	11.98	53.43	1,960,540	36,694	1862

The next table gives instances of lines which have been constructed in more recent years at a comparatively small cost per mile.

The average cost per mile of the 458.77 miles comprised in the above table was £41,673, whereas the average cost of the 351.24 miles referred to in the next table was £1,916.

**STATE RAILWAYS.—EXAMPLES OF LINES CONSTRUCTED AT SMALL CAPITAL EXPENDITURE PER MILE OPEN.**

Line.	Gauge.	Length.	Total Cost.	Average Cost per Mile.	Date of Opening.
	ft. in.	Miles.	£	£	
NEW SOUTH WALES—					
Parkes to Condobolin ..	4 8½	62.75	132,917	2,118	1898
Burren Junction to Pokataroo ..	4 8½	42.55	104,509	2,455	1906
VICTORIA—					
Wangaratta to Whitfield ..	2 6	30.49	40,135	1,316	1899
Wycheproof to Sea Lake ..	5 3	47.89	85,532	1,786	1895
Ultima to Chillingollah ..	5 3	20.14	34,402	1,708	1909
QUEENSLAND—					
Dalby to Bell ..	3 6	23.50	38,567	1,641	1906
Mahar to Jandowae ..	3 6	28.24	61,307	2,171	1914
SOUTH AUSTRALIA—					
Wandilo to Glencoe ..	3 6	9.13	11,740	1,287	1904
Tailem Bend to Pinnaroo ..	5 3	86.55	164,027	1,895	1906

The comparisons afforded in the two preceding tables are subject to certain limitations, inasmuch as the cost is naturally greater in the case of the older lines. Further, the figures given represent the cost of construction only (*i.e.*, are exclusive of cost of equipment), and cannot therefore be directly compared with the average cost per mile open given in the table on page 672.

(ii) *Capital Cost of Construction and Equipment, Total and per Mile Open.* The increase in the total capital cost of construction and equipment of Government railways in each State for each year from 1915 to 1919 is shewn in the following table :—

**STATE RAILWAYS.—CAPITAL COST OF CONSTRUCTION AND EQUIPMENT, 1915 TO 1919.**

Year ended 30th June.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	All States.
<b>TOTAL COST OF LINES OPEN.</b>							
1915 ..	£ 64,008,436	£ 51,518,792	£ 33,405,877	£ 16,597,139	£ 16,980,712	£ 4,628,911	£ 187,139,867
1916 ..	68,825,592	54,428,148	34,787,623	17,236,543	17,118,195	4,798,646	197,194,747
1917 ..	72,006,621	55,652,275	36,476,000	17,687,344	17,466,802	4,913,395	204,202,437
1918 ..	75,050,450	56,535,414	37,301,889	17,974,348	17,760,566	4,979,399	209,602,066
1919 ..	76,601,591	57,403,576	38,244,494	18,649,979	17,995,941	5,076,014	213,971,595

**COST PER MILE OPEN.**

1915 ..	15,483	13,295	6,905	7,695	5,096	8,683	9,918
1916 ..	16,434	13,275	7,004	7,881	5,138	8,534	10,198
1917 ..	16,229	13,498	6,996	7,964	5,100	8,447	10,210
1918 ..	16,042	(a) 13,659	7,045	(b) 8,058	5,087	8,470	10,263
1919 ..	15,877	(a) 13,743	6,992	(b) 8,186	5,086	8,438	10,243

(a) Exclusive of cost of line from Murrayville to South Australian border (12.53 miles).  
 (b) Exclusive of cost of line from Mount Gambier to Victorian border (11.79 miles).

(iii) *Loan Expenditure on Railways.* The subjoined table shews the total loan expenditure on Government railways (including lines both open and unopen) in each State, except Tasmania, and on Government railways and tramways in the latter State for the years 1914–15 to 1918–19 :—

## STATE RAILWAYS.—LOAN EXPENDITURE, 1915 TO 1919.

Year ended 30th June.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	All States.
	£	£	£	£	£	£	£
1915 ..	4,394,318	2,809,926	1,739,156	1,285,431	670,209	a228,285	11,127,325
1916 ..	4,787,669	2,440,317	2,034,614	929,143	414,026	a233,601	10,839,370
1917 ..	3,706,422	1,266,352	1,342,249	413,095	308,027	a133,056	7,169,201
1918 ..	2,294,547	761,705	984,147	500,441	181,394	a55,561	4,777,795
1919 ..	1,441,105	878,384	1,416,302	324,041	154,720	a39,165	4,253,717

(a) Including tramways.

The following statement shews the total loan expenditure on railways to the 30th June, 1919 :—

## STATE RAILWAYS.—TOTAL LOAN EXPENDITURE IN EACH STATE TO 30th JUNE, 1919.

State ..	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.a	All States.
	£	£	£	£	£	£	£
Expenditure	81,377,841	55,523,086	39,854,607	20,962,909	17,333,310	5,505,765	220,557,608

(a) Including tramways.

## 7. Gross Revenue ; Total, per Average Mile Worked, and per Train-mile Run.—

The following table shews the total revenue from all sources, the revenue per average mile worked, and the revenue per train-mile run in each State during each financial year from 1915 to 1919 inclusive :—

## STATE RAILWAYS.—GROSS REVENUE, TOTAL, PER AVERAGE MILE WORKED, AND PER TRAIN-MILE RUN, 1915-19.

Year ended 30th June.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	All States.
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## TOTAL GROSS REVENUE.

	£	£	£	£	£	£	£
1915 ..	7,616,511	5,161,073	3,832,003	1,745,378	2,058,244	323,265	20,736,474
1916 ..	8,006,078	5,705,163	3,745,350	1,965,410	2,088,110	348,028	21,858,139
1917 ..	8,380,084	5,952,719	3,831,967	2,273,530	1,877,382	340,505	22,656,187
1918 ..	8,954,880	6,562,259	4,023,921	2,331,549	1,816,388	356,735	24,045,732
1919 ..	9,958,173	6,432,277	3,984,597	2,391,409	1,872,897	401,364	23,040,717

## GROSS REVENUE PER AVERAGE MILE WORKED.

	£	£	£	£	£	£	£
1915 ..	1,877	1,341	810	861	665	603	1,134
1916 ..	1,920	1,443	758	899	627	630	1,142
1917 ..	1,943	1,450	756	1,037	557	591	1,155
1918 ..	1,968	1,585	762	1,043	525	604	1,166
1919 ..	2,102	1,547	748	1,047	534	670	1,215

## GROSS REVENUE PER TRAIN-MILE RUN.

	d.	d.	d.	d.	d.	d.	d.
1915 ..	89.52	80.94	76.71	75.06	91.40	77.18	83.36
1916 ..	89.14	89.03	77.68	83.77	97.32	79.43	89.24
1917 ..	99.07	101.89	85.72	95.22	100.12	75.64	96.47
1918 ..	118.46	115.58	93.58	102.55	106.47	81.05	109.55
1919 ..	119.88	118.46	96.18	103.03	105.60	86.95	111.94

8. **Coaching, Goods, and Miscellaneous Receipts.**—The gross revenue is composed of (a) receipts from coaching traffic, including the carriage of mails, horses, parcels, etc., by passenger trains; (b) receipts from the carriage of goods and live stock; and (c) rents and miscellaneous items. The subjoined table shows the gross revenue for 1915–19, classified according to the three chief sources of receipts. The total of the three items specified has already been given in the preceding paragraph.

**STATE RAILWAYS.—COACHING, GOODS, AND MISCELLANEOUS RECEIPTS,  
1915 TO 1919.**

Year ended 30th June.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	All States.
<b>COACHING TRAFFIC RECEIPTS.</b>							
	£	£	£	£	£	£	£
1915 ..	3,315,294	2,795,673	1,284,595	668,403	617,553	157,726	8,839,244
1916 ..	3,574,063	3,003,263	1,339,753	721,555	646,566	179,784	9,464,984
1917 ..	3,637,656	2,918,557	1,308,896	739,483	607,537	171,220	9,383,349
1918 ..	3,932,936	3,254,274	1,396,803	819,197	617,606	177,854	10,198,670
1919 ..	3,978,180	3,241,194	1,392,476	807,747	637,851	188,329	10,245,777
<b>GOODS AND LIVE STOCK TRAFFIC RECEIPTS.</b>							
	£	£	£	£	£	£	£
1915 ..	4,206,234	2,268,375	2,516,380	1,049,074	1,350,740	153,845	11,544,648
1916 ..	4,329,971	2,610,210	2,364,364	1,211,465	1,356,452	156,860	12,029,322
1917 ..	4,542,619	2,934,259	2,433,868	1,502,363	1,176,058	158,162	12,747,329
1918 ..	4,652,113	3,137,547	2,516,564	1,480,469	1,105,836	168,095	13,060,624
1919 ..	5,583,982	2,957,789	2,483,698	1,536,209	1,127,539	203,412	13,892,629
<b>MISCELLANEOUS RECEIPTS.</b>							
	£	£	£	£	£	£	£
1915 ..	94,983	97,025	31,028	27,901	89,951	11,694	352,582
1916 ..	102,044	91,690	41,233	32,390	85,092	11,384	363,833
1917 ..	(a) 199,809	99,903	89,203	31,684	93,787	11,123	525,509
1918 ..	(c) 369,831	170,438	110,554	31,883	92,946	10,786	786,438
1919 ..	(a) 396,011	233,294	108,423	47,453	107,507	9,623	902,311

(a) Including Refreshment Rooms, 1917, £102,375; 1918, £274,699; and 1919, £289,810.

(i) *New South Wales.* The total earnings for the year 1918–19 amounted to £9,958,173, an increase of £1,003,293 as compared with the previous year. Increases of £45,244, £931,869, and £26,180 took place in the coaching traffic, goods and live stock traffic, and miscellaneous receipts respectively.

(ii) *Victoria.* In Victoria, traffic receipts shewed a decrease of £129,982 as compared with the previous year. This was due to decreases of £13,080 and £179,758, in the receipts from coaching traffic, and goods and live stock traffic respectively, and an increase of £62,856 in the miscellaneous receipts.

(iii) *Queensland.* In Queensland, there was a decrease of £39,324 in 1918–19, relatively to 1917–18. There were decreases of £4,327, £32,866 and £2,131 in respect of coaching traffic, goods and live stock traffic, and miscellaneous receipts respectively.

(iv) *South Australia.* In this State there were increases of £55,740 and £15,570 in goods and live stock receipts and miscellaneous receipts respectively, and a decrease of £11,450 in coaching traffic receipts, the net increase for the year 1918–19 being £59,860 in advance of the receipts for the previous year.

(v) *Western Australia.* In this State the earnings in 1918–19 shewed an increase of £56,509 as compared with 1917–18. There were increases of £20,245, £21,703 and £14,561 in the coaching traffic, goods and live stock traffic, and miscellaneous receipts respectively.

(vi) *Tasmania*. The gross revenue in 1918-19 showed an increase of £44,629 as compared with the previous year. In the coaching traffic and goods and live stock traffic receipts there were increases of £10,475 and £35,317 respectively, and a decrease of £1,163 in the miscellaneous receipts.

The following table shews for the two years 1917-18 and 1918-19 the percentage which each class of receipts bears to the total gross revenue :—

**STATE RAILWAYS.—PERCENTAGE OF REVENUES FROM VARIOUS SOURCES  
ON TOTAL REVENUE, 1918 and 1919.**

Particulars.	1917-18.						
	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	All States.
	%	%	%	%	%	%	%
Coaching .. ..	43.92	49.59	34.71	35.13	34.00	49.86	42.41
Goods and live stock .. ..	51.95	47.81	62.54	63.50	60.88	47.12	54.32
Miscellaneous .. ..	4.13	2.60	2.75	1.37	5.12	3.02	3.27

Particulars.	1918-19.						
	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	All States.
	%	%	%	%	%	%	%
Coaching .. ..	39.95	50.39	34.95	33.78	34.06	46.92	40.92
Goods and live stock .. ..	56.07	45.98	62.33	64.24	60.20	50.68	55.48
Miscellaneous .. ..	3.98	3.63	2.72	1.98	5.74	2.40	3.60

9. **Coaching Traffic Receipts per Average Mile Worked, and per Passenger-train Mile.**—The subjoined table shews the receipts from coaching traffic per average mile of line worked, and per passenger-train mile, in each State and for all States for the year ended the 30th June, 1919 :—

**STATE RAILWAYS.—COACHING TRAFFIC RECEIPTS PER MILE WORKED,  
AND PER PASSENGER-TRAIN MILE, 1918-19.**

State.	Number of Passenger- Train Miles.(a)	Coaching Traffic Receipts.		
		Gross.	Per Average Mile Worked.	Per Passenger- Train Mile.
	No.	£	£	d.
New South Wales .. ..	9,688,834	3,978,180	840	98.54
Victoria .. ..	7,305,134	3,241,194	779	106.48
Queensland .. ..	3,536,504	1,392,476	262	94.50
South Australia .. ..	2,643,693	807,747	353	73.33
Western Australia .. ..	1,771,965	637,851	182	86.39
Tasmania .. ..	447,825	188,329	314	100.93
Total .. ..	25,393,955	10,245,777	497	96.83

(a) The returns include the undermentioned mixed-train mileage, which has been divided between passenger-train miles and goods-train miles in the proportion of one-third and two-thirds respectively in the case of the following States :—

New South Wales ..	1,569,524	Western Australia ..	965,158
Victoria .. ..	2,509,505	Tasmania .. ..	665,583



The preceding table shews that, amongst the States, there is a considerable difference in the amount of the average receipts per average mile worked. In this respect New South Wales shews the maximum of £840, while Western Australia has a minimum of £182, the average for all States being £497. In the case of the receipts per passenger-train mile the maximum occurs in Victoria with 106.48 pence, and the minimum in South Australia, 73.33 pence, the average for all States being 96.83 pence.

With regard to the number of passenger journeys in the various States, it will be seen from the table on page 669 *ante* that there has been a preponderance in favour of Victoria for years past, though it was a declining one during the years 1915-18. In the year 1918-19, however, there was an increase over the two previous years.

This preponderance in Victoria is accounted for, to a great extent, by the large number of metropolitan suburban passengers in that State. Of the total number of passengers carried in Victoria in 1918-19, 103,687,372 were metropolitan suburban passengers, *i.e.*, were carried between stations within twenty miles of Melbourne, while in New South Wales the number of suburban passenger journeys between stations within thirty-four miles of Sydney, including the Richmond line, and of Newcastle, including Greta, was 89,542,008. In Sydney a large proportion of the metropolitan suburban traffic is carried on the electric and steam tramways, the number of passenger journeys during the year 1918-19 being 253,948,487. In Melbourne, on the other hand, the number of passengers carried on the two cable tramway systems during the same period was 124,004,401; and the number carried on the St. Kilda-Brighton, Sandringham-Black Rock, Prahran-Malvern Trust, Melbourne-Brunswick-Coburg Trust, Hawthorn Trust, and the North Melbourne tramways, 54,183,016, making a total of 178,187,417. This matter is referred to hereinafter. (See sub-section 14.)

**10. Goods and Live-Stock Traffic Receipts per Mile Worked, per Goods-train Mile, and per Ton Carried.**—The following table shews the gross receipts from goods and live-stock traffic per mile worked, per goods-train mile, and per ton carried, for the year ended the 30th June, 1919 :—

**STATE RAILWAYS.—GOODS AND LIVE-STOCK TRAFFIC RECEIPTS PER MILE WORKED, PER GOODS-TRAIN MILE, AND PER TON CARRIED, 1918-19.**

State.	Number of Goods-Train Miles. (a)	Goods and Live-Stock Tonnage.	Goods and Live-Stock Traffic Receipts.			
			Gross.	Per Average Mile Worked.	Per Goods-Train Mile.	Per Ton Carried.
	No.	Tons.	£	£	d.	d.
New South Wales ..	10,246,368	12,714,012	5,583,982	1,179	130.79	105.41
Victoria ..	5,726,521	6,515,470	2,957,789	711	123.96	108.95
Queensland ..	6,406,240	3,783,334	2,483,698	467	93.05	157.56
South Australia ..	2,769,231	2,618,510	1,536,209	672	133.14	140.80
Western Australia ..	2,484,662	2,379,403	1,127,539	322	108.91	113.73
Tasmania ..	660,065	472,926	203,412	340	73.96	103.23
Total ..	28,293,087	28,483,655	13,892,629	674	117.85	117.06

(a) The returns include the undermentioned mixed-train mileage, which has been divided between passenger-train miles and goods-train miles in the proportion of one-third and two-thirds respectively in the case of the following States :—

New South Wales ..	1,569,524	Western Australia ..	965,158
Victoria ..	2,509,505	Tasmania ..	665,583

From the preceding table it will be seen that the average cost of freight per ton ranges from 103.23 pence in Tasmania to 157.56 pence in Queensland, the average for all States being 117.06 pence.

11. Working Expenses.—In order to make an adequate comparison of the working expenses of the Government railways in the several States, allowance should be made for the variation of gauges and of physical and traffic conditions, not only on the railways of the different States, but also on different portions of the same system. Where traffic is light, the percentage of working expenses is naturally greater than where traffic is heavy; and this is especially true in Australia, where ton-mile rates are in many cases based on a tapering principle—i.e., a lower rate per ton-mile is charged upon merchandise from remote interior districts—and where on many of the lines there is but little back-loading. Further, though efforts have been made from time to time to obtain a uniform system of accounts in the several States, the annual reports of the Commissioners do not yet comprise fully comparable data of railway expenditure.

The following table shows the total annual expenditure, comprising expenses on (a) maintenance of way, works, and buildings; (b) locomotive power—repairs and renewals; (c) carriages and wagons—repairs and renewals; (d) traffic expenses; (e) compensation; and (f) general and miscellaneous charges; and the percentage of the total of these expenses upon the corresponding gross revenues in each State for each year 1915 to 1919:—

**STATE RAILWAYS.—TOTAL WORKING EXPENSES, AND PERCENTAGES OF WORKING EXPENSES ON GROSS REVENUE, 1915 TO 1919.**

Year ended 30th June.	N.S.W.	Victoria. (a)	Q'land.	S. Aust.	W. Aust.	Tasmania.	All States.
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**TOTAL WORKING EXPENSES.**

	£	£	£	£	£	£	£
1915 .. ..	5,311,162	4,114,973	2,401,679	1,448,495	1,497,826	225,995	15,000,130
1916 .. ..	5,661,168	3,997,412	2,745,061	1,545,489	1,511,055	248,051	15,709,436
1917 .. ..	5,915,360	4,154,040	2,994,187	1,725,341	1,448,451	289,186	16,528,565
1918 .. ..	5,940,447	4,451,092	3,410,157	1,747,055	1,451,334	277,952	17,278,037
1919 .. ..	6,904,450	4,279,663	3,690,445	1,829,634	1,567,591	324,595	18,596,378

**PERCENTAGE OF WORKING EXPENSES ON GROSS REVENUE.**

	%	%	%	%	%	%	%
1915 .. ..	69.73	79.73	62.67	82.99	72.77	69.91	72.34
1916 .. ..	70.71	70.07	73.29	78.63	72.39	71.45	71.87
1917 .. ..	70.59	69.78	78.14	75.89	77.15	84.93	72.95
1918 .. ..	66.34	67.83	84.75	74.93	79.90	77.92	71.85
1919 .. ..	69.33	66.53	82.62	76.51	83.70	80.87	74.26

(a) Including amounts paid for special and abnormal charges.

(i) *New South Wales.* In this State the total working expenses in 1918–19 amounted to £6,904,450, an increase of £964,003 as compared with the previous year. Part of this amount is due to the increase in the train mileage over that of the previous year (1,791,935 miles), at the rate of 10.99 per cent. There were several increases of wages to the staff under awards of the Court of Industrial Arbitration and also large increases in the prices paid for coal and other materials, all of which accounted for a sum of £483,139.

(ii) *Victoria.* In Victoria there was a decrease of £171,429 in the working expenses. This was mainly due to a reduction in the train mileage of 594,706 or at the rate of 9.56 per cent. as compared with the previous year

(iii) *Queensland.* In this State the working expenses increased £280,288, from £3,410,157 in 1917-18 to £3,690,445 in 1918-19. Though there was a decrease of 376,950 in the train mileage, substantial increases were made in the salaries and wages of the staff, in the maintenance services in the Northern and Central Divisions, and in the prices of stores.

(iv) *South Australia.* In South Australia the working expenses in 1918-19 shewed an increase of £82,579 over 1917-18, viz., from £1,747,055 to £1,829,634. This increase was due to the higher prices of stores used in maintenance, and for traffic purposes, together with an addition to the minimum wages staff. It should be mentioned that the average mileage worked during the year was 50 miles greater than in the previous year.

(v) *Western Australia.* In this case the expenditure in 1918-19 was £116,257 greater than in the previous year. The train mileage run was 162,117 more than in the previous year, and the locomotive and rolling stock charges, maintenance, and traffic expenses were greater, mainly owing to the higher cost of stores.

(vi) *Tasmania.* In 1918-19 the working expenses were £46,643 higher than in the previous year. This was mainly owing to the increased salaries and wages paid.

In the preceding table it will be observed that the percentages of the total working expenses to the total gross earnings of the State railways have varied but slightly during the period 1914-19, of which the last year shews the maximum rate, 74.26 per cent.

(vii) *Working Expenses per Average Mile Worked and per Train-mile Run.* The following table shews the working expenses per average mile worked and per train-mile run in each State for the years 1915 to 1919 :—

**STATE RAILWAYS.—WORKING EXPENSES PER AVERAGE MILE WORKED  
AND PER TRAIN-MILE RUN, 1915 TO 1919.**

Year ended 30th June.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	All States.
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**WORKING EXPENSES PER AVERAGE MILE WORKED.**

	£	£	£	£	£	£	£
1915 .. ..	1,309	1,069	508	715	484	422	820
1916 .. ..	1,358	1,011	556	707	454	450	821
1917 .. ..	1,372	1,012	591	787	430	502	842
1918 .. ..	1,305	1,075	646	782	419	470	838
1919 .. ..	1,457	1,029	693	801	447	542	902

**WORKING EXPENSES PER TRAIN-MILE RUN.**

	d.	d.	d.	d.	d.	d.	d.
1915 .. ..	62.42	64.53	48.08	62.29	66.51	53.96	60.30
1916 .. ..	63.03	69.39	56.93	65.87	70.45	56.75	64.14
1917 .. ..	69.93	71.10	66.98	72.26	77.25	64.24	70.37
1918 .. ..	78.58	78.40	79.31	77.07	85.07	63.15	78.72
1919 .. ..	83.12	78.82	89.08	81.12	88.39	70.32	83.13

12. Distribution of Working Expenses.—The subjoined table shows the distribution of working expenses, among four chief heads of expenditure, for the years 1915 to 1919 :—

## STATE RAILWAYS.—DISTRIBUTION OF WORKING EXPENSES, 1915 TO 1919.

Year ended 30th June.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	All States.
MAINTENANCE.							
	£	£	£	£	£	£	£
1915 .. ..	918,790	1,107,310	628,793	230,062	346,771	58,253	3,337,984
1916 .. ..	895,526	995,619	738,160	306,420	361,627	66,618	3,366,970
1917 .. ..	932,990	927,315	774,833	391,334	349,714	82,571	3,458,757
1918 .. ..	996,502	1,049,270	851,525	304,462	371,411	72,515	3,645,685
1919 .. ..	1,126,118	870,123	904,199	338,785	411,986	87,902	3,739,113

## LOCOMOTIVE, CARRIAGE, AND WAGON CHARGES.

1915 .. ..	2,755,669	1,789,836	1,051,683	793,997	714,173	99,829	7,205,187
1916 .. ..	2,917,299	1,747,319	1,193,160	859,334	714,802	108,867	7,545,801
1917 .. ..	2,926,231	1,953,282	1,326,002	909,660	681,243	125,889	7,923,187
1918 .. ..	2,756,183	2,042,846	1,515,121	982,298	656,576	125,190	8,077,214
1919 .. ..	3,277,623	2,012,967	1,650,263	981,646	689,333	149,260	8,768,092

## TRAFFIC EXPENSES.

1915 .. ..	1,502,945	1,099,026	671,622	347,437	392,628	57,814	4,071,472
1916 .. ..	1,638,942	1,127,568	744,229	350,472	393,033	58,571	4,312,815
1917 .. ..	1,763,466	1,137,703	821,941	291,309	375,655	64,247	4,554,321
1918 .. ..	1,727,861	1,225,479	974,513	426,775	379,991	63,728	4,798,347
1919 .. ..	1,927,612	1,257,685	1,067,667	459,147	418,050	72,514	5,202,675

## OTHER CHARGES.

1915 .. ..	133,758	118,801	51,576	26,999	44,254	10,099	385,487
1916 .. ..	209,401	123,906	64,512	29,263	42,193	14,575	483,850
1917 .. ..	(a) 292,673	135,760	70,511	33,038	41,839	16,479	590,300
1918 .. ..	(a) 460,901	133,497	68,998	33,520	43,356	16,519	756,791
1919 .. ..	(a) 573,097	131,888	68,316	50,056	48,222	14,919	886,498

(a) Including Refreshment Rooms, 1917, £94,014; 1918, £236,063; and 1919, £248,249.

13. Net Revenue.—The following table shows the net sums available to meet interest charges, also the percentage of such sums upon the capital cost of construction and equipment of lines opened for traffic in each State for the years 1915 to 1919 :—

## STATE RAILWAYS.—NET REVENUE AND PERCENTAGE OF NET REVENUE ON CAPITAL COST OF LINES OPEN, 1915 TO 1919.

Year ended 30th June.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	All States.
NET REVENUE.							
	£	£	£	£	£	£	£
1915 .. ..	2,305,349	1,046,100	1,430,324	296,883	560,418	97,270	5,736,344
1916 .. ..	2,344,910	1,707,751	1,000,280	419,921	576,455	99,377	6,148,703
1917 .. ..	2,464,724	1,798,679	837,780	548,189	428,931	51,319	6,129,622
1918 .. ..	3,014,433	2,111,167	613,764	584,494	385,054	78,783	6,767,695
1919 .. ..	3,053,723	2,152,614	204,152	56,775	305,06	76,769	6,444,339
PERCENTAGE OF NET REVENUE ON CAPITAL EXPENDITURE.							
	%	%	%	%	%	%	%
1915 .. ..	3.60	2.03	4.28	1.79	3.30	2.10	3.07
1916 .. ..	3.41	3.14	2.88	2.44	3.27	2.07	3.12
1917 .. ..	3.42	3.23	2.30	3.10	2.46	1.04	3.00
1918 .. ..	4.02	3.73	1.65	3.25	2.06	1.58	3.23
1919 .. ..	3.99	3.75	0.77	3.01	1.70	1.51	3.01

(i) *Net Revenue per Average Mile Worked and per Train-mile Run.* Tables shewing the gross earnings and the working expenses per average mile worked and per train-mile run have been given above. The net earnings, *i.e.*, the excess of gross earnings over working expenses, per average mile worked and per train-mile run are shewn in the following table:—

**STATE RAILWAYS.—NET REVENUE PER AVERAGE MILE WORKED AND PER TRAIN-MILE RUN, 1915 TO 1919.**

Year ended 30th June.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	All States.
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**NET REVENUE PER AVERAGE MILE WORKED.**

	£	£	£	£	£	£	£
1915 .. ..	568	272	302	147	181	181	314
1916 .. ..	562	432	202	192	173	180	321
1917 .. ..	571	438	165	250	127	89	312
1918 .. ..	663	510	116	261	105	133	328
1919 .. ..	645	518	55	246	87	128	313

**NET REVENUE PER TRAIN-MILE RUN.**

	d.	d.	d.	d.	d.	d.	d.
1915 .. ..	27.10	16.41	28.63	12.77	24.89	23.23	23.06
1916 .. ..	26.11	29.64	20.75	17.90	26.87	22.68	25.10
1917 .. ..	29.14	30.79	18.74	22.96	22.87	11.40	26.10
1918 .. ..	39.88	37.18	14.27	25.78	21.40	17.90	30.83
1919 .. ..	36.76	39.64	7.10	24.91	17.21	16.63	28.81

14. *Traffic Conditions.*—Reference has already been made to the difference in the traffic conditions on many of the lines of the Commonwealth (see sub-sections 9, 10, and 11 hereof). These conditions differ not only in the several States, but also on different lines in the same State, and apply to both passenger and goods traffic. By far the greater part of the population of Australia is confined to a fringe of country near the coast, more especially in the eastern and southern districts. A large proportion of the railway traffic between the chief centres of population is therefore carried over lines in the neighbourhood of the coast, and is thus, in some cases, open to sea-borne competition. On most of the lines extending into the more remote interior districts traffic is light; the density of population diminishes rapidly as the coastal regions are left behind; and there is a corresponding diminution in the volume of traffic, while, in comparison with other more settled countries, there is but little back-loading.

As an indication of the different traffic conditions prevailing in the several States, the following table is given shewing the numbers of passenger journeys and the tons of goods carried per 100 of the mean population; and per average mile worked in each State during the financial year 1918–19:—

**STATE RAILWAYS.—PASSENGER JOURNEYS AND TONNAGE OF GOODS AND LIVE STOCK, 1918–19.**

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	All States.
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**PER 100 OF MEAN POPULATION.**

Passenger journeys .. No.	5,107	7,821	3,804	4,527	5,527	904	5,492
Goods and live stock .. Tons	659	455	545	587	759	226	566

**PER AVERAGE MILE OF LINE WORKED.**

Passenger journeys .. No.	20,808	26,907	4,961	8,830	4,940	3,154	13,404
Goods and live stock .. Tons	2,684	1,567	711	1,146	678	790	1,382

Particulars of the actual numbers of passengers and tons of goods and live stock carried have already been given (see sub-section 2 hereof).

(i) *Metropolitan and Country Passenger Traffic.* A further indication of the difference in passenger traffic conditions might be obtained from a comparison of the volume of metropolitan, suburban, and country traffic in each State. Particulars are, however, available only for the States of New South Wales and Victoria. The subjoined table shews the number of metropolitan and country passengers carried in each of the States mentioned and the revenue derived therefrom during the year 1918-19 :—

**STATE RAILWAYS.—METROPOLITAN, SUBURBAN, AND COUNTRY PASSENGER TRAFFIC, 1918-19.**

Particulars.	Number of Passenger Journeys.			Revenue.		
	Metropolitan.	Country.	Total.	Metropolitan.	Country.	Total.
N.S.W. ..	a89,542,008	9,026,760	98,568,768	£ 1,207,827	£ 2,326,041	£ 3,533,868
Victoria ..	b103,687,372	8,217,414	111,904,786	1,273,668	1,620,741	2,894,409

(a) Within 34 miles of Sydney and Newcastle, and including the Richmond line.  
(b) Within 20 miles of Melbourne.

From this table it will be seen that the number of passenger journeys in country districts in Victoria was less than the corresponding number in New South Wales, while the number of metropolitan passenger journeys in Victoria was greater than in New South Wales, although in the latter State both Sydney and Newcastle are included. In Sydney a larger proportion of the suburban traffic is carried by the tramway systems than in Melbourne. The Sydney ferries also carry a large number of suburban passengers (see § 3. Tramways).

In previous issues of the *Year Book* reference has been made to the scheme for the electrification of the suburban lines running out of Melbourne. Part of this scheme was brought into operation on the lines between Sandringham and Essendon, via Melbourne, on the 28th May, 1919, followed by the St. Kilda line on the 31st August, and the Port Melbourne line on the 26th October. The remainder of the suburban lines are receiving attention, but the completion of the scheme will not take place for some time to come. It may be mentioned that the Melbourne suburban lines have a total length of 195.78 route miles, of which about 22 miles have been electrified. In Sydney, a Metropolitan Railway Construction Branch of the Railway Department has been created to deal specially with electrical transport in the city area. The Minister has approved of the construction of an underground city railway, and plans have been prepared and a commencement made with the preliminary works. The preliminary work in the location of a system of electric railways for the eastern, western, and northern suburbs has also been in hand. Further progress with this work has, however, for financial reasons, been deferred for the present.

(ii) *Goods Traffic.* The differing conditions of the traffic in each State might also, to some extent, be analysed by an examination of the tonnage of various classes of commodities carried, and of the revenue derived therefrom. Comparative particulars regarding the quantities of some of the leading classes of commodities carried on the Government railways are available for all the States; corresponding information regarding the revenue derived from each class of commodity is not, however, generally available in a comparable form. In this connexion it may be stated that the following resolution was passed at the Interstate Conference of Railway Commissioners held in Melbourne in May, 1909 :—“That in view of the variations in the character and classification of the goods traffic in the different States, the subdivisions of tonnage carried and revenue in each State shall be those which best suit local conditions.”

The following table shows the number of tons of various representative commodities carried, and the percentage of each class on the total tonnage carried during the financial year 1918-19 :—

**STATE RAILWAYS.—CLASSIFICATION OF COMMODITIES CARRIED, 1918-19.**

State.	Minerals.	Fire-wood.	Grain and Flour.	Hay, Straw, and Chaff.	Wool.	Live Stock.	All other Com-modities.	Total.
TONS CARRIED.								
New South Wales	66,827,719	191,432	1,684,776	526,793	126,037	645,858	2,466,658	12,469,273
Victoria ..	61,106,493	538,863	1,647,264	332,499	83,014	488,853	2,318,484	6,515,470
Queensland ..	1,213,087	255,588	436,996	368,004	62,914	358,503	1,487,342	3,783,334
South Australia	886,369	155,136	597,040	81,393	26,741	124,731	747,100	2,618,510
Western Australia	421,795	535,282	594,196	83,245	31,915	78,094	634,876	2,379,403
Tasmania ..	122,727	46,170	(e)	37,871	3,857	17,384	244,017	472,926
All States ..	10,578,190	1,722,471	4,566,272	1,430,705	334,478	1,713,423	7,899,377	28,238,916

**PERCENTAGE ON TOTAL TONNAGE CARRIED.**

	%	%	%	%	%	%	%	%
New South Wales	54.76	1.54	13.51	4.22	1.01	5.18	19.78	100.00
Victoria ..	16.98	8.27	25.28	5.10	1.23	7.50	35.59	100.00
Queensland ..	32.06	6.76	6.98	9.75	1.66	9.48	39.31	100.00
South Australia	33.85	5.93	22.80	3.11	1.02	4.76	28.53	100.00
Western Australia	17.73	22.50	24.97	3.50	1.34	3.28	26.68	100.00
Tasmania ..	25.95	9.76	(e)	8.01	0.82	3.67	51.79	100.00
All States ..	37.46	6.10	16.15	5.07	1.18	6.07	27.97	100.00

(a) Exclusive of 244,739 tons of coal on which only shunting and haulage were collected. (b) Coal, stone, gravel, and sand. (c) Up journey only (to coast). (d) Flour only. (e) Included in all other commodities. (f) Sugar-cane.

**15. Passenger-Mileage and Ton-Mileage.**—In earlier issues of the Year Book reference has been made to the resolution on the subject of passenger-mileage and ton-mileage statistics passed at the Interstate Conference of Railway Commissioners held in Melbourne in May, 1909; and to the Report [Cd. 4697] on the same subject by a Committee appointed by the President of the Board of Trade in the United Kingdom (see Year Book No. 10, p. 654).

In the Commonwealth, information regarding "passenger-miles" and "ton-miles" is available, either wholly or in part, for three of the States only, viz., New South Wales, South Australia, and Tasmania, but is not available at all for either Victoria, Queensland, or Western Australia. Of the three States which give particulars of the nature indicated, New South Wales furnishes the information in a classified form according to class of passengers and nature of commodities carried. South Australia supplies particulars for all classes of passengers and of goods together, and Tasmania supplies particulars for all classes of passengers together and a classification of nature of commodities carried. Western Australia furnished particulars as to ton-miles for the years 1907-12, but has since discontinued to record them.

(i) *Passenger-Miles.* Particulars for the whole of the Commonwealth period regarding total "passenger-miles" are available for one State only, namely, Tasmania. For New South Wales, to the end of 1909-10, particulars are available for suburban and extended suburban traffic only—i.e., for all stations within 34 miles of Sydney (including the Richmond line), and of Newcastle (including Greta), but since that date all passenger traffic is included. For South Australia particulars are available for each year since 1904. No particulars are available for other States. In the tables given below

the average number of passengers carried per "train" is obtained by dividing the number of "passenger-miles" by the number of "passenger-train-miles." Similarly, the "density of traffic" is obtained by dividing the number of "passenger-miles" by the "average miles worked."

## STATE RAILWAYS.—SUMMARY OF "PASSENGER-MILES," 1915 TO 1919.

Year ended 30th June—	Passenger Train Mileage.	Number of Passenger Journeys.	Total Passenger-miles.	Amount Received from Passengers.	Average Number of Passengers carried per Train.	Average Mileage per Passenger-journey.	Average Receipt per Passenger-mile.	Average Fare per Passenger-journey.	Density of Traffic per Average Mile Worked.
	Miles. (000 omitted.)	No. (000 omitted.)	No. (000 omitted.)	£	No.	Miles.	d.	d.	No.

## NEW SOUTH WALES.

1915	10,099	88,774	1,230,901	2,910,684	122	13.87	0.57	7.87	303,402
1916	10,283	92,851	1,321,491	3,147,041	129	12.85	0.57	8.13	316,980
1917	10,435	96,710	1,473,707	3,202,167	141	15.24	0.52	7.95	341,690
1918	9,441	94,305	1,384,766	3,473,340	147	14.67	0.60	8.84	304,277
1919	9,689	98,569	1,367,691	3,533,869	141	13.88	0.62	8.60	288,725

## SOUTH AUSTRALIA.

1915	2,815	18,831	215,489	560,012	77	11.44	0.60	7.14	106,362
1916	2,786	20,513	218,609	603,203	78	10.66	0.66	7.06	100,050
1917	2,635	18,197	210,303	615,909	80	11.61	0.70	8.16	95,897
1918	2,597	18,936	234,197	703,221	90	12.37	0.72	8.91	104,786
1919	2,644	20,177	238,845	703,748	90	11.84	0.71	8.37	104,527

## TASMANIA.

1915	454	1,751	36,051	132,680	79	20.59	0.88	18.19	67,260
1916	465	2,078	46,719	154,225	100	22.48	0.79	17.81	84,567
1917	471	1,972	40,164	145,941	85	20.37	0.87	17.76	69,607
1918	448	1,874	40,385	151,874	90	21.55	0.90	19.45	68,324
1919	448	1,889	39,961	167,035	89	21.15	1.00	21.22	67,713

(ii) *Ton-miles.* Particulars regarding total "ton-miles" are available for each year since 1901 for the States of New South Wales, South Australia, and Tasmania. Corresponding particulars for Western Australia are available for the years 1907 to 1912, but not for subsequent years. (See Year Book No. 11, p. 691.) The average freight-paying load carried per "train" is obtained by dividing the total "ton-miles" in the fourth column by the goods-train mileage in the second column. In New South Wales the tonnage carried is exclusive of coal on which only shunting and haulage charges are collected, and the amount of earnings specified excludes terminals. In South Australia and Tasmania terminals are included.



## STATE RAILWAYS.—SUMMARY OF "TON-MILES," 1915 TO 1919.

Year ended the 30th June—	Goods Train Mileage.	Total Tons Carried.	Total "Ton-miles."	Earnings.	Average Freight-paying Load carried per "Train."	Average Miles per Ton.	Earnings per "Ton-mile."	Density of Traffic per Average Mile Worked.
	No. (,000 omitted.)	No. (,000 omitted.)	No. (,000 omitted.)	£	Tons.	Miles.	d.	Tons.

## NEW SOUTH WALES. (a)

1915	10,321	11,660	916,923	3,633,613	88.84	78.64	0.95	226,010
1916	11,273	11,614	1,028,760	3,738,227	91.26	88.58	0.87	246,764
1917	9,866	11,468	1,136,485	3,936,639	115.19	99.10	0.83	263,502
1918	8,703	11,094	1,044,437	4,051,655	120.02	94.14	0.93	229,496
1919	10,246	12,469	1,237,806	4,889,343	120.80	99.27	0.95	261,306

## SOUTH AUSTRALIA.

1915	2,766	2,076	237,014	1,049,074	85.70	114.15	1.06	116,986
1916	2,845	2,397	278,942	1,211,465	98.04	116.37	1.04	127,662
1917	3,095	2,822	298,442	1,502,363	96.41	105.74	1.21	136,089
1918	2,844	2,768	270,104	1,480,469	94.99	97.59	1.32	120,852
1919	2,769	2,619	263,984	1,536,209	95.33	100.81	1.40	115,529

## TASMANIA. (b)

1915	551	388	19,809	141,049	35.90	51.09	1.70	37,000
1916	586	367	20,105	145,094	34.29	54.81	1.73	36,392
1917	609	380	21,288	146,248	34.93	55.98	1.65	36,894
1918	609	389	21,539	153,577	35.39	55.42	1.71	36,444
1919	660	456	23,745	190,524	35.97	52.12	1.93	39,641

(a) Exclusive of tonnage on which only shunting and haulage charges are collected.

(b) Exclusive of live stock.

(iii) *Classification of Commodity Ton-mileage.* As previously mentioned, New South Wales and Tasmania are the only States for which particulars specifying the ton-mileage and the earnings per ton-mile for various classes of commodities are available.

The subjoined statement gives particulars for the last financial year in respect of New South Wales. Miscellaneous traffic consists of timber, bark, bricks, drain-pipes in six-ton lots, and cement in full truck loads, agricultural and vegetable seeds in five-ton lots, and traffic of a similar nature. A and B classes consist of lime, vegetables, tobacco leaf, caustic soda and potash, copper ingots, fat and tallow, water and mining plant in six-ton lots, leather in one and three-ton lots, agricultural implements in five-ton lots, and other traffic of a similar nature. The table does not include 244,739 tons of coal on which only shunting and haulage charges were collected, nor does it include £89,942 for haulage, tonnage dues, etc.

**NEW SOUTH WALES.—SUMMARY OF TON-MILEAGE FOR THE YEAR ENDED  
30th JUNE, 1919.**

Particulars.	Total Tons Carried.	Total "Ton-miles."	Average Miles per Ton.	Earnings (exclusive of Terminals).	Earnings per "Ton-mile."	Per cent. on Total Tonnage.
	No.	No.	No.	£	d.	%
Coal, coke, and shale	5,834,953	231,036,372	39.59	622,759	0.64	46.78
Other minerals ..	790,721	52,796,683	66.77	116,748	0.53	6.34
Crude ores ..	202,045	26,607,595	131.19	62,146	0.56	1.62
Miscellaneous ..	931,726	106,244,769	114.03	363,686	0.82	7.47
Firewood ..	191,432	5,832,521	30.46	27,769	1.14	1.54
Fruit ..	106,532	22,658,587	212.69	104,379	1.11	0.85
Grain, flour, etc. (Up journey to coast) ..	1,684,776	298,516,553	177.18	545,088	0.44	13.51
Hay, straw, and chaff	526,793	150,110,252	284.95	271,396	0.43	4.22
Frozen meat ..	27,449	5,016,356	182.75	27,264	1.30	0.22
A class ..	666,030	63,672,468	95.60	348,746	1.31	5.34
B class ..	283,982	29,499,062	103.87	253,079	2.06	2.28
C class ..	34,647	2,461,524	71.04	30,210	2.94	0.28
1st class ..	199,938	15,165,729	75.85	215,773	3.41	1.63
2nd class ..	216,354	34,734,634	160.55	644,715	4.46	1.73
Wool ..	126,037	36,686,217	291.07	344,344	2.25	1.01
Live stock ..	645,858	156,766,547	242.72	911,241	1.39	5.18
<b>Total ..</b>	<b>12,469,273</b>	<b>1,237,805,869</b>	<b>99.27</b>	<b>4,889,343</b>	<b>0.95</b>	<b>100.00</b>

In the following table will be found particulars of the ton-mileage and earnings per ton-mile in the case of Tasmania :—

**TASMANIA.—SUMMARY OF TON-MILEAGE FOR THE YEAR ENDED  
30th JUNE, 1919.**

Particulars.	Total Tons Carried.	Total "Ton-miles."	Average Miles per Ton.	Earnings.	Earnings per "Ton-mile."	Per cent. on Total Tonnage.
	No.	No.	No.	£	d.	%
Agricultural produce ..	63,592	3,494,735	54.95	25,099	1.72	13.96
Hay, straw, chaff, and horse feed ..	37,871	2,108,221	55.66	14,440	1.64	8.31
Stable manure ..	2,497	92,023	36.85	382	0.99	0.55
Manures, other than stable	9,557	310,477	32.48	1,590	1.22	2.10
Fruit ..	6,578	391,042	59.44	4,145	2.54	1.44
Native coal ..	59,996	6,293,044	104.89	20,372	0.77	13.17
Minerals, other than native coal ..	62,731	1,117,442	17.81	11,238	2.41	13.77
Bark ..	1,477	62,472	42.29	545	2.09	0.32
Firewood ..	46,170	1,326,268	28.72	6,945	1.25	10.13
Timber ..	105,780	4,850,724	45.85	33,270	1.64	23.23
Wool ..	3,857	230,062	59.64	5,582	5.82	0.85
Miscellaneous goods ..	55,436	3,468,466	62.57	66,916	4.63	12.17
<b>Total ..</b>	<b>455,542</b>	<b>23,744,976</b>	<b>52.12</b>	<b>190,524</b>	<b>1.92</b>	<b>100.00</b>

**16. Interest Returned on Capital Expenditure.**—In the year 1901-2 the State Government railways made a profit of 2.94 per cent. on the capital expenditure at that time. In the subsequent years up to and including the year 1910-11, the percentages were 2.56, 3.11, 3.36, 3.98, 4.45, 4.32, 4.22, 4.26, and 4.63 respectively,

rates which shew substantial increases with one exception on that for the first-named year. Since 1910-11, the rates have oscillated and have shewn a decreasing tendency, the rate for the year 1918-19 being 3.01, or 1.62 less than that for the year 1910-11. The reasons for this reduction are to be found in the increases of the charges in respect of working expenses, brought about by the opening of new lines, the higher cost of materials, and the raising of the rate of wages, while in recent years additional expenses have been incurred in consequence of the war. The return on the capital invested as at the 30th June, 1919, was not equal to the interest payable for that year, the rate of which was 4.02 per cent. This average, however, does not accurately express the position. At an early period the necessity for the construction of railways to open up undeveloped districts was recognised, and the money had to be raised at a very high rate of interest. It may be noted, however, that although the loans made for expenditure on railway construction and equipment very largely increase the amount of the public debt of the States, forming, in fact, nearly three-fifths of the total debt, the money borrowed has not been sunk in undertakings which give no return, but has been expended on works which are increasingly reproductive, yielding in most cases a direct return on the capital expended, and representing a greater value than their original cost. In Europe the national debts of various countries have been incurred principally through the expenses of prolonged wars, and the money has gone beyond recovery; but in Australia the expenditure by the States up to a recent period is represented to a large extent by public works which yield a direct return. In addition to the purely commercial aspect of the figures relating to the revenue and expenditure of the State railways, it is of great importance that the object with which many of the lines were constructed should be kept clearly in view; the anticipated advantage in building these lines has been the ultimate settlement of the country rather than the direct returns from the railways themselves, and the policy of the State Governments has been to use their railway systems for the development of the country's resources to the maximum extent consistent with the direct payment by the customers of the railways of the cost of working and interest charges.

(i) *Profit or Loss after Payment of Working Expenses and Interest.* The net revenue of the Government railways of each State after payment of working expenses is shewn in sub-section 13 hereof. The following table shews the amount of interest payable on expenditure from loans on the construction and equipment of the railways of each State, the actual profit or loss after deducting working expenses and interest and all other charges from the gross revenue, and the percentage of such profit or loss on the total capital cost of construction and equipment.

It will be seen that during the year ended 30th June, 1915, only two States, New South Wales and Queensland, shew a profit after paying working expenses and interest, while in the four years ended 30th June, 1919, all the States shew a loss.

The losses during the last four years for all the States are due to the causes to which allusion has already been made in the remarks as to increases in the working expenses of the railways (see pp. 679 and 680 *ante*). It will be observed in the following table that the interest charges in 1919 were £1,941,040 higher than they were in 1915.

**STATE RAILWAYS.—INTEREST ON LOAN EXPENDITURE, PROFIT OR LOSS, AND PERCENTAGE OF PROFIT OR LOSS ON TOTAL COST, 1915 TO 1919.**

Year ended 30th June.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	All States.
AMOUNT OF INTEREST ON RAILWAY LOAN EXPENDITURE.							
	£	£	£	£	£	£	£
1915 .. ..	2,279,070	1,764,379	1,312,196	584,812	586,069	172,349	6,698,875
1916 .. ..	2,508,659	1,922,410	1,418,280	663,588	625,250	180,772	7,378,959
1917 .. ..	2,858,789	2,006,197	1,500,800	673,985	643,765	181,617	7,865,153
1918 .. ..	3,043,349	2,120,547	1,559,136	716,234	654,059	183,977	8,277,302
1919 .. ..	3,265,540	2,157,798	1,617,404	747,671	665,100	186,402	8,639,915

STATE RAILWAYS. INTEREST ON LOAN EXPENDITURE, PROFIT OR LOSS, AND PERCENTAGE OF PROFIT OR LOSS ON TOTAL COST, 1915 TO 1919.—*continued.*

Year ended 30th June,	N.S.W.	Victoria. (a)	Q'land.	S. Aust.	W. Aust.	Tasmania.	All States.
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PROFIT OR LOSS AFTER PAYMENT OF WORKING EXPENSES, INTEREST, AND OTHER CHARGES.(b)

	£	£	£	£	£	£	£
1915 .. ..	+ 26,279	- 718,279	+ 118,128	- 287,929	- 25,651	- 75,079	- 962,531
1916 .. ..	- 223,749	- 214,659	- 417,991	- 243,667	- 48,795	- 81,395	- 1,230,256
1917 .. ..	- 394,064	- 207,518	- 663,020	- 125,796	- 214,834	- 130,298	- 1,735,530
1918 .. ..	- 28,916	- 9,380	- 945,372	- 131,740	- 289,005	- 105,194	- 1,509,607
1919 .. ..	- 211,817	- 5,184	- 1,323,202	- 18,896	- 359,794	- 104,633	- 2,193,576

PERCENTAGE OF PROFIT OR LOSS ON CAPITAL COST OF CONSTRUCTION AND EQUIPMENT.(b)

	%	%	%	%	%	%	%
1915 .. ..	+ 0.04	- 1.39	+ 0.35	- 1.73	- 0.15	- 1.62	- 0.51
1916 .. ..	- 0.33	- 0.39	- 1.20	- 1.41	- 0.29	- 1.70	- 0.62
1917 .. ..	- 0.55	- 0.37	- 1.82	- 0.71	- 1.23	- 2.65	- 0.85
1918 .. ..	- 0.03	- 0.02	- 2.53	- 0.73	- 1.63	- 2.11	- 0.72
1919 .. ..	- 0.28	- 0.01	- 3.46	- 1.00	- 2.00	- 2.16	- 1.03

(a) Allowing for payment of special expenditure and charges (see sub-section 11 above).

(b) + Indicates a profit; - indicates a loss.

17. **Passenger Fares and Goods Rates.**—Fares and rates are changed from time to time to suit the convenience and varying necessities of the railways, but, as traffic is developed and revenue increases, they are in many cases reduced to an extent consistent with the direct payment by the customers of the railways of the cost of working and interest charges.

(i) *Passenger Fares.* On the Australian Government railways two classes are provided for passenger traffic. The fares charged may be classified as follows:—  
(a) Fares between specified stations (including suburban fares). (b) Fares computed according to mileage rates. (c) Return, periodical, and excursion fares. (d) Special fares for workmen, school pupils, and others. Fares in class (a) are issued at rates lower than the ordinary mileage rates. Fares in class (b) are charged between stations not included in class (a). On the average, mileage-rate fares run about 1.88 pence per mile for first-class and about 1.21 pence per mile for second-class single tickets. In New South Wales, Victoria, and Queensland the mileage rates are based upon a tapering principle, i.e., a lower charge per mile is made for a long journey than for a short journey. In Victoria and Western Australia, return fares are generally about  $1\frac{1}{2}$  to  $1\frac{3}{4}$  times the single fare, and the second-class are about 30 to 45 per cent. lower than the first-class fares. In all the States the issue of ordinary return tickets outside the suburban areas has now been discontinued. Special excursion return tickets are, however, issued at certain times of the year, subject to restrictions as to break of journey and trains available for such tickets.

The following table shews the passenger fares for different distances charged in each State between stations for which specific fares are not fixed :—

### ORDINARY PASSENGER MILEAGE RATES ON STATE RAILWAYS, 1919.

State.	For a Journey of—											
	50 Miles.		100 Miles.		200 Miles.		300 Miles.		400 Miles.		500 Miles.	
	First Class.	Second Class.	First Class.	Second Class.	First Class.	Second Class.	First Class.	Second Class.	First Class.	Second Class.	First Class.	Second Class.
New South Wales	s. d. 7 10	s. d. 5 2	s. d. 15 8	s. d. 10 5	s. d. 31 4	s. d. 19 5	s. d. 46 8	s. d. 28 5	s. d. 62 0	s. d. 36 3	s. d. 72 6	s. d. 41 4
Victoria ..	8 6	5 8	16 8	11 2	33 2	22 2	49 4	32 10	64 4	43 0	79 6	53 0
Queensland ..	8 2	5 5	15 4	9 11	29 10	19 0	43 4	27 1	56 0	34 3	68 8	41 6
South Australia	7 6	5 0	15 6	10 0	30 0	20 0	45 0	30 0	60 0	40 0	75 0	50 0
Western Australia	8 4	5 3	16 8	10 5	33 4	20 10	50 0	31 3	66 8	41 8	83 4	52 1
Tasmania ..	8 3	5 6	16 3	10 9	32 3	21 6	..	..	..	..	..	..
Average ..	8 1	5 4	15 11	10 5	31 8	20 6	46 10	29 11	61 10	39 0	75 10	47 7
Average per passenger mile..	d. 1.94	d. 1.28	d. 1.91	d. 1.25	d. 1.90	d. 1.23	d. 1.87	d. 1.20	d. 1.86	d. 1.17	d. 1.82	d. 1.14

The above rates were those in force in June, 1919. Since that time several changes have been made in the rates, of which full particulars are not yet available.

(ii) *Parcel Rates.* In all the States parcels may be transmitted by passenger train at prescribed rates, which are based upon weight and distance carried. The rates vary slightly in the different States. In New South Wales they range from threepence for a parcel not exceeding 3 lbs. for any distance up to 25 miles to thirteen shillings and fourpence for a parcel weighing from 85 lbs. to 112 lbs. for a distance of 500 miles. In Victoria the charge for a parcel weighing from 84 lbs. to 112 lbs. for a distance over 450 miles is twelve shillings and fivepence. The rate in Queensland for a parcel weighing from 85 to 112 lbs. for 500 miles is sixteen shillings and threepence; in South Australia for 550 miles fourteen shillings and ten pence; in Western Australia for a parcel weighing from 99 lbs. to 112 lbs. for 500 miles fourteen shillings; and in Tasmania for a distance of 250 miles the rate is eight shillings.

(iii) *Goods Rates.* The rates charged for the conveyance of goods and merchandise may generally be divided into three classes, viz. :—(a) Mileage rates, (b) District or "development" rates, and (c) Commodity rates. In each of the States there is a number—ranging from eight in Victoria to fifteen in Tasmania—of different classes of freight. Most of the mileage rates are based upon a tapering principle, i.e., a lower charge per ton-mile is made for a long haul than for a short haul; but for some classes of freight there is a fixed rate per mile irrespective of distance. District rates are charged between specified stations, and are somewhat lower than the mileage rates. In addition to the ordinary classification of freights under class (a), certain commodities, such as wool, grain, agricultural produce, and crude ores, are given under class (c) Special rates, lower than the mileage rates.

Space will not permit of exhibiting a complete analysis of goods rates in the several States. As an indication of the range and amount of such rates the subjoined tables are given. The first table shews for each State the truck-load rates charged for hauls of different distances in respect of agricultural produce not otherwise specified; these special rates are here given for this class of produce, since it is generally forwarded in truck-loads.

### RATES FOR AGRICULTURAL PRODUCE IN TRUCK-LOADS ON STATE RAILWAYS, 1919.

State.	Charge per Ton in Truck-loads for a Haul of—					
	50 Miles.	100 Miles.	200 Miles.	300 Miles.	400 Miles.	500 Miles.
	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>
New South Wales .. ..	5 11	8 10	11 2	12 5	13 5	14 2
Victoria .. ..	5 10	9 2	12 2	14 0	15 10	17 6
Queensland .. ..	4 10	9 2	11 0	12 0	13 0	14 0
South Australia (a) .. ..	5 9	8 11	11 0	12 11	14 8	16 5
Western Australia .. ..	6 3	8 11	12 1	17 0	22 0	24 0
Tasmania .. ..	7 1	11 3	12 6	..	..	..
Average .. ..	5 11	9 5	11 8	13 8	15 10	17 3
Average per ton-mile .. ..	<i>d.</i>	<i>d.</i>	<i>d.</i>	<i>d.</i>	<i>d.</i>	<i>d.</i>
	1.43	1.13	0.70	0.55	0.47	0.41

(a) Wheat is carried at a lower rate than that specified above for agricultural produce.

The next table shews for each State the ordinary mileage rates charged per ton for hauls of different distances in respect of (a) the highest-class freight, and (b) the lowest-class freight :—

### ORDINARY GOODS MILEAGE RATES ON STATE RAILWAYS, 1919.

State.	Charge per ton for a Haul of—											
	50 Miles.	100 Miles.	200 Miles.	300 Miles.	400 Miles.	500 Miles.	50 Miles.	100 Miles.	200 Miles.	300 Miles.	400 Miles.	500 Miles.
	Highest Class Freight.						Lowest Class Freight.					
	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>
New South Wales .. ..	29 11	58 5	101 9	128 11	139 9	150 7	4 4	5 7	6 5	8 4	10 7	12 10
Victoria .. ..	23 9	46 6	87 9	120 0	147 6	175 3	3 0	4 6	6 8	8 10	9 10	10 8
Queensland .. ..	44 2	80 7	145 2	209 9	242 0	255 7	4 10	9 2	15 9	20 1	24 6	28 10
South Australia .. ..	31 3	60 2	113 1	155 5	192 6	224 3	3 10	7 3	11 0	12 11	14 8	16 5
Western Australia (b) .. ..	41 1	71 1	125 10	171 9	209 4	240 8	5 0	8 4	14 2	19 2	23 4	27 6
Tasmania .. ..	33 9	54 0	100 0	..	..	..	2 10	5 7	8 6	..	..	..
Average .. ..	34 0	61 10	112 4	157 2	186 3	209 3	4 0	6 9	10 5	13 10	16 7	19 3
Average per ton-mile .. ..	<i>d.</i>	<i>d.</i>	<i>d.</i>	<i>d.</i>	<i>d.</i>	<i>d.</i>	<i>d.</i>	<i>d.</i>	<i>d.</i>	<i>d.</i>	<i>d.</i>	<i>d.</i>
	8.16	7.42	6.74	6.29	5.59	5.02	0.96	0.81	0.63	0.55	0.50	0.46

(a) Maximum freight for distances up to 500 miles on highest class goods to Western stations is 210 shillings per ton.

(b) The lowest class freights are for manures.

The classification of commodities varies in the several States. Generally, the highest-class freight includes expensive, bulky, or fragile articles, while the lowest-class comprises many ordinary articles of merchandise, such as are particularly identified or connected with the primary industries of each State.

In New South Wales, for example, the highest-class freight comprises such articles as boots, drapery, drugs, groceries, furniture, liquors, crockery and glassware, cutlery, ironmongery, confectionery, and carpets. In the same State the lowest-class freight includes agricultural produce, ores, manures, coal, coke, shale, firewood, limestone, stone, slates, bricks, screenings, rabbit-proof netting, timber, and posts and rails.

Since June, 1919, several changes have been made in the goods mileage rates, of which full particulars are not yet available.

18. Numbers and Description of Rolling Stock, 1918-19.—The following table shews the rolling stock in use on the State Government railways in each State, classified according to gauge :—

**ROLLING STOCK ON STATE GOVERNMENT RAILWAYS IN EACH STATE,  
CLASSIFIED ACCORDING TO GAUGE, 1918-19.**

State.	Gauge.					Total.
	5 ft. 3 in.	4ft. 8½ in.	3 ft. 6 in.	2 ft. 6 in.	2 ft. 0 in.	

**LOCOMOTIVES.**

New South Wales ..	..	1,279	..	..	..	1,279
Victoria ..	780	..	..	17	..	797
Queensland ..	..	..	654	..	4	658
South Australia ..	241	..	245	..	..	486
Western Australia ..	..	..	424	..	..	424
Tasmania ..	..	..	73	..	7	80
Total ..	1,021	1,279	1,396	17	11	3,724

**PASSENGER VEHICLES.**

	Ordinary.	With Motors.		Ordinary.	With Motors.			Ordinary.	With Motors.
New South Wales ..	..	..	1,659	..	..	..	..	1,659	..
Victoria ..	1,518	98	..	..	..	40	..	1,558	98
Queensland ..	..	..	..	794	10	..	7	801	10
South Australia ..	454	1	..	169	2	..	..	623	3
Western Australia ..	..	..	..	396	..	..	..	396	..
Tasmania ..	..	..	..	169	2	..	6	175	2
Total ..	1,972	99	1,659	1,528	14	40	13	5,212	113

**VEHICLES, OTHER THAN PASSENGER.**

New South Wales ..	..	23,076	..	..	..	23,076
Victoria ..	20,141	..	..	248	..	20,389
Queensland ..	..	..	14,353	..	134	14,487
South Australia ..	4,036	..	5,470	..	..	9,506
Western Australia ..	..	..	10,105	..	..	10,105
Tasmania ..	..	..	1,757	..	77	1,834
Total ..	24,177	23,076	31,685	248	211	79,397

19. Number of Railway Employees.—The following table shews the number of employees in the Railway Department of each State in each year from 1915 to 1919 inclusive, classified according to (a) salaried staff, and (b) wages staff.

In the period under review it will be seen that the aggregates of salaried and wages staffs have fallen from 94,233 in 1915 to 85,837 in 1918, but rose to 87,219 in 1919, the latter being a decrease of 7.44 per cent. of the number in 1915.

Separate returns for salaried and wages staff are not available for South Australia prior to 1916-17; the number of salaried staff is therefore included in the wages staff.

**STATE RAILWAYS.—NUMBER OF EMPLOYEES IN RAILWAY DEPARTMENTS,  
1915 TO 1919.**

State.	At 30th June—									
	1915.		1916.		1917.		1918.		1919.	
	Salaried Staff.	Wages Staff.	Salaried Staff.	Wages Staff.	Salaried Staff.	Wages Staff.	Salaried Staff.	Wages Staff.	Salaried Staff.	Wages Staff.
New South Wales ..	3,649	33,096	4,148	34,634	64,590	30,726	64,870	29,370	64,937	629,776
Victoria ..	12,661	24,314	2,428	20,500	62,344	617,126	62,380	616,359	62,525	67,285
Queensland ..	1,403	8,286	1,889	9,877	3,024	10,784	3,251	11,090	3,296	11,222
South Australia ..	..	10,182	..	10,400	1,057	9,241	61,099	68,904	61,975	68,570
Western Australia ..	1,054	7,093	1,011	6,204	961	5,623	972	5,675	1,037	6,057
Tasmania ..	218	1,277	222	1,203	233	1,151	221	1,146	199	1,240
All States	9,985	84,248	10,698	82,878	12,209	74,651	12,793	73,044	13,069	74,150

(a) Prior to 1916-17, separate returns for salaried and wages staffs are not available; the number of salaried staff in the earlier years is included with the wages staff. (b) Including those absent on military or naval service. (c) Excluding those absent on active service.

20. **Accidents.—Number of Killed and Injured.**—The subjoined table gives particulars of the number of persons killed and injured through train accidents and the movement of rolling stock on the Government railways in each State for each of the years 1914-15 to 1918-19 inclusive :—

**STATE RAILWAYS.—NUMBER OF PERSONS KILLED AND INJURED,  
1915 TO 1919.**

State.	In year ended 30th June—									
	1915.		1916.		1917.		1918.		1919.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
New South Wales ..	78	645	87	710	63	572	59	496	44	600
Victoria ..	48	558	54	534	32	465	44	561	52	510
Queensland ..	30	102	26	181	30	280	21	205	28	162
South Australia ..	20	172	14	193	11	247	17	189	22	193
Western Australia ..	14	131	18	131	20	106	13	86	20	140
Tasmania ..	..	39	10	89	1	4	2	7	4	7
All States ..	190	1,647	209	1,838	157	1,674	156	1,544	170	1,702

**(D) Graphical Representation of Government Railway Development.**

1. **General.**—Railways are so important a factor in the development of Australia that it has been deemed desirable to graphically represent the main facts of their progress from 1860 onwards. To this end the graphs shewn on pages 646 to 648 have been prepared. The distribution of the railways is shewn on the map on page 645.



2. **Capital Cost and Mileage Open** (page 646).—The graph shows that the ratio between these elements was, naturally enough, very variable from 1860 to 1870, consequent upon progressive decrease in cost of construction. It then became subject to a more regular change, implying reduction of average cost, though in recent years a slight increase has been in evidence.

3. **Cost per Mile Open**.—The fluctuations in cost per mile open from 1860 are clearly indicated by the graph on page 646. In 1855 the cost per mile open was no less than £28,430; by 1858 it had fallen to £17,752, when it rose again to a maximum of £35,958 in 1862. It then diminished rapidly till 1885—when it reached £10,074 per mile—rose to £10,244 in 1886, then fell slowly till 1888, when it amounted to £10,092 per mile. Again rising, this rate attained to £10,481 in 1892, since when it has, on the whole, been declining, reaching its lowest value, £9,466, in 1911. In 1912, 1913, and 1914 it rose to £9,544, £9,665, and £9,820 respectively, but fell in 1915 to £9,632. In 1916 it rose to £9,895, in 1917 was £9,901, in 1918 £9,943, and fell slightly in 1919 to £9,942.

4. **Gross Revenue**.—This graph (page 646) exhibits considerable irregularities, the most striking of which are the maxima in 1892, 1902, 1914, and 1919. The fall commencing in 1892 was in consequence partly of the commercial crisis and partly of the then droughty conditions of several of the States, while that of 1902-3 was due to drought. In the latter case the recovery was very rapid, and there has been a continuous rise up to the year 1914. In 1915, there was a fall amounting to £1,016,421. Since 1915 each year has given an increase over the previous year's figures, the increases for 1916, 1917, 1918, and 1919 being £1,260,646, £813,479, £1,280,565, and £983,563 respectively.

5. **Working Expenses**.—In this case the graph (page 646) has the same characteristics as those of gross revenue. It should be noted, however, that working expenses have been increasing during the last five years at a greater rate than gross revenue, owing to increases in wages and the higher cost of materials.

6. **Net Revenue**.—This graph (page 646) shows a fairly constant rate of increase up to 1900. Thence to 1903 there was a continuous fall, which was followed by a rapid rise to 1907. In 1911 and 1914 there were maxima, followed by a fall in 1915 and a rise in 1916. In 1917 there was a slight fall, and a substantial rise in 1918. In 1919 there was a fall.

7. **Percentage of Working Expenses on Gross Revenue**.—This is shewn for each State and for the Commonwealth, from the year 1855, on page 647. The curve for the Commonwealth shews considerable fluctuations, but points also to the fact that, although a slight rise occurred in 1908, there was from 1903 to 1907 a rapid decline in the percentage of working expenses to gross revenue; since 1907, however, there has been a steady increase up to 1915. In 1916 the percentage slightly declined, rose again in 1917, declined in 1918, but rose in 1919. In the case of the individual States it will be seen that the curves shew considerable fluctuations, particularly in the early years of the period under review.

8. **Percentage of Net Revenue on Capital Cost**.—The fluctuations in this item from the year 1855 are shewn in the graph on page 648. After exhibiting somewhat remarkable oscillations in the earlier years, and less marked ones between 1885 and 1900, and also a rapid fall to 1903, the curve for the Commonwealth from that year shews a well-marked increase until the year 1908, a slight fall occurring in that year and in 1909. Maxima were reached in 1865, 1877, 1881, 1907, and 1911—viz., 3.44, 3.71, 4.12, 4.45, and 4.54 per cent. Since 1911 the rate has varied considerably, that for 1919 being 1.74 lower than that for 1911.

For the individual States the results are in general very satisfactory up to 1911. The greatest maximum percentage attained by each of the States in any year during the period under review is as follows:—New South Wales 5.31 in 1881, Victoria 4.18, Queensland 4.51, and South Australia 6.47 in 1911, Western Australia 11.48 in 1896, and Tasmania 2.49 in 1913. Since 1911 (1913 in the case of Tasmania) the States have shewn varying and declining rates. The effect of the drought of 1915 is discernible, also the rise of wages and higher cost of materials, to which allusion has already been made.

The remarkable maximum for Western Australia in 1896 is consequent upon the large use made of the railways at the time of the development of the Western Australian goldfields.

9. General Indications of Graphs.—Reviewing the cost of railways, as a whole, it may be noted that at the undermentioned dates the average cost per mile open was as follows :—

**STATE RAILWAYS.—AVERAGE COST PER MILE OF LINE OPEN, 1859 TO 1919.**  
**COMMONWEALTH.**

Date	1859.	1869.	1879.	1889.	1899.	1909.	1919.
	£	£	£	£	£	£	£
Cost per mile	27,857	19,857	11,891	10,367	9,722	9,489	9,942

While the sinister influence of the drought of 1902 is strikingly shewn in the curves (a) by the fall in the gross and net revenue in 1902-3, (b) by the fall in the percentage of net revenue on capital cost, and (c) by the increase of working expenses on gross revenue, the rapidity of recovery is even more striking, and serves to indicate the great elasticity of the economic condition of the Commonwealth. Although the percentage of net revenue on capital cost during the year 1918-19 has been exceeded in previous years, nevertheless it is satisfactory that the State Government railways, necessarily constructed largely in accordance with a policy of widespread development of Australia's resources rather than as mere commercial enterprises, and costing so large a sum as £213,971,595 for construction and equipment up to the 30th June, 1919, should yield a return of no less than 3.01 per cent.

It should be mentioned that the graphs for the Commonwealth include the Federal railways.

**(E) Government Railways Generally.**

1. Rolling Stock.—In the following table particulars of the numbers of the rolling stock employed on both the Federal and State Government railways are set out, classified according to gauge, as at the 30th June in the years 1901, 1911, 1916, and 1919 respectively, together with the percentage of the numbers for each gauge on the total for the mainland. For geographical reasons the figures for Tasmania are shewn separately from those for the mainland.

**ROLLING STOCK EMPLOYED ON THE FEDERAL AND STATE GOVERNMENT RAILWAYS AS AT 30th JUNE, 1901, 1911, 1916, AND 1919.**

**LOCOMOTIVES.**

Gauge.	At 30th June—							
	1901.		1911.		1916.		1919.	
	No.	%	No.	%	No.	%	No.	%
<b>Mainland—</b>								
5 ft. 3 in. ..	688	35.23	705	26.84	1,031	28.66	1,021	27.54
4 ft. 8½ in. ..	495	25.34	903	34.37	1,247	34.67	1,328	35.82
3 ft. 6 in. ..	765	39.17	1,009	38.41	1,298	36.09	1,337	36.07
2 ft. 6 in. ..	5	0.26	10	0.38	17	0.47	17	0.46
2 ft. 0 in. ..	..	..	..	..	4	0.11	4	0.11
<b>Total</b> ..	1,953	100.00	2,627	100.00	3,597	100.00	3,707	100.00
<b>Tasmania—</b>								
3 ft. 6 in. ..	64	..	72	..	73	..	73	..
2 ft. 0 in. ..	7	..	7	..	7	..	7	..
<b>Grand Total</b>	2,024	..	2,706	..	3,677	..	3,787	..

**ROLLING STOCK EMPLOYED ON THE FEDERAL AND STATE GOVERNMENT  
RAILWAYS—continued.**

**PASSENGER VEHICLES, INCLUDING THOSE FITTED WITH MOTORS.  
(See below.)**

Gauge.	At 30th June—							
	1901.		1911.		1916.		1919.	
	No.	%	No.	%	No.	%	No.	%
Mainland—								
5 ft. 3 in. ..	1,365	49.71	1,618	42.50	1,958	39.68	2,071	39.96
4 ft. 8½ in. ..	610	22.21	1,136	29.84	1,636	33.15	1,690	32.61
3 ft. 6 in. ..	761	27.71	1,032	27.11	1,300	26.34	1,375	26.53
2 ft. 6 in. ..	10	0.37	21	0.55	34	0.69	40	0.77
2 ft. 0 in. ..	..	..	..	..	7	0.14	7	0.13
Total ..	2,746	100.00	3,807	100.00	4,935	100.00	5,183	100.00
Tasmania—								
3 ft. 6 in. ..	163	..	170	..	167	..	171	..
2 ft. 0 in. ..	8	..	6	..	6	..	6	..
Grand Total	2,917	..	3,983	..	5,108	..	5,360	..

**PASSENGER VEHICLES FITTED WITH MOTORS, INCLUDED IN TABLE OF PASSENGER VEHICLES  
ABOVE.**

Gauge.	At 30th June—			
	1901.	1911.	1916.	1919.
Mainland—				
5 ft. 3 in. ..	2	..	4	99
3 ft. 6 in. ..	..	2	7	12
Total ..	2	2	11	111
Tasmania—				
3 ft. 6 in. ..	..	..	..	2
Grand Total	2	2	11	113

**VEHICLES, OTHER THAN PASSENGER.**

Gauge.	At 30th June—							
	1901.		1911.		1916.		1919.	
	No.	%	No.	%	No.	%	No.	%
Mainland—								
5 ft. 3 in. ..	12,204	31.05	15,430	27.80	23,531	30.93	24,177	30.74
4 ft. 8½ in. ..	11,540	29.36	17,112	30.83	22,865	30.06	23,820	30.28
3 ft. 6 in. ..	15,481	39.38	22,775	41.03	29,343	38.57	30,272	38.49
2 ft. 6 in. ..	82	0.21	190	0.34	248	0.33	248	0.32
2 ft. 0 in. ..	..	..	..	..	83	0.11	134	0.17
Total ..	39,307	100.00	55,507	100.00	76,070	100.00	78,651	100.00
Tasmania—								
3 ft. 6 in. ..	1,389	..	1,618	..	1,710	..	1,757	..
2 ft. 0 in. ..	50	..	71	..	77	..	77	..
Grand Total	40,746	..	57,196	..	77,857	..	80,485	..

In the eighteen years under review the percentages of the numbers of locomotives for each gauge on the total number of locomotives on all Government railways on the mainland have undergone the following changes : on the 5-ft. 3-in. gauge the percentage has fallen by 7.69 per cent., the 4-ft. 8½-in. gauge increased by 10.48, and the 3-ft. 6-in. gauge fallen by 3.10 per cent.

As regards passenger vehicles the alterations are as follow : on the 5-ft. 3-in. gauge the percentage has fallen by 9.75 per cent., the 4-ft. 8½-in. gauge increased by 10.40, and the 3-ft. 6-in. gauge fallen by 1.18 per cent.

In the case of vehicles other than passenger the changes have been small, the 5-ft. 3-in. gauge percentage having fallen 0.31, the 4-ft. 8½-in. gauge risen by 0.92, and the 3-ft. 6-in. gauge fallen by 0.89 per cent.

**2. Railway Mileage (Route) Open for Traffic.**—The Government railway route mileages open for traffic, classified according to gauge, as at the 30th June in each of the years 1901, 1911, 1916, and 1919, are set out in the following table, which gives as well the percentages of each mileage on the total on the mainland, the figures for Tasmania being shewn separately, as in the case of the preceding table relating to rolling stock :—

**RAILWAY (ROUTE) MILEAGE OF THE FEDERAL AND STATE GOVERNMENT RAILWAYS, CLASSIFIED ACCORDING TO GAUGE, AS AT 30th JUNE IN EACH OF THE YEARS 1901, 1911, 1916, AND 1919, WITH PERCENTAGES ON TOTAL FOR MAINLAND.**

Gauge.	At 30th June—							
	1901.		1911.		1916.		1919.	
	Miles.	%	Miles.	%	Miles.	%	Miles.	%
<b>Mainland—</b>								
5 ft. 3 in. ..	3,696.77	30.50	4,023.61	25.78	4,955.44	24.56	5,148.01	23.35
4 ft. 8½ in. ..	2,805.34	23.14	3,717.17	23.82	4,925.86	24.41	5,840.82	26.50
3 ft. 6 in. ..	5,571.02	45.96	7,742.96	49.62	10,143.38	50.28	10,905.53	49.47
2 ft. 6 in. ..	48.25	0.40	121.90	0.78	121.90	0.60	121.90	0.55
2 ft. 0 in. ..	..	..	..	..	29.35	0.15	29.35	0.13
<b>Total ..</b>	<b>12,121.38</b>	<b>100.00</b>	<b>15,605.64</b>	<b>100.00</b>	<b>20,175.93</b>	<b>100.00</b>	<b>22,045.61</b>	<b>100.00</b>
<b>Tasmania—</b>								
3 ft. 6 in. ..	439.33	..	448.93	..	538.73	..	577.96	..
2 ft. 0 in. ..	18.72	..	23.57	..	23.58	..	23.58	..
<b>Grand Total</b>	<b>12,579.43</b>	<b>..</b>	<b>16,078.14</b>	<b>..</b>	<b>20,738.24</b>	<b>..</b>	<b>22,647.15</b>	<b>..</b>

From the above table it will be seen that in the eighteen years from 1901 to 1919 the 5-ft. 3-in. gauge percentage has fallen by 7.15 per cent., and the 4-ft. 8½-in. and 3-ft. 6-in. gauges risen by 3.24 and 3.51 per cent. respectively.

3. **Railway Mileage (Track) Open for Traffic.** In the following table, the track mileages of all Government railways and sidings, exclusive of Tasmania, are shewn for the years ended 30th June, 1901, 1911, 1916 and 1919, classified according to gauge, together with the percentages of each mileage on the total.

**RAILWAY (TRACK) MILEAGE, FEDERAL AND STATE GOVERNMENT RAILWAYS, EXCLUSIVE OF TASMANIA, ACCORDING TO GAUGE AS AT 30th JUNE, 1901-1919.**

Gauge.	At 30th June—							
	1901.		1911.		1916.		1919.	
	Miles.	%	Miles.	%	Miles.	%	Miles.	%
5 ft. 3 in. ..	4,531.09	32.13	5,102.77	27.64	6,309.82	26.13	6,586.49	24.95
4 ft. 8½ in. ..	3,387.08	24.01	4,666.34	25.28	6,442.87	26.68	7,549.03	28.60
3 ft. 6 in. ..	6,134.78	43.50	8,562.97	46.38	11,236.96	46.53	12,101.70	45.84
2 ft. 6 in. ..	51.00	0.36	128.65	0.70	130.90	0.54	130.97	0.50
2 ft. 0 in. ..	..	..	..	..	29.35	0.12	29.35	0.11
Total ..	14,103.95	100.00	18,460.73	100.00	24,149.90	100.00	26,397.54	100.00

In the eighteen years under review, the 5 ft. 3 in. gauge percentage has fallen by 7.18 per cent., and the 4 ft. 8½ in. and 3 ft. 6 in. gauges have risen by 4.59 and 2.34 per cent. respectively.

4. **Summary of Working of Federal and State Government Railways.**—In the following table a summary is given of the working of all Government railways, both Federal and State, for the year ended 30th June, 1919, fuller particulars of which have been given in the sections B and C of this chapter :—

**SUMMARY OF THE WORKING OF THE FEDERAL AND STATE GOVERNMENT RAILWAYS FOR THE YEAR ENDED 30th JUNE, 1919.**

Particulars.	Federal Railways.	State Railways.	Total for Commonwealth.
Total mileage open .. .. Miles	1,733.76	20,913.39	22,647.15
Average miles open during the year .. ..	1,733.76	20,611.00	22,344.76
Total train mileage .. ..	674,873	53,687,042	54,361,915
Total cost of construction of lines open £	10,950,113	213,971,595	224,921,708
Cost per mile .. .. £	6,316	10,243	9,942
Gross revenue .. .. £	266,064	25,040,717	25,306,781
Working expenses .. .. £	407,255	18,596,378	19,003,633
Percentage of working expenses on gross revenue .. .. %	153.07	74.26	75.09
Net revenue .. .. £	—141,191	6,444,339	6,303,148
Interest payable .. .. £	358,112	8,639,915	8,998,027
Number of passenger journeys .. No.	81,393	276,279,441	276,360,834
Tonnage of goods and live stock carried Tons	214,045	28,483,655	28,697,700
Number of employees at 30th June, 1919—			
Salaried .. .. No.	214	13,069	13,283
Wages .. ..	996	74,150	75,146
Number of persons killed and injured during the year through train accidents and movement of rolling stock—			
Killed .. ..	3	170	173
Injured .. ..	115	1,702	1,817

(a) Exclusive of lines from Mount Gambier to Victorian border, and from Murrayville to Victorian border.

Note.—The sign — denotes a loss on working.

5. **Government Railway Facilities.**—On page 658 *ante* the population per mile of line open for general traffic is given in respect of the States' railways for each State. In the following table is given the mileage of all Government railways, State and Federal, in each State and Territory, per 1,000 of population :—

**MILEAGE OF ALL GOVERNMENT RAILWAYS, FEDERAL AND STATE, PER 1,000 OF POPULATION IN EACH STATE AND TERRITORY AS AT 30th JUNE, 1919.**

State or Territory.	Population 30th June, 1919.	Length of Line Open (Route).			Mileage per 1,000 of Population.
		State.	Federal.	Total.	
	No.	Miles.	Miles.	Miles.	Miles.
New South Wales ..	1,963,203	4,824.67	..	4,824.67	2.46
Victoria ..	1,467,188	4,189.52	..	4,189.52	2.86
Queensland ..	712,829	5,469.45	..	5,469.45	7.67
South Australia ..	455,944	2,289.98	1,075.32	3,365.30	7.38
Western Australia ..	323,220	3,538.23	453.94	3,992.17	12.35
Tasmania ..	210,881	601.54	..	601.54	2.85
Northern Territory ..	4,921	..	199.56	199.56	40.55
Federal Territory ..	2,357	..	4.94	4.94	2.10
Commonwealth ..	5,140,543	20,913.39	1,733.76	22,647.15	4.41.

**(F) Private Railways.**

1. **Total Mileage Open, 1918-19.**—As has been stated in a previous part of this section (see A. 8) a number of private railway lines have from time to time been constructed in the Commonwealth. By far the greater proportion of such lines, however, has been laid down for the purpose of hauling timber, sugar-cane, coal, or other minerals, and is not generally used for the conveyance of passengers or for public traffic; in many cases the lines are often practically unballasted and are easily removable, running through bush and forest country in connexion with the timber and sugar-milling industries, and for conveying firewood for mining purposes. Many of these lines may perhaps be said to be rather of the nature of tramways than of railways. Private railways referred to herein include (a) lines open to the public for general passenger and goods traffic; and (b) branch lines from Government railways and other lines which are used for special purposes and which are of a permanent description. Other lines are referred to in the part of this section dealing with Tramways (see § 3, *Tramways*).

The following table gives particulars of private railways in the Commonwealth open for traffic for general and special purposes during 1918-19. A classification of these lines according to their gauge has already been given (see page 659).

**MILEAGE OF PRIVATE RAILWAYS OPEN, 1918-19.**

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.
For general traffic ..	184.32	24.94	440.85	33.80	278.35	162.86	1,125.12
For special purposes ..	160.83	46.12	931.11	5.00	694.96	46.63	1,884.65
Total ..	345.15	71.06	1,371.96	38.80	973.31	209.49	3,009.77

2. **Classification of Private Railways.**—In previous issues of the *Year Book*, a classification has been given shewing particulars of the private railways open for general traffic and for special purposes. On account of the necessity for economy of space, this classification has been omitted from this issue and has been transferred to the *Transportation Bulletin* No. 11, issued by this Bureau (pp. 28-32.)

3. **New South Wales.**—In this State the mileage of private railways open to the public for general traffic at the end of 1918 was 184.32, and of lines used for special purposes, 160.83 miles. Most of these lines were constructed primarily for the purpose of conveying coal from the mines to the Government railway systems. Particulars for the year 1918-19 of the operations of lines open for general traffic are given, so far as available, in the table on page 702.

(i) *Private Railways Open for General Traffic.* The most important of the lines open for general traffic are as follows:—(a) *The Deniliquin-Moama Line.* In 1874 permission was granted by the New South Wales Government to the Deniliquin and Moama Railway Company to construct a line forty-five miles long from Deniliquin in the Riverina district, to Moama, connecting with the Victorian Railway system at the Murray Bridge, near Echuca. The line was opened in 1876, the land required being granted by the Government. (b) *The Cockburn-Broken Hill Line.* This line is owned by the Silvertown Tramway Company. It was opened in 1888, and connects Broken Hill with the South Australian railway system, having a total length of 36.67 miles. (c) *South Maitland Railways.* These lines, belonging to the South Maitland Railways, Limited, run from East Greta Junction, on the Northern line of the Government railways, to Stanford Merthyr, a distance of 7.36 miles, and from Aberdare Junction to Cessnock, 12.08 miles—a total of 19.44 miles. (d) *The New Redhead Coal Company's Railway.* The lines owned by this company branch from the Northern line of the Government railways, and run from Adamstown to Burwood Extended Colliery, thence to Belmont, and from Burwood Junction to Dudley Boundary and branches, a total distance of 12.00 miles. The lines are worked by the Railway Department, coal wagons being supplied in part by the coal companies using the line. The colliery companies using the line pay a way-leave for right to run their coal over the line, and the Railway Commissioners allow the New Redhead Company a proportion of the revenue from the passenger and goods traffic. (e) *The Seaham Coal Company's Railway.* This line runs from Cockle Creek to West Wallsend and Seaham Collieries, and has a total length of 5.13 miles. (f) *Hexham-Minmi Railway.* This line branches from the Northern line of the Government railways at Hexham, and has a length of 6.00 miles. (g) *The Commonwealth Oil Corporation's Railway.* This line runs from Newnes Junction on the Great Western line of the Government railways to the company's refinery, a distance of 33 miles. The Shay geared type of locomotive is in use on this line. (h) *The Warwick Farm Line* is a short line, 0.83 of a mile in length, connecting the Government line near Liverpool with the Warwick Farm Racecourse. Government rolling stock is used. (i) *The Goondah-Burrinjuck Line* is a line 26.25 miles in length built and worked by the Public Works Department in connexion with the reservoir at Burrinjuck.

In addition to the lines referred to above, legislative sanction was obtained in 1890 for the construction of a private line from the flux quarries at Tarrawingee to the Broken Hill line, a distance of 40.09 miles. The line was purchased by the Government in 1901, and is operated by the Silvertown Tramway Company under lease from the Chief Commissioner, who pays the working expenses and receives the ordinary earnings and one-half the net receipts on special and holiday traffic. The mileage of this line is included in that of the Government railways, and it has a gauge of 3 feet 6 inches.

4. **Victoria.**—In Victoria there are two private railways open for general traffic. (a) *Kerang-Koondrook tramway*, opened in 1889. The cost of construction of this line to the end of September, 1919, was £39,229, paid out of a loan advanced by the Victorian Government. The total length is 13.94 miles. The line is at present controlled by the Kerang Shire Council, but proposals have been made for its transfer to the Railway Department. (b) *Yarra Junction to Powelltown.* This line has a length of 11 miles, and is worked mainly for timber purposes.

A line running from Elsternwick to Oakleigh, a distance of about 5 miles, was constructed by a private company many years ago. It was never in general use, having only an occasional train running over it on special occasions, and has since been dismantled.

5. **Queensland.**—In this State private railways open for general traffic may be grouped under two heads:—(i) Lines constructed primarily for mining purposes or for the transport of sugar-cane, and (ii) Shire tramways.

(i) *Mining Railways.* (a) *The Chillagoe Railway.* The most important of these is the Chillagoe railway, constructed under the Mareeba to Chillagoe Railway Act 1897,

and opened in 1901. This line runs from Mareeba, on the Cairns railway, to Mungana, a distance of 102.73 miles. On 26th June, 1919, it was vested in the Queensland Railways Commissioner. (b) *The Stannary Hills Line*. This line branches from the Chillagoe railway at Boonmoo and runs to Rocky Bluff, via Stannary Hills, a total distance of 21 miles. The gradients on this line, which has a gauge of 2 feet, range as high as 1 in 27, while the radius of some of the curves is as low as  $1\frac{1}{4}$  chains. An additional length of 8 miles has been surveyed with a view to extending the line.

(ii) *Shire Tramways*. Under Part XV. of the Local Authorities Act of 1902 provision is made whereby not less than one-third of the ratepayers in any district may petition the local authority to apply to the Governor for the constitution of a tramway area. The Governor may define the area and may also approve of the plans and specifications of the proposed tramway. The amount which may be advanced by the Government for the construction or purchase of a tramway may not exceed a sum equal to £5,000 for every mile of its length. As regards repayment of loans, no sum need be paid during the first three years, but after the expiration of that period the principal and interest must be repaid by half-yearly instalments on the basis provided for by the "Local Works Loans Act 1880 to 1899." For the purpose of raising the money to pay these instalments the local authority may levy a rate upon all ratable property within the tramway area. The money required for the tramway may be raised by the local authorities by the issue of debentures.

6. *South Australia*.—In this State there is one private railway open for general traffic, that owned by the Broken Hill Proprietary Company, running from Iron Knob to the seaboard near the head of Spencer's Gulf, a distance of 33.80 miles. The line is utilised for the carriage of ore for use in connexion with the smelting works at Port Pirie and the steel works at Newcastle. There is also a line from Marion Bay, having a length of 5 miles, used for mining purposes.

7. *Western Australia*.—Owing to the difficulty experienced at one time by the Government in constructing lines urgently required for the development of the country, private enterprise was encouraged to undertake the work of construction on the land-grant principle, and two trunk lines were thus constructed. The greater part of the private lines now open, however, have been constructed in connexion with the timber industry. (i) *The Midland Railway*. This line is 278.35 miles in length, and runs from Midland Junction, ten miles from Perth, to Walkaway, where it joins the Government line running to Geraldton. It was constructed under a concession of 12,000 acres of land per mile of line constructed, to be selected along the entire route of the railway. (ii) *The Great Southern Railway*. This line, which was built by private enterprise under the land-grant system, is 242 miles in length, and was acquired by the Government by purchase on the 1st January, 1897. The total price paid for all the interests of the private company and of the original concessionaire, was £1,100,000, which was divided by the Government for book-keeping purposes into £300,000 for the land and £800,000 for the railway. (iii) *Millar's Timber Trading Company's Lines*. These lines have mostly been built under special timber concessions and leases. There were, at latest date available, in all eight lines situate in various parts of the State extending into the bush, whence logs are brought to the mills. The total length of these lines was approximately 246.85 miles. (iv) *Other Lines*. There are also several other lines in various parts of the State used chiefly in connexion with the timber industry.

8. *Tasmania*.—In this State there are three private lines open for general traffic, all of which are situated in the western part of the island.

(i) *The Emu Bay Railway Company*. The lines owned by this company run from Burnie to Waratah, from Guildford to Zeehan, and from Rayna to Dundas, and have a total length of 102.94 miles.

(ii) *The Mount Lyell Mining and Railway Company*. The Mount Lyell railway runs from Regatta Point, Strahan, to Queenstown, and the North Mount Lyell line from Kelly Basin to Linda. The former line, 22.13 miles in length, was constructed in 1895–6, while the latter line, 27.80 miles long, was taken over from the North Mount Lyell Copper Company on the amalgamation of the two companies in 1903. The line from Kelly Basin to Linda is now worked only intermittently.

(iii) *The Magnet Silver Mining Company's Railway*. This line runs from Magnet Junction, near Waratah, on the Emu Bay Company's line, to Magnet, a distance of 9.99 miles.



9. Operations of Private Railways, 1918-19.—The tabular statement given below shows particulars, so far as returns are available, for the year 1918-19, of all private railways open to the public for general traffic in the Commonwealth:—

PARTICULARS OF PRIVATE RAILWAYS OPEN FOR GENERAL TRAFFIC, 1918-19.

Line.	Miles Open (route).	Train Miles.	Capital Cost.	Gross Revenue.	Expenses.		Rolling Stock.			Passenger Journeys.	Tons of Goods, etc.	No. of Employees.
	No.	No.	£	£	Working.	Interest, etc.	Locos.	Coaches.	Other Vehicles.	No.	Tons.	No.
NEW SOUTH WALES.												
C'wealth Oil Corp'n	33.00	17,390	194,500	8,202	8,212	(h)	4	(d)3	69	1,843	17,633	19
Deniliquin-Moama..	45.00	39,470	162,673	23,889	11,782	(h)	4	6	64	14,126	(D)28,932	49
South Maitland	19.44	392,539	492,182	87,040	67,198	24,611	19	27	45	857,166	m 94,527	265
Goond'g-Burrinj'k(a)	26.25	25,364	89,756	1,281	(i)8,321	(j)	4	3	23	3,217	3,672	31
Hexham-Minni	6.00	1,872	(b)	220	235	(h)	1	4	1		980	6
New Redhead Co.	12.00	(h)	102,000	(h)	(h)	(h)	(c)	2	(c)	(h)	(h)	(c)
Seaham Colliery Co.	5.13	7,790	25,000	1,158	1,567	(h)	2	(c)	2	21,284	8,302	9
Silverton Tramway	36.67	101,936	477,994	134,781	74,134	(h)	20	1	676	43,764	599,212	155
Warwick Farm	0.83	(b)	5,700	(h)	(h)	(h)	(c)	(c)	(c)	(h)	(h)	(c)
Total(h)	184.32	589,361	1,540,805	256,571	171,449	24,611	54	46	885	941,400	753,258	534

VICTORIA.

Kerang-Koondrook(n)	13.94	18,928	39,229	4,495	3,917	1,774	2	2	9	14,509	22,856	12
Yarra J.-Powelltown	11.00	23,000	46,700	4,980	3,440	465	2	2	32	12,000	52,000	12
Total	24.94	41,928	85,929	9,475	7,357	2,239	4	4	41	26,509	74,856	24

QUEENSLAND.

Aramac-Barcaldine	42.00	17,396	86,983	10,210	5,990	2,122	2	2	2	3,034	9,324	12
Beaudesert(o)	33.00	(h)	93,559	12,337	10,651		1	3	1	14,090	11,585	27
Belmont Tramway	4.39	9,583	19,903	1,527	2,002	1,208	(c)	(c)	(c)	40,854	19,509	(c)
Buderim	7.00	(h)	(h)	(h)	(h)	(h)	(h)	(h)	(h)	(h)	(h)	(h)
Irvinebank	14.00	(h)	(h)	(h)	(h)	(h)	(h)	(h)	(h)	(h)	(h)	(h)
Chillagoe Railway(e)												
Douglas-Mossman	18.00	20,000	43,200	5,642	3,812	2,052	2	3	22	3,000	7,200	13
Etheridge	143.00	24,172	457,175	11,453	14,397	11,250	(c)	(c)	(c)	3,608	3,869	(c)
Inveria Mill	8.70	1,585	20,067	1,044	755	1,017	(c)	(c)	(c)	1,386		(c)
Lucinda Pt. to Stone R. and Lg. Pocket	53.50	(h)	(h)	(h)	(h)	(h)	2	3	84	(h)	41,117	(h)
Green Hills to Ham- bledon Junc.	4.13											
Macgregor	22.13	5,247	66,328	2,296	2,919	{ (k) 1,213 }	(c)	(c)	(c)	1,634	12,688	6
Mapleton	15.00	(h)	(h)	(h)	(h)	(h)	2	(h)	(h)	(h)	(h)	(h)
Moreton Central S.M.	8.50	1,625	14,350	1,075	849	178	2	3	2	12,316	920	4
South Johnstone												
Central S.M.	46.50	5,472	170,000	4,108	2,400		4	3	6	14,400	5,200	8
Stannary Hills	21.00	12,406	64,320	2,302	3,505	(h)	1	2	76	1,905	5,614	7
Total(b)	440.85	97,486	1,035,885	51,994	47,280	19,040	14	19	193	101,227	117,026	77

SOUTH AUSTRALIA.

Iron Knob	33.80	57,050	(h)	(h)	(h)	(h)	5	3	105	833	250,176	95
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WESTERN AUSTRALIA.

Midland Railway(f)	278.35	291,031	2,036,855	109,701	68,984	(h)	17	18	402	54,584	90,614	246
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TASMANIA.

Emu Bay Railway	g102.94	110,150	614,924	58,457	36,453	20,905	10	6	155	37,083	50,636	137
Magnet Railway	9.99	3,120	18,750	329	1,757	(h)	2	1	6	886	365	7
Mt. Lyell Railway..	22.13	53,660	216,086	34,208	28,197	(h)	7	7	117	23,810	66,535	107
Nth Mt. Lyell Rly.	27.80	11,598	316,638	6,694	7,713	(h)	4	4	56	3,946	21,247	22
Total(b)	162.86	178,528	1,166,398	99,688	74,120	20,905	23	18	334	65,725	138,783	273

Total for C'wealthb 1,125.12 1,255,384 5,865,872 527,429 369,190 66,795 117 108 1960 1,190,278 1,424,713 1249

(a) The property of Commissioner of Water Conservation and Irrigation; for year ended 30th June, 1919.  
 (b) Incomplete. (c) Worked by Government Railways. (d) Including one motor car. (e) Transferred to the Queensland Government railways. (f) For year ended 30th June, 1919. (g) Including 47.66 miles owned by the Emu Bay Railway and Mount Bischoff Railway Company. (h) Not available. (i) Including interest. (j) Included in working expenses. (k) Rental of Permanent Way Material. (l) Exclusive of live stock. (m) Exclusive of shipment coal. (n) For year ended 30th September, 1919. (o) For year ended 31st December, 1918.

10. Comparative Railway Statistics.—On page 657 *ante* a table is given shewing the railway facilities in 1918-19 in the States, in the Northern Territory, and in the Commonwealth, the railway mileage open for traffic being compared both with the area and population.

In the table below, the comparative railway statistics of a like character are given in respect of the principal countries of the world at certain dates. The latter have been taken so that the latest accurate figures for both population and railway mileage could be brought into relation.

## COMPARATIVE RAILWAY STATISTICS, VARIOUS COUNTRIES.

Country.	Year.	Miles of Railway.	Population.	Area in Square Miles.	Miles of Railway.	
					Per 1,000 of Popu- lation.	Per 1,000 Sq. Miles of Territory.
Europe—						
United Kingdom ..	1915	23,709	44,481,494	121,633	0.53	194.93
Austria ..	1913	14,512	29,193,293	115,882	0.50	125.23
Belgium ..	1912	5,401	7,571,387	11,373	0.71	474.90
Denmark ..	1916	2,550	2,921,362	(c)15,042	0.87	169.53
France ..	1911	30,709	39,602,258	207,054	0.78	148.31
Germany ..	1914	39,439	67,812,000	208,780	0.58	188.90
Greece ..	1914	1,365	4,821,300	41,933	0.28	32.55
Hungary ..	1912	13,333	21,134,862	125,609	0.63	106.15
Italy ..	1916	11,722	36,546,437	110,632	0.32	105.95
Netherlands ..	1917	2,377	6,724,663	12,582	0.35	188.92
Norway ..	1918	2,007	2,632,010	124,643	0.76	16.10
Portugal ..	1911	1,780	5,957,985	35,490	0.30	50.16
Russia ..	1913	35,987	143,114,300	1,997,309	0.25	18.02
Spain ..	1917	8,993	20,818,995	(b)190,050	0.43	47.32
Sweden ..	1917	9,368	5,800,847	173,035	1.61	54.14
Switzerland ..	1916	3,705	3,937,000	15,976	0.94	231.91
Asia—						
India ..	1911	32,839	315,156,396	1,802,629	0.10	18.22
Russia ..	1913	10,586	27,787,800	6,641,587	0.38	1.59
Africa—						
Egypt ..	1917	2,874	12,569,000	350,000	0.23	8.21
Union of South Africa	1918	10,021	6,936,687	473,100	1.43	21.18
America, North—						
Canada ..	1917	38,191	8,361,000	3,729,665	4.57	10.24
Mexico ..	1912	15,804	15,501,684	785,881	1.02	20.11
United States ..	1916	266,031	102,826,309	2,973,890	2.59	89.46
America, South—						
Argentina ..	1918	21,858	8,284,266	1,153,119	2.64	18.96
Brazil ..	1917	17,159	27,473,579	3,275,510	0.62	5.24
Chile ..	1917	5,611	3,870,002	289,829	1.45	19.36
Australasia—						
Australia ..	1919	25,657	5,140,543	2,974,581	4.99	8.63
New Zealand ..	1919	3,012	1,124,618	104,751	2.68	28.75

(a) Including lines of "local" interest. (b) Exclusive of Balearic and Canary Islands.  
(c) Exclusive of Faroe Islands.

It will be seen from the above table that per 1,000 of population the Commonwealth of Australia had the greatest mileage (in 1919), 4.99 miles; the next in magnitude being Canada (1917) with 4.57 miles, New Zealand (1919) with 2.68 miles, Argentina (1918) with 2.64 miles, and the United States (1916) with 2.59 miles.

The least mileage per 1,000 of population is shown in the case of India (1911) with 0.10 mile, followed by Egypt (1917) with 0.23 mile of railway.

With regard to the mileage per 1,000 square miles of territory, Belgium (1912) with 474.90 miles was easily first, followed by Switzerland (in 1916) with 231.91 miles, the United Kingdom (in 1915) with 194.93 miles, the Netherlands (in 1917) with 188.92 miles, and Germany (in 1914) with 188.90 miles.

The least mileage open per 1,000 square miles is that of Asiatic Russia (in 1913) with 1.59 miles, the next being 5.24 miles in the case of Brazil (1917).

### § 3. Tramways.

1. **General.**—Tramway systems are in operation in all the States of the Commonwealth, and in recent years considerable progress has been made in the adoption of electrical traction, the benefit of which is now enjoyed by a number of the principal towns of the Commonwealth.

In many parts of Australia private lines used for special purposes, in connexion with the timber, mining, sugar, or other industries are often called tramways, but they are really private railways, and the traffic on them has nothing in common with that of the street tramways for the conveyance of passengers, which are dealt with in the present section.

(i) *Total Mileage Open and Classification of Lines.* The following tables shew the total mileage of tramway lines open for general passenger traffic in each State and in the Commonwealth for the year 1918-19, and also in the Commonwealth as a whole for the years 1909-10 to 1918-19, classified (a) according to the motive power utilised, (b) according to the nature of the authority by which the lines are controlled and (c) according to gauge:—

#### TRAMWAYS.—CLASSIFICATION OF MILEAGE OPEN FOR PASSENGER TRAFFIC IN EACH STATE AND IN THE COMMONWEALTH, 1918-19.

Nature of Motive Power, Controlling Authority, and Gauge.	N.S. Wales.	Victoria.	Q'land.	South Australia.	Western Australia.	Tasmania.	C'wealth.
ACCORDING TO MOTIVE POWER.							
Electric .. ..	Miles. 154.56	Miles. 94.58	Miles. 42.60	Miles. 65.66	Miles. 50.22	Miles. 23.25	Miles. 430.87
Steam .. ..	74.49	1.15	6.00	..	17.75	28.30	127.69
Cable .. ..	..	45.92	..	..	..	..	45.92
Horse .. ..	..	0.63	..	17.36	5.75	..	23.74
Total .. ..	229.05	142.28	48.60	83.02	73.72	51.55	628.22
ACCORDING TO CONTROLLING AUTHORITY.							
Government .. ..	225.55	51.87	..	17.36	50.31	19.80	364.89
Municipal .. ..	..	55.60	6.00	65.66	8.66	23.25	159.17
Private .. ..	3.50	34.81	42.60	..	14.75	8.50	104.16
Total .. ..	229.05	142.28	48.60	83.02	73.72	51.55	628.22
ACCORDING TO GAUGE.							
Gauge—							
5 ft. 3 in. .. ..	..	5.16	..	17.35	..	..	12.51
4 ft. 8½ in. .. ..	229.05	135.97	42.60	65.66	..	..	473.28
3 ft. 6 in. .. ..	..	1.15	6.00	10.01	58.22	43.05	118.43
2 ft. 0 in. .. ..	..	..	..	..	15.50	8.50	24.00
Total .. ..	229.05	142.28	48.60	83.02	73.72	51.55	628.22

(a) 16.36 miles included in South Australian Government railway mileage.

**TRAMWAYS.—CLASSIFICATION OF MILEAGE OPEN FOR PASSENGER TRAFFIC  
IN THE COMMONWEALTH, 1909-10 TO 1918-19.**

Nature of Motive Power, Controlling Authority, and Gauge.	1909- 10.	1910- 11.	1911- 12.	1912- 13.	1913- 14.	1914- 15.	1915- 16.	1916- 17.	1917- 18.	1918- 19.
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**ACCORDING TO MOTIVE POWER.**

	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.
Electric ..	272.57	297.34	322.24	345.07	365.39	386.30	404.76	422.89	426.40	430.87
Steam ..	76.41	96.66	91.78	91.65	108.65	112.50	112.50	113.06	120.61	127.69
Cable ..	46.04	46.04	46.04	46.04	46.04	46.04	46.04	46.04	46.04	45.92
Horse ..	70.00	60.61	51.44	50.51	54.51	53.05	42.97	43.61	41.12	23.74
Total ..	465.02	500.65	511.50	533.27	574.59	597.89	606.27	625.60	634.17	628.22

**ACCORDING TO CONTROLLING AUTHORITY.**

Government ..	217.69	241.72	247.61	256.96	309.44	319.50	322.75	371.08	372.44	364.89
Municipal ..	68.79	78.69	82.86	102.85	114.55	129.86	143.32	158.13	158.03	159.17
Private ..	178.54	180.24	181.03	173.46	150.60	148.53	140.20	96.39	103.70	104.16
Total ..	465.02	500.65	511.50	533.27	574.59	597.89	606.27	625.60	634.17	628.22

**ACCORDING TO GAUGE.**

Gauge—										
5 ft. 3 in. ..	14.77	14.77	14.77	14.80	14.80	15.12	15.12	12.51	12.51	12.51
4 ft. 8½ in. ..	349.56	374.17	384.89	407.62	420.93	438.97	444.60	467.46	469.76	473.28
3 ft. 6 in. ..	72.94	83.96	84.09	86.02	114.03	118.97	121.72	121.45	120.41	118.43
2 ft. 0 in. ..	27.75	27.75	27.75	24.83	24.83	24.83	24.83	24.18	31.49	24.00
Total ..	465.02	500.65	511.50	533.27	574.59	597.89	606.27	625.60	634.17	628.22

2. New South Wales.—In this State the tramways, with but few comparatively unimportant exceptions, are the property of the Government, and are under the control of the Railway Commissioners.

(i) *Government Tramways.* In Sydney and suburbs the Government tramways are divided into distinct systems. There were in June, 1919, seven such systems in operation within the metropolitan area, the most important being the city and suburban lines, 112.97 miles in length (206.50 miles single track); the North Shore line, 21.14 miles in length (36.41 miles single track); the Ashfield to Mortlake line, 8.47 miles in length (15.12 miles single track); Manly to the Spit, Brookvale, and Narrabeen, 10.73 miles in length (15.47 miles single track); and Rockdale to Brighton-le-Sands, 1.25 miles in length (single track). The last-mentioned line was purchased from a private company and opened for traffic on 7th June, 1914. All of these systems are now operated by electricity. There are two systems on which the motive power used is steam, namely—(a) from Kogarah to Sans Souci, 5.56 miles in length (6.99 miles single track), and (b) from Arncliffe to Bexley, 2.62 miles long (single track).

There are also Government steam tramways in operation at Newcastle, Broken Hill, Parramatta, from East to West Maitland, and from Sutherland to Cronulla. The gauge of line on all the Government tramways is 4 ft. 8½ in.

(a) *Sydney Tramways.* In October, 1862, a horse tramway, 1½ miles long, was opened for traffic in Sydney. Owing to the rails being laid higher than the road surface, the inconvenience thus caused to other traffic necessitated its removal under the authority of an Act passed in November, 1865, and it was not until the 15th September, 1879, that the first steam tramway was opened, running from Bridge-street to Hay-street via Elizabeth-street. In the following few years the steam tramways were considerably extended. The electric system was commenced by the opening of a section of the North Sydney lines on the 20th September, 1893. This was followed by the opening of the Ocean-street-Rose Bay line on the 4th October, 1898, and by the opening of the George-street-Pymont line on the 8th September, 1899, which introduced the electric system into the city. The tramways in the heart of the city, running along King-street to the suburb of Woollahra, as well as those in North Sydney, were originally worked by underground cables, and have since been converted into electric lines on the overhead trolley system. With the exception of the Kogarah-Sans Souci and the Arncliffe-Bexley lines, the whole of the steam tramways in Sydney and suburbs have now been converted into electric lines, and provision for the extra power required for the electrification of the former of these two lines has been made at the central power station.

(b) *Other Tramway Systems.* In Newcastle the first section of the tramways, from Perkins-street to Plattsburg, was opened on 31st December, 1887; the total length open on the 30th June, 1919, was 34.07 miles (44.42 miles single track). At Broken Hill and Parramatta the first sections of the tramways were opened in 1902. On the 30th June, 1918, the mileage open at Broken Hill amounted to 10.05 miles (11.44 miles single track), and at Parramatta to 6.69 miles (single track). The line from East to West Maitland, 4.59 miles long (single track), was opened in February, 1909, and the line from Sutherland to Cronulla, 7.40 miles long (single track), on the 12th June, 1911. Further particulars are given below.

(c) *Particulars of all Government Tramways.* The following table shews the total length, the capital cost, the gross revenue, working expenses, net earnings, interest, percentages of working expenses on gross revenue, and of net earnings on capital cost, passengers carried and persons employed for the financial years 1915 to 1919 :—

#### NEW SOUTH WALES.—PARTICULARS OF WORKING OF GOVERNMENT TRAMWAYS, 1915 TO 1919.

Year ended 30th June—	Mileage Open for Traffic. (Route.)	Total Cost of Construction and Equipment.	Gross Revenue.	Working Expenses.	Net Earnings.	Interest	Per-centage of Working Expenses on Gross Revenue.	Per-centage of Net Earnings on Capital Cost.	Passen- gers carried.	Persons em- ployed.
	Miles.	£	£	£	£	£	%	%	No. '000s.	No.
1915 ..	219.81	7,970,293a	1,986,060	1,611,287	374,773	284,639	81.13	4.70	289,283	9,205
1916 ..	220.83	8,166,423a	1,991,628	1,602,650	388,978	302,686	80.47	4.76	292,022	9,806
1917 ..	223.98	8,309,629a	2,008,539	1,691,367	317,172	335,361	84.21	3.82	295,304	9,763
1918 ..	225.35	8,470,091a	1,992,641	1,603,260	389,381	348,546	80.46	4.60	255,741	8,955
1919 ..	225.54	8,568,138a	2,237,701	1,850,724	386,977	368,529	82.71	4.52	268,798	9,028

(a) £47,455 of this sum has been paid from the Consolidated Revenue, and no interest is payable thereon.

The net result, after providing for all working expenses and £368,529 for interest on the capital invested, was a profit of £18,448 in 1918-19 as compared with a profit of £40,835 in the preceding year. During the year 1918-19, 268,797,814 passengers were carried, an increase of 13,057,006 as compared with the previous year.

(d) *Particulars of Different Systems of Government Tramways.* In the subjoined statement particulars are given of the working of the electric and steam tramways in Sydney, and of other tramways under Government control in 1918-19 :—

**NEW SOUTH WALES.—PARTICULARS OF WORKING OF VARIOUS GOVERNMENT TRAMWAYS, 1918-19.**

Line.	Mileage Open for Traffic.		Total Cost of Construction and Equipment.	Gross Revenue.	Working Expenses.	Net Earnings.	Interest.	Profit or Loss.(a)	Percentage of Working Expenses on Gross Revenue.	Percentage of Net Earnings on Capital Cost.
	Route.	Track.								
	Miles.	Miles.	£	£	£	£	£	£	%	%
Sydney and Suburban—Electric	154.56	274.75	7,779,227	2,063,055	1,673,536	+ 389,519	335,482	+ 54,037	81.12	+ 5.01
Steam	8.18	9.61	51,107	14,744	18,176	— 3,432	2,223	— 5,655	123.28	— 6.72
Total	162.74	284.36	7,830,334	2,077,799	1,691,712	+ 386,087	337,705	+ 48,382	81.42	+ 4.93
Parramatta—Steam	6.69	6.69	39,252	9,058	9,610	— 552	1,707	— 2,259	106.09	— 1.41
Sutherland to Cronulla—Steam	7.40	7.40	51,776	11,912	10,516	+ 1,396	2,233	— 837	88.28	+ 2.70
Newcastle—Steam	34.07	44.42	516,414	116,480	112,027	+ 4,453	21,215	— 16,762	96.18	+ 0.86
East to West Maitland—Steam	4.59	4.59	38,888	4,537	5,424	— 887	1,602	— 2,579	119.55	— 2.28
Broken Hill—Steam	10.05	11.44	91,474	17,915	21,435	— 3,520	3,977	— 7,497	119.65	— 3.85
Total	225.54	358.90	8,568,138	2,237,701	1,850,724	+ 386,977	368,529	+ 18,448	82.71	+ 4.52

(a) + indicates a profit; — indicates a loss.

The total capital cost shewn in the preceding table was made up as follows :—

**CAPITAL COST OF NEW SOUTH WALES GOVERNMENT TRAMWAYS AS AT 30th JUNE, 1919.**

Permanent Way.	Rolling Stock.	Power-houses, Sub-stations, and Plant.	Machinery.	Work-shops.	Furniture.	Store Advances Account.	Total.
£	£	£	£	£	£	£	£
4,326,300	1,828,460	1,814,390	144,782	227,814	2,392	224,000	8,568,138

The average cost per mile open was £19,182 for permanent way and £18,807 for all other charges, making a total of £37,989 per mile.

During the year 1918-19, one new extension, 0.19 mile in length, was opened for traffic.

(e) *Sydney Electric Tramways.* The current for the operation of the city and suburban tramways is generated at the power-houses at Ultimo and White Horse Bay, which have been erected at a total cost of £1,814,390, including the cost of the sub-stations and plant. The total output of the power-houses, for both lighting and traction purposes, during the year 1918-19 was 99,048,075 kilowatt-hours, of which the direct-current supply was 114,335, and the alternating current 98,933,740 kilowatt-hours. The following table gives particulars of the working of the electric tramways for the financial years 1914-15 to 1918-19 :—

**NEW SOUTH WALES.—PARTICULARS OF SYDNEY ELECTRIC TRAMWAYS,  
1914-15 TO 1918-19.**

Year ended 30th June—	Mileage Open for Traffic.		Total Cost of Construction and Equipment.	Current used for Traction Purposes.	Tram Miles Run.	Passengers Carried.
	Route.	Track.				
	Miles.	Miles.				
1915 ..	150.04	261.09	7,349,866 •	81,591,224	25,406,807	269,633,638
1916 ..	151.05	266.18	7,526,701	81,688,434	25,008,055	272,048,293
1917 ..	152.99	270.84	7,615,110	80,608,220	23,955,722	275,180,334
1918 ..	154.37	274.55	7,738,377	73,384,629	20,618,808	239,442,696
1919 ..	154.56	274.75	7,779,227	83,780,703	23,298,238	250,706,503

Year ended 30th June—	Gross Revenue.	Working Expenses.	Net Revenue.	Percentage of Working Expenses on Gross Revenue.	Cars in Use.	Persons Employed.
	£	£	£	%	No.	No.
1915 .. ..	1,834,022	1,469,227	364,795	80.11	1,430	8,743
1916 .. ..	1,838,708	1,452,470	386,238	78.99	1,402	9,308
1917 .. ..	1,853,399	1,535,423	317,976	82.84	1,398	9,295
1918 .. ..	1,847,868	1,457,349	390,519	78.87	1,398	8,463
1919 .. ..	2,063,055	1,673,536	389,519	81.12	1,393	8,610

(ii) *Private Tramways.* A private steam tramway passes through the township of Parramatta. Commencing at the park gates, it runs as far as the Duck River, a distance of 3½ miles, where it connects with the Parramatta River steamers, conveying passengers and goods to and from Sydney. This line, the gauge of which is 4 ft. 8½ in., was opened for traffic in 1883. In 1919 the number of tram miles run was 18,200, and the number of passengers conveyed 120,946.

(iii) *Sydney Harbour Ferries.* As the ferry services on the waters of Port Jackson are mainly supplementary to the suburban railway and tramway systems, it has been thought advisable to include them here rather than under Shipping. Returns for the year 1918-19

were received from three companies, and shew that these companies had 63 boats in commission, which were licensed to carry a total of 40,371 passengers, or an average of 641 per boat and per trip. The total number of passengers carried during the year is stated as 35,319,759, an average of 96,766 per day. In addition to the ordinary passenger traffic there are two lines providing for vehicular traffic, which afford the only rapid means of transit for such traffic between the city and the northern suburbs. The three companies employed during the year a total of 973 persons. The gross revenue during 1918-19 amounted to £429,130, and the expenditure to £335,550, thus giving a net revenue of £93,580. The services are well managed, and the boats constructed during recent years—double-ended screwboats—are claimed to be superior in size and equipment to boats employed on similar service in any part of the world.

3. Victoria.—In Melbourne there are several tramway systems carried on under the control of various authorities, the most important being the cable system worked by the Melbourne Tramway and Omnibus Company up to the 1st July, 1916, and since that date by the Melbourne Tramway Board, to which reference will be made further on. There are also six lines of electric tramways, viz. :—(a) St. Kilda to Brighton, belonging to the Government and under the control of the Railway Commissioners; (b) an electric tramway between Sandringham and Black Rock, 2.41 miles in length, which has been constructed by the Railway Department and was opened for traffic on 11th March, 1919; (c) Flemington Bridge to the Saltwater River and Keilor-road, owned by a private company; (d) lines connecting Prahran, Windsor, St. Kilda and Elsternwick with Glen Huntly, Caulfield, Malvern, Glenferrie and Kew, controlled by the Prahran and Malvern Tramways Trust; (e) lines from Queensberry-street, Melbourne, to Bell-street, Coburg, and Moreland-road to Baker's-road, Fawkner, owned by the Melbourne, Brunswick, and Coburg Tramways Trust, and (f) Prince's-bridge to Burwood; Burke-road to Boundary-road, Wattle Park; and Bridge-road, Richmond, to Power-street, owned by the Hawthorn Tramways Trust. There is also a cable tramway, 2½ miles in length, between Clifton Hill and Preston, owned by the Northcote municipality. There is a short steam tramway, about 1 mile long, at Sorrento, and there are also systems of electric tramways at Ballarat, Bendigo, and Geelong, constructed and run by private companies. A number of tramways has been constructed for special purposes in various parts of the State under the provisions of the Tramway Act 1890. These, however, correspond to the description of private railways referred to in sub-section 1 hereof. A tramway to the Zoological Gardens, with horse traction, is operated by the Melbourne Tramway Board.

(i) *Melbourne Cable Tramways.* A short account of the formation of the Melbourne Tramway and Omnibus Company, and of the Tramway Trust, will be found in previous issues of this book. (See Year Books No. 7, page 652, and No. 9, page 679.) The company was required by the original Act, as amended in 1892, to complete the tramways by the end of the year 1893, and in return a thirty-two years' lease of the tramways was granted to it, dating from the 1st July, 1884—when the liability for interest on the loans commenced—and expiring on the 1st July, 1916. The total amount the Trust was empowered to borrow was £1,650,000, which was raised in London by means of debentures bearing interest at 4½ per cent. The premiums received amounted to £55,794, making a total of £1,705,794. This amount had been expended by the end of the year 1893, when further loan expenditure ceased. Up to the 30th June, 1919, the total cost of construction and equipment of the tramways amounted to £2,078,257. The first line—that to Richmond—was opened for traffic on the 11th November, 1885, and the work being rapidly pushed on, the other lines were opened at short intervals, and the whole system was completed in 1891. The complete system consisted of 43.68 miles of double-track cable lines, using constantly over 90 miles of wire rope, and 4.47 miles of horse tram line. Of the latter, 1.79 miles were transferred to the Kew Council in November, 1914, and 2.06 miles to the Hawthorn Tramway Trust in January, 1916, for electrification, leaving 0.62 mile of horse tramway at Royal Park. The gauge of track is 4 feet 8½ inches. The company also had omnibuses at work for many years down to 3rd May, 1916, when the East Brunswick line of omnibuses ceased running owing to the construction of an electric tramway along the route.



(a) *Particulars of Working.* The subjoined statement shows the tram mileage, the number of passengers carried, and the revenue and expenditure for the years 1915 to 1919:—

**MELBOURNE CABLE TRAMWAYS.(b)—PARTICULARS OF WORKING,  
1915 TO 1919.**

Year ended 30th June—	Mileage Open (Route).			Mileage Run during Year.				Number of Passengers Carried.			
	Cable.	Horse.	Total.	Tram.		Omni- bus.	Total.	Tram.		Omni- bus.	Total.
				Cable.	Horse.			Cable.	Horse.		
Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	No.	No.	No.	No.	
1915	43.68	2.68	46.36	11,887,462	..	90,458	11,977,920	87,707,934	352,189	88,060,123	
1916	43.68	0.62	44.30	11,977,916	..	68,569	12,046,485	96,290,131	412,812	96,702,943	
1917	43.68	0.62	44.30	12,413,485	10,444	..	12,423,929	(a)	(a)	103,118,377	
1918	43.68	0.62	44.30	12,822,147	10,882	..	12,833,029	112,754,979	279,178	113,034,157	
1919	43.68	0.62	44.30	13,138,992	10,645	..	13,149,637	118,043,604	259,177	118,302,781	

Year ended 30th June—	Traffic Revenue.				Working Expenses.				Percentage of Working Expenses on Revenue.	No. of Employees at end of Year.
	Tram.		Omni- bus.	Total.	Tram.		Omni- bus.	Total.		
	Cable.	Horse.			Cable.	Horse.				
£	£	£	£	£	£	£	£	%	No.	
1915	..	734,177	1,468	735,645	(a)	..	(a)	425,831	57.89	1,959
1916	..	807,356	1,721	809,077	(a)	..	(a)	435,423	53.82	1,992
1917	..	(a)	..	841,784	(a)	(a)	..	462,132	54.90	2,104
1918	..	902,471	549	903,020	513,717	735	..	514,452	56.97	2,273
1919	..	945,286	513	945,799	577,736	1,154	..	578,890	61.21	2,400

(a) Not available. (b) Exclusive of Northcote Cable Tramway.

(b) *Transfer of Cable Trams.* On the 30th December, 1915, the Victorian Government appointed a Tramway Board of five members to take over the tramways as from 1st July, 1916, and in due course the Board entered into possession of the tramway properties. The amount of compensation to be paid to the company in respect of the rolling-stock, car-houses, and other assets handed over by it to the Tramway Board was the subject of arbitration and of an eventual appeal to the Privy Council, which upheld the award by Mr. Justice Cussen under which a sum of £335,000 with interest at 5 per cent. from the 1st July, 1916, was payable to the company.

An action by the Tramway Board against the company to recover a sum of £587,915, for alleged breaches of the terms of the lease of the cable tramways was, after several days had been spent in part hearing the case, settled out of court by agreement between the parties.

(c) *Metropolitan Tramway Board.* In the last issue of the Year Book, No. 12, pp. 698-9, reference was made to the *Melbourne and Metropolitan Tramways Act 1918*, and to the terms under which it was to come into operation. In June, 1919, the appointments of the chairman and other members of the Tramway Board were made by the Governor-in-Council, and it was arranged that the Board should take over control of the Melbourne Cable Tramway System and of the Royal Park Horse Tramway on the 1st November, 1919.

On the 6th January, 1920, a proclamation was made under which the Board were to assume control of the Prahran and Malvern, Hawthorn, Melbourne, Brunswick and Coburg, Fitzroy, Northcote and Preston, and Footscray Tramway Trusts on the 2nd February following, after which date the Tramway Trusts were to cease to exist. The

Board thus assumed control of all the Metropolitan tramways, with the exception of the Northcote Council Cable Tramway and the North Melbourne Electric Tramway, both of which the Board has power to acquire.

(ii) *Electric Tramways.* As already mentioned, there are in Melbourne six electric tramway systems in operation, namely (a) the St. Kilda-Brighton line, (b) the Sandringham-Black Rock line, (c) the North Melbourne tramways, (d) the Prahran-Malvern Tramways Trust system, (e) the Melbourne, Brunswick and Coburg Tramways Trust system, and (f) the Hawthorn Tramways Trust system.

(a) *The St. Kilda-Brighton Line.* Under the St. Kilda and Brighton Electric Street Railway Act 1904, the Board of Land and Works was authorised to construct a tramway from St. Kilda to Brighton. The amount of interest payable on the cost of the land acquired for the tramway was guaranteed by the municipalities of St. Kilda and Brighton for a period of twenty years, and authority was given by the Act to the municipalities to levy either a general or special rate not exceeding one shilling in the pound for the purpose of paying the guarantee. The profit, if any, during the first twenty years is to be set off in reduction of the guarantee. The line was opened for traffic between St. Kilda and Park-street, Middle Brighton, on the 7th of May, 1906, and the extension to Brighton Beach was opened on the 22nd of December following. The capital cost to the 30th June, 1919, exclusive of rolling stock, was £115,113, and of rolling stock £49,234, making a total of £164,347. The gauge of track is 5 ft. 3 in. The subjoined statement gives particulars of the working of this line for the financial years ended the 30th June, 1915 to 1919:—

#### ST. KILDA-BRIGHTON ELECTRIC STREET TRAMWAY, 1915 TO 1919.

Year ended 30th June—	Mileage Open (Route).	Total Cost of Construction and Equipment	Current used for Traction Purposes.	Tram Miles Run.	Passengers Carried.	Gross Revenue.	Working Expenses	Interest.	Net Profit or Loss. (a)
	Miles.	£	Kilowatt-hours.	No.	No.	£	£	£	£
1915 ..	5.16	101,726	769,380	577,468	2,718,972	22,614	19,905	3,428	— 719
1916 ..	5.16	132,300	810,510	597,819	3,126,984	25,580	22,844	4,697	— 1,961
1917 ..	5.16	156,242	780,320	572,735	3,450,442	27,919	20,502	6,250	+ 1,167
1918 ..	5.16	158,986	745,853	521,525	3,854,677	31,614	23,653	6,359	+ 1,602
1919 ..	5.16	164,347	932,010	527,305	4,945,627	40,048	27,207	6,574	+ 6,267

(a) Profit is indicated by +, loss by —.

The average fare paid per passenger was 1.94 pence in 1918–19 as against 1.96 pence in 1917–18. The gross revenue in 1918–19 was 18.23 pence per passenger car mile and £3,881 per mile of single track open.

(b) *The Sandringham-Black Rock Line.* This line has a length of 2.41 miles and, as already mentioned, was opened for traffic on 11th March, 1919.

The capital cost to the 30th June, 1919, exclusive of rolling-stock, was £42,706. The cost of rolling-stock is included in that for the St. Kilda-Brighton line. The gauge of this line is 4 ft. 8½ in. The subjoined statement gives particulars of the working of this line to the 30th June, 1919:—

#### SANDRINGHAM-BLACK ROCK ELECTRIC STREET TRAMWAY, 1919.

Year ended 30th June—	Mileage Open (Route).	Total Cost of Construction.	Current used for Traction Purposes.	Tram Miles Run.	Passengers Carried.	Gross Revenue.	Working Expenses	Interest.	Net Profit.
	Miles.	£	Kilowatt-hours.	No.	No.	£	£	£	£
1919 ..	2.41	42,706	38,650	20,008	616,746	3,751	1,792	529	1,430

(c) *The North Melbourne Tramways*, extending through the northern suburbs to the Saltwater River and to Keilor-road, were constructed by a private company, and were opened for traffic on the 11th October, 1906. The route and track mileage for year ended 30th September, 1919, were 7.51 and 11.43 miles respectively, the gauge of line being 4 feet 8½ inches. The number of passengers carried during the same period was 3,456,442. The current used during the year for traction purposes was 794,705 kilowatt-hours, while the number of persons employed was 126.

(d) *The Prahran and Malvern Tramways Trust*. The lines were constructed under the control of a trust, which consisted of seven members appointed from the councils of Prahran, Malvern, St. Kilda, Caulfield, Hawthorn, Kew, and Camberwell. At the 30th September, 1919, the total route mileage open was 35.15 miles, the total track mileage being 68.38 miles, and the total capital cost £817,165. The gauge of the track is 4 ft. 8½ in. The current is supplied by the Melbourne Electric Supply Company Limited at a price varying according to the consumption of current and the price of fuel. Any surplus revenue, after providing for operating expenses, interest, sinking fund and renewal reserve, is to be paid to the municipal councils interested, in proportion to the car mileage run in their respective districts. The first section of the lines was opened for traffic on 31st May, 1910. During the year ended 30th September, 1919, the current used for traction purposes was 6,891,877 kilowatt-hours, and the number of tram miles run was 3,093,901, the number of passengers carried 29,616,772, the gross revenue £214,728, and the working expenses £159,354. The number of cars in use was 95, and the number of persons employed 610.

(e) *The Melbourne, Brunswick and Coburg Tramways Trust*. The first section of these tramways, that between Moreland-road and Bell-street, was opened for traffic on 27th April, 1916. At the 30th September, 1919, the route and track mileages open for traffic were 7.03 and 12.29 miles respectively. During the year ended 30th September, 1919, the current used for traction purposes was 1,247,510 kilowatt-hours, the tram miles run 669,029, the number of passengers carried 5,886,253, the gross revenue £40,049, and the working expenses £28,389. Eighteen cars were in use, and the number of persons employed was 121.

(f) *The Hawthorn Tramways Trust*. The first section of these tramways, that from Prince's Bridge to Power Street, Hawthorn, was opened for traffic on 6th April, 1916, and on 30th September, 1919, the route and track mileages in operation were 11.17 and 18.00 miles respectively. During the year ended 30th September, 1919, the current used for traction purposes was 2,613,316 kilowatt-hours, the tram miles run 947,740, number of passengers carried 9,661,176, the gross revenue £72,560, and the working expenses £54,369. The number of cars in use was 32, and the number of persons employed 171.

(g) *The Ballarat and Bendigo Electric Tramways* are under the control of a private company, and run along the main streets and to and from the outlying suburbs of the two cities. The total length of lines open for traffic is 21.25 route miles and 25.86 track miles, the gauge being 4 ft. 8½ in. During the year ended 31st December, 1919, 5,031,092 passengers were carried, the gross revenue being £48,345, and the working expenses £36,825. The number of cars in use was 55, and the number of persons employed 133.

(h) *The Geelong Electric Tramways*, which are privately owned, were opened for traffic on the 14th March, 1912, and up to the 31st August, 1919, the cost of construction and equipment, exclusive of generating plant, totalled £61,020. The system has a route and track mileage of 4.90 and 5.67 miles respectively, the gauge being 4 ft. 8½ in. The car mileage for the year ending on the last-mentioned date was 220,265 miles, and the number of passengers carried 1,539,170. For the same period the revenue was £17,032, and the expenditure £13,558.

(i) *Particulars of Working of all Electric Tramways.* The following table gives particulars of the working of all electric tramways in Victoria for each year from 1915 to 1919 inclusive :—

**VICTORIA.—PARTICULARS OF WORKING OF ELECTRIC TRAMWAYS, 1915 TO 1919,**

Year.	Mileage Open for Traffic (Route).	Total Cost of Construction and Equipment.	Current Used for Traction Purposes.	Tram Miles Run.	Passengers Carried.	Gross Revenue.	Working Expenses.	Cars in Use.	Persons Employed.
	Miles.	£	Kilowatt-hours.	No.	No.	£	£	No.	No.
1915	69.47	1,299,786	7,445,978	4,358,030	30,150,912	223,056	164,313	193	811
1916	83.91	1,765,854	9,553,034	5,327,895	39,928,454	288,206	206,367	235	1,009
1917	89.08	1,861,771	11,910,707	6,462,318	51,586,576	373,594	271,315	255	1,074
1918	92.17	1,939,887	13,169,343	6,775,538	57,020,726	432,921	318,163	268	1,167
1919	94.58	2,027,057	13,955,124	6,832,873	60,753,278	463,320	344,220	274	1,318

4. *Queensland.*—In this State there is a system of electric tramways running through the streets of the city and suburbs of Brisbane and controlled by a private company which has its head office in London. The total length of the Brisbane system was 42.60 route miles at the end of the year 1919. There is also a steam tramway in operation at Rockhampton having a length of 6 route miles.

(i) *Brisbane Electric Tramways.* These tramways are run on the overhead trolley system, the voltage of the line current being 550. The total cost of construction and equipment to the end of the year 1917 was £1,435,414, the gauge of line being 4 ft. 8½ in. The following table gives particulars of these tramways for the calendar years 1915 to 1919 :—

**QUEENSLAND.—BRISBANE ELECTRIC TRAMWAYS, PARTICULARS OF WORKING 1915 TO 1919.**

Year.	Mileage Open for Traffic (Route).	Total Cost of Construction and Equipment.	Current Used for Traction Purposes.	Tram Miles Run.	Passengers Carried.	Gross Revenue.	Working Expenses.	Cars in Use.	Persons Employed.
	Miles.	£	Kilowatt-hours.	No.	No.	£	£	No.	No.
1915	40.20	1,476,866	11,563,696	4,339,863	49,695,313	372,383	233,761	161	803
1916	40.45	1,468,906	9,272,709	4,286,802	51,029,668	364,745	216,607	172	921
1917	41.58	1,435,414	8,964,113	4,377,104	51,860,308	371,850	257,035	172	1,121
1918	41.58	(a)1,435,414	9,453,441	4,379,679	57,456,832	412,569	264,858	173	1,103
1919	42.60	(a)1,435,414	10,309,349	4,600,482	61,415,350	445,333	295,697	174	1,073

(a) Figures for 1917.

(ii) *Rockhampton Municipal Tramways.* These tramways were opened for traffic in 1909, the motive power being steam. The length of line is 6 route miles, and the gauge 3 ft. 6 in. The capital cost to 31st December, 1919, was £42,000. During the year 1,654,971 passengers were carried, the revenue being £12,572, and working expenses £11,337. The number of the staff at end of year was 40.

(iii) *Sugar-Mill Tramways.* In various parts of Queensland there are tramways used in connexion with the sugar-milling industry, chiefly for the purpose of hauling cane to the mills. Some of these lines are of a permanent nature, running through sugar-cane plantations, while others are portable lines running to various farms.

5. **South Australia.**—Up to the year 1906 the tram service in the principal streets of Adelaide and suburbs was a horse system run by various private companies. Power to acquire these lines, and to provide for their extension and management by means of a Trust, was given to the Government by the Municipal Tramways Trust Act 1906. In accordance with the provisions of the Act, a Trust consisting of eight members, of whom two were nominated by the Governor, two elected by the City Corporation, and two each by the Suburban Corporations and the District Councils involved, was formed in 1907, and a length of 49 route miles of horse traction tramways was purchased from the private companies for a sum of £282,582. On the 10th March, 1909, the electric car system was inaugurated on the Kensington route. At the end of July, 1919, a length of 65.66 route miles had been electrified and opened for traffic, the corresponding length of track opened being 113.31 miles, all of which are of a gauge of 4 ft. 8½ in. The cost of construction and equipment on the 31st July, 1919, was £1,789,487. The following table gives particulars of the tramways for the years ended 31st July, 1915 to 1919 :—

**SOUTH AUSTRALIA.—ADELAIDE ELECTRIC TRAMWAYS, PARTICULARS OF WORKING, 1915 TO 1919.**

Year.	Mileage Open for Traffic (Route).	Total Cost of Construction and Equipment.	Current Used for Traction Purposes.	Tram Miles Run.	Passengers Carried.	Gross Revenue.	Working Expenses.	Cars in Use.	Persons Employed.
	Miles.	£	Kilowatt-hours.	No.	No.	£	£	No.	No.
1915	54.42	1,451,989	9,428,315	4,914,357	42,287,503	309,915	191,070	170	1,045
1916	54.42	1,486,546	9,286,910	4,719,043	43,141,885	322,759	193,965	170	1,120
1917	64.46	1,703,151	10,382,667	4,954,848	45,431,691	338,361	211,662	170	1,200
1918	65.66	1,751,943	10,758,897	5,359,776	46,466,258	414,836	250,586	174	1,099
1919	65.66	1,789,487	10,730,307	5,176,264	45,882,376	428,477	284,993	185	1,337

There are also in South Australia 19.86 miles of Government horse tramways in country districts, worked in connexion with the railway system, of which 17.36 miles are used for passenger service, and 2.50 miles for special purposes. The subjoined statement gives various particulars of these lines :—

**SOUTH AUSTRALIA.—PARTICULARS OF HORSE TRAMWAYS, 1919.**

**GOVERNMENT TRAMWAYS.**

Particulars.	Length.	Gauge.	Nature of Traffic.
	Miles.	ft. in.	
Moonta, Moonta Bay, and Hamley Flat	(a)5.15	5 3	Passengers and goods
Gawler .. .. .	(a)1.20	5 3	" "
Victor Harbour and Breakwater ..	1.00	5 3	" "
Dry Creek and Magazine .. ..	1.00	2 0	Explosives
Magazine and Broad Creek .. ..	1.50	2 0	"
Port Broughton and Mundoora ..	(a)10.01	3 6	Passengers and goods

(a) Included in mileage of Government railways.

6. **Western Australia.**—Apart from the electric tramways, there are in this State several tramways, amounting in all on the 30th June, 1919, to a length of 23½ miles, which are the property of the Government. Of these, which are under the control of the Harbour and Light Department, the most important is the line between Roebourne and Cossack, constructed on a 2-ft. gauge. The length of this line is 12½ miles, and it is worked by steam. The remaining 11 miles belonging to the Government are made up of several short lengths, worked by steam or horses, in connexion with the jetties at certain ports for the purpose of providing the necessary communication between such

jetties and the goods sheds or warehouses. In addition to these Government lines there are electric tramway systems at Perth, under Government control; at Kalgoorlie and Boulder City, carried on by private companies; and at Fremantle, under municipal control.

(i) *Steam and Horse Tramways.* Particulars as to the working of the Government steam or horse tramways for the year ended 30th June, 1919, shew that the capital cost of the lines to that date was £85,451, the gross revenue for the year being £13,037, and the working expenses £7,300. The number of passengers carried was 9,403, and the tonnage of goods conveyed 38,588.

(ii) *Electric Tramways.* There are now four towns in Western Australia which enjoy the benefits of electric tramway systems, namely, Perth, Fremantle, Kalgoorlie, and Boulder.

(a) *The Perth Electric Tramways* were opened for traffic by a private company on the 24th September, 1899, and the system has since been extended to many of the suburbs. This tramway system was taken over by the Government on 1st July, 1913, and is now running in conjunction with the Government railways. On the 30th June, 1919, the route and track miles open for traffic were 26.81 and 36.10 miles respectively, the total cost of construction and equipment to that date being £592,361. During the year, 13,510,694 passengers were carried, the gross revenue being £134,059 and the working expenses £111,098. Seventy-three motors were in use, and the number of employees was 356. The gauge of line is 3 ft. 6 in.

(b) *The Fremantle Tramways* were opened in November, 1905, under the control of the municipality. On the 31st August, 1919, there were 8.64 route and 11.55 track miles of line open for traffic, the cost of construction and equipment at that date being £105,339. This line has a gauge of 3 ft. 6 in. During the year 5,514,111 passengers were carried, the gross revenue being £42,601 and the working expenses £34,440. Twenty-five cars were in use, and the number of employees was 131.

(c) *The Kalgoorlie and Boulder Tramways* are run by a private company, the first line being opened in 1902. At the beginning of 1904 legislative authority was given for the construction of lines in Boulder and suburbs, and in November, 1904, the last section of the Boulder system was completed. At the end of the year 1919 the total mileage of the whole system—in Kalgoorlie and Boulder—amounted to 14½ route or 20½ track miles, the total cost of construction and equipment being £452,318. During the year 1,929,774 passengers were carried, the gross revenue being £33,004 and the working expenses £24,722. Twenty-five motors and seven trailers were in use, and the number of employees was 68. The gauge of this line is 3 ft. 6 in.

(d) *The Leonora-Gwalia Tramway*, two and a quarter route miles in length, was initially a steam tramway. It was opened for traffic by electrification under municipal control on 5th October, 1908, but is now worked with a petrol motor by a private syndicate. It has a gauge of 3 ft. 6 in.

(e) *Particulars of Working of all Electric Tramways.* The subjoined table shews so far as returns are available, particulars of the working of all electric tramway systems in the State for the years 1915 to 1919:—

WESTERN AUSTRALIA.—PARTICULARS OF ELECTRIC TRAMWAYS,  
1915 TO 1919.

Year.	Mileage Open for Traffic (Route).	Total Cost of Construction and Equipment.	Current Used for Traction Purposes.	Tram Miles Run.	Passengers Carried.	Gross Revenue.	Working Expenses.	Cars in Use.	Persons Employed.
	Miles.	£	Kilowatt-hours.	No.	No.	£	£	No.	No.
1915	50.75	1,092,289	as,045,163	2,793,519	17,568,161	182,935	130,868	121	471
1916	52.98	1,132,169	as,191,398	2,861,959	18,315,719	189,140	139,633	123	573
1917a	51.61	1,161,478	5,799,337	2,955,503	19,178,047	197,880	153,847	122	526
1918	50.62	1,152,417	6,118,637	3,127,284	21,218,019	215,011	169,058	130	503
1919	50.22	1,150,018	5,922,421	2,951,653	20,954,579	209,664	170,261	130	545

(a) Exclusive of Leonora tramway.

(iii) *Perth Ferries.* As the Perth ferry services are mainly used for suburban passenger traffic, they are referred to in this section rather than under *Shipping*. Of the twelve boats in service, four are under the control of the Western Australian Government, the other eight belonging to a private company. The number of passengers carried during the year 1918-19 was 925,281, the revenue and expenditure for the same period being £11,795 and £10,820 respectively, and the number of persons employed 24.

7. *Tasmania.*—(i) *Tramways.* In Hobart there is a system of electric tramways, the first line of which was opened for traffic in 1893, amounting in all to a length of 13 and 16.30 route and track miles respectively. This was originally owned by a private company, but is now the property of the Hobart Municipal Council. Under the authority of the Launceston Tramway Act of 1906 the Launceston City Council entered into an agreement with a private company for the construction of a system of electric tramways in the city and suburbs of Launceston. The agreement provided that the company was to run the tramways for a period of 25 years, when the council could purchase the lines and stock at cost price; the electric power required was to be supplied by the Council. This agreement, however, lapsed, and the Council has constructed the tramways, and is running them as a municipal undertaking. The system, which was opened on the 16th August, 1911, has a route and track mileage of 10.25 and 12.88 miles respectively. The gauge of track in both these systems is 3 ft. 6 in.

The following table gives particulars of the working of the two systems for the years 1915 to 1919:—

TASMANIA.—PARTICULARS OF WORKING OF ELECTRIC TRAMWAYS,  
1915 TO 1919.

Year.	Mileage Open for Traffic (Route).	Total Cost of Construction and Equipment.	Current Used for Traction Purposes.	Tram Miles Run.	Passengers Carried.	Gross Revenue.	Working Expenses.	Cars in Use.	Persons Em- ployed.
	Miles.	£	Kilowatt- hours.	No.	No.	£	£	No.	No.
1915	21.43	347,214	1,493,183	999,315	7,462,782	68,170	46,568	60	314
1916	21.95	373,812	1,576,839	1,058,979	7,963,040	73,424	46,758	60	250
1917	21.95	383,219	1,687,407	1,115,090	8,349,789	79,693	49,930	60	259
1918	22.00	389,659	1,913,720	1,192,955	9,785,155	81,918	56,103	60	253
1919	23.25	400,375	2,396,717	1,215,663	10,070,263	97,459	63,561	60	288

There is also a tramway from Smithton to Marawah, 26.50 miles in length, operated by the Government. Of this distance 8.75 miles are worked as a horse tram, the rest being for steam traction. In the year ended 30th June, 1919, 400 passengers and 6,000 tons of goods were conveyed, the number of employees being 7.

A private steam tram at Zeehan, 1.50 miles in length, is also in operation. In 1919, 260 passengers and 4,800 tons of goods were conveyed, the number of persons employed being 4. There is also a private steam tram running from Tullah to Farrell's Siding, a distance of 7 miles. In 1918, 1,476 passengers and 3,040 tons of goods were conveyed, the number of persons employed being 4.

(ii) *Ferries.* The Hobart ferry service, being of a suburban character, is referred to here rather than under *Shipping*. There is one company controlling a fleet of five boats, and also a ferry operated by the Public Works Department with two boats. In the year 1918-19 the number of passengers carried was 870,453, the revenue £13,234, the working expenses £11,393, and the number of persons employed 37.

8. *Electric Traction in Commonwealth, 1918-19.*—The subjoined table gives particulars of electric tramways for each State and the Commonwealth. The returns for the Hobart tramways in Tasmania, for the Ballarat and Bendigo tramways in Victoria, for the Kalgoorlie tramways in Western Australia, and for the Brisbane tramways, are for the calendar year 1919; and for other tramways the returns are, generally, for the financial year 1918-19.

## ELECTRIC TRAMWAYS IN THE COMMONWEALTH, 1918-19.

State.	Mileage open for Traffic (Route).	Total Cost of Construction and Equipment.	Current used for Traction purposes.	Tram Miles Run.	Passengers Carried.	Gross Revenue.	Working Expenses.	Percentage of Working Expenses on Gross Revenue.	Cars, Motors and Trailers.	Persons Employed.
	Miles.	£	Kilowatt-hours.	Nb.	No.	£	£	%	No.	No.
N.S.W. . .	154.56	7,779,227	83,780,703	23,298,238	250,706,503	2,063,055	1,673,536	81.12	1,393	8,610
Victoria . .	94.58	2,027,057	13,955,124	6,832,873	60,753,278	463,320	344,220	74.29	274	1,318
Q'land . . .	42.60	1,435,414	10,309,349	4,660,482	61,415,350	445,332	295,697	66.40	174	1,073
S. Aust. . .	65.66	1,789,487	10,730,307	5,176,264	45,882,376	428,477	284,993	66.51	185	1,337
W. Aust. . .	50.22	1,150,018	5,922,421	2,951,653	20,954,579	209,664	170,261	81.21	130	545
Tasmania . .	23.25	400,375	2,396,717	1,215,663	10,070,263	97,459	63,561	65.22	60	288
C'wealth	430.87	14,581,578	127,094,621	44,075,173	449,782,349	3,707,307	2,832,268	76.40	2,216	13,171

(a) For year 1917.

The percentage of working expenses on gross revenue for all electric tramways in the Commonwealth was 76.40, the range for the States being 65.22 in the case of Tasmania and 81.21 in the case of Western Australia. The latter rate was, however, only slightly higher than that for New South Wales, viz., 81.12.

In the Transportation Bulletin No. 11, Table No. 20, will be found an analysis of the figures in the foregoing table in respect of revenue, working expenses, etc., for the year 1918-19.

In the following table particulars are shewn as to the operations of electric tramways in the Commonwealth for the period 1910 to 1919 :—

## ELECTRIC TRAMWAYS IN THE COMMONWEALTH, 1910 TO 1919.

Year.	Mileage open for Traffic (Route).	Total Cost of Construction and Equipment.	Current used for Traction Purposes.	Tram Miles Run.	Passengers Carried.
	Miles.	£	Kilowatt-hours.	No.	No.
1909-10 . . .	272.24	7,954,192	(b) 62,178,735	30,482,066	268,251,284
1910-11(a) . . .	297.47	8,747,597	(b) 80,804,252	33,625,344	312,857,166
1911-12 . . .	322.24	9,669,808	93,897,694	37,256,203	363,959,404
1912-13 . . .	345.07	11,147,493	106,967,982	41,258,696	405,480,511
1913-14 . . .	365.39	12,365,142	(b) 118,894,845	44,147,626	435,058,028
1914-15 . . .	386.30	13,018,010	(b) 116,567,559	42,811,891	416,798,309
1915-16 . . .	404.76	13,753,988	(b) 116,569,324	43,262,733	432,427,059
1916-17(b) . . .	421.68	14,197,194	119,352,451	43,820,585	451,586,745
1917-18 . . .	426.40	14,441,189	114,798,667	41,454,040	431,389,686
1918-19 . . .	430.87	14,581,578	127,094,621	44,075,173	449,782,349

Year.	Gross Revenue.	Working Expenses.	Percentage of Working Expenses on Gross Revenue.	Cars, Motors and Trailers.	Persons Employed.
	£	£	%	No.	No.
1909-10 . . .	1,731,637	1,297,379	74.92	1,401	8,372
1910-11(a) . . .	2,030,533	1,512,473	74.49	1,506	9,329
1911-12 . . .	2,345,428	1,775,927	75.72	1,628	11,063
1912-13 . . .	2,635,526	2,092,810	79.41	1,864	12,208
1913-14 . . .	2,915,272	2,239,584	76.82	2,071	12,548
1914-15 . . .	2,990,481	2,235,806	74.76	2,135	12,077
1915-16 . . .	3,076,982	2,255,800	73.31	2,162	13,181
1916-17(b) . . .	3,214,777	2,479,212	77.12	2,177	13,475
1917-18 . . .	3,405,123	2,516,117	73.89	2,203	12,588
1918-19 . . .	3,707,307	2,832,268	76.40	2,216	13,171

(a) Exclusive of Leonora tramway (W.A.), with exception of mileage.

(b) Exclusive of Leonora tramway.

During the ten years included in the last table the percentage of working expenses on the gross revenue of all electric tramways in the Commonwealth had a maximum of 79.41 in 1912-13 and a minimum of 73.31 in 1915-16, the average over the whole period being 75.70.



## SECTION XVIII.

## POSTS, TELEGRAPHS AND TELEPHONES.

## § 1. Posts.

1. **The Commonwealth Postal Department.**—Under the provisions of section 51 of the Commonwealth Constitution Act the Commonwealth Parliament was empowered to make laws with respect to the control of the postal, telegraphic, and telephonic services in Australia, and by proclamation, made under section 69 of the same Act, the six separate State Post and Telegraph Departments were amalgamated and taken over by the Federal Executive on the 1st March, 1901. On the 1st December following, the Commonwealth Post and Telegraph Act 1901 came into operation, and the provisions of the various State Acts referring to the postal and telegraphic services thereby ceased to apply; it was, however, specially provided by the Act of 1901 that, until such provisions should be revoked by the Governor-General, all regulations in force, and all rates and charges levied under any State Act, should continue in force and be applied in the same manner as if such State Act were not affected by the Commonwealth Act. The administration of the Act of 1901 was placed in the hands of a Postmaster-General, a responsible Minister with Cabinet rank, and of a Secretary having chief control of the Department throughout the Commonwealth under the Postmaster-General, whilst a principal officer in each State was provided for under the style of Deputy Postmaster-General. The rates and charges levied in each State for the transmission of letters, telegrams, and postal articles at the date of Federation remained in force until the Post and Telegraph Rates Act came into operation on the 1st November, 1902. This Act secured uniformity throughout the Commonwealth in the rates charged for the conveyance of newspapers by post, and for the transmission of telegrams, but did not alter the charges made in the individual States for the transmission of letters, cards, parcels, and packets. Uniform postage rates now exist in all the States under the Postal Rates Act of 1910, which came into operation by proclamation on the 1st May, 1911. (See paragraph 6 hereof.)

For a brief description of the postal services in the earlier period of Australian history, see Year Book No. 5, page 754.

2. **Development of Postal Services.**—In 1841 the number of post offices open in Australia was 102, situated mainly in New South Wales and Tasmania. Ten years later 101 post offices were open in New South Wales, 44 in Victoria, 72 in South Australia, and 51 in Tasmania. From the year 1851 onwards a remarkable increase in the number of post offices in Australia took place, until, in 1891, the number open totalled 4,463, of which 1,384 were situated in New South Wales, 1,729 in Victoria, 307 in Queensland, 629 in South Australia, 86 in Western Australia, and 328 in Tasmania. The number continued to increase until the end of the financial year 1916, when there were 6,082 post offices open in the Commonwealth. In the following year the number closed exceeded the number opened by 102, while in 1917–18 the number further decreased by 107. For the last year available 1918–19, the net result was a reduction of 7, as compared with the previous year the offices in operation being distributed among the States as follows:—New South Wales 2,037, Victoria 1,715, Queensland 640, South Australia 666, Western Australia 402, Tasmania 406, a total for the Commonwealth of 5,866. In addition there were 2,468 Receiving Offices in the Commonwealth.

3. State, Interstate, and Oversea Postages for whole Commonwealth.—In the following table the matter dealt with from 1913 to 1918-19 is divided into (i) matter posted in the Commonwealth for delivery within the Commonwealth, (ii) matter received from places outside the Commonwealth, (iii) matter despatched to places outside the Commonwealth, and (iv) total postal matter dealt with by the Commonwealth Postal Department. Although mail matter posted in the Commonwealth for delivery therein is necessarily handled at least twice, only the numbers despatched are included in the table following, which consequently gives the number of distinct articles handled. The large increase in oversea mail matter despatched and received in 1916-17 and 1917-18 is mainly attributable to postages in connexion with the Australian troops abroad. Evidence of this is furnished by the decreases recorded in 1918-19, when the majority of the troops had returned to Australia.

**STATE, INTERSTATE, AND OVERSEA POSTAGES FOR THE COMMONWEALTH,  
1913 TO 1918-19.**

Year.	Letters and Post-cards.		Newspapers.		Packets.		Parcels.		Registered Articles.	
	Number (,000 omitted).	Per 1,000 of Popula- tion.	Number (,000 omitted).	Per 1,000 of Popula- tion.	Number (,000 omitted).	Per 1,000 of Popula- tion.	Number (,000 omitted).	Per 1,000 of Popula- tion.	Number (,000 omitted).	Per 1,000 of Popula- tion.

**POSTED WITHIN THE COMMONWEALTH FOR DELIVERY THEREIN.**

1913 ..	449,928	93,664	115,662	24,078	62,731	13,059	3,976	828	3,750	781
1914 ..	467,114	94,957	122,534	24,909	59,989	12,195	4,163	846	3,855	784
1915-16	461,167	93,505	123,928	26,141	51,498	10,442	4,366	885	4,165	844
1916-17	478,287	98,104	124,939	25,627	45,926	9,420	4,337	890	4,399	902
1917-18	483,048	97,876	116,899	23,686	42,455	8,602	4,421	896	4,677	948
1918-19	485,452	96,502	121,416	24,136	39,039	7,760	4,875	960	4,741	942

**OVERSEA RECEIVED.**

1913 ..	37,986	7,908	13,043	2,715	4,424	921	213	44	462	96
1914 ..	30,952	6,292	11,068	2,250	2,316	471	191	39	390	79
1915-16	32,292	6,547	8,603	1,744	2,115	429	220	45	470	95
1916-17	59,301	12,163	10,209	2,094	3,007	617	245	50	468	96
1917-18	48,961	9,920	7,152	1,449	2,099	425	278	56	537	109
1918-19	38,953	7,744	7,194	1,430	2,582	513	369	73	510	101

**OVERSEA DESPATCHED.**

1913 ..	30,569	6,364	10,658	2,219	4,131	860	108	22	350	73
1914 ..	26,724	5,433	7,517	1,525	2,227	453	86	17	301	61
1915-16	33,668	6,826	10,011	2,030	2,955	599	466	94	334	68
1916-17	47,464	9,736	12,095	2,481	3,226	682	1,173	241	365	75
1917-18	44,942	9,106	10,896	2,208	2,826	573	1,179	239	357	72
1918-19	29,550	5,874	7,360	1,463	1,907	379	759	151	281	56

**TOTAL POSTAL MATTER DEALT WITH BY THE COMMONWEALTH POSTAL DEPARTMENT.**

1913 ..	518,483	107,936	139,363	29,012	71,286	14,840	4,297	894	4,562	950
1914 ..	524,790	106,682	141,119	28,687	64,532	13,119	4,440	902	4,546	924
1915-16	527,127	106,878	147,542	29,915	56,568	11,470	5,052	1,024	4,969	1,007
1916-17	585,052	120,003	147,243	30,202	52,159	10,699	5,755	1,181	5,232	1,073
1917-18	576,951	116,902	134,947	27,343	47,380	9,600	5,878	1,191	5,571	1,129
1918-19	553,960	110,120	135,970	27,029	43,528	8,652	6,003	1,193	5,532	1,090

4. **State, Interstate, and Oversea Postages for each State.**—The following table shews separately for each State the postal matter dealt with in 1918-19 under the classification adopted in the preceding paragraph with the exception of Registered Articles, which are dealt with separately in paragraph 7. The returns given for South Australia in this and all succeeding tables include those for the Northern Territory. Similarly, the returns for the Federal Territory are included in those for New South Wales.

**STATE, INTERSTATE, AND OVERSEA POSTAGES FOR EACH STATE, 1918-19.**

State.	Letters and Post-cards.		Newspapers.		Packets.		Parcels.	
	Number (,000 omitted).	Per 1,000 of Popula- tion.	Number (,000 omitted).	Per 1,000 of Popula- tion.	Number (,000 omitted).	Per 1,000 of Popula- tion.	Number (,000 omitted).	Per 1,000 of Popula- tion.

**POSTED FOR DELIVERY WITHIN COMMONWEALTH.**

New South Wales	193,983	100,381	54,009	27,948	19,466	10,073	2,511	1,299
Victoria ..	145,970	102,023	28,842	20,158	8,600	6,011	836	584
Queensland ..	59,236	85,300	19,613	28,242	5,304	7,638	906	1,305
South Australia	42,038	93,315	7,679	17,047	3,336	7,405	304	674
Western Australia	24,992	79,732	5,220	16,655	1,330	4,243	230	734
Tasmania ..	19,233	92,081	6,053	28,979	1,003	4,801	88	422
Commonwealth	485,452	96,502	121,416	24,136	39,039	7,760	4,875	969

**OVERSEA RECEIVED.**

New South Wales	14,505	7,506	2,691	1,393	1,350	699	90	47
Victoria ..	12,657	8,846	1,225	856	334	233	151	106
Queensland ..	3,727	5,367	1,157	1,667	272	392	59	85
South Australia	3,752	8,328	826	1,833	151	334	34	76
Western Australia	3,101	9,894	977	3,117	374	1,193	26	83
Tasmania ..	1,216	5,820	318	1,522	101	486	9	44
Commonwealth	38,958	7,744	7,194	1,430	2,582	513	369	73

**OVERSEA DESPATCHED.**

New South Wales	12,930	6,691	3,076	1,592	905	468	242	125
Victoria ..	9,762	6,823	2,900	2,027	808	564	279	195
Queensland ..	2,372	3,415	620	907	72	104	88	126
South Australia	2,115	4,695	341	757	71	156	84	187
Western Australia	1,548	4,938	264	844	21	68	41	131
Tasmania ..	823	3,942	149	715	30	144	25	122
Commonwealth	29,550	5,874	7,360	1,463	1,907	379	759	151

5. **Postal Facilities.**—The subjoined statement shews the number of post and receiving offices, the area in square miles and the number of inhabitants to each post office (including receiving offices) in each State and in the Commonwealth at the end of the year 1918-19. In order to judge clearly the relative postal facilities provided in each State, the area of country to each office, as well as the number of inhabitants per office, should be taken into account.

**SQUARE MILES OF TERRITORY AND NUMBER OF INHABITANTS TO EACH POST AND RECEIVING OFFICE ON 30th JUNE, 1919.**

State.	N.S.W. (a)	Vic.	Q'land.	S.A. (b)	W.A.	Tas.	C'wlth.
Number of post and receiving offices	2,599	2,569	1,283	791	603	489	8,334
Number of square miles of territory to each office in State ..	119	34	523	1,142	1,618	54	357
Number of inhabitants to each office	744	557	541	570	520	427	604
Number of inhabitants per 100 square miles .. .. .	623	1,628	104	50	32	797	169

(a) Including Federal Territory. (b) Including Northern Territory.

**6. Rates of Postage.**—Prior to the operation of the Postal Rates Act of 1910, the charges made for the postage of newspapers and parcels, and of interstate and foreign letters, were the same in all the States of the Commonwealth. The rates for the transmission of letters within the borders of a State, however, were not uniform, the Post and Telegraph Act 1901 having specially provided that the rates and charges levied in any State should continue in force. The last-mentioned provision, however, was repealed by the Postal Rates Act of 1910, which came into force by proclamation on 1st May, 1911, and uniform rates are now applicable throughout the Commonwealth. An amendment of the Act in 1918 imposed as from the 28th October of that year  $\frac{1}{2}$ d. war postage in addition to the ordinary rate and this has since been collected, but a further amending bill now before Parliament provides for the repeal of the "War Postage Section" and for increases in the rate of postage on letters, newspapers and other postal matter. Should the early passage of the bill permit the new schedules will be included in the appendix to this number of the Year Book.

The following rates on letters, newspapers, and certain other postal articles posted in the Commonwealth for delivery therein came into force on the 1st May, 1911, the date of proclamation of the operation of the Postal Rates Act of 1910. War postage as shewn in the succeeding table must be added.

**POSTAL RATES ON CERTAIN ARTICLES POSTED IN THE COMMONWEALTH FOR DELIVERY THEREIN ON AND AFTER 1st MAY, 1911.**

Postal Articles.	Rates of Postage (Exclusive of War Postage).
LETTERS .. .. .	1d. per $\frac{1}{2}$ ounce
LETTER-CARDS .. .. .	{ Single, 1d. each
	{ Reply, 1d. each half
POST-CARDS .. .. .	{ Single, 1d. each
	{ Reply, 1d. each half
PRINTED PAPERS.—As prescribed .. .. .	$\frac{1}{2}$ d. per 2 ounces or part of 2 ounces
BOOKS.—Printed outside Australia .. .. .	$\frac{1}{2}$ d. per 4 ounces or part of 4 ounces
BOOKS.—Printed in Australia .. .. .	$\frac{1}{2}$ d. per 8 ounces or part of 8 ounces
CATALOGUES.—Set up and printed in Australia, for each catalogue .. .. .	$\frac{1}{2}$ d. per 4 ounces
MAGAZINES.—Printed in Australia, for each magazine .. .. .	$\frac{1}{2}$ d. per 8 ounces or part of 8 ounces
MAGAZINES.—Printed outside Australia, for each magazine .. .. .	$\frac{1}{2}$ d. per 4 ounces or part of 4 ounces
HANSARD.—Reports of Parliamentary Debates ..	$\frac{1}{2}$ d. per 12 ounces or part of 12 ounces
COMMERCIAL PAPERS, PATTERNS, SAMPLES, AND MERCHANDISE.—As prescribed .. .. .	1d. per 2 ounces or part of 2 ounces
NEWSPAPERS (in bulk), posted by registered newspaper proprietors, or by newsvendors, or returned by an agent or newsvendor to the publishing office .. .. .	1d. per 20 ounces on the aggregate weight of newspapers
NEWSPAPERS.—Printed outside Australia .. ..	$\frac{1}{2}$ d. per 4 ounces or part of 4 ounces
ALL OTHER NEWSPAPERS .. .. .	For each newspaper, $\frac{1}{2}$ d. per 10 ounces or part of 10 ounces

On 28th October, 1918,  $\frac{1}{2}$ d. War Postage, in addition to ordinary postage, was imposed. An exception was made in the case of letters for members of the Australian Imperial Force abroad and for men serving on ships of the Australian Navy. The war postage to be affixed is indicated hereunder :—

### WAR POSTAGE.

Postal Articles.	Rates of Postage.
(a) For delivery within the Commonwealth—	
Letters .. .. .	$\frac{1}{2}$ d. each.
Letter-cards .. .. .	Single, $\frac{1}{2}$ d. each ; reply, $\frac{1}{2}$ d. each half.
Post-cards .. .. .	Single, $\frac{1}{2}$ d. each ; reply, $\frac{1}{2}$ d. each half.
Packets, namely—Commercial papers, printed papers, patterns, samples, merchandise, books, catalogues, magazines, <i>Hansard</i>	$\frac{1}{2}$ d. each packet.
Newspapers posted by newspaper proprietors or newsvendors, or returned by an agent or newsvendor to the publishing office	$\frac{1}{2}$ d. per 20 oz. on the aggregate weight posted by one person at one time.
Other newspapers .. .. .	$\frac{1}{2}$ d. each newspaper.
(b) For delivery outside the Commonwealth—	
Letters (except letters for members of the A.I.F. abroad, and those serving on ships of the Australian Navy)	$\frac{1}{2}$ d. each.
Letter-cards .. .. .	$\frac{1}{2}$ d. each.
Post-cards addressed to places in the British Empire and the United States of America, New Hebrides, Banks and Torres Islands	Single, $\frac{1}{2}$ d. each ; reply, $\frac{1}{2}$ d. each half.
Newspapers addressed to New Zealand and Fiji posted by newspaper proprietors or newsvendors, in parcels containing not fewer than four newspapers of the same issue	$\frac{1}{2}$ d. per 16 oz. on the aggregate weight posted by one person at one time.
Other newspapers exceeding 2 oz. in weight ..	$\frac{1}{2}$ d. for each newspaper.

The sum transferred to the Treasury by the Postal Department on account of War Postage for the period between 28th October, 1918, and 30th June, 1919, was £466,029.

Whilst the bookkeeping sections of the Constitution Act were in force, each State had necessarily to use its own postage stamps, and stamps sold in one State were only allowed to be used on letters posted in that State. The necessity for this arrangement disappeared with the change in the keeping of the Commonwealth accounts, and since the 14th October, 1910, it has been permissible to affix stamps of any State to letters, irrespective of the State in which such letters are posted. Stamps of a uniform design are now used throughout the Commonwealth.

(i) *Letters.* Under the Postal Rates Act of 1910, the charge (1d. for every  $\frac{1}{2}$ -oz.) for letters posted for delivery within the Commonwealth is now uniform throughout all States. Previous to 1st May, 1911, various local and interstate rates were in operation within the States. The postage to the United Kingdom was reduced in January, 1891, from sixpence per half-ounce *via* the Red Sea, and fourpence *via* the Cape of Good Hope, to the uniform rate of twopence halfpenny. In 1891 the States were represented at the Congress of the Universal Postal Union held in Vienna, and on the 4th July a convention was signed on their behalf, by which they joined the Union from the 1st October of that year. On that date the rate of postage to all British possessions and to foreign countries included in the Union was reduced to twopence halfpenny. The present charge throughout the Commonwealth for postage of interstate letters and of letters to the United Kingdom and to British possessions, including the islands in the Pacific, which,

prior to the War were held by Germany, but are now under British control, is uniformly one penny per half-ounce. The rate on letters to foreign countries (with the exception of New Hebrides, Banks and Torres Islands, where the rate is a penny per half-ounce) is twopence halfpenny for each half-ounce. In addition to the above rates, one halfpenny (war postage) must be affixed to each article.

(ii) *Newspapers.* The different rates charged for the carriage of newspapers in the various States, prior to Federation, continued after the control of the Postal Departments had been taken over by the Commonwealth, until the 1st November, 1902, when a uniform rate was imposed by the Post and Telegraph Rates Act 1902. At present the rate on all newspapers posted for delivery in the Commonwealth or for transmission to Papua (without condition as to the number contained in each addressed wrapper posted) by registered newspaper proprietors, or by newsvendors, or returned by newsvendor or agent to the publishing office, is one penny, plus one halfpenny (war postage), per twenty ounces on the aggregate weight. The rate to New Zealand, the islands annexed thereto, and Fiji is one penny, plus one halfpenny (war postage), per sixteen ounces on the aggregate weight, which must not exceed 20 lbs. On all other registered newspapers posted within the Commonwealth for delivery therein or for transmission to New Zealand and the islands annexed thereto, Fiji, and Papua, the charge is a halfpenny per ten ounces for each newspaper. In addition each newspaper must bear one halfpenny (war postage). At the end of the year 1919 there were in all 1,482 publications registered in the Commonwealth under section 29 of the Post and Telegraph Act 1901 for transmission by post as newspapers. The rates on registered newspapers for transmission to the United Kingdom are, by the ordinary route, for each newspaper not exceeding eight ounces one penny, exceeding eight ounces but not exceeding ten ounces twopence halfpenny, every additional two ounces one halfpenny. By the all-sea route the rate for each newspaper exceeding eight ounces is one penny per sixteen ounces. To other parts of the world the rate is one penny up to four ounces and one halfpenny for every additional two ounces. An additional one halfpenny (war postage) is charged on each newspaper exceeding two ounces. The limit of weight allowed is 5 lbs. Newspapers which are not registered are charged at the same rates as other printed papers.

(iii) *Parcels.* Parcels may not exceed 11 lbs. in weight, 3 ft. 6 in. in length, or 6 feet in length and girth combined. The rate for the inland postage of parcels is sixpence up to 1 lb., and then threepence for every additional pound. For interstate transmission the rate is eightpence up to 1 lb., and then sixpence per lb., and for transmission to the United Kingdom the rate is one shilling up to 1 lb., and sixpence for every additional pound. Various rates are charged for the conveyance of parcels to other parts of the world.

(iv) *Packets.* The following articles are classed as packets and are accepted for oversea destinations at the rates given. A table of charges for delivery within the Commonwealth is to be found on page 721 :—Commercial Papers: For New Zealand (including islands annexed thereto) and Fiji, penny per two ounces (a); for all other places, two ounces threepence, each additional two ounces up to ten ounces halfpenny, each two ounces thereafter penny. Printed Papers: For New Zealand, Fiji, New Hebrides, and Solomon Islands, two ounces penny (a), each additional two ounces halfpenny; for all other places, two ounces penny. Patterns and Samples: For New Zealand (including islands annexed thereto) and Fiji, penny per two ounces (a) (up to 1 lb.); for United Kingdom, penny per two ounces (up to 5 lbs.); for all other places, penny per two ounces (up to twelve ounces). Merchandise: For New Zealand (including islands annexed thereto) and Fiji, penny per two ounces (a) (up to 1 lb.); to all other places parcels rates are charged. Books: For New Zealand (including islands annexed thereto), Fiji, New Hebrides, and Solomon Islands, penny per four ounces; for all other places, penny per two ounces. Catalogues: Rates applicable Commonwealth only. Magazines: For New Zealand (including islands annexed thereto), Fiji, New Hebrides, and Solomon Islands, penny per eight ounces, each additional four ounces halfpenny; for all other places, penny per two ounces. Packets for transmission within the Commonwealth must not as a rule exceed 2 feet in length, 1 foot in breadth or depth; or, if in a roll, 2 ft. 6 in. in length, while the maximum weights allowed are—commercial and printed papers, 5 lbs.; patterns, samples, and merchandise, 1 lb.

(a) An additional halfpenny (war postage) must be affixed to each packet.

7. **Registered Letters, Packets, etc.**—Under section 38 of the Post and Telegraph Act 1901, provision is made for the registration of any letter, packet, or newspaper upon payment of a fee of threepence, and any person who sends a registered article by post may obtain an acknowledgment of its due receipt by the person to whom it is addressed by paying an additional fee of twopence halfpenny in advance at the time of registration.

*Number of Registered Articles.* The subjoined table shews the number of registered articles posted in each State, classified according to the places to which they were despatched, for delivery, also the number of registered articles received in each State from beyond the Commonwealth during the year 1918-19 :—

**REGISTERED ARTICLES POSTED IN EACH STATE AND RECEIVED FROM  
BEYOND COMMONWEALTH, 1918-19.**

State.	Posted in each State for Delivery within that State.		Posted in each State for Delivery in other States.		Posted in each State for Delivery in Places outside the C'wealth.		Total Posted.		Received in each state from Places outside the C'wealth.	
	Number (,000 omitted).	Per 1,000 of Population.	Number (,000 omitted).	Per 1,000 of Population.	Number (,000 omitted).	Per 1,000 of Population.	Number (,000 omitted).	Per 1,000 of Population.	Number (,000 omitted).	Per 1,000 of Population.
New South Wales ..	1,623	840	185	95	129	67	1,937	1,002	214	111
Victoria ..	1,117	781	185	129	73	51	1,375	961	153	107
Queensland ..	530	763	91	131	37	52	658	946	53	77
South Australia ..	326	723	56	124	15	33	397	880	31	67
Western Australia ..	369	1,179	33	107	23	74	425	1,360	48	153
Tasmania ..	201	962	25	119	4	19	230	1,100	11	52
Commonwealth ..	4,166	828	575	114	281	56	5,022	998	510	101

8. **Ocean Mail Services.**—Regular steamship communication between Australia and Europe was established in 1852 by a service run by the Peninsular and Oriental Company between Singapore and Sydney, *via* King George's Sound, Adelaide, and Melbourne. This service was inaugurated in September, 1852, by the arrival at Melbourne of the *Chusan*, and was continued until 1854, when it was stopped in consequence of the Crimean War; in 1856 a line of steamers was again started, and the service was carried on by the Peninsular and Oriental Company, in conjunction with the Royal Mail Company, for some years.

(i) *Mail Route via San Francisco.* The service *via* the Red Sea did not at first give much satisfaction to the public, and was looked upon with a certain amount of disfavour in New South Wales and New Zealand. The effect was to stimulate the colonists to agitate for an improved service, and proposals were made for the establishment of a line of mail packets from Sydney to Panama *via* Wellington, by rail across the isthmus, and thence to Great Britain. The result was that in 1866 the line was started, and continued in operation until the end of 1868, when it was terminated through the failure of the company by which it had been carried out. The completion of the railway across the American continent in 1869, with its western terminus at San Francisco, opened up a new and agreeable route, and in that year a monthly service was inaugurated by the Union Steamship Company, in conjunction with the Pacific Steamship Company, from Sydney to San Francisco *via* Auckland. This service was subsidised to the extent of £37,000 per annum, of which New South Wales paid £25,750 and New Zealand £11,250, and was continued until November, 1890, when a new contract was entered into and the amount of the subsidy largely reduced, the amount of the contribution being based upon the weight of mail matter carried. Various extensions of the contract were made, but the last agreement made between the New Zealand Government and the Oceanic Steamship Company of San Francisco expired on the 10th November, 1906, and has not since been

renewed. From that date mails were carried at Postal Union rates until the 12th April, 1907, when the service was discontinued. At present mails to and from Europe are carried by the Union Steamship Company, which receives a subsidy from the New Zealand Government, with a four-weekly service; and by the Oceanic Company, with a service twice in every nine weeks. Postal Union rates are charged in respect of Australian mails conveyed by the Union Company, and poundage rates in the case of the Oceanic Company.

(ii) *Route via Suez Canal.* The establishment of a mail route *via* America had the effect of stimulating the steamship owners who were engaged in the service *via* Suez, and from that time there was a marked improvement in the steamers, as well as in the punctuality and speed with which the mails were delivered. Almost since the inception of ocean steam services, the Peninsular and Oriental Company, and, at a little later date, the Orient-Pacific Company, have carried mails to and from Australia. Postal matter was carried by contract until 1905, when the contract between the Peninsular and Oriental Company and the Commonwealth Government ceased, although that between the company and the Imperial Post Office is still in force. Until discontinued, owing to the war, mails were carried from Australia by the Peninsular and Oriental Company, but at Postal Union rates and not under contract with the Commonwealth. On the 25th April, 1905, the Orient-Pacific Company concluded a new contract with the Commonwealth Government for a fortnightly service between England and Australia. The subsidy was at the rate of £124,880 per annum. This contract has now been replaced by the present mail contract referred to in the next sub-section hereof. Fremantle has, since the year 1900, been the first and last port of call for European mail steamers, in lieu of Albany, the original port of call. The Peninsular and Oriental and Orient Steam Navigation Companies' steamers, before the outbreak of war in 1914, sailed alternately every week, both from London and Australia, conveying the outward and homeward mails. As before stated, the Peninsular and Oriental service was entirely suspended as a result of the war, while a very limited service was carried on for a greater part of the time by the Orient line *via* the Cape route. The situation has improved since the termination of the War, although the regular running of the Peninsular and Oriental and Orient line steamers has not yet been resumed. At present every opportunity is being availed of to improve the service by despatching mails by all vessels suitable for the purpose.

(a) *Present Mail Contract.* On the 1st January, 1906, tenders were invited by the Commonwealth Postmaster-General for a fortnightly mail service between Adelaide and Brindisi, to alternate with a similar service to be provided by the Imperial Government, and a contract was entered into with Sir James Laing and Company Limited, providing for a service at an annual subsidy of £125,000. This contract, however, fell through, and new tenders were accordingly called for. On the 15th November, 1907, an agreement was entered into with the Orient Steam Navigation Company Limited providing for a fortnightly service for a period of ten years, commencing in February, 1910. The mail service was to be carried out by existing vessels belonging to the company and by five new mail ships, which had been specially built, and which were each over 12,000 tons gross registered tonnage and of not less than seventeen knots speed. An additional new vessel was to be added within eighteen months, and another within six years, from February, 1910, and the first of these—the *Orama*—entered into running during November, 1911. War conditions have, however, delayed the addition of the later vessel to the mail fleet. The vessels were to call at Fremantle, Adelaide, Melbourne, Sydney, and Brisbane, and, during the months of February to May inclusive, at least six of them at Hobart. The voyage from Taranto to Adelaide was to be completed within twenty-six days, fourteen hours, and from Adelaide to Taranto within twenty-seven days, two hours, but the latter period might be exceeded by thirty-six hours during the prevalence of the south-west monsoon. The amount of the subsidy was fixed at £170,000 per annum; but, if the earnings of the company were decreased, or the expenses increased by reason of any Commonwealth shipping legislation passed subsequently to the date of the agreement, to the extent of not less than £5,000 a year, the contractors had the right to terminate the agreement unless the subsidy were increased. Insulated space of not less than 2,000 tons of forty cubic feet per ton was to be provided in each of the new vessels, and the freights were not to exceed one halfpenny per lb. for butter and sixty shillings per ton for fruit. These rates obtained until the beginning of the War when the control of



space passed to the Imperial Government. White labour only was to be employed, and no discrimination was to be made between unionists and non-unionists. If before or during the sixth year of the period of the contract an accelerated service were provided by any competing line of mail ships, the contractors had, if so required by the Postmaster-General, to provide a service equal to the competing service, at an increased subsidy, to be determined by agreement or arbitration. With the expiration of the period in 1916, this clause in the agreement lapsed. The Commonwealth flag had to be flown on the mail ships, which the Commonwealth had the right to purchase at a valuation at any time. Within six months of the Postmaster-General establishing a permanent wireless telegraphy station at Rottne Island, or at any point on the coast between Fremantle and Brisbane, the company was required to fit the mail ships with wireless telegraphy installations. The new service was inaugurated on the 11th February, 1910, but was interrupted by the War and has since been carried out as far as possible with the reduced number of steamers available. The present contract will expire on 17th September, 1921, the Company having given the necessary 24 months' notice of intention to terminate as provided by the agreement.

(b) *French and German Subsidised Mail Services.* Vessels belonging to the Messageries Maritimes and the Norddeutscher Lloyd, which were under contract respectively with the French and German Governments to convey mails monthly between Marseilles and New Caledonia and between Bremen and Sydney, *via* Genoa, also carried mails for the Commonwealth Government from Australia to Europe at Postal Union rates. The Messageries Maritimes service commenced in November, 1882; the amount of the annual subsidy granted by the French Government being £120,000. The vessels have, however, for the time being, been withdrawn from the Australian service. The first contract for the establishment and maintenance of a mail steamship line between Germany and Australia was made between the Imperial German Government and the Norddeutscher Lloyd in 1885, and the service was inaugurated in July, 1886, with the steamer *Salier*. The service afforded by German vessels was, of course, discontinued on the outbreak of hostilities in Europe in 1914.

(iii) *Route via Vancouver and Canadian-Pacific Railway.* During the year 1893 a direct monthly service was started between Sydney and Vancouver, in British Columbia, *via* Wellington in New Zealand, and thence to Liverpool *via* the Canadian-Pacific Railway, the New South Wales Government paying an annual subsidy of £10,000 for the maintenance of this service for a period of three years. In 1896 the agreement was renewed for a further period of three years, and in 1899 was again renewed for four years, subject to the same terms and conditions, except that the route was *via* Brisbane instead of Wellington. The contract was further extended, at an increased subsidy, from time to time until the 31st July, 1911, at a subsidy of £26,626 per annum, when it finally terminated, and Commonwealth mails for Canada are now forwarded from Sydney, *via* New Zealand, at poundage rates.

(iv) *Other Ocean Mail Services.* In addition to the mails *via* the Suez Canal, a number of other services, both regular and irregular, are maintained between the Commonwealth and various parts of the world, and also between the principal ports in the various States and a number of small ports in the less settled parts of the Commonwealth which are inaccessible by rail. The following statement gives a summary, in so far as returns are available, of all mail services maintained between the Commonwealth and other countries and between ports in the Commonwealth. The amounts of subsidies specified are the amounts payable per annum unless otherwise stated.

#### SUMMARY OF COMMONWEALTH MAIL SERVICES, 1920.

Description of Service.	Frequency of Service.	Ports between which Service is maintained.	Particulars regarding Subsidies.
1. <i>To and from Europe, via Suez—</i> (a) Orient Steam Navigation Co.	Irregular intervals	Adelaide, Fremantle and London, <i>via</i> Suez	Subsidised. Date of agreement, 15th Nov., 1907. Term, from Feb., 1910. Expires 17th Sep., 1921. Amt. of subsidy, £170,000
(b) Peninsular and Oriental S.N. Co. Ltd.	"	" " "	Poundage rates

SUMMARY OF MAIL SERVICES—*continued.*

Description of Service.	Frequency of Service.	Ports between which Service is maintained.	Particulars regarding Subsidies.
2. <i>To and from Europe, via Vancouver (A)—</i> Union Steamship Co. ..	Every four weeks	Sydney and Vancouver, B.C., via Auckland, Fiji, Honolulu	Poundage rates
3. <i>To and from Europe, via San Francisco—</i> (a) Union Steamship Company	„	Sydney, Wellington, and San Francisco	Subsidised by New Zealand Govt. Mails from Aust. at Postal Union rates
(b) Oceanic Steamship Co. ..	Twice in nine weeks	Sydney, Pago Pago (Samoa), Honolulu, and San Francisco	Poundage rates
4. <i>To and from New Zealand—</i> (a) Conjointly by Union S.S. Co. and Huddart, Parker Ltd.	Weekly	Sydney and Wellington, Sydney and Auckland	„ „
(b) Other steamers ..	Irregularly, when convenient	Sydney, Wellington, Auckland, Lyttelton, and other Ports	„ „
5. <i>To and from Ports in New South Wales—</i> (i) NORTHERN PORTS— (a) North Coast S.N. Co.	Weekly Twice weekly	Sydney, Macleay River Coff's Harbour, Clarence River, Byron Bay and Richmond River	„ „ „ „
(b) „ „	Fortnightly	South Solitary Island ..	„ „
(c) Langley Bros. „ ..	Weekly	Sydney and Coff's Harbour	„ „
(d) Cain's Co-operative S.S. Co.	Twice a month	Sydney and Port Macquarie	„ „
(ii) SOUTH COAST PORTS— Illawarra and S. Coast S.N. Co.	Fortnightly	Sydney, Montague Island	„ „
6. <i>To and from Northern Ports of Queensland—</i> (a) Australasian United Steam Navigation Co. Limited	Weekly	Gladstone, Mackay, Bowen, Townsville, Lucinda, Mourilyan, Cairns, Port Douglas, and Cooktown	Subsidised by agreement dated 5th Dec., 1919, for one year. Amount of subsidy, £20,000, exclusive of Port and Light dues
(b) Other steamers ..	Irregularly	Various ..	Poundage rates
7. <i>To and from Ports in South Australia—</i> (a) Coast Steamship Co. Ltd.	Weekly	Port Adelaide and Kingscote	Subsidised to 31st December, 1922. Amount of subsidy, (a) £900; (b) £400; (c) £500; (d) £400
(b) „ „	Twice a week	Port Adelaide and Edithburgh	
(c) „ „	„	Port Adelaide and Stansbury	
(d) „ „	„	Port Adelaide and Port Vincent	
(e) Adelaide Steamship Co. ..	Weekly	Port Adelaide and Port Lincoln	Subsidised for three years from 1st January, 1920. Amount of subsidy, £3,000
(f) Adelaide Steam Tug Co. ..	As required	Port Pirie and Hummocks Hill	Subsidised without agreement. Amount of subsidy, £120.

(A) Carries also mails to Canada and the United States.

SUMMARY OF MAIL SERVICES—*continued.*

Description of Service.	Frequency of Service.	Ports between which Service is maintained.	Particulars regarding Subsidies.
8. <i>Western Australia</i> —			
(i) TO AND FROM PORTS ON N.W. COAST—			
(a) State Steamship Service	Monthly ..	Fremantle and Derby ..	Subsidised by agreement dated 28th February, 1913, for three years. Later extended to a date three months after expiration of war. Subsequently extended for indefinite period. Amount of subsidy, £5,500
(b) " " "	Once each sixty days	Fremantle and Darwin..	
(c) West Australian S.N. Co.	About fortnightly	Fremantle and Broome	
(d) Ausn. United S. Navigation and State S.S. Co. and Melbourne S.S. Coy.	Irregularly, during the cattle season	Fremantle, Derby; and Wyndham	" "
(ii) TO AND FROM PORTS ON S. COAST—			
(a) State Steamship Service	Fortnightly	Albany and Esperance..	Subsidised by agreement for three years, dating from 1st July, 1918. Amount of subsidy, £1,500
(b) " "	Quarterly	Albany and Eucla, via intermediate ports	
9. <i>Tasmania</i> —			
(a) Union S.S. Co. and Huddart, Parker Proprietary	Three times a week	Melbourne and Launceston	Subsidised by agreement dated 27th October, 1913, for five years from date on which a new steamer similar to t.s. <i>Loongana</i> is run on Launceston - Melbourne service. £13,000 only to be paid prior to running of new steamer and £15,000 thereafter
(b) " " "	Twice a week	Melbourne and Burnie	
(c) " " "	Weekly ..	Sydney, Hobart, and Wellington	
(d) Union Steamship Co...	Fortnightly	Sydney, Launceston, and Devonport	" "
(e) To and from ports in Western Districts	Weekly ..	Hobart and Strahan ..	" "
(f) Holyman and Sons Ltd.	" ..	Melbourne, Burnie, etc	" "
(g) Huon Channel and Peninsular Co.	Twice a week	Hobart and Kelly's Point, via Pearson's Point	Subsidised by agreement dated 1st January, 1919, for three years. Amount of subsidy, £40 per annum
(h) C. A. Coghlan ..	Every two weeks	Launceston and Furneaux group of islands	Subsidised by agreement dated 1st January, 1919, for three years. Amount of subsidy, £800 per annum, of which £300 contributed by State Government, contract terminable by month's notice either side
(i) King Island Steamers Ltd.	Fortnightly	Launceston and King Island	Subsidised by agreement dated 1st January, 1919, for three years. Amount of subsidy, £300 per annum
10. <i>To and from Northern Territory</i> —			
(a) Burns, Philp and Co. . .	Monthly ..	To and from Adelaide, Melbourne and Sydney, via Queensland ports, extending to China and Japan	Poundage rates
(b) State Steamship Service of Western Australia	Once each sixty days	Fremantle and Darwin..	See Item 8 above

SUMMARY OF MAIL SERVICES—*continued.*

Description of Service.	Frequency of Service.	Ports between which Service is maintained.	Particulars regarding Subsidies.
11. <i>To Eastern Ports—(A)</i>			
(a) Burns, Philp and Co...	Monthly ..	Sydney to Singapore, calling Timor and Dilly every other trip, via Queensland Ports and Darwin	Subsidised by Commonwealth Govt. Mails at poundage rates
(b) China Navigation, Eastern and Ausn., and China Australian Line	About three times a month	Sydney to Hong Kong, Manila, etc., via Queensland Ports	Poundage rates
(c) Nippon Yusen Kaisha	Every four weeks	Sydney to Manila, China, and Japan, via Queensland Ports	Postal Union rates
(d) Royal Dutch Packet S.N. Co.	Monthly	Melbourne to Java, via Sydney and Queensland Ports	Poundage rates
(e) Various other steamers	About monthly	Sydney or Newcastle and ports in Borneo, Java, Sumatra, and Malay Peninsula	" "
(f) W.A.S.N. Co. ..	About fortnightly	W.A. Ports, Java, and Singapore	" "
12. <i>South Africa—</i> White Star, P. and O. Branch Service, and other Companies	Irregularly	Various .. ..	" "
13. <i>North America—</i>			
(a) Various steamers ..	Irregularly	Sydney or Newcastle to San Francisco	" "
(b) " " ..	"	Sydney to Guaymas (Mexico)	" "
(c) Union S.S. Co. ..	13 voyages yearly	Sydney, Wellington, Tahiti and San Francisco	" "
(d) " " ..	Every four weeks	Sydney, Auckland, Fiji, Honolulu, and Vancouver	" "
(e) Oceanic S.S. Co. ..	Twice in nine weeks	Sydney, Pago Pago, (Samoa), and San Francisco	" "
14. <i>South America—</i>			
(a) { Oceanic S.S. Co. } { Union S.S. Co. }	Twice a month	Sydney, via San Francisco to ports in Chile, Brazil, Peru, Uruguay, and Argentina	" "
(b) Various other steamers	Irregularly	Via Newcastle to various ports	" "
15. <i>Pacific Islands—</i>			
(a) Burns, Philp and Co. ..	Every two months	Sydney to Lord Howe and Norfolk Islands and New Hebrides	Subsidised by Commonwealth
(b) " " ..	Irregularly	Sydney to Nauru and Ocean Islands, Gilbert and Ellice Groups	"
(c) " " ..	"	Sydney to Marshall Islands	"
(d) " " ..	Every three weeks	Sydney to Papua and Rabaul	Subsidised by Commonwealth
(e) " " ..	"	Sydney to Rabaul ..	" "
(f) " " ..	"	Sydney to Solomon Islands	" "
16. <i>New Caledonia and New Hebrides—</i>			
(a) Messageries Maritimes	Monthly ..	Sydney and Noumea and to Vila (New Hebrides)	Postal Union rates
(b) Other steamers ..	About four times a month	Sydney and Noumea ..	Poundage rates
17. <i>Fiji, Friendly Islands, and Samoa—</i>			
(a) Union S.S. Co. ..	Every four weeks	Sydney and Suva ..	" "
(b) " " ..	"	Sydney, Suva, Tonga, and Samoa	" "
(c) A.U.S.N. Co. ..	"	Sydney and Suva ..	" "

(A) Frequency of services not maintained owing to exigencies of war.

9. **Amount of Mail Subsidies Paid.**—The following table shews the amounts of subsidies paid by the Commonwealth Postal Department for ocean and coastal mail services during the year ended 30th June, 1919 :—

**MAIL SUBSIDIES.—OCEAN AND POSTAL SUBSIDIES DURING YEAR 1918-19.**

Service.	Orient S. N. Co.	Queens- land Ports.	South Australian Ports.	Western Australian Ports.	Tas- manian Ports.
	£	£	£	£	£
Annual subsidy .. ..	..	23,950	5,170	7,000	(a)13,915

(a) Including £315 paid by Tasmania.

During the year 1918-19 the amount paid by the Commonwealth for conveyance of mails at poundage rates by non-contract vessels was £77,877 ; by road services, £476,556 ; and by railway services, £251,953. The total expenditure in 1918-19 on the carriage of mails, as disclosed by the Profit and Loss Account, amounted to £858,744. The payment shewn for railway services represents the annual "rate" of expenditure and is subject to adjustment.

10. **Average and Fastest Time of Mails to and from London.**—Great progress has been made in regard to the means of postal communication with the United Kingdom and the continents of Europe and America. In 1857 there was an unsatisfactory ocean mail service, which nominally brought monthly mails, with news nearly sixty days old ; before the outbreak of the war there were three lines of modern ocean steamships, which brought the mails from the United Kingdom in about twenty-nine days to Adelaide, in addition to services by way of New Zealand, *via* San Francisco and Vancouver. Upon the arrival of oversea mail vessels at Fremantle letters for Australia and New Zealand are now landed for despatch by rail to the eastern States. By landing at Fremantle instead of as formerly at Adelaide, a saving of approximately sixty-seven hours is effected. In consequence of the war in Europe, steamers belonging to the Orient S. N. Co. were diverted from the Suez Canal to the Cape route, but the steamers of both companies have since reverted to the Suez Canal route. A regular service equal to that of pre-war days is not yet available, although a fairly frequent service is maintained by the Orient line and a limited service by the P. & O. Company. Other vessels suitable for the carriage of mails are also employed.

In previous issues of the Year Book a table appeared giving the average and fastest times occupied in the conveyance of mails between England and Australia, but owing to the disorganisation of the service reliable information is not for the present available.

At present a mail leaving Perth by train for the eastern States, say, at 10 p.m. on Monday, arrives at Adelaide at 7.50 p.m. on Thursday, at Melbourne at 1.3 p.m. on Friday, at Sydney at 10.45 a.m. on Saturday, and at Brisbane at 6.40 p.m. on Sunday. The time over all between Perth and Brisbane is 138 hours 40 minutes, of which the stops at changing stations take 14 hours 56 minutes. The journey from Melbourne to Hobart occupies about 26 hours *via* Launceston, and about 32 hours direct.

The average time occupied in the conveyance of mails from London to Sydney *via* Vancouver is a little over 37 days, and from Sydney to London by the same route nearly 35. A table shewing the average and fastest times of this service was given in earlier

issues (see Year Book No. 5, p. 766), but the discontinuance of the contract with the company operating between Australia and Vancouver renders the table no longer of value.

11. **Money Orders and Postal Notes.**—The issue of money orders and postal notes in the Commonwealth is regulated by sections 74 to 79 of the Post and Telegraph Act 1901. A money order may be issued for payment of sums up to £20 within the Commonwealth and not exceeding £40 (in some cases £30, £20, or £10) in places abroad. A postal note, which is payable only within the Commonwealth and in Papua, cannot be issued for a larger sum than twenty shillings. Money orders are sent direct from the Commonwealth to the United Kingdom, and to most of the British colonies and possessions, to the British Solomon Islands Protectorate and the Gilbert and Ellice Islands Protectorate, to Italy, to Norway, and to the United States of America. Money orders, payable in Japan and China, are sent *via* Hong Kong; orders payable in other countries, with a few exceptions, are sent through the General Post Office in London, where new orders are issued and forwarded to the addresses of the payees, less twopence for each £1 or fraction of £1, with a minimum charge of fourpence. To secure the full amount of the original order being forwarded to the payee, this extra commission must be paid by the sender.

(i) *Rates of Commission on Money Orders.* The rates of commission chargeable for the issue of money orders are as follows :—

#### RATES OF COMMISSION, MONEY ORDERS.

If Payable in—	For sums—							
	Not exceeding £2.	Exceeding £2, but not exceeding £5.	Exceeding £5, but not exceeding £7.	Exceeding £7, but not exceeding £10.	Exceeding £10, but not exceeding £12.	Exceeding £12, but not exceeding £15.	Exceeding £15, but not exceeding £17.	Exceeding £17, but not exceeding £20.
	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>
Commonwealth of Australia	0 6	0 6	1 0	1 0	1 6	1 6	2 0	2 0
New Zealand and Fiji ..	0 6	1 0	1 6	2 0	2 6	3 0	3 6	4 0
Papua .. .. .	0 9	0 9	1 6	1 6	2 3	2 3	3 0	3 0
United States of America, including Hawaii or Sand- wich Islands and Philip- pine Islands	(a) For sums not exceeding £1, 9d. for every 2s. or frac- tion of 2s., with a maximum rate of 6s. 8d. (b) For sums exceeding £1, for each pound, 6s. 8d.; and for any odd amount less than £1, 9d. for every 2s. on fraction thereof, with a maximum rate of 6s. 8d. per pound							
United Kingdom, other British Possessions, and other Foreign Countries..	Sixpence for any amount up to £2 and 3d. for each additional £1 or fraction thereof							

Remittances may also be made by telegraph to and from money order offices in the Commonwealth which are also telegraph or telephone offices, and to New Zealand. The charge for a telegraph money order is the cost of the telegram of advice in addition to the ordinary commission. Where payment is to be made within the Commonwealth the remitter must also send a telegram advising the transmission of the money, which telegram must be produced by the payee when applying for payment. In the case of New Zealand a second telegram is not required, but an additional charge of sixpence is made by the Department to cover the cost of notifying the payee.

(ii) *Rates of Poundage on Postal Notes.* The values of the notes issued have been so arranged that any sum of shillings and sixpences up to £1 can be remitted by not more than two of these notes. The poundage or commission charged on notes of different denominations is as follows :—

#### POUNDAGE RATES, POSTAL NOTES.

Denomination of Note ..	6d. to 1s. 6d.	2s. to 4s. 6d.	5s.	7s. 6d.	10s. to 20s.
Poundage charged ..	$\frac{1}{2}$ d.	1d.	1 $\frac{1}{2}$ d.	2d.	3d.

(iii) *Value of Orders Issued and Paid and of Notes Sold.* The following table shews the total value of money orders issued and paid, and of postal notes sold in each State and in the Commonwealth during the year 1918-19, together with the total amount of commission on money orders and poundage on postal notes received by the Postal Department. The results throughout shew an improvement as compared with the corresponding figures for 1917-18, although it should be stated that the inclusion of certain sums collected on money orders "paid" in 1918-19 is partly responsible for the increase in the case of money order commission received.

#### VALUE OF MONEY ORDERS ISSUED AND PAID AND OF POSTAL NOTES SOLD, AND TOTAL AMOUNTS OF COMMISSION AND POUNDAGE RECEIVED IN EACH STATE DURING 1918-19.

State.	Value of Money Orders Issued.	Value of Money Orders Paid.	Net Money Order Commission Received.	Value of Postal Notes Sold.	Poundage Received on Postal Notes.
	£	£	£	£	£
New South Wales ..	4,844,721	5,012,064	29,302	1,400,457	27,583
Victoria ..	2,712,512	2,702,292	12,734	912,938	18,029
Queensland ..	1,768,112	1,523,570	11,843	412,495	8,058
South Australia ..	747,517	699,324	4,746	224,908	4,544
Western Australia ..	1,157,788	1,008,891	7,185	213,783	4,081
Tasmania ..	465,889	423,690	2,845	112,844	2,297
Commonwealth ..	11,696,539	11,369,831	68,655	3,277,425	64,592

12. *Number and Value of Money Orders and Postal Notes Issued and Paid.*—The following table shews the total number and value of money orders and postal notes issued and paid in the Commonwealth from 1913 to 1918-19. The payment of military allotments by money order was chiefly responsible for the increase in business recorded in 1915-16. Payment of military allotments by this method was discontinued in 1916-17.

**NUMBER AND VALUE OF MONEY ORDERS AND POSTAL NOTES ISSUED AND PAID, 1913 TO 1918-19.**

Year.	Money Orders.				Postal Notes.			
	Issued.		Paid.		Issued.		Paid.	
	Number.	Value.	Number.	Value.	Number.	Value.	Number.	Value.
	No. (,000).	£ (,000).	No. (,000).	£ (,000).	No. (,000).	£ (,000).	No. (,000).	£ (,000).
1913 ..	2,091	8,750	1,814	8,133	9,425	3,551	9,341	3,527
1914 ..	2 062	8,858	1,823	8,326	9,881	3,680	8,893	3 671
1915-16 ..	(a) 3,007	12,336	2,904	11,815	9,536	3,292	9,517	3,316
1916-17 ..	2,293	10,285	2,105	9,757	9,663	3,273	9,549	3,265
1917-18 ..	2,196	10,901	2,138	10,510	9,842	3,252	9,814	3,221
1918-19 ..	2,300	11,697	2,214	11,370	9,830	3,277	9,775	3,244

(a) Increases due to payment by money order of military allotments.

13. Classification of Money Orders Issued and Paid.—The following table shews the number and value of money orders issued in each State during the year 1918-19, classified according to the country where payable :—

**MONEY ORDERS ISSUED IN EACH STATE, CLASSIFIED ACCORDING TO COUNTRY WHERE PAYABLE, 1918-19.**

State in which Issued.	Where Payable.				Total.
	In the Commonwealth.	In New Zealand.	In the United K'dom.	In Other Countries.	
NUMBER.					
New South Wales ..	911,468	13,879	57,374	14,012	996,733
Victoria ..	411,996	7,200	32,420	9,548	461,164
Queensland..	329,841	2,571	22,773	7,461	362,646
South Australia ..	145,773	1,211	11,532	3,295	161,811
Western Australia ..	198,562	1,090	14,371	3,604	217,627
Tasmania ..	93,865	1,678	3,416	1,241	100,200
Commonwealth ..	2,091,505	27,629	141,886	39,161	2,300,181
VALUE.					
New South Wales ..	£ 4,566,398	£ 46,481	£ 164,470	£ 67,372	£ 4,844,721
Victoria ..	2,566,643	25,160	81,454	39,255	2,712,512
Queensland..	1,632,756	8,661	68,795	57,900	1,768,112
South Australia ..	696,525	4,893	31,885	14,214	747,517
Western Australia ..	1,095,610	3,913	38,515	19,750	1,157,788
Tasmania ..	447,791	6,897	8,203	2,998	465,889
Commonwealth ..	11,005,723	96,005	393,322	201,489	11,696,539



The following table shews the number and value of money orders paid in each State during the year 1918-19, classified according to the country where issued :—

**MONEY ORDERS PAID IN EACH STATE, CLASSIFIED ACCORDING TO COUNTRY OF ISSUE, 1918-19.**

State in which Paid.	Where Issued.				Total.
	In the Commonwealth.	In New Zealand.	In the United K'dom.	In Other Countries.	
NUMBER.					
New South Wales ..	950,060	27,401	14,351	10,915	1,002,727
Victoria ..	445,407	17,031	8,419	5,686	476,543
Queensland ..	303,477	2,193	4 101	2,049	311,820
South Australia ..	140,272	1,305	2,379	1,045	145,001
Western Australia ..	182,745	1,761	3,788	1,208	189,502
Tasmania ..	83,394	3,198	921	1,087	88,600
Commonwealth ..	2,105,355	52,889	33,959	21,990	2,214,193

VALUE.					
	£	£	£	£	£
New South Wales ..	4,803,239	100,684	60,545	47,596	5,012,064
Victoria ..	2,597,350	50,459	33,906	20,577	2,702,292
Queensland ..	1,490,636	8,110	16,798	8,026	1,523,570
South Australia ..	680,723	5,464	8,548	4,589	699,324
Western Australia ..	984,424	3,890	15,357	5,220	1,008,891
Tasmania ..	407,262	10,126	3,465	2,837	423,690
Commonwealth ..	10,963,634	178,733	138,619	88,845	11,369,831

In the above tables money orders payable or issued in foreign countries, which have been sent from or to the Commonwealth through the General Post Office at London, are included in those payable or issued in the United Kingdom.

**14. Classification of Postal Notes Paid.**—The subjoined table shews the number and value of postal notes paid during the year 1918-19 in each State and in the Commonwealth, classified according to the State in which they were issued.

Particulars regarding the total number and value of postal notes issued and paid in each of the last six years are given in paragraph 12 hereof.

**NUMBER AND VALUE OF POSTAL NOTES PAID, CLASSIFIED ACCORDING TO STATE OF ISSUE, 1918-19.**

Particulars.	Postal Notes Paid in—						
	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
NUMBER.							
Issued in same State ..	3,018,172	2,100,515	925,628	502,948	497,652	276,743	7,321,658
Issued in other States ..	316,459	330,390	79,986	59,798	23,862	1,643,290	2,453,785
Total ..	3,334,631	2,430,905	1,005,614	562,746	521,514	1,920,033	9,775,443

NUMBER AND VALUE OF POSTAL NOTES PAID, CLASSIFIED ACCORDING TO STATE OF ISSUE, 1918-19—continued.

Particulars.	Postal Notes Paid in—						
	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
VALUE.							
Issued in same State ..	£ 1,110,501	£ 698,606	£ 326,316	£ 158,205	£ 187,107	£ 87,850	£ 2,568,585
Issued in other States ..	117,422	120,167	28,868	23,682	9,026	376,289	675,454
Total ..	1,227,923	818,773	355,184	181,887	196,133	464,139	3,244,039

15. **The Value Payable Post.**—This is a system under which the Postal Department undertakes to deliver registered articles sent by parcel post within the Commonwealth, or between Papua and the Commonwealth, to recover from the addressee on delivery a specified sum of money fixed by the sender, and to remit the sum to the sender by money order, for which the usual commission is charged. The object of the system is to meet the requirements of persons who wish to pay at the time of receipt for articles sent to them, and also to meet the requirements of traders and others who do not wish their goods to be delivered except on payment. In addition to the ordinary postage, commission on the value of the articles transmitted at the rate of twopence on sums not exceeding ten shillings, and one penny for each additional five shillings or part thereof, must be prepaid by postage stamps affixed to the articles, distinct from the postage, and marked "commission." The registration fee (threepence) and the proper postage must also be prepaid. If the addressee refuse delivery, the parcel is returned to the sender free of charge. Any article that can be sent by parcel post may be transmitted as a value-payable parcel. Letters may also be sent as value-payable parcels, if prepaid at the letter rate of postage and handed to the parcels clerk, in the same manner as in the case of parcels. The subjoined statement gives particulars of the number and value of parcels sent through the Value Payable Post in each State during the years 1913 to 1918-19. From these figures it will be seen that the business in Queensland is in excess of the combined transactions of all the other States, chiefly owing to the fact that the system has been established in that State for some years, but was only extended to the whole Commonwealth with the advent of Federal control of the post office. The system has also found favor for a number of years in Western Australia and continues to make marked progress in New South Wales, but the amount of business transacted in Victoria, South Australia, and Tasmania remains negligible.

VALUE PAYABLE PARCELS POST.—NUMBER POSTED, VALUE COLLECTED, AND REVENUE, 1913 TO 1918-19.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
NUMBER OF PARCELS POSTED.							
	No.	No.	No.	No.	No.	No.	No.
1913 .. ..	12,175	1,691	39,434	255	22,335	8	75,898
1914 .. ..	12,987	1,698	37,657	251	22,759	26	75,378
1915-16 .. ..	13,979	1,395	45,467	206	22,108	35	83,190
1916-17 .. ..	16,794	1,530	53,585	318	22,427	28	94,682
1917-18 .. ..	21,962	1,204	63,523	473	23,421	37	110,620
1918-19 .. ..	28,544	1,579	68,601	588	24,211	22	123,545

**NUMBER OF EMPLOYEES AND NUMBER OF MAIL CONTRACTORS,  
AT 30th JUNE, 1914 TO 1919.**

State.	1914.		1915.		1916.		1917.		1918.		1919.	
	Employees.	Mail Contractors.	Employees.	Mail Contractors.	Employees.	Mail Contractors.	Employees.	Mail Contractors.	Employees.	Mail Contractors.	Employees.	Mail Contractors.
		(a)		(b)								
Central Office ..	85	..	92	..	83	..	91	..	92	..	84	..
New South Wales ..	11,174	2,376	11,343	2,512	12,193	1,899	11,821	1,915	11,684	1,972	11,732	1,964
Victoria ..	8,114	1,123	8,451	1,132	8,567	1,152	8,320	1,137	8,249	1,105	8,499	1,112
Queensland ..	4,380	812	4,555	813	4,441	806	4,375	801	4,477	794	4,289	787
South Australia ..	2,368	382	2,549	307	2,683	348	2,755	352	2,737	368	2,768	350
Western Australia ..	2,378	355	2,336	351	2,584	284	2,451	279	2,462	271	2,258	264
Tasmania ..	1,102	294	1,148	281	1,204	224	1,214	221	1,212	250	1,173	227
Commonwealth	29,601	5,342	30,474	5,396	31,755	4,713	31,027	4,705	30,913	4,760	30,803	4,704

(a) Numbers at 31st December, 1913.

(b) Numbers at 31st December, 1914.

19. **Gross Revenue of Postal Department.**—The following table shows the gross revenue of the Postal Department for the years ended 30th June, 1913 to 1919 inclusive, under three heads, viz., the Postal, the Telegraph, and the Telephone branches. In the Postal branch is included the revenue derived from money-order commissions, poundage on postal notes, private boxes and bags, and miscellaneous sources. The following figures and also those for expenditure are supplied by the Treasury and represent the actual collections and payments for the periods mentioned :—

**GROSS REVENUE OF POSTAL DEPARTMENT, 1912-13 TO 1918-19.**

Year ended 30th June—				Postal Branch.	Telegraph Branch.	Telephone Branch.	Total.
				£	£	£	£
1913	..	..	..	2,553,995	811,592	860,726	4,226,313
1914	..	..	..	2,680,944	834,316	996,047	4,511,307
1915	..	..	..	2,616,887	878,238	1,099,417	4,594,542
1916	..	..	..	2,938,837	893,904	1,220,855	5,053,596
1917	..	..	..	2,997,714	950,842	1,549,961	5,498,517
1918	..	..	..	2,998,724	1,032,317	1,731,149	5,762,190
1919	..	..	..	3,130,806	1,098,530	1,876,822	6,106,158

The following table gives an analysis of the actual collections of the Postal Department in each State and in the Commonwealth during the year ended 30th June, 1919 :—

**ANALYSIS OF GROSS REVENUE OF POSTAL DEPARTMENT, 1918-19.**

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
	£	£	£	£	£	£	£
Postage ..	1,076,646	784,050	388,635	228,841	150,987	97,365	2,726,524
Telegraphs ..	405,992	216,097	170,056	179,190	92,802	34,393	1,098,530
Telephones ..	763,005	518,514	268,357	168,577	106,174	52,195	1,876,822
Money order commission ..	..	..	..	..	..	..	..
Poundage on postal notes ..	57,126	30,312	20,652	9,391	11,266	5,210	133,957
Private boxes and bags ..	13,736	6,600	7,441	4,107	2,359	1,428	35,671
Miscellaneous ..	78,833	67,531	30,337	18,259	29,976	9,718	234,654
Total ..	2,395,338	1,623,104	885,478	608,365	393,564	200,309	6,106,158

20. **Expenditure in respect of the Postal Department.**—The subjoined table represents the actual payments made as shewn by records kept for Treasury purposes in respect of the Postal Department in the Commonwealth for each of the years ended 30th June, 1914 to 1919 inclusive. The figures given include certain items of expenditure, such as rent, repairs and maintenance of buildings, fittings and furniture, sanitation, water supply, new buildings and additions and interest on transferred properties.

**TOTAL EXPENDITURE IN RESPECT OF POSTAL DEPARTMENT,  
1913-14 TO 1918-19.**

Year .. .. .	1913-14.	1914-15.	1915-16.	1916-17.	1917-18.	1918-19.
Expenditure .. £	6,597,123	6,315,744	6,366,431	5,879,768	5,677,783	5,826,488

The following table shews, as far as possible, the distribution of expenditure on various items in each State during the year ended 30th June, 1919. The table is not to be regarded as a statement of the working expenses of the Department, since items relating to new works, interest, etc., are included therein.

**DISTRIBUTION OF EXPENDITURE OF POSTAL DEPARTMENT, 1918-19.**

Particulars.	Central Office.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
	£	£	£	£	£	£	£	£
Salaries and contingencies—								
Salaries ..	20,350	1,123,968	708,736	355,140	241,690	235,637	86,488	2,772,009
Conveyance of mails ..		380,082	162,933	157,975	60,541	47,528	39,872	848,931
Contingencies ..	2,821	544,962	343,859	209,519	133,229	105,022	52,550	1,391,962
Cables ..	3,756							3,756
Ocean mails ..								
Miscellaneous ..	53	8,510	7,946	2,152	1,676	1,790	576	22,703
Pensions and retiring allowances ..		24,854	33,242	1,730		4,933		64,759
Rent, repairs, maintenance ..	42	27,877	16,681	7,727	3,261	4,270	1,113	60,971
Supervision of works ..		484	358	174	113	78	52	1,259
Proportion of Audit Office expenses ..		1,109	821	399	259	180	120	2,888
Unforeseen expenditure ..		59	6	7	18	8	4	102
New works—								
Telegraph and telephone ..		159,727	59,110	37,441	33,876	18,416	3,324	311,894
New buildings, etc. ..		17,958	22,009	512	511	21,329	33	62,352
Interest on transferred properties ..		80,992	44,373	33,033	28,504	16,882	7,443	211,227
Purchase of sites ..								(a) 1,630
Other ..								(a) 70,045
Total ..	27,022	2,370,582	1,400,074	805,809	503,678	456,073	191,575	5,826,488

(a) Particulars of apportionment to each State not available.

21. **Balance Sheet of the Postmaster-General's Department.**—The first complete balance sheet and profit and loss account of the Postmaster-General's Department was presented in November, 1913, for the year ending 30th June, 1913. As will be seen from the figures of the General Profit and Loss Account hereunder, the year 1918-19, after providing for depreciation, pension and retiring allowances, closed with a surplus of £1,114,680. From this amount £590,035, interest on capital, was deducted, leaving a profit of £524,645, which exceeds that of 1917-18 by £137,263.

Tables shewing the results of the working of the Department for the years 1914-15 to 1918-19 are appended :—

**GENERAL PROFIT AND LOSS ACCOUNT, POSTMASTER-GENERAL'S DEPARTMENT,  
1914-15 TO 1918-19.**

Items.	1914-15.	1915-16.(a)	1916-17.(a)	1917-18.(a)	1918-19. (a)
	£	£	£	£	£
Total earnings .. ..	4,620,061	5,049,569	5,515,769	5,773,954	6,158,571
Total working expenses ..	4,761,714	4,841,667	5,134,533	4,809,571	5,043,891
Surplus (+) or Deficit (-)	(-)141,653	(+)207,902	(+)381,236	(+)964,383	(+)1,114,680
Interest on capital .. ..	488,069	523,892	558,382	577,001	590,035
Total surplus (+) or deficit (-) .. ..	(-)629,722	(-)315,990	(-)177,146	(+)387,382	(+)524,645

(a) Excluding Wireless Telegraphy Branch, which was transferred to the Department of the Navy as from 1st July, 1915.

Although the revenue received in 1914-15 exceeded by £96,693 the amount received in 1913-14, the deficit on the year's working was greater than that of 1913-14 by no less than £128,266. A marked improvement was effected in 1915-16, the deficit for the twelve months being £315,990, a reduction of £313,732 as compared with the previous year. A still more satisfactory result was obtained in 1916-17 when the year's operations closed with a loss of only £177,146. All past achievements were eclipsed in 1917-18, when for the first time in the history of the Department a profit amounting to £387,382 resulted, while the statement of accounts for the following and last year 1918-19 shews the amount of profit earned to have increased to £524,645. The reasons furnished by the Department for the excess of expenditure over revenue in the years 1913-14 to 1916-17 were increases in wages and salaries, higher rates for the conveyance of inland mails, and increased prices for stores, etc., while in 1914-15 the prevailing drought and the effect of the war upon earnings were also contributing factors.

The following tables shew the yearly results of the working of the various branches, and the Department as a whole, and in each State from 1912-13 to 1918-19 :—

**PROFIT OR LOSS OF THE VARIOUS BRANCHES OF THE POSTAL DEPARTMENT,  
1912-13 TO 1918-19.**

Year ended 30th June—	Postal.		Telegraph.		Telephone.		All Branches.	
	Loss.	Profit.	Loss.	Profit.	Loss.	Profit.	Loss.	Profit.
	£	£	£	£	£	£	£	£
1913 .. ..	..	23,132	164,108	..	221,757	..	a407,102	..
1914 .. ..	..	24,155	151,446	..	296,424	..	b501,457	..
1915 .. ..	81,296	..	114,555	..	390,704	..	c629,722	..
1916 .. ..	..	42,131	86,426	..	271,695	..	315,990	..
1917 .. ..	168,896	..	25,484	..	..	17,234	177,146	..
1918 .. ..	..	237,421	..	28,116	..	121,845	..	387,382
1919 .. ..	..	239,337	..	63,133	..	222,175	..	524,645

(a) Includes wireless £11,599, pensions and interest on assets £32,770. (b) Includes wireless £35,656, pensions and interest on assets £42,086. (c) Includes wireless £43,167.

In the period of seven years covered by the foregoing table it will be observed that the operations of the Postal branch closed with a profit in each of the years 1913, 1914, 1916, 1918, and 1919, the Telephone branch in 1917, 1918, and 1919, and the Telegraph branch in 1918 and 1919.

**PROFIT OR LOSS OF THE POSTAL DEPARTMENT IN THE VARIOUS STATES,  
1915-16 TO 1918-19.**

State.	1915-16.		1916-17.		1917-18.		1918-19.	
	Loss.	Profit.	Loss.	Profit.	Loss.	Profit.	Loss.	Profit.
	£	£	£	£	£	£	£	£
New South Wales ..	170,800		102,434		..	140,354	..	155,159
Victoria ..		59,412		86,330	..	177,805	..	254,013
Queensland ..	68,594		33,037		..	68,929	..	60,103
South Australia ..		34,446		31,969	..	104,868	..	132,772
Western Australia ..	154,874		146,909		102,409	..	81,460	..
Tasmania ..	15,580		13,065		2,165	..	..	4,058
Commonwealth	409,848	93,858	295,445	118,299	104,574	491,956	81,460	606,105

22. **Royal Commission on Postal Services.**—In 1908 a Royal Commission was appointed to report on the Postal, Telegraphic, and Telephonic services of the Commonwealth. An account of the work done by the Commission will be found in earlier issues of the Year Book. (See Year Book No. 6, p. 766.)

## § 2. Telegraphs.

1. **First Lines Constructed.**—The electric telegraph was first introduced into Australia for use by the public in the year 1854, when a line from Melbourne to Williamstown was opened. The first line in South Australia, from Adelaide to Port Adelaide, was opened in 1856, while the first line in New South Wales was brought into operation in 1858, when the line from Sydney to Liverpool, 22 miles in length, was opened. In Tasmania the first telegraph line was completed in 1857, while in the following year communication was established between Sydney, Melbourne, and Adelaide. The first lines to be constructed in Queensland were those between Brisbane and Warwick, and Brisbane and Lytton, distances of 169 and 12 miles respectively. These lines were working in 1861. In Western Australia the first telegraph constructed was from Perth to Fremantle, a distance of 12 miles, which was brought into use in 1869, and in the same year the cable joining Tasmania with the continent of Australia was completed.

2. **Development of Services.**—During the period from 1871 to 1881 great progress was made throughout Australia in the way of telegraphic construction, over 14,000 miles of line, exclusive of railway telegraph lines, being opened for use, making the total length of the line open at the end of the year 1881, 25,470 miles. At the present time the systems of telegraph lines throughout Australia are well developed. The longest line extends from Thursday Island, in Torres Strait, by submarine cable to Paterson, on the mainland of Cape York Peninsula; from Paterson the line runs in a southerly direction as far as Brisbane, where it joins the main interstate line to Sydney, Melbourne, and Adelaide; from Adelaide it runs to Port Augusta, then on to Port Lincoln, on Eyre's Peninsula, and thence to Eucla, on the Western Australia boundary; from Eucla the line extends along the coast of the Great Australian Bight to Albany, and thence it runs adjacent to the west coast of Western Australia as far as Onslow, *via* Perth, Geraldton, and Carnarvon. From Onslow connection extends to Broome, in Roebuck Bay. From Roebuck Bay the line crosses the Kimberley district in an easterly direction, and then runs north as far as the terminus at Wyndham. In Queensland a line runs to Burketown, near the coast of the Gulf of Carpentaria, *via* Normanton; another line extends to Cloncurry and Urundangi, in the extreme west of the State. Branch lines extend to all important coastal and inland towns, while considerable networks of lines converge from the country districts towards the centres of population. From Adelaide the transcontinental line runs in a northerly direction to Darwin, from which place communication is provided with Europe by submarine cable by way of Batavia, Singapore, and Madras. In Western Australia a line runs from Eucla to the Coolgardie goldfields *via* Balladonia and Dundas, and from Coolgardie communication is provided with Perth, and with Mount Sir Samuel in the East Murchison district.

3. **Number of Telegraph Offices and Length of Lines and Wire Open.**—The following table shews the number of telegraph offices and the length of telegraph lines and of telegraph wire available for use in the Commonwealth from 1915 to 1919 inclusive. It will be noticed that 141,152 miles of wire are available for telegraph purposes, of which 78,004 miles are also used for telephone purposes.

**NUMBER OF TELEGRAPH OFFICES AND LENGTH OF LINE AVAILABLE  
AT 30th JUNE, 1915 TO 1919.**

Particulars.	1915.	1916.	1917.	1918.	1919.
Number of offices .. .. .	5,812	6,119	6,189	6,196	6,219
Length of wire (miles)—					
Telegraph purposes only .. ..	71,680	62,224	62,804	62,981	63,148
Telegraph and telephone purposes ..	60,061	71,267	73,663	74,682	78,004
Length of line (miles)—					
Conductors in Morse cable .. ..	2,883	2,959	3,232	3,254	3,189
Conductors in submarine cable ..	1,080	1,196	1,680	1,708	1,705
Pole routes .. .. .	57,424	58,889	59,706	59,849	60,275

The following table gives corresponding particulars for each State for the year 1918-19 :—

**NUMBER OF TELEGRAPH OFFICES, LENGTH OF LINE AND WIRE, IN  
EACH STATE, AT 30th JUNE, 1919.**

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
Number of offices .. .. .	2,252	1,671	815	535	509	437	6,219
Length of wire (miles)—							
Telegraph purposes only .. ..	21,514	6,256	14,776	11,561	8,905	136	63,148
Telegraph and telephone purposes .. ..	29,474	16,532	13,046	6,879	6,898	5,175	78,004
Length of line (miles)—							
Conductors in Morse cable .. ..	697	2,108	349	..	21	14	3,189
Conductors in submarine cable .. ..	1,086	437	66	67	..	49	1,705
Pole routes .. .. .	23,524	7,253	11,846	6,672	8,327	2,653	60,275

4. **Revenue and Expenditure.**—Particulars as to the revenue from the telegraph systems for the years 1913 to 1919 are given on page 738.

5. **Number of Telegrams Despatched.**—The following table shews the total number of telegrams despatched to destinations within the Commonwealth in each of the years 1913 to 1918-19 inclusive :—

**NUMBER OF TELEGRAMS DESPATCHED, 1913 TO 1919.**

Year ..	1913.	1914.	1915-16.	1916-17.	1917-18.	1918-19.
Number (a)	13,555,252	13,918,135	13,939,424	14,088,606	14,633,859	15,436,534

(a) Including interstate cablegrams.

The following table shews the number of telegrams despatched in each State in 1918-19 for delivery in that State, and the number despatched in each State for delivery in other States, and also the total number of telegrams—exclusive of cablegrams for places outside the Commonwealth—despatched in each State :—

#### NUMBER OF TELEGRAMS DESPATCHED IN EACH STATE, 1918-19.

State, etc.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
Inland ..	4,261,229	2,538,632	2,031,111	922,876	1,314,552	371,897	11,440,297
Interstate (a) ..	1,201,039	1,132,989	605,635	469,150	391,305	196,119	3,996,237
Total ..	5,462,268	3,671,621	2,636,746	1,392,026	1,705,857	568,016	15,436,534

(a) Including interstate cablegrams.

6. Rates for Transmission of Telegrams.—The present rates for the transmission of telegrams within the Commonwealth were fixed by section 7 of the Post and Telegraph Rates Act 1902, and came into force on the 1st November, 1902. Under this Act charges are made for telegrams according to whether they are "ordinary" or "press" telegrams. "Press" telegrams are defined to mean those the text of which consists of political, commercial, etc., information, and of news intended for publication in a newspaper. The telegram must be sent by an authorised correspondent, and must be addressed to a registered newspaper or recognised news agency. The subjoined tables shew the scales of charges at present in force, but a bill is now before Parliament to give effect to increased rates, particulars of which will be given in the appendix to this number of the Year Book should the early passage of the measure permit :—

#### SCALE OF CHARGES FOR ORDINARY TELEGRAMS.

Particulars.	Town and Suburban, within Prescribed Limits, or within 15 miles from the Sending Station.	Other Places within the State, except Town and Suburban.	Interstate.
	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>
Including address and signature—			
Not exceeding 16 words ..	0 6	0 9	1 0
Each additional word ..	0 1	0 1	0 1

Double the foregoing 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 telegrams lodged for "urgent" transmission.

#### SCALE OF CHARGES FOR PRESS TELEGRAMS.

Particulars.	Within any State.	Interstate.	Relating to Parli- amentary, Executive, Departmental, and other Common- wealth Proceedings as may be prescribed.(a)
	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>
Not exceeding 25 words ..	0 6	1 0	1 0
From 26 to 50 words ..	0 9	1 6	1 6
From 51 to 100 words ..	1 6	3 0	
Every additional 50 words ..	0 6	1 0	0 6

(a) Within the Commonwealth.



**7. Letter-telegrams.**—Commencing in February, 1914, the Postal Department instituted a system of letter-telegrams between all telegraph offices which are open between 7 p.m. and midnight. The letter-telegrams are forwarded during the night by telegraph to the office of destination and are delivered as ordinary letters by the first letter delivery, or are despatched by mail to the address in the ordinary way. The object of the Department in introducing the system was to profitably utilize the unoccupied time of the staff, but it was found that ordinary business and revenue suffered through the extensive use of the system by the business community, consequently the concession has been limited to messages of a social, domestic or private nature. The rates charged throughout the Commonwealth are one shilling for the first 40 words, and one halfpenny for each additional word, double these rates being charged on Sundays. At the end of 1919 the service applied to 102 offices throughout the Commonwealth.

**8. Wireless Telegraphy.**—Previous to September, 1915, the Postmaster-General was, under the Wireless Telegraphy Act 1905, given the exclusive privilege of establishing and using stations and appliances for receiving and transmitting messages by wireless telegraphy within Australia, and an amendment of the Act in 1919 extended the Commonwealth's control to wireless telephony also. Licences for experimental work were granted by the Postmaster-General under the authority of the Act, but were withdrawn on the outbreak of war. Upon the cessation of hostilities the system of issuing these licences was revived. Licences are now issued (a) in respect of wireless telegraphy installations on ships registered in Australia; (b) in respect of experimental work carried out by amateur investigators into radio-phenomena generally. In September, 1915, the administration of the Act was transferred to the Minister for the Navy, by whom the Act is still administered.

In preparing the initial scheme for the construction of wireless stations in the Commonwealth, it was evident, viewing the insular position of Australia, that, for an effective system of radio-telegraphic communication to be given, not only must the service offered be continuous, but the distances separating the stations must to a great extent be governed by the normal working range of the vessels with which communication would have to be established. With this object in view the Commonwealth Government has constructed and erected 21 stations at or near the following localities:—Port Moresby, Thursday Island, Cooktown, Townsville, Rockhampton, Brisbane, Sydney, Flinders Island, Melbourne, Hobart, King Island, Mount Gambier, Adelaide, Esperance, Perth, Geraldton, Broome, Roebourne, Wyndham, Darwin, and Samarai. Low-power stations are in course of erection at Norfolk Island and Misima (Louisiade Archipelago). In the Pacific the Commonwealth controls stations at Woodlark Island, Rabaul, Madang, Nauru, Kieta, Bita Paka, Morobe, Eitape, Manus, and Kaewieng; all these, with the exception of Woodlark Island, being on former German territory now administered by Australia. The stations at Sydney, Perth, and Townsville are of a medium-power type. All the other stations are of low power, and constitute the internal scheme of inter and ship-to-shore communication. The ordinary ship-to-shore communication rates are, for vessels registered by the Commonwealth or New Zealand, 5d. per word, allocated as follows: 3d. for land station and 2d. for ship station charge. For vessels registered by other administrations 10d. per word, allocated as follows: 6d. for land station and 4d. for the ship station charge. In all cases the inland forwarding charge of 1d. per word must be added. Between the Commonwealth and Port Moresby the rate is 2d. per word, and between the mainland and Flinders Island or King Island 1d. per word, plus ordinary land-line charges.

In December, 1909, a conference of representatives of the Commonwealth, New Zealand, the High Commissioner for the Western Pacific, Fiji, the Admiralty, and the Pacific Cable Board was convened at Melbourne to report upon the establishment of wireless telegraphy in the Pacific. The chief recommendations of this Conference were:—(a) That high-power stations be established at Sydney, Doubtless Bay (New Zealand), Suva (Fiji), and Ocean Island, and (b) that medium-power stations be established at Tulagi (Solomon Islands) and Vila (New Hebrides). The total cost of construction involved by these recommendations was £42,000, while the total annual cost was estimated at £13,820 for a continuous service, and £9,970 for a restricted service. It was proposed

to apportion the cost between Great Britain, New Zealand, Fiji, and Australia. These recommendations were adopted by the Commonwealth Government, but the British Government would not agree to the erection of high-power stations at Suva and Ocean Island. Up to the present no further concerted action has taken place, but radio-telegraphic stations have been erected at Suva, Ocean Island, Tulagi, and Vila under the control of the High Commissioner of the Pacific, while the New Zealand Government has erected high-power stations at Awanui (Auckland), Awarua (Bluff), and Apia (Samoa), and low-power stations at Auckland, Chatham Islands, Raratonga (Cook Islands), and Wellington.

### § 3. Submarine Cables.

1. **First Cable Communication with the Old World.**—In earlier issues of the Year Book will be found a detailed account of the connection of Australia with the old world by means of submarine cables. (See No. 6, p. 770.)

2. **The Tasmania-Victoria Cables.**—A submarine cable joining Tasmania to the continent of Australia was opened for use in 1869, the total length being 170 miles. The line was owned by the Eastern Extension Telegraph Company, and was subsidised by the Tasmanian Government until the year 1909. On the 28th February, 1908, the Postmaster-General entered into an agreement with Messrs. Siemens Brothers and Company Ltd., of London, for the manufacture and laying of two submarine cables between Tasmania and Victoria. The new cables were taken over on the 24th March, 1909, and opened to the public on the 1st May, 1909, the day following the expiration of the agreement with the Eastern Extension Company. Their aggregate length is approximately 350 nautical miles of main cable, and 20 nautical miles each of intermediate and shore-end cable, making a total of 390 nautical miles. The contract price was £52,447.

3. **The Eastern Extension Company's Cables.**—In addition to the first Victoria-Tasmania cable and the original cable from Darwin (see Year Book No. 6, p. 770), the Eastern Extension Company has constructed several other cables connecting with various places in the Commonwealth. (a) In 1879 the original cable *via* Banjoewangie was duplicated, the States of New South Wales, Victoria, South Australia, Western Australia, and Tasmania having agreed to pay the above company a subsidy of £32,400 per annum for a period of twenty years, the amount to be divided between the States on a population basis. (b) In 1881 a cable was constructed connecting Broome, in Roebuck Bay, W.A., with Banjoewangie, and remained in operation until 1914, in which year it was taken up. (c) In July, 1899, the company offered to lay a cable direct to Great Britain *via* the Cape of Good Hope, and also offered reductions in the rates charged, if the States would agree to certain conditions giving the company the right of direct dealing with the public. The States of South Australia, Western Australia, and Tasmania accepted the terms offered, and New South Wales entered into the agreement in January, 1901. The cable was opened *via* Fremantle and Durban in October, 1901. (d) Another submarine cable from Fremantle to Adelaide forms an alternative line of communication between the eastern States and Western Australia. (e) There is an alternative route, partly belonging to the Eastern Extension Company and connecting the Port Darwin-Singapore cable with London, *via* Hong Kong, Shanghai, Possiet Bay (Pacific Russia), Libau (Russian Baltic), and Newbiggin (England). (f) In 1909 a cable was laid from Java to Cocos

Island, thus affording another route from Australia to South Africa, whilst in April, 1911, a radio-telegraphic station was opened at Cocos Island, thus strengthening the line of communication between Australia and the East.

4. **The Pacific Cable.**—In July, 1898, a conference of representatives of Great Britain, Canada, New South Wales, Victoria, Queensland, South Australia, and New Zealand was held for the purpose of considering a project for a cable to be laid across the Pacific Ocean, touching only British territory on its way from Australia to Canada, thus providing an "All Red" route, as it is termed, for a cable system between England and Australia. In the following year it was agreed at a meeting held by representatives of the countries interested that the cable should be laid and that Great Britain and Canada should each pay five-eighteenths of the cost, and the States of New South Wales, Victoria, Queensland, and the Dominion of New Zealand should each pay one-ninth. The construction and management of the cable were placed under the control of a Board composed of seven members—two each from Great Britain, Canada, and Australia, and one from New Zealand—called the Pacific Cable Board. The Australian shore-end of the cable was landed at Southport, Queensland, in March, 1902, and the cable was completed on the 31st October, 1902, and opened for traffic on the 7th December of the same year. There are cable stations at Norfolk Island, Fiji, and Fanning Island, and a branch cable runs from Norfolk Island to New Zealand. In 1910 the Board leased a wire from Bamfield, British Columbia, to Montreal, thus extending the Pacific cable system from Queensland to Montreal. The traffic is then carried across the Atlantic to the United Kingdom by the cables of the Anglo-American and Commercial Companies, or if desired the Marconi wireless system between Canada and the United Kingdom may be availed of for either homeward or outward messages at a reduction of 2d. on the through cable rate of 3s. per word. The operations of the Pacific cable for the year ended 31st March, 1919, resulted in a profit of £27,126, after providing working expenses, interest on loan and renewal fund contributions. A sum of £50,000 was also transferred to a suspense account, with a view to the improvement of the provident fund. In 1919 the total contributions to the renewal fund were £232,000, an amount greater by £95,000 than the sum set aside for the same purpose in 1918. In any comparison that may be made of the results for the years 1918 and 1919, the increase in the contributions to the renewal fund in 1919 and the amount transferred to suspense account should be borne in mind. It is recognised that the expenditure on renewals, etc., must continue to be much greater than before the war. After deducting the annual sinking fund instalment of £17,545 from the profit of £27,126, there remained a surplus of £9,581, whereof the Commonwealth's share was £3,193. In accordance with the Pacific Cable Act 1901 the surplus was applied in the reduction of the balance of the original loan of £2,000,000. The following table shews particulars of the revenue, expenditure, total profit or loss, and the proportion of the loss payable by the Commonwealth for the financial years 1911–15, and the proportion of profit credited to the Commonwealth for the years 1916–19.

**REVENUE, EXPENDITURE, AND PROFIT OR LOSS ON WORKING OF PACIFIC CABLE, 1911 TO 1919.**

Year ended the 31st March—	Revenue.	Expenditure (including Annuities and Renewal Fund).	Profit or Loss.	Commonwealth Proportion of Loss or Profit.
	£	£	£	£
1911 ..	138,678	186,888	Loss 48,210	Loss 16,071
1912 ..	159,150	199,649	" 40,499	" 13,500
1913 ..	167,901	200,171	" 32,270	" 10,757
1914 ..	197,848	217,798	" 19,950	" 6,650
1915 ..	225,045	232,961	" 7,916	" 2,638
1916 ..	310,516	292,592	Profit 17,924	Profit 5,975
1917 ..	336,774	332,543	" 4,231	" 1,410
1918 ..	411,061	385,668	" 25,393	" 8,464
1919 ..	564,097	554,516	" 9,581	" 3,193

5. **New Zealand Cables.**—A submarine cable joining New Zealand to the Australian Continent was laid in 1876. The line is 1,191 miles in length. The Australian shore-end of the cable is at Botany Bay, while the New Zealand terminus is at Wakapuaka, near Nelson, in the Middle Island, from which place another cable, 109 miles in length, is laid to Wanganui, in the North Island. For a period of ten years after its opening the cable was subsidised by the New South Wales and New Zealand Governments, the total contributions amounting to £10,000 a year. The branch from Norfolk Island to New Zealand of the Pacific cable was opened on the 23rd April, 1902. The length of this cable is 597 miles, the New Zealand terminus being at Doubtless Bay in the north of the North Island. During 1911 a scheme to lay a second cable between New Zealand and Australia (Auckland to Sydney) was adopted by the various Governments concerned, and the laying of the new cable was completed on the 24th December, 1912, the cable being opened for traffic on the 31st December, 1912.

6. **The New Caledonian Cable.**—In April, 1892, a French company, known as the *Compagnie Française des Câbles Télégraphiques*, entered into an agreement with the French, the New South Wales, and the Queensland Governments to lay down a submarine cable between New Caledonia and Queensland in return for guarantees by the French Government to the extent of £8,000, and by the Governments of New South Wales and Queensland to the amount of £2,000 each annually for a period of 30 years. The cable was opened for use in October, 1893, the Australian shore-end being at Burnett Heads, near Bundaberg. The guarantees of the Governments of New South Wales and Queensland have now been transferred to the Commonwealth Government.

7. **Number of Cablegrams Received and Despatched.**—The subjoined table shews the number of cablegrams received and despatched in the Commonwealth from 1916–17 to 1918–19 :—

**CABLEGRAMS RECEIVED AND DESPATCHED, COMMONWEALTH,  
1916–17 TO 1918–19.**

Particulars	Cablegrams Received.			Cablegrams Despatched.			Total Cablegrams Received and Despatched.		
	1916–17.	1917–18.	1918–19.	1916–17.	1917–18.	1918–19.	1916–17.	1917–18.	1918–19.
Number ..	533,055	522,746	516,942	392,381	407,293	394,285	925,436	930,039	911,227

The following table shews the total number of cablegrams received and despatched in each State during the year 1918–19 :—

**NUMBER OF CABLEGRAMS RECEIVED AND DESPATCHED IN EACH STATE,  
1918–19.**

Particulars.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.(a)	C'wealth.
Number received ..	274,180	158,111	29,405	25,832	21,181	8,233	516,942
Number despatched	196,521	132,613	21,710	18,333	18,301	6,807	394,285
Total ..	470,701	290,724	51,115	44,165	39,482	15,040	911,227

(a) Exclusive of interstate cablegrams, which are included with interstate telegrams (see § 2 ante).

8. **Lengths of Cable Routes.**—The following table gives the lengths of various cable routes :—

### LENGTHS OF CABLE ROUTES.

<i>Via Darwin.</i>				<i>Via South Africa.</i>			
		Miles.				Miles.	
Adelaide to Darwin .. ..	..	2,134		Perth to Mauritius .. ..	..	4,417	
Darwin to Banjoewangie .. ..	..	1,150		Mauritius to Durban .. ..	..	1,786	
Banjoewangie to London .. ..	..	9,841		Durban to Cape Town .. ..	..	800	
				Cape Town to Madeira .. ..	..	5,715	
				Madeira to Penzance .. ..	..	1,341	
				Penzance to London .. ..	..	260	
Total .. ..	..	13,125		Total .. ..	..	14,310	

<i>Via Vancouver.</i>				<i>Via Russia.</i>			
		Miles.				Miles.	
Southport (Queensland) to Norfolk Island ..	..	963		Sydney to Darwin .. ..	..	2,992	
Norfolk Island to Suva (Fiji) .. ..	..	1,129		Darwin to Hong Kong .. ..	..	4,237	
Suva to Fanning Island .. ..	..	2,351		Hong Kong to Possiet Bay .. ..	..	2,647	
Fanning Island to Bamfield (Canada) ..	..	3,980		Possiet Bay to Libau .. ..	..	6,399	
Across Canada .. ..	..	3,450		Libau to Newbiggin (England) ..	..	1,657	
Canada to Ireland .. ..	..	2,450					
Total .. ..	..	14,323		Total .. ..	..	17,932	

9. **Cable Rates.**—In 1872 the cable rate to England was nine guineas for twenty words, but when word rates were brought into general use in 1875, the rate between Great Britain and Australia was fixed at ten shillings and sixpence, subsequently altered to ten shillings and eightpence. In 1886 the Eastern Extension Telegraph Company reduced the rate to nine shillings and fourpence a word for ordinary messages, to seven shillings and a penny for Government messages, and to two shillings and eightpence a word for press messages. At a conference of the postal and telegraphic authorities held in March, 1891, the proposal to reduce the rates to four shillings a word for ordinary messages, three shillings and eightpence for Government, and one shilling and tenpence for press messages was agreed to, the States of New South Wales, Victoria, South Australia, Western Australia, and Tasmania undertaking to make good half the loss which the Eastern Company might suffer through such reductions. The States guaranteed to the company one-half of the amount of receipts short of the sum of £237,736—the amount received by the company in 1889 in respect of cable charges—the other half to be borne by the company. The Government of South Australia was also guaranteed by the other contracting States against any loss to the revenue which the lower cable rates might cause in the working of the overland lines. Queensland subsequently joined the other States in these guarantees. In 1893, however, owing to the heavy losses incurred, the rate for ordinary messages was increased to four shillings and ninepence per word, and at the same time New Zealand joined in the guarantees to the company and to South Australia.

(i) *Present Rates to United Kingdom.* On the acceptance by three of the States of the terms offered by the Eastern Extension Telegraph Company for the construction of a cable *via* South Africa, the rate for ordinary messages was reduced in May, 1900, to four shillings a word. It was further reduced to three shillings and sixpence in January, 1901, and to three shillings in January, 1902, and this rate has since applied to all cable systems connected with Great Britain with the exception of a partly wireless service which has been introduced by the Pacific Cable Board, and for which the “through” rate has been fixed at two shillings and tenpence per word. Under this arrangement cablegrams passing between Australia and the United Kingdom are transmitted by the Pacific cable between Australia and Canada and by the Marconi Wireless system across the Atlantic. The scale for future reductions was to be based on a revenue standard and provided that the rate should be reduced to two shillings and sixpence per word, when the revenue averaged £330,000 per annum. In consequence of the abnormal

conditions created by the war, which involved a large increase in expenditure, this provision has been abrogated, but its restoration is anticipated with a return to normal conditions. In September, 1912, the "through" charge for press cables was reduced from ninepence to sevenpence-halfpenny per word.

(ii) *Deferred Cablegrams.* With a view to affording additional cable facilities and to keeping the Pacific cable fully occupied during the whole 24 hours, proposals were made by the Postmaster-General's Department for the adoption of a system of deferred cablegrams. A meeting of representatives of the administrations and companies concerned was held in London in November, 1910, and the new rates came into force on the 1st January, 1912. Under this system a reduction of 50 per cent. in the charges is made, providing the message is written in plain language, and conveys no other meaning than that which appears on the face of it. Messages can only be transmitted after non-urgent private cablegrams and press cablegrams. Those which have not reached their destination within a period of 24 hours from the time of handing in are transmitted in turn with cablegrams charged full rate. They may be sent *via* the Pacific or Eastern routes to nearly all countries to which the ordinary rate exceeds tenpence per word. The arrangement, previous to the war, extended to some 60 countries, and became very popular. This service, together with that of the week-end cable letters, has affected the ordinary cable business to a large extent. Deferred press cablegrams, subject to a delay of eighteen hours, may be exchanged between the Commonwealth and the United Kingdom at the rate of fourpence halfpenny per word, and between the Commonwealth and Vancouver at the rate of one penny three farthings per word. Since the commencement of the war, it has been found necessary on several occasions, owing partly to the interruption to the Pacific cable from September to November, 1914, and partly to the pressure of other cable matter, to temporarily suspend the operation of the deferred cablegram service, as well as that of the week-end cable messages.

(iii) *Week-end Cable Letters.* The service of the week-end cable letters between the Commonwealth and the United Kingdom was introduced on the 4th January, 1913. Under this arrangement, messages written in plain language might be lodged at any post office in the Commonwealth or the United Kingdom in time to reach the forwarding cable office by post or telegraph by midnight on Saturday. The messages, which were deliverable by post on Tuesday morning, were charged at the rate of ninepence per word, plus ordinary telegraph rates if required to be forwarded by land telegraph in either the country of despatch or destination.

The system was extended subsequently to messages between the Commonwealth and the Union of South Africa, India, Ceylon, Burma, Canada, Portugal, and Newfoundland. A further benefit was conferred on users, as week-end cables to the countries enumerated were transmitted by telegraph throughout without extra charge. The pressure on the cables during the war rendered the suspension of the week-end service necessary on numerous occasions, and that the position has not been relieved since the termination of hostilities is evidenced by the figures for 1918-19, when the restrictions imposed were responsible for a decrease of 1,800,546 words as compared with 1917-18, or approximately 80 per cent. of the total for that year.

The rates to the countries named, including the United Kingdom, are given hereunder:—

#### RATES FOR WEEK-END CABLE LETTERS.

Country.	Rate per Word.	Minimum Charge per Telegram.
United Kingdom ..	9d.	15/-
Union of South Africa ..	7d. (plus ½d. for those lodged in Tasmania)	11/8
India, Ceylon, and Burma ..	7½d.	12/6
Canada (ordinary rate 2s. 4d.) ..	7d.	11/8
Other parts of Canada ..	8d. to 10d.	12/11 to 16/8
Newfoundland ..	8½d.	13/9
Portugal ..	9d.	15/-

Week-end cable letters may also be sent to the United Kingdom or Canada for transmission by registered post to other countries at an extra charge of 5d. per message.

(iv) *Rates to New Zealand.* As a result of the completion of the New Zealand branch of the Pacific cable in 1902, the rates charged for cablegrams between Australia and New Zealand, except to and from Tasmania, were uniformly reduced to fourpence-halfpenny per word. Between New Zealand and Tasmania the charge was fixed at fivepence-halfpenny a word, but it has since been reduced to fourpence-halfpenny. The charge for ordinary cablegrams from New Zealand to Great Britain was reduced from the 1st June, 1902, from five shillings and twopence to three shillings and fourpence a word, and has since been further reduced to three shillings a word.

10. *Subsidised Press Cable Service.*—In October, 1909, a Select Committee of the Commonwealth Senate was appointed to report upon the circumstances of the supply, conditions of sale, and distribution, which affect the Press Cable Service within and from outside the Commonwealth. A majority report of this Committee was issued in December, 1909, and recommended (a) the completion of an "All Red" cable route *via* Canada, (b) the conditional subsidisation of a press cable association, (c) the utilisation of the High Commissioner's office for the dissemination in Australia of Empire news, and (d) the amendment of the Copyright Act in regard to cables.

In accordance with the recommendations of this Committee the Commonwealth granted a total subsidy of £6,000, extending over a period of three years, to the Independent Press Cable Service, on the conditions that at least 6,000 cable words were supplied each week, to be sent *via* Pacific, and that any newspaper proprietary in the Commonwealth was permitted to become a subscriber at rates approved by the Government. This terminated on the 1st July, 1912, and a new arrangement was entered into under which the Commonwealth agreed to grant a subsidy of £2,000 per annum, provided that not less than 26,000 words were sent each month. A later agreement was drawn up to extend for a period of three years from 1st October, 1916, with an annual grant of £1,500, but within a year the service lapsed, the last payment being made by the Government in August, 1917.

11. *Cable Subsidies Paid.*—The agreement between the State Governments and the Eastern Extension Telegraph Company expired on the 30th April, 1900. From the year 1895 onwards the amounts guaranteed—£237,736 to the company and £37,552 to South Australia—were met by the receipts.

The following table shews the total amounts paid by way of cable subsidies for the years 1913–14 to 1918–19:—

TOTAL AMOUNT OF CABLE SUBSIDIES PAID, 1913–14 TO 1918–19.

Year	..	..	..	1913–14.	1914–15.	1915–16.	1916–17.	1917–18.	1918–19.
Amount	..	..	£	10,650	6,638	4,860	3,929	3,851	3,756

As the agreement in connexion with the Tasmanian cable expired in 1909, and as new cables were laid by the Commonwealth Government, the guarantees were, in the course of the year 1910, reduced to those in connexion with the New Caledonia and Pacific cables. The amount of cable subsidies paid by the Commonwealth in 1918–19 was in respect of the New Caledonian cable guarantee.

## § 4. Telephones.

1. *Development of Telephone Services.*—The Postal Department has established telephone services in all the capital towns and in many of the important centres of population throughout the Commonwealth. Particulars as to the revenue from telephone services for the years 1913–19 are given on page 738 *ante*.

2. **Telephone Rates.**—On the 10th December, 1915, revised charges for telephone services came into operation. Under the new scale, ground-rent for telephones is calculated on the number of subscribers connected with the exchange or network, instead of being based on the total population residing within the telephone network, as formerly. The smallest and greatest rental charges remain the same as under the old system, but between these a more gradual scale was introduced. Previously the charge for calls made by a subscriber was at the rate of two calls for one penny up to 2,000 calls per half-year; above that number, three calls for one penny. This charge was increased to one penny per call, without any progressive reduction. At the same time, the public telephone charge per call was increased from one penny to twopence. The charges mentioned in the table hereunder are payable for the different classes of telephone services specified therein :—

**TELEPHONES.—RENTAL CHARGES, 30th JUNE, 1920.**

Exchanges or Networks with Subscribers' Lines Connected, as shewn hereunder.	Radius of Network with Main Exchange as Centre.	Annual Ground Rent, within Two-mile Radius.		
		For an Exclusive Service.	For each Subscriber or Instrument on a Two-party Service.	For each Subscriber or Instrument on a Three or more party Service.
	Miles.	£ s. d.	£ s. d.	£ s. d.
From 1 to 300 .. ..	5	3 0 0	2 10 0	2 0 0
„ 301 to 600 .. ..	5	3 5 0	2 10 0	2 0 0
„ 601 to 1,500 (a) ..	5	3 10 0	2 15 0	2 5 0
„ 1,501 to 4,000 (a) ..	10	3 15 0	3 0 0	2 10 0
4,001 and upwards (a) ..	10	4 0 0	3 0 0	2 10 0

(a) Ground rent and call charge to be increased by 25 per cent. as from 1st October, 1920.

It is provided that for each effective call originating from a subscriber's instrument the charge shall be one penny, subject to the increase indicated in note (a) above.

3. **Particulars of Telephone Services.**—On 30th June, 1919, there were in the Commonwealth 157,314 telephone lines connected to 2,256 exchanges, as compared with 147,422 lines connected to 2,178 exchanges a year previously. The following tables shew the mileage of lines, etc., for telephone purposes, shewing trunk lines separately, on 30th June, 1918 and 1919 :—

**MILEAGE OF LINES, ETC., FOR TELEPHONE PURPOSES (EXCLUSIVE OF TRUNK LINES), 30th JUNE, 1918 AND 1919.**

Particulars.	1918.	1919.
Conduits .. .. duct miles	2,433	2,456
Conductors in aerial cables .. .. loop mileage	38,747	38,543
Conductors in underground cables .. .. „	200,277	204,885
Conductors in cables for junction circuits .. .. „	25,117	24,835
Open conductors .. .. single wire mileage	177,185	179,941

**MILEAGE OF WIRES, TELEPHONE TRUNK LINES, 1918 AND 1919.**

Particulars.	1918.	1919.
	Miles.	Miles.
Telephone trunk lines only .. ..	25,343	25,076
Telegraph and telephone purposes .. ..	74,682	78,004



Particulars relating to the telephone service in each State will be found in the following table :—

### PARTICULARS OF TELEPHONE SERVICE, 1917, 1918, AND 1919.

Particulars.	Year (30th June.)	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Total C'wealth.
No. of Exchanges ..	1917 765 1918 825 1919 853	622 662 634	256 270 285	189 196 203	111 111 112	101 114 119	2,044 2,178 2,256	
No. of lines connected ..	1917 57,553 1918 62,123 1919 65,734	38,025 40,754 44,035	18,562 19,923 21,146	10,742 11,598 12,619	8,470 8,574 9,026	4,300 4,450 4,754	137,652 147,422 157,314	
No. of instruments connected	1917 72,884 1918 78,886 1919 84,118	51,820 55,839 60,376	22,616 24,421 26,152	14,521 15,780 17,189	10,760 10,995 11,599	5,136 5,454 5,838	177,737 191,375 205,272	
No. of subscribers' instru- ments	1917 70,058 1918 75,793 1919 80,996	49,358 53,320 57,811	21,474 23,216 24,910	13,916 15,125 16,514	10,135 10,338 11,008	5,000 5,272 5,659	169,941 183,064 196,898	
No. of public telephones ..	1917 1,421 1918 1,521 1919 1,558	1,278 1,321 1,363	748 793 822	402 421 437	328 329 337	106 74 75	4,283 4,459 4,597	
No. of other local instru- ments	1917 1,405 1918 1,572 1919 1,564	1,184 1,198 1,197	394 412 420	203 234 238	297 328 254	30 108 104	3,513 3,852 3,777	
Instruments per 100 of popu- lation	1917 3.9 1918 4.2 1919 4.4	3.7 3.9 4.1	3.3 3.5 3.7	3.3 3.6 3.8	3.5 3.5 3.6	2.6 2.7 2.8	3.6 3.9 4.1	
Earnings ..	1917 £ 648,850 1918 715,566 1919 777,859	£ 447,120 £ 479,684 £ 526,411	£ 231,180 £ 257,226 £ 275,616	£ 137,579 £ 152,496 £ 171,843	£ 94,219 £ 99,905 £ 108,010	£ 44,159 £ 47,692 £ 54,144	£ 1,603,107 £ 1,752,569 £ 1,913,883	
Working expenses ..	1917 538,832 1918 536,741 1919 573,304	317,026 330,587 335,977	166,525 168,238 177,805	84,436 99,987 96,548	101,020 98,648 95,203	38,987 40,853 40,796	1,246,826 1,275,054 1,324,638	
Percentage of working ex- penses to earnings	1917 83.04 1918 75.01 1919 74.35	% 70.90 % 68.92 % 63.82	% 72.03 % 65.40 % 64.51	% 61.37 % 65.57 % 56.18	% 107.22 % 98.74 % 88.15	% 88.29 % 85.66 % 75.35	% 77.78 % 72.75 % 69.21	

The subjoined table gives the number of subscribers' lines and the daily calling rate at Central, Suburban, and Country telephone exchanges in the several States for the year 1918-19. A comparison of the daily calling rates for each class of exchange shews New South Wales to have registered the greatest number per line at Central exchanges, South Australia at Suburban exchanges, and Queensland at Country exchanges. Taking the figures for the Commonwealth, it will be observed that the average number of calls per line at Central exchanges was almost double the number registered at Suburban exchanges, while the average for Suburban exchanges was slightly less than double the number shewn for Country exchanges.

### NUMBER OF SUBSCRIBERS' LINES AND DAILY CALLING RATE AT TELEPHONE EXCHANGES, 1918-1919.

State.	Central Exchanges.		Suburban Exchanges.		Country Exchanges.		Total.	
	Subscribers' Lines.	Average Outward Calls Daily per line.	Subscribers' Lines.	Average Outward Calls Daily per line.	Subscribers' Lines.	Average Outward Calls Daily per line.	Subscribers' Lines.	Average Outward Calls Daily per line.
New South Wales	9,477	9.9	27,383	3.9	24,209	1.9	61,069	4.0
Victoria ..	10,545	7.8	17,675	3.6	12,990	1.6	41,210	4.0
Queensland ..	5,452	7.9	2,610	3.5	11,910	2.9	19,972	4.3
South Australia	5,389	5.5	3,236	5.3	3,610	1.4	12,235	4.2
Western Australia	3,140	6.1	1,876	4.8	3,227	2.1	8,243	4.2
Tasmania ..	1,879	5.3	216	2.7	2,659	1.8	4,754	3.2
Commonwealth	35,882	7.7	52,996	3.9	58,605	2.0	147,483	4.1

In the following table the number of Telephone Trunk Line Calls recorded, the amount of revenue received, and the average revenue per call are shewn for each of the States for the years 1916-17 to 1918-19 :—

**TRUNK LINE CALLS AND REVENUE FOR THE YEARS 1916-17 TO 1918-19.**

Particulars.	New South Wales.	Victoria.	Queens- land.	South Australia.	Western Australia.	Tasmania.	Common- wealth.
Total Calls for Year—	No.	No.	No.	No.	No.	No.	No.
1916-17 ..	3,605,878	2,191,689	1,589,033	620,743	342,836	421,984	8,772,163
1917-18 ..	4,007,208	2,445,245	1,698,096	719,930	351,400	454,294	9,674,173
1918-19 ..	4,484,816	2,797,346	1,861,431	883,517	418,984	557,002	11,003,096
Total Revenue for							
Year—	£	£	£	£	£	£	£
1916-17 ..	100,836	79,200	66,699	26,000	13,337	13,023	299,104
1917-18 ..	133,453	88,416	78,535	31,374	14,827	14,618	361,223
1918-19 ..	155,345	100,335	87,273	39,694	17,873	18,567	419,087
Average Revenue per							
Call—	Pence.	Pence.	Pence.	Pence.	Pence.	Pence.	Pence.
1916-17 ..	6.71	8.67	10.07	10.06	9.34	7.41	8.18
1917-18 ..	7.90	8.68	11.11	10.46	10.13	7.72	8.96
1918-19 ..	8.31	8.61	11.25	10.78	10.24	8.00	9.14

## SECTION XIX.

## COMMONWEALTH FINANCE.

## § 1. General.

1. **Financial Provisions of the Constitution.**—The main provisions of the Constitution relating to the initiation and development of the financial system of the Commonwealth are those contained in Chapter IV., "Finance and Trade," being sections 81 to 105 of the Constitution Act. Two other sections which have a most important bearing on questions of Commonwealth finance are sections 69 and 51.

Section 69 provided for certain departments which were transferable under the Constitution. Section 51 referred to other departments which it would be necessary to create under the Constitution. Section 87 dealt with the financial relations between the Commonwealth and the States. All of these matters have been treated in detail in previous issues of the Official Year Book up to and including No. 12, and no further reference to them will be made here.

2. **Accounts of Commonwealth Government.**—The Commonwealth Government, like the States Governments, operates nearly all its accounts by means of three funds: the Consolidated Revenue Fund, the Trust Fund, and the Loan Fund. The latter only came into existence in the financial year 1911-12, but on the outbreak of war became so important that it is now treated in two parts: a General Loan Fund mainly for purposes of Public Works, and a War Loan Fund for purely military purposes. The accounts of these funds are now so interwoven that a proper conspectus of the Commonwealth Accounts can hardly be obtained by an analysis of each of them singly. Two tables are therefore appended, shewing receipts and disbursements from all sources for the last five years. The different funds will then be treated in detail in the subsequent sections.

## COMMONWEALTH RECEIPTS, 1913-14 TO 1918-19.

Heading.	1913-14.	1914-15.	1915-16.	1916-17.	1917-18.	1918-19.
	£	£	£	£	£	£
Consolidated Revenue	21,741,775	22,419,798	30,762,216	34,067,434	36,839,868	44,716,918
Trust Funds in aid of Revenue ..	1,418,958	1,224,347	..	3,000,000	2,077,427	3,925,820
Total ..	23,160,733	23,644,145	30,762,216	37,067,434	38,917,295	48,642,738
General Loan Fund..	2,100,000	2,058,201	2,859,341	..	1,803,447	1,429,891
Unexpended Balance from previous years	151,498	96,237	..	..	..	..
Total ..	2,251,498	2,154,438	2,859,341	..	1,803,447	1,429,891
War Loan Fund ..	..	(a)14,471,118	57,656,683	50,611,810	60,865,195	57,637,507
Unexpended Balance from previous years	..	..	..	20,233,115	17,730,688	23,500,774
Total ..	..	(a)14,471,118	57,656,683	70,844,925	78,595,883	81,138,281
Grand Total ..	25,412,231	40,269,701	91,278,240	107,912,359	119,316,625	131,210,910

(a) Credited by the Treasury to Consolidated Revenue.

## COMMONWEALTH EXPENDITURE, 1913-14 TO 1918-19.

Heading.	1913-14.	1914-15.	1915-16.	1916-17.	1917-18.	1918-19.
	£	£	£	£	£	£
Expenditure from Consolidated Revenue Balance paid into Trust Funds ..	15,458,776	16,056,023	21,415,221	(b)25,719,588	26,573,674	34,786,107
Expenditure from Trust Funds ..	..	..	3,000,000	2,077,427	3,925,820	3,476,478
Subsidy to States ..	1,418,958	1,224,347	..	3,000,000	2,077,427	3,879,241
Unexpended Balance from Trust Funds ..	6,282,999	6,363,775	6,346,995	6,270,419	6,340,374	6,454,333
	..	..	..	..	..	46,579
Total ..	23,160,733	23,644,145	30,762,216	37,067,434	38,917,295	48,642,738
General Loan Fund Expenditure ..	2,155,261	2,154,438	2,859,341	..	1,803,447	1,429,891
Unexpended Balance from General Loan Fund ..	96,237	..	..	..	..	..
Total ..	2,251,498	2,154,438	2,859,341	..	1,803,447	1,429,891
War Expenditure from War Loan Fund ..	..	(a)14,471,118	37,423,568	53,114,237	55,095,109	62,192,889
Unexpended Balance from War Loan Fund ..	..	..	20,233,115	17,730,688	23,500,774	18,945,392
Total ..	..	14,471,118	57,656,683	70,844,925	78,595,883	81,138,281
Grand Total	25,412,231	40,269,701	91,278,240	107,912,359	119,316,625	131,210,910

(a) See footnote (a) to previous table. (b) Includes £371,118 repayment of advance from Notes Fund in 1914-15. See footnote (a) to previous table.

## § 2. Consolidated Revenue Fund.

## (A) Nature of Fund.

The provisions made for the formation of a Commonwealth Consolidated Revenue Fund, and the means to be adopted for operating on that fund, are contained in sections 81, 82, and 83 of the Constitution. In section 81 it is provided that "All revenues or moneys raised or received by the Executive Government of the Commonwealth shall form one Consolidated Revenue Fund, to be appropriated for the purposes of the Commonwealth in the manner and subject to the charges and liabilities imposed by this Constitution." A strictly literal interpretation of this section would appear to require all loan and trust moneys received by the Commonwealth Executive to be paid to Consolidated Revenue. It is, however, held by Quick and Garran, in their "Annotated Constitution," that the "generic word *moneys* must be controlled by the preceding specific word *revenues*, and limited to moneys in the nature of revenue." This is the view of the matter which has been adopted by the Commonwealth Treasury in the preparation of its accounts. At present certain moneys received by the Commonwealth, which are not of the nature of revenue, are paid to Trust Account, and other moneys are paid to Loan Account. As regards expenditure from the Consolidated Revenue Fund, section 82 provides that the costs, charges, and expenses incident to the collection, management, and receipt of the Consolidated Revenue Fund should form the first charge thereon, while section 83 stipulates that "no money shall be drawn from the Treasury of the Commonwealth except under appropriation made by law." Such appropriations are either special, and as such are provided for by means of a permanent Act, or annual, and provided for in an annual Appropriation Act.

## (B) Revenue.

1. **Total Collections.**—The consolidated revenue of the Commonwealth, which in 1901-2, the first complete financial year under the new régime, amounted to £11,296,985, had, in 1918-19, reached a total of £44,716,918, an increase in the period of £33,419,933.

Particulars concerning the total amount of revenue collected by the Commonwealth Government from 1st July, 1913, to 30th June, 1919, are contained in the following table :—

**CONSOLIDATED REVENUE OF THE COMMONWEALTH, 1913-14 TO 1918-19.**

—	1913-14.	1914-15.	1915-16.	1916-17.	1917-18.	1918-19.
	£	£	£	£	£	£
Commonwealth	21,741,775	22,419,798	30,762,216	34,067,434	36,839,868	44,716,918

Since 1913-14 the revenue has increased steadily every year. In 1914-15 it was augmented by instalments, amounting to £14,100,000, of the War Loan from the British Government, and also by £371,118 Treasury Bills in aid of revenue. The great increase in the last four years is due to the large expansion in direct taxation, which will be dealt with in detail in a later subsection.

2. **Collections per Head.**—In the table given hereunder particulars are furnished of the amount of revenue per head of population collected in respect of the Commonwealth for the last six years :—

**COMMONWEALTH REVENUE PER HEAD OF POPULATION, 1913-14 TO 1918-19.**

—	1913-14.	1914-15.	1915-16.	1916-17.	1917-18.	1918-19.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Taxation ..	3 8 1	3 8 4	4 15 5	5 0 7	4 19 9	6 10 8
Public Works and Services	0 18 7	0 19 11	1 4 4	1 9 0	1 18 5	1 16 5
Other Receipts	0 2 7	0 2 6	0 5 0	0 10 2	0 11 1	0 10 8
Total ..	4 9 3	4 10 9	6 4 9	6 19 9	7 9 3	8 17 9

3. **Sources of Revenue.**—The following table furnishes particulars concerning the Commonwealth revenue derived from each source during the years 1913-14 to 1918-19 :—

**SOURCES OF COMMONWEALTH REVENUE, 1913-14 TO 1918-19.**

Source of Revenue.	1913-14.	1914-15.	1915-16.	1916-17.	1917-18.	1918-19.
Taxation—	£	£	£	£	£	£
Customs ..	12,652,737	12,105,698	13,610,684	12,373,664	9,486,555	11,605,410
Excise ..	2,325,333	2,771,556	3,233,419	3,236,623	3,737,757	5,821,560
Land Tax ..	1,609,836	1,953,696	2,040,436	2,121,952	2,123,779	2,109,171
Probate Duties ..	..	39,646	626,215	1,062,168	947,232	923,908
Income Tax ..	..	..	3,932,775	5,621,950	7,385,514	10,376,456
Entertainments Tax ..	..	..	..	110,683	245,898	358,126
War Time Profits Tax ..	..	..	..	..	680,008	1,206,538
War Postage ..	..	..	..	..	..	463,317
Total ..	16,587,906	16,870,596	23,533,529	24,527,040	24,606,743	32,864,486
Public Works and Services—						
Postal ..	4,511,307	4,594,542	5,053,596	5,498,517	5,762,190	6,110,522
Railways ..	23,627	177,614	304,068	305,964	201,107	196,988
Commonwealth Steamers	..	..	..	..	880,000	1,015,762
Detained Enemy Vessels	..	145,503	646,219	1,272,621	2,173,418	1,671,905
Other ..	..	..	..	..	468,769	156,321
Total ..	4,534,934	4,917,659	6,003,883	7,077,102	9,485,484	9,151,498
Other Revenue—						
Interest, Discount, etc.	119,365	86,559	191,395	865,655	995,576	1,479,050
Coinage ..	208,348	208,515	359,720	354,276	229,378	125,634
Defence ..	28,936	73,649	234,896	478,326	683,804	262,786
Quarantine ..	15,173	13,768	19,242	19,671	16,453	44,118
Territories (a) ..	50,564	46,421	54,156	70,333	71,053	97,873
Patents, etc. ..	28,325	21,906	20,662	20,599	20,282	23,623
Lighthouses ..	..	3	123,945	99,830	108,556	125,231
Pension Contributions ..	36,824	47,640	50,447	50,474	51,396	51,763
Defence Trust Account	..	74,243	85,854	..	250,310	185,082
Miscellaneous ..	131,400	58,839	84,487	504,128	320,833	305,774
Total ..	608,935	631,543	1,224,804	2,463,292	2,747,641	2,700,934
Grand Total	21,741,775	22,419,798	30,762,216	34,067,434	36,839,868	44,716,918

(a) Exclusive of Railways, and other items which appear elsewhere under their appropriate headings.

In addition to the new direct taxation, there was for some time a fairly steady return from customs and excise. In the two years 1916-8, however, there was a striking fall in the customs returns, due probably to the diminution of imports caused by a scarcity of tonnage. A marked improvement was manifested in 1918-19. The postal receipts have shown a consistent upward tendency, and there has been also a large addition to the revenue of recent years by the operations of the Commonwealth steamers, and detained enemy vessels.

The principal items composing the revenue are discussed in greater detail hereunder.

4. Customs Revenue for Past Six Years.—Particulars for the Commonwealth as a whole, for the six years 1913-14 to 1918-19, are furnished in the following table :—

COMMONWEALTH CUSTOMS REVENUE, 1913-14 TO 1918-19.

Classes.	1913-14.	1914-15.	1915-16.	1916-17.	1917-18.	1918-19.
	£	£	£	£	£	£
Stimulants .. ..	2,810,222	2,899,540	2,500,606	1,986,321	1,693,957	1,455,667
Narcotics .. ..	1,175,404	1,257,223	1,333,516	1,300,683	1,236,085	1,268,357
Sugar .. ..	209,375	60,403	587,028	453,380	51,119	107,965
Agricultural products	1,002,363	1,087,133	1,310,437	862,227	603,605	515,236
Apparel and textiles ..	2,514,170	2,302,764	2,902,012	3,197,778	2,393,518	3,422,371
Metals and machinery	1,672,125	1,638,416	1,572,536	1,404,705	1,000,943	1,603,767
Oils, paints, etc. ..	310,847	311,545	386,994	338,202	267,129	319,043
Earthenware, etc. ..	426,134	338,095	368,300	249,525	176,244	248,664
Drugs and chemicals ..	122,960	131,764	160,997	163,027	163,623	219,532
Wood, wicker and cane	555,843	455,860	365,969	277,396	203,430	214,715
Jewellery, etc. ..	272,214	253,290	335,147	325,718	279,785	334,986
Leather, etc. ..	470,382	428,106	505,652	498,874	346,073	466,589
Paper and stationery	234,504	269,443	346,158	419,323	299,330	506,662
Vehicles .. ..	343,633	303,868	499,140	429,077	322,344	337,334
Musical instruments ..	166,059	83,570	100,562	107,915	110,413	110,850
Miscellaneous articles	330,548	248,977	295,895	320,334	298,661	425,349
Other receipts .. ..	35,954	35,701	39,735	39,179	40,296	48,323
Total Customs .. ..	12,652,737	12,105,698	13,610,684	12,373,664	9,486,555	11,605,410

It will be seen that during the period here dealt with, the Customs revenue from stimulants and narcotics has represented a proportion of the total varying approximately from one-fourth to one-third. The other principal articles from which Customs revenue was derived were "apparel and textiles," "metals and machinery," and "agricultural products." The smaller revenue from Customs duties in 1917-18 was due to the restriction of imports in consequence of the shortage of ships.

5. Excise Collections, 1913-14 to 1918-19.—Particulars concerning the amount of Excise collected under each head during each of the years ending 30th June, 1914 to 1919, are given hereunder :—

COMMONWEALTH EXCISE REVENUE, 1913-14 TO 1918-19.

Particulars.	1913-14.	1914-15.	1915-16.	1916-17.	1917-18.	1918-19.
	£	£	£	£	£	£
Beer .. ..	792,243	1,205,001	1,485,543	1,387,115	1,703,888	2,862,760
Spirits .. ..	421,506	514,794	627,431	670,768	804,476	1,098,440
Sugar .. ..	179,149	1,508	(a)170	..	..	..
Tobacco .. ..	927,293	1,043,885	1,204,556	1,172,787	1,223,792	1,847,661
Licenses .. ..	5,142	6,368	6,059	5,953	5,601	12,699
Total Excise .. ..	2,325,333	2,771,556	3,323,419	3,236,623	3,737,757	5,821,560

(a) Debit.

Comparing the Excise collections for 1918-19 with those for 1913-14, it will be seen that the revenue from tobacco was about doubled, the yield from beer was nearly fourfold, and that from spirits increased about 160 per cent., while the revenue from sugar has vanished, owing to the abolition of the Excise duties. The large increase in every item in 1918-19 is due to the operation of increased excise duties which came into force on 25th September, 1918.

**6. Commonwealth Direct Taxation.**—(a) *General.* Under section 51, sub-section (ii) of the Constitution, power is given to the Commonwealth Parliament to make laws with respect to taxation, but so as not to discriminate between States or parts of States. Section 90 of the Constitution makes the power of the Commonwealth Parliament to impose Customs and Excise duties an exclusive one, but it would appear that as regards all other forms of taxation the States and Commonwealth possess concurrent powers. The question of the imposition by the Commonwealth Parliament of direct taxes such as land and income taxes is one which has been the subject of considerable discussion, and the opinion has been expressed that the intention of the framers of the Constitution was that of restricting the powers of taxation of the Commonwealth to the imposition of Customs and Excise duties except in case of great national peril. Whatever the intention of the framers may have been in this matter, the Constitution itself expresses no such limitation, consequently the Commonwealth Parliament is unfettered in the imposition of taxation. Up to the end of the financial year 1909-10 the only taxes so levied were those of Customs and Excise, referred to in detail in the foregoing paragraphs. During the 1910 session of the Federal Parliament, however, an Act—assented to on 17th November, 1910—was passed, giving to the Commonwealth the power of levying a tax upon the unimproved value of all lands within the Commonwealth not specially exempted. Detailed reference to this Act will be found in Commonwealth Year Books Nos. 5 and 6. The Act No. 30 of 1918 increased the existing rates of land tax by 20 per cent.

(b) *Budget of 1914-15.* The fact stated in the previous paragraph, that there was nothing in the Constitution itself to restrain the Federal Government from entering the field of direct taxation, received further exemplification by the Budget of 1914-15. The outbreak of war then made it necessary for the Commonwealth Government to exercise full powers in the matter of direct taxation. In the first place the Land Tax was raised by altering the graduation so that the increase in rate over the whole taxable value of the estate, for each succeeding pound of taxable value between £5,000 and £75,000, was one eighteen-thousand seven-hundred and fiftieth of a penny, instead of one thirty-thousandth of a penny, as hitherto. The maximum rate for resident owners became 9d. in the £ on estates whose taxable value was more than £75,000. Corresponding increases in the rates payable by absentee owners were made, rising to a maximum of 10d. in the £ on estates whose taxable value is more than £80,000. These advances were estimated as likely to increase the annual yield of the Land Tax by £1,000,000. In addition to this substantial increase in an already existing tax, the Federal Government, for the first time, introduced Succession Duties on estates of deceased persons, in addition to those already imposed by the State Governments. The Commonwealth scale of succession duty, exempting all estates of less than £1,000 net value, ranges from a minimum of 1 per cent. to a maximum of 15 per cent. on estates of a higher taxable value than £71,000. The rate of duty per cent. for any estate may be found by the following rule. Divide the number of thousands of pounds in the estate by five, and to the quotient thus obtained add  $\frac{3}{5}$  in the case of an exact thousand, and  $\frac{1}{5}$  in every other case. Thus for an estate of £43,000 the duty would be  $9\frac{1}{5}$  per cent. (i.e.  $\frac{43}{5} + \frac{3}{5}$ ), but for an estate of £43,001 the duty would be  $9\frac{2}{5}$  per cent. (i.e.  $\frac{43}{5} + \frac{4}{5}$ ). The succession duties thus outlined yielded £39,646 up to 30th June, 1915, an amount very much less than the estimate. It is probable, however, that sufficient account was not taken of the interval that frequently elapses between a person's death and the taking out of probate on the estate. This is borne out by the great increase in the yield in the more recent years. The respective collections in the several States are given in the accompanying table. In this table and the corresponding ones dealing with Land Tax, Income Tax, and War Time Profits Tax, it must be noted that the amount received in Victoria includes that collected on behalf of the Central Office which deals with taxpayers who own property in more than one State. Comparison between the several States are therefore invalid unless this factor is taken into consideration.

COMMONWEALTH PROBATE AND SUCCESSION DUTIES, COLLECTED IN EACH STATE, 1914-15 TO 1918-19.

Year.	N.S.W.	Vic. (c)	Q'land.	S. Aust.	W. Aust.	Tas.	Total.
	£	£	£	£	£	£	£
1914-15 ..	18,474	9,216	4,774	1,900	1,912	3,370	39,646
1915-16 ..	261,477	276,923	23,928	32,790(a)	8,530	22,567	626,215
1916-17 ..	306,249	588,125	61,239	65,130	30,064	11,361	1,062,168
1917-18 ..	338,006	448,225	55,181	69,737	18,616	17,467	947,232
1918-19 ..	307,499	377,872	56,909	131,488 (b)	28,638	21,502	923,908

(a) Including Northern Territory, £164.

(b) Including Northern Territory, £1,280.

(c) Including Central Office.

(c) *Commonwealth Income Tax.* The first Commonwealth Income Tax was levied during the financial year 1915-16. The legislation on the subject comprised the Income Tax Assessment Act No. 34 of 1915, as amended by the Income Tax Assessment Acts Nos. 47 of 1915, 37 of 1916, 39 of 1916 and 18 of 1918. Full details as to the original Acts are to be found in *Commonwealth Official Year Book No. 9*. The rates are fixed for one year only, and in each financial year an Income Tax Act fixing the rate for that year is passed. Various estimates as to the probable yield in the first year were made, varying from £3,000,000 to £4,000,000, and the confidence of those who quoted the higher amount was justified by the result. The increased amounts collected in subsequent years are due to increases in the rates. The result of the first four years' collections was as follows :—

COMMONWEALTH INCOME TAX COLLECTIONS IN EACH STATE, 1915-16 TO 1918-19.

States.	1915-16.	1916-17.	1917-18.	1918-19.
	£	£	£	£
New South Wales ..	1,462,418	1,670,829	2,543,427	3,674,633
Victoria(a) ..	1,476,690	2,547,222	2,847,448	3,966,829
Queensland ..	497,059	545,475	795,717	1,206,051
South Australia ..	245,063	433,446	612,225	803,950
Western Australia ..	185,003	314,374	433,703	487,842
Tasmania ..	66,183	108,837	149,947	234,066
Northern Territory ..	359	1,767	3,047	3,085
Total ..	3,932,775	5,621,950	7,385,514	10,376,456

(a) Including Central Office.

(d) *Entertainments Tax.* This tax was to amount to 1d. for a ticket not exceeding 1s., and ½d. for each additional 6d., or part thereof. An exception was made in the case of payments not exceeding 3d. for the admission, on Saturdays between the hours of twelve o'clock noon and six o'clock in the afternoon, of children apparently under the age of twelve years. The collections for the first three years are as follows :—

ENTERTAINMENTS TAX : COLLECTIONS IN EACH STATE, 1916-17 TO 1918-19.

State.	1916-17.	1917-18.	1918-19.
	£	£	£
New South Wales ..	48,990	107,033	136,932
Victoria ..	32,947	72,209	110,815
Queensland ..	12,730	30,086	45,930
South Australia ..	8,016	18,430	27,534
Western Australia ..	4,954	11,879	27,934
Tasmania ..	2,992	5,988	8,680
Northern Territory ..	54	273	301
Total ..	110,683	245,898	358,126



(e) *War Time Profits Tax.* This tax came into force on 22nd September, 1917. It provides for a tax on the amount by which the profits made in the war-time financial year (1st July to 30th June following), exceeds the pre-war standard of profits, which may be either :—(a) the average profits of two of the three years before 4th August, 1917, or (b) 10 per cent. on the capital employed in a business. The tax in respect of profits derived in the financial year 1st July, 1915, to 30th June, 1916, was 50 per cent., and in all subsequent years 75 per cent. The collections for the first two years are given in the accompanying table.

#### WAR TIME PROFITS TAX : COLLECTIONS IN EACH STATE, 1917-19.

State.						1917-18.	1918-19.
						£	£
New South Wales	..	..	..	..	..	147,285	524,658
Victoria (a)	..	..	..	..	..	371,969	364,572
Queensland	..	..	..	..	..	33,526	125,329
South Australia	..	..	..	..	..	67,795	137,641
Western Australia	..	..	..	..	..	43,323	15,940
Tasmania	..	..	..	..	..	16,110	38,398
Total	..	..	..	..	..	680,008	1,206,538

(a) Including Central Office.

(f) *War Postage.* This is a new source of revenue derived from an additional halfpenny rate imposed on postages from the 28th October, 1918. The amount credited to "War Postage" is the excess over the normal increase of revenue from postage. The amount collected for the balance of the financial year 1918-19 was £463,317.

(g) *Commonwealth Land Tax.*—Particulars as to the Land Tax assessment for each State for the year ending 30th June, 1918, the latest available return at the time of writing, will be found in the following table. Details in regard to rate of tax, etc., will be found in Year Books Nos. 5 and 6.

#### PARTICULARS OF LAND TAX ASSESSMENT FOR EACH STATE OF THE COMMONWEALTH FOR THE YEAR ENDING 30th JUNE, 1918.

State.			Number of Taxable Returns.	Unimproved Value as ascertained by Department.	Tax Assessed.		
					Town.	Country.	Total.
				£	£	£	£
Central—							
Resident	..	..	1,475	36,090,168	286,288	379,939	666,227
Absentee	..	..	209	560,758	5,162	3,098	8,260
			1,684	36,650,926	291,450	383,037	674,487
New South Wales—							
Resident	..	..	4,735	71,125,902	248,864	430,206	679,070
Absentee	..	..	639	1,306,714	10,778	5,025	15,803
			5,374	72,432,616	259,642	435,231	694,873
Victoria—							
Resident	..	..	4,277	46,875,824	103,682	183,357	287,039
Absentee	..	..	691	1,094,878	10,567	3,661	14,228
			4,968	47,970,702	114,249	187,018	301,267

## PARTICULARS OF LAND TAX ASSESSMENT FOR EACH STATE OF THE COMMONWEALTH FOR THE YEAR ENDING 30TH JUNE, 1918—continued.

State.		Number of Taxable Returns.	Unimproved Value as ascertained by Department.	Tax Assessed.		
				Town.	Country.	Total.
			£	£	£	£
Queensland—						
Resident ..	..	1,075	13,018,143	26,987	65,079	92,066
Absentee ..	..	270	349,376	1,453	2,031	3,484
		1,345	13,367,519	28,440	67,110	95,550
South Australia—						
Resident ..	..	1,594	17,093,650	44,952	73,154	118,106
Absentee ..	..	312	300,544	2,039	1,296	3,335
		1,906	17,394,194	46,991	74,450	121,441
Western Australia—						
Resident ..	..	545	6,462,642	23,064	23,667	46,731
Absentee ..	..	1,035	413,548	2,029	900	2,929
		1,580	6,876,190	25,093	24,567	49,660
Tasmania—						
Resident ..	..	448	5,091,749	7,819	24,404	32,223
Absentee ..	..	323	257,561	476	891	1,367
		771	5,349,310	8,295	25,295	33,590
Grand Total—						
Resident ..	..	14,149	195,758,078	741,656	1,179,806	1,921,462
Absentee ..	..	3,479	4,283,379	32,504	16,902	49,406
		17,628	200,041,457	774,160	1,196,708	1,970,868

The foregoing table relates to the assessments for the latest year in regard to which figures are available. In addition to this, a further table is appended showing the actual amounts received by the Treasury for six years. The yield of the tax has been remarkably constant since 1914-15.

## COMMONWEALTH LAND TAX COLLECTIONS IN EACH STATE, 1913-14 TO 1918-19.

State.	1913-14.	1914-15.	1915-16.	1916-17.	1917-18.	1918-19.
	£	£	£	£	£	£
New South Wales	661,344	865,791	925,055	921,974	889,164	822,880
Victoria (a) ..	669,724	751,870	760,205	822,946	844,872	885,084
Queensland ..	84,054	107,891	100,588	143,317	149,989	141,121
South Australia	113,373	133,522	154,689	150,670	145,852	153,789
Western Australia	51,233	55,983	61,485	47,365	58,743	64,378
Tasmania ..	30,108	38,639	38,414	35,680	35,159	41,918
Total ..	1,609,836	1,953,696	2,040,436	2,121,952	2,123,779	2,109,170

(a) Including Central Office.

7. Details of Postal Revenue, 1913-14 to 1918-19.—Particulars concerning the postal revenue of the Commonwealth for each of the financial years from 1913-14 to 1918-19 are contained in the following table :—

**COMMONWEALTH POSTAL REVENUE, 1913-14 TO 1918-19.**

Particulars.	1913-14.	1914-15.	1915-16.	1916-17.	1917-18.	1918-19.
	£	£	£	£	£	£
Private boxes and bags .. ..	27,744	29,995	30,743	33,239	34,926	35,672
Commission—						
Money orders and postal notes ..	134,834	129,760	137,355	127,775	129,651	133,955
Telegraphs ..	834,316	878,238	893,904	950,842	1,032,318	1,103,664
Telephones ..	996,047	1,099,417	1,220,855	1,549,961	1,731,149	1,876,928
Postage ..	2,391,424	2,338,489	2,525,873	2,614,542	2,625,262	2,726,524
Miscellaneous ..	126,942	118,643	244,866	222,158	208,884	233,779
<b>Total ..</b>	<b>4,511,307</b>	<b>4,594,542</b>	<b>5,053,596</b>	<b>5,498,517</b>	<b>5,762,190</b>	<b>6,110,522</b>

8. Railways. The Commonwealth Government is now responsible for four lines, the Kalgoorlie-Port Augusta, the Port Augusta-Oodnadatta, the Darwin-Katherine River, and the Capital Territory line. The appended table shews the amounts paid into the credit of the Consolidated Revenue Fund on account of each of these railways for the past six years. In the case of the Port Augusta-Oodnadatta Railway the amount is made up by fees, wharfage rates, etc. Under an arrangement which came into effect on 1st January, 1914, this line is worked by the South Australian Government, and the Commonwealth Government is to receive the profit, if any, on the working, or to pay the deficiency. Since 1914 there has always been a deficiency, which is met by a payment from the Commonwealth Government, and debited to the Northern Territory Account.

**COMMONWEALTH REVENUE FROM RAILWAYS FOR SIX YEARS.**

Railway.	1913-14.	1914-15.	1915-16.	1916-17.	1917-18.	1918-19.
	£	£	£	£	£	£
Kalgoorlie-Port Augusta	4,647	147,889	271,510	271,388	164,203	150,856
Port Augusta-Oodnadatta	946	7,641	2,368	1,379	1,027	..
Darwin-Katherine River	18,034	21,082	29,150	32,605	35,172	45,725
Capital Territory ..	..	1,002	1,040	592	705	407
<b>Total ..</b>	<b>23,627</b>	<b>177,614</b>	<b>304,068</b>	<b>305,964</b>	<b>201,107</b>	<b>196,988</b>

It will be noticed that there was a substantial fall in the receipts of the Kalgoorlie-Port Augusta Railway in 1917-18, due to the reduction in freight receipts. In 1915-16 and 1916-17 large amounts were credited to working receipts for the carriage of constructional material. The completion of the line in 1917-18 closed this source of revenue.

9. Commonwealth Steamships. The Commonwealth Government announced, about the end of June, 1916, that, owing to the difficulty of obtaining tonnage, and to increasing freight charges, it had purchased fifteen steamers to insure to producers, as far as possible, the transport of their produce. The price given was rather more than £2,000,000, the capital cost brought forward from 30th June, 1917, being £2,080,656. The profits for the year 1916-17 amounted to £327,336, and for the year 1917-18 to £576,164, a total of £903,500. Out of this amount the sum of £880,000 was transferred from the Trust Account to Consolidated Revenue in 1917-18, under the approval of the Treasurer. The Consolidated Revenue benefited further in 1918-19, the surplus earnings being £1,015,762.

**10. Detained Enemy Vessels.** This is an item which first appeared in the Commonwealth accounts in 1914-15. For the first two years it appeared in the receipts of the Navy, but since 1916-17 it has ranked as a separate account. The great increases in 1916-17 and 1917-18 are due to higher freight charges, while the fall in 1918-19 is due to the fact that gross receipts were paid into the Consolidated Revenue in 1917-18, and net receipts in 1918-19.

**11. Other Public Works and Services.**—The most important items in 1917-18 were "Profit on sale of rabbit skins" £301,000, and "Profit on charter of vessels" £166,790. In 1918-19 they were "Profit under Wool Tops Agreement" £141,008, and "Profit on charter of vessels" £15,000.

**12. Interest, Discount, etc.**—The most important investments of the Commonwealth Government from which interest is derived are—Loans to States, General Trust Funds, Loans to the London Market, Fixed Deposits with the Commonwealth and other Banks, and certain advances and overdrafts. In 1918-19, the main receipts from this source were—Interest on Loans and Advances to States £876,605; Interest on Bank Deposits, £202,674; and Interest on Commonwealth Ships during construction, £106,113.

**13. Coinage.**—The Commonwealth Revenue under this head is derived from profit on coin issued, and for 1918-19 was made up of £116,060 for silver and £9,574 for bronze. The great fall in revenue from this source during recent years is due to the unprecedented rise in the price of silver, which has reduced the profits on seignorage to a very modest figure.

**14. Defence.**—The income from this source (which is derived from both Defence and Navy Offices) is mainly derived from sales of material and stores supplied, forfeitures fines, costs, etc. In 1918-19, £166,652 was contributed by the Defence Department, and £96,134 by the Navy Office.

**15. Patents, etc.**—This heading includes Patents, Trade Marks, Copyrights, and Designs, the administration of which has been exclusively a Commonwealth concern for a very long time. The revenue has been very regular during the period under review at a figure somewhat in excess of £20,000 annually. In 1918-19, £18,175 was obtained from Patents, and £5,448 from Trade Marks, Copyright and Designs.

**16. Miscellaneous.**—This includes several items which are either small in themselves, or not included under separate headings as they are virtually non-recurring. Thus in 1916-17 there was a large item of £431,690 which was paid into Revenue under the operation of the Sugar Purchase Act of 1915. In 1917-18, it had fallen to £20,390, and in 1918-19 to £6,547. There is also an item which may, or may not, appear regularly, viz., Unexpended balance of London Account, which in 1917-18 amounted to £186,149, and in 1918-19 to £185,746. No other item calls for any special remark.

### (C) Expenditure.

**1. Nature of Commonwealth Expenditure.**—The disbursements by the Commonwealth Government of the revenue collected by it fell naturally, under the "book-keeping" system, into three classes, viz. :—

- (a) Expenditure on transferred services.
- (b) Expenditure on new services.
- (c) Payment to States of surplus revenue.

Of these three, only the first two were actual expenditure, the last being merely a transfer, the actual expenditure being incurred by the States. In accordance with the provisions of the Constitution, the expenditure on transferred services was, under the "book-keeping" system, debited to the several States in respect of which such expenditure was incurred, while the expenditure on new services was distributed *per capita*. Surplus Commonwealth revenue was paid to the States monthly. During the earlier years of Federation, viz., until the end of the year 1903-4, new works, etc., for transferred departments were treated as transferred expenditure, and were charged to the States on whose behalf the expenditure had been incurred. In subsequent years all such expenditure

\* For an exposition of the "book-keeping system" see Commonwealth Year Book No. 6, p. 780.

was regarded as expenditure on new services, and was distributed amongst the States *per capita*. Under the new system of keeping the accounts there is no further debiting of expenditure to the several States.

2. **Total Expenditure.**—The expenditure by the Commonwealth Government during the period 1913–14 to 1918–19 is shewn in the following table :—

**COMMONWEALTH EXPENDITURE, 1913–14 TO 1918–19.(a)**

—	1913–14.	1914–15.	1915–16.	1916–17.	1917–18.	1918–19.
	£	£	£	£	£	£
Commonwealth..	15,458,776	16,056,023	24,415,221	27,797,015	30,499,494	38,262,585

(a) Including balance paid into Trust Funds, but excluding subsidies to States.

The largely increased expenditure of recent years is due partly to Old-age and Invalid Pensions, partly to fleet construction, and partly to such public works as the Trans-Australian Railway, Federal Capital, etc. In 1914–15 an additional amount of £14,471,118 was spent, made up of £14,100,000 war loan from the Imperial Government, and £371,118 Treasury Bills in aid of revenue. In 1915–16 the expenditure included £3,000,000 set aside for the purposes of Pensions in subsequent years, and this item came to £2,077,427 in 1916–17, £3,925,820 in 1917–18, and £3,476,478 in 1918–19. These totals include amounts paid into Trust Funds, but exclude subsidy to States.

3. **Expenditure per Head.**—Particulars concerning the Commonwealth expenditure per head are furnished hereunder :—

**COMMONWEALTH EXPENDITURE PER HEAD OF POPULATION, 1913–14 TO 1918–19.**

—	1913–14.	1914–15.	1915–16.	1916–17.	1917–18.	1918–19.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Commonwealth..	3 3 5	3 5 0	4 19 0	5 14 0	6 3 6	7 12 1

4. **New Works, etc.**—As previously mentioned, the Commonwealth expenditure on new works, etc., for transferred departments was, prior to 1904–5, included under the head of “transferred” expenditure, but in that and subsequent years up to 1909–10 was treated as “other” expenditure, and debited to the States *per capita*. Particulars of the expenditure on new works, etc., during the last six years are given in the following table :—

**COMMONWEALTH EXPENDITURE ON NEW WORKS FOR SIX YEARS,  
1914 TO 1919.**

Year ended 30th June—	Defence.	Trade and Customs.	Postmaster- General.	Home Affairs.	External Affairs.	Treasury.	Prime Minister's Department.	Home and Territories.	Works and Railways.	Total.
	£	£	£	£	£	£	£	£	£	£
1914	1,079,940	56,014	1,121,632	266,124	50,653	1,637	..	..	..	2,576,000
1915	1,520,684	66,338	831,828	217,784	30,647	6,396	..	..	..	2,673,989
1916	1,940,682	133,976	644,134	168,898	50,598	2,547	..	..	..	2,940,835
1917	1,765,253	201,419	590,770	(b)	(b)	2,085	120,591	293,838	1,314,793	4,288,747
1918	245,501	109,164	233,255	(b)	(b)	2,377	..	27,718	4,188	622,203
1919	97,018	38,542	238,643	(b)	(b)	609	..	22,156	7,688	405,656

(a) Including £262 for Attorney-General's Department. (b) Merged into other Departments.

It will be seen that the Commonwealth expenditure from Consolidated Revenue on new works during the years 1913-14 to 1916-17 was of considerable magnitude. This was largely due to expenditure on fleet construction, which was supplemented in 1916-17 by large payments on account of works and railways which had formerly been charged to loan funds.

5. Cost of Departments, etc.—Arranged in such a manner as to shew under each Department the expenditure on behalf of that Department, the cost of the several branches of the Commonwealth service for the years 1913-14 to 1918-19 was as follows :—

**COST OF COMMONWEALTH DEPARTMENTS, ETC., 1913-14 TO 1918-19.**

Departments, etc.	1913-14.	1914-15.	1915-16.	1916-17.	1917-18.	1918-19.
	£	£	£	£	£	£
Governor-General ..	17,815	24,750	23,535	25,279	26,893	23,875
Parliament ..	243,163	340,605	263,397	344,060	237,464	245,713
Prime Minister ..	82,847	56,642	60,790	155,797	234,568	231,173
External Affairs ..	678,974	595,178	840,199			
Attorney-General ..	82,442	78,466	86,164	94,195	96,930	94,686
Home Affairs ..	152,299	440,932	592,251			
Treasury (b) ..	2,787,034	2,527,833	3,817,851	1,545,923	2,902,578	1,222,580
Trade and Customs ..	730,458	551,318	589,121	648,147	715,129	817,505
Defence ..	2,950,722	2,904,869	1,512,540	1,544,775	1,283,063	1,392,859
Navy ..			1,552,318	1,514,061	1,551,258	1,663,888
Postmaster-General ..	5,157,022	5,221,274	5,358,371	5,288,998	5,349,994	5,449,722
Home and Territories ..				484,274	468,701	489,163
Works and Railways ..				886,661	672,893	683,874
All other Expenditure (c)	2,576,000	3,314,156	9,718,684	15,263,945	16,960,023	25,947,547
Total ..	15,458,776	21,656,023	24,415,221	27,707,015	30,499,494	38,262,585

(a) Exclusive of £14,471,118 spent from loans in aid of Revenue. (b) For an explanation of the varying amounts in the expenditure on the Treasury see footnote to the table on page 768. (c) For details see table on page 771.

The heading "all other expenditure" includes War Services since 1914-15. More detailed reference to the items included under the above general heads is furnished in the succeeding paragraphs, and attention is particularly directed to the table giving detailed information concerning the items composing "all other expenditure" on page 770.

6. Governor-General.—In section 3 of the Constitution it is enacted that, until the Commonwealth Parliament otherwise provides, there shall be payable out of the Consolidated Revenue Fund for the salary of the Governor-General an annual sum of ten thousand pounds, and a proviso is made that the salary of the Governor-General shall not be altered during his continuance in office. The total expenditure in connexion with the Governor-General and establishment for the six years 1913-14 to 1918-19 is as follows :—

**EXPENDITURE, GOVERNOR-GENERAL AND ESTABLISHMENT, 1913-14 TO 1918-19.**

Details.	1913-14.	1914-15.	1915-16.	1916-17.	1917-18.	1918-19.
	£	£	£	£	£	£
Salary ..	10,000	10,000	10,000	10,000	10,000	10,000
Governor-General's Establishment	5,118	5,573	4,365	5,079	6,351	4,390
(a) Contingencies ..	2,697	9,177	9,170	10,200	10,542	9,485
Total ..	17,815	24,750	23,535	25,279	26,893	23,875

(a) Represents official services outside the Governor-General's personal interests, and carried out in the main at the instance of the Government.

7. Parliament.—Under this head have been grouped all the items of expenditure connected with the Parliamentary government of the Commonwealth, including the salaries of the Ministers and the allowances to senators and members of the House of

Representatives. Details for the six years 1913-14 to 1918-19 are furnished in the table given hereunder :—

**EXPENDITURE, COMMONWEALTH PARLIAMENT, 1913-14 TO 1918-19.**

Details.	1913-14.	1914-15.	1915-16.	1916-17.	1917-18.	1918-19.
	£	£	£	£	£	£
Salaries of Ministers ..	12,000	12,000	13,597	13,650	14,901	15,300
Allowances to Senators ..	21,004	18,979	21,000	20,866	20,854	20,760
Allowances to Members of House of Representatives	43,745	39,556	43,132	39,072	42,796	42,261
Officers, staff, contingencies, etc.	36,703	36,347	37,746	36,771	39,583	37,584
Repairs, maintenance, etc. ..	2,808	4,411	6,085	1,988	1,518	1,568
Printing ..	20,078	21,429	17,817	18,997	16,864	26,863
Travelling expenses of Members and others ..	10,627	10,173	10,458	10,339	9,950	8,913
Insurance ..	342	342	342	342	342	342
Electoral Office ..	11,716	49,815	49,155	53,091	53,717	53,159
Election expenses ..	28,252	84,600	1,360	83,276	4,355	2,459
Referendum ..	..	..	21,334	77	..	..
Administration of Electoral Act	54,541	57,691	34,687	60,100	27,425	31,460
Miscellaneous ..	1,347	5,262	6,684	5,491	5,159	5,044
Total ..	243,163	340,605	263,397	344,060	237,464	245,713

In section 66 of the Constitution, provision is made that there shall be payable out of the Consolidated Revenue Fund of the Commonwealth, for the salaries of Ministers of State, an annual sum which, until Parliament otherwise provides, shall not exceed £12,000. This was modified in 1915-16, when the Minister of the Navy was given separate Cabinet rank. Allowances to senators and members of the House of Representatives are also provided for in the Constitution, section 48 of which specifies that until Parliament otherwise provides, each such allowance shall consist of £400 a year, reckoned from the day on which the member takes his seat. During the second session of the Commonwealth Parliament in 1907 the question of allowances to members came under consideration, and an Act was passed raising the annual allowance from £400 to £600, such increase to date from 1st July, 1907. During 1920, the salaries of members of both Houses were raised to £1,000 per annum.

**8. Prime Minister's Department.**—This was a new department created during the financial year 1911-12. In addition to the Prime Minister's Office it includes the Audit Office taken from the Treasury, the Executive Council taken from the External Affairs Department, and the Public Service Commissioner's Office taken from the Home Affairs Department. In 1916-17 it assumed control of the High Commissioner's Office in London, which was detached from the old External Affairs Department when the latter was merged in the Home and Territories Department. The expenditure for the last six years is shewn in the following table :—

**EXPENDITURE, PRIME MINISTER'S DEPARTMENT, 1913-14 TO 1918-19.**

Details.	1913-14.	1914-15.	1915-16.	1916-17.	1917-18.	1918-19.
	£	£	£	£	£	£
Salaries, contingencies, etc. ..	8,961	11,087	11,906	21,691	25,764	33,328
Executive Council ..	152	164	137	170	160	177
Audit Office ..	12,167	11,943	12,574	16,726	18,480	25,486
Rent, repairs, etc. ..	2,552	2,829	3,021	4,678	16,489	7,028
Public Service Commissioner's Office ..	22,303	23,255	21,252	22,142	22,329	23,129
High Commissioner's Office ..	..	..	..	31,518	52,166	57,106
Interest on Commonwealth Securities ..	..	..	..	22,274	23,467	25,781
Sinking Fund on Commonwealth Securities ..	..	..	..	2,433	2,433	2,433
Mail Service to Pacific Islands ..	..	..	..	17,073	35,021	28,800
Miscellaneous ..	36,712	7,364	11,900	17,092	38,259	27,905
	82,847	56,642	60,790	155,797	234,568	231,173

The "Miscellaneous" vote for 1913-14 included two special grants: one for £16,635 towards the expenses of the British Association for the Advancement of Science (which held its 1914 session in Australia), and one of £5,000 towards the relief of the Antarctic expedition under Dr. Mawson. The "Miscellaneous" vote for 1917-18 included a grant of £5,000 for the relief of sufferers from the cyclone in Queensland, and an item of £13,831 for the working expenses of the Port Pirie wharf.

9. *Home and Territories.*—Under this new department, created in the financial year 1916-17, is placed the bulk of the old External Affairs Department (after the removal of the London office), and the Census and Statistics, and Meteorological Offices, taken from the old Home Affairs Department. The Darwin-Katherine River Railway is administered by the Works and Railways Department.

**EXPENDITURE HOME AND TERRITORIES DEPARTMENT, 1916-17 TO 1918-19.**

Details.	1916-17.	1917-18.	1918-19.
	£	£	£
Chief Office .. .. .	17,065	14,737	16,156
Census and Statistics .. .. .	18,505	15,013	16,248
Meteorological Branch .. .. .	27,499	25,971	28,209
Papua .. .. .	61,746	51,918	51,260
Rents, repairs, etc. .. .. .	1,951	10,493	14,905
Northern Territory .. .. .	237,163	207,620	213,649
Federal Capital Territory .. .. .	..	23,382	24,142
Norfolk Island .. .. .	3,000	3,000	3,000
Interest on Commonwealth Securities (a) ..	72,202	74,548	84,881
Sinking Fund, Commonwealth Securities (a) ..	5,853	5,853	5,853
Miscellaneous .. .. .	39,290	36,166	30,860
<b>Total .. .. .</b>	<b>484,274</b>	<b>468,701</b>	<b>489,163</b>

(a) Includes Northern Territory and Port Augusta Railway.

10. *Attorney-General's Department.*—The extra expenditure connected with this Department of late years has been caused in large measure by the extension of the Federal High Court. Details for the six years 1913-14 to 1918-19 are furnished hereunder:—

**EXPENDITURE, ATTORNEY-GENERAL'S DEPARTMENT, 1913-14 TO 1918-19.**

Details.	1913-14.	1914-15.	1915-16.	1916-17.	1917-18.	1918-19.
	£	£	£	£	£	£
Attorney-General's Office ..	6,302	5,852	10,457	13,880	10,189	11,510
Crown Solicitor's Office ..	7,565	8,371	10,078	10,766	11,255	12,943
Salaries of Justices of High Court .. .. .	21,500	21,175	21,500	21,500	21,500	21,500
High Court expenses .. .. .	11,209	9,862	9,947	10,280	9,852	8,837
Court of Conciliation and Arbitration .. .. .	6,450	3,586	8,637	11,068	7,900	6,242
Rent, repairs, etc. .. .. .	3,733	4,755	3,412	3,217	9,414	4,839
Patents, Trade Marks, etc. . .	24,439	23,485	20,579	21,856	19,253	23,875
Miscellaneous .. .. .	1,244	1,380	1,554	1,628	7,567	4,940
<b>Total .. .. .</b>	<b>82,442</b>	<b>78,466</b>	<b>86,164</b>	<b>94,195</b>	<b>96,930</b>	<b>94,686</b>

11. *Works and Railways Department.*—The great extension of Commonwealth Works and Railways led, in 1916-17, to the separation of these functions from the old Home Affairs Department and the constitution of a separate office. This new office also administers those Railways which were formerly under the control of the old External



Affairs Department. The expenditure for the three years of its existence is as follows :—

**EXPENDITURE, WORKS AND RAILWAYS DEPARTMENT, 1916-17 TO 1918-19.**

Details.	1916-17.	1917-18.	1918-19.
	£	£	£
Chief Office .. .. .	40,558	31,162	36,594
Kalgoorlie-Port Augusta Railway .. .. .	302,550	232,726	237,204
Port Augusta-Oodnadatta Railway, and Northern Territory Railways .. .. .	312,906	172,637	162,077
Interest on Transferred Properties .. .. .	404	403	403
Interest on Commonwealth Securities .. .. .	198,406	208,811	226,083
Sinking Fund on Commonwealth Securities .. .. .	11,957	11,957	11,957
Rent, repairs, etc. .. .. .	14,635	2,953	2,957
Miscellaneous .. .. .	5,245	12,244	6,599
<b>Total .. .. .</b>	<b>886,661</b>	<b>672,893</b>	<b>683,874</b>

12. **Treasurer's Department.**—The sub-departments under the control of the Commonwealth Treasurer are the Treasury, the Pensions Department, and the Taxation Office. The Audit Office was transferred to the Prime Minister's Department in 1911-12. Details of the expenditure of this Department for the last six years are given in the following table:—

**EXPENDITURE, TREASURER'S DEPARTMENT, 1913-14 TO 1918-19.**

Details.	1913-14.	1914-15.	1915-16.	1916-17.	1917-18.	1918-19.
	£	£	£	£	£	£
Treasury .. .. .	22,696	26,291	26,996	37,993	29,391	32,072
Taxation Office .. .. .	80,775	82,296	133,495	198,967	281,523	311,330
Old-age Pensions Office .. .. .	44,942	46,421	42,796	52,214	53,391	61,406
Maternity Allowance Office .. .. .	10,124	12,267	11,334	13,263	12,280	11,209
Coinage .. .. .	9,588	1,763	16,584	28,728	30,481	18,411
Rent, repairs, etc. .. .. .	6,294	6,654	17,103	15,487	20,491	18,715
Invalid and Old-age Pensions (a) .. .. .	1,881,794	1,479,963	2,859,766	453,344	1,781,564	..
Maternity Allowance .. .. .	674,990	694,275	659,745	662,030	634,428	620,080
Maintenance of persons in charitable institutions .. .. .	14,236	27,630	31,831	34,653	39,060	55,760
Interest on Commonwealth Securities .. .. .	6,150	1,253	14	19,833	12,273	..
Sinking Fund on Commonwealth Securities .. .. .	19,385	36,479	..	..	..	..
Miscellaneous .. .. .	16,060	112,541	18,187	29,411	7,696	93,597
<b>Total .. .. .</b>	<b>2,787,034</b>	<b>2,527,833</b>	<b>3,817,851</b>	<b>1,545,923</b>	<b>2,902,578</b>	<b>1,222,580</b>

(a) In addition, the following amounts were spent from Trust Funds :—in 1913-14, £697,471; in 1914-15, £1,224,347; in 1915-16, nil; in 1916-17, £3,000,000; in 1917-18, £2,077,427; and in 1918-19, £3,879,241.

The fluctuations in the expenditure on this Department are due to the variations in the method of payment of the Invalid and Old-age Pensions, as explained in the footnote. The "Miscellaneous" vote for 1914-15 included the special Belgian grant of £100,000, and that for 1918-19 included £78,344, temporary credits under certain Trust Fund accounts.

13. **Trade and Customs.**—Under this head have been included the expenditure of all the sub-departments under the control of the Minister of Trade and Customs, as well as the amounts payable as sugar and other bounties and the expenses in connexion therewith. The administration of Patents, Trade Marks, and Copyright is now entrusted

to the Attorney-General's Department. The fluctuations in the total expenditure of this Department in recent years have been mainly due to variations in the amount payable in respect of sugar bounties. Particulars for the six years 1913-14 to 1918-19 are given in the following table :—

**EXPENDITURE, TRADE AND CUSTOMS DEPARTMENT, 1913-14 TO 1918-19.**

Details.	1913-14.	1914-15.	1915-16.	1916-17.	1917-18.	1918-19.
	£	£	£	£	£	£
Chief Office ..	14,429	16,240	15,986	19,223	21,849	29,404
Customs (ordinary) ..	341,116	354,205	323,309	344,303	339,698	350,253
Fisheries ..	7,443	4,447	492	170	224	96
Analyst ..	3,441	3,441	3,576	4,440	3,498	4,804
Audit (proportion) ..	8,144	7,427	6,722	5,786	4,525	4,617
Quarantine ..	44,063	32,057	38,804	46,251	50,748	150,820
Pensions and retiring allowances ..	13,318	16,041	14,524	16,215	16,545	17,213
Rents, repairs, etc. ..	14,872	15,448	21,067	19,103	20,945	18,066
Sugar and other bounties ..	163,548	28,290	6,767	3,169	15,418	30,460
Iron bonus ..	51,810	15,072	24,465	11,454	..	..
Inter-State Commission	10,380	13,192	10,231	10,096	11,903	12,007
Lighthouses ..	..	..	86,524	128,767	133,837	137,364
Interest on transferred properties ..	49,350	29,556	30,125	29,933	79,294	43,951
Interest on Commonwealth Securities ..	..	..	..	..	726	2,200
Miscellaneous ..	8,544	15,902	6,529	9,237	15,919	16,250
<b>Total ..</b>	<b>730,458</b>	<b>551,318</b>	<b>589,121</b>	<b>648,147</b>	<b>715,129</b>	<b>817,505</b>

The rise in expenditure on quarantine and lighthouses in recent years has counteracted the abolition of the sugar bounty, and caused the expenditure on this Department to return to the level of 1913-14.

**14. Defence.**—The Commonwealth expenditure in connection with Defence, which in 1901-2 amounted to £861,218, had by 1918-19 grown to £1,392,859. The bulk of the immense war expenditure is provided for out of loan. Particulars for the six years 1913-14 to 1918-19 are as follows :—

**EXPENDITURE, DEFENCE, 1913-14 TO 1918-19.**

Details.	1913-14.	1914-15.	1915-16.	1916-17.	1917-18.	1918-19.
	£	£	£	£	£	£
Chief Office ..	86,191	88,233	46,441	49,267	50,163	47,143
Military ..	1,547,921	2,337,686	1,273,885	1,311,481	1,052,848	1,153,036
Naval ..	979,554		(a)	(a)	(a)	(a)
Audit (proportion) ..	1,362	2,398	5,486	11,117	21,548	8,407
Pensions and retiring allowances ..	1,103	1,427	363	191	380	380
Rents, repairs, etc. ..	70,471	79,665	76,744	68,314	54,599	53,484
Interest on transferred properties ..	94,859	177,740	88,519	88,512	88,490	92,289
Interest on Commonwealth Securities ..	..	79,243	..	..	1,839	5,917
Miscellaneous ..	169,261	138,477	21,102	15,893	13,196	32,203
<b>Total ..</b>	<b>2,950,722</b>	<b>2,904,869</b>	<b>1,512,540</b>	<b>1,544,775</b>	<b>1,283,063</b>	<b>1,392,859</b>

(a) Now a separate Department.

The "Miscellaneous" vote for 1914-15 included £50,366 for the purchase of foodstuffs for other countries; £36,489, as interest on a loan from the Imperial Government; and £21,062 for Prize Courts. The Miscellaneous vote for 1913-14 included £81,181 paid into Trust Funds.

15. **Navy Office.**—During the financial year 1915-16, the Navy Office, owing to its increasing importance, was separated from the Defence Department and constituted an independent Department. Appended is the expenditure for the last four years, under similar headings to those of the Defence Department:—

**EXPENDITURE, NAVY DEPARTMENT, 1915-16 TO 1918-19.**

Details.	1915-16.	1916-17.	1917-18.	1918-19.
	£	£	£	£
Chief Office .. ..	39,170	40,747	39,176	39,689
Naval .. ..	1,444,521	1,401,659	1,426,988	1,506,897
Audit (proportion) .. ..	1,166	1,272	1,017	1,711
Pensions and retiring allowances .. ..	899	899	899	1,012
Rents, repairs, etc. .. ..	17,402	15,969	19,079	25,738
Interest on transferred properties .. ..	39,920	41,058	41,058	44,410
Interest on Commonwealth Securities .. ..	2,270	4,381	16,995	42,523
Sinking Fund, Commonwealth Securities .. ..	40	40	40	40
Miscellaneous .. ..	6,930	8,936	6,006	1,868
<b>Total .. ..</b>	<b>1,552,318</b>	<b>1,514,961</b>	<b>1,551,258</b>	<b>1,663,888</b>

16. **Postal.**—The expenditure of this Department has remained almost constant in the six years under review, the increase being less than £300,000. Full details are given in the table hereunder.

**EXPENDITURE, POSTAL DEPARTMENT, 1913-14 TO 1918-19.**

Details.	1913-14.	1914-15.	1915-16.	1916-17.	1917-18.	1918-19.
	£	£	£	£	£	£
Chief Office .. ..	22,506	23,606	21,400	22,821	21,960	23,189
Postal Department (ordinary) .. ..	4,752,652	4,809,672	4,904,839	4,853,886	4,920,251	5,015,429
Audit (proportion) .. ..	3,340	3,955	3,670	2,981	2,635	2,888
Pensions and retiring allowances .. ..	48,400	48,073	53,358	55,877	59,174	64,720
Rents, repairs, etc. .. ..	88,884	84,044	92,083	67,494	60,070	60,756
Interest on transferred properties .. ..	217,730	217,640	217,625	217,602	212,227	210,908
Interest on Commonwealth Securities .. ..	5,735	20,007	33,619	40,539	42,150	46,420
Sinking Fund on Commonwealth Securities .. ..	..	..	16,271	16,271	16,271	16,271
Miscellaneous .. ..	17,775	14,277	15,506	11,527	15,256	9,141
<b>Total .. ..</b>	<b>5,157,022</b>	<b>5,221,274</b>	<b>5,358,371</b>	<b>5,288,998</b>	<b>5,349,994</b>	<b>5,449,722</b>

17. **Miscellaneous.**—In addition to the foregoing there are certain items which do not come under any of the heads enumerated. They consist in the main of war services, expenditure on new works which has already been treated in detail on page 764, and sums carried forward in respect of pensions in subsequent years. The particulars for the six years, 1914-19, are given in detail in the next table.

ALL OTHER EXPENDITURE, 1913-14 TO 1918-19.

Details.	1913-14.	1914-15.	1915-16.	1916-17.	1917-18.	1918-19.
	£	£	£	£	£	£
New Works ..	2,576,000	2,673,939	2,940,835	4,288,747	622,203	405,656
War Services (a) ..	..	640,217	3,777,849	8,421,654	11,863,250	21,255,101
Carried forward in respect of pensions ..	..	..	3,000,000	2,077,427	3,925,820	3,476,478
Interest—State Loans Act ..	..	..	..	105,000	548,750	810,312
Miscellaneous ..	..	..	..	371,117	..	..
Total ..	2,576,000	3,314,156	9,718,684	15,263,945	16,960,023	25,947,547

(a) For details see second table appended to next paragraph.

18. Cost of the War.—A substantial amount of the cost of the war has been paid out of consolidated revenue in the last two years under the heading "War Services." The expenditure on the war from revenue has already been dealt with in the previous table, but a further table is here presented shewing the total expenditure from the different funds during the four years for which the war lasted up to 1917-18, and including also 1918-19, which contained the last four months of war approximately, and the first eight months of peace.

COST OF WAR SERVICES TO COMMONWEALTH, 1914-15 TO 1918-19.

Year.	From Consolidated Revenue.	From War Loan Fund.	Total.
	£	£	£
1914-15 .. ..	640,217	14,471,118	15,111,335
1915-16 .. ..	3,777,849	37,423,568	41,201,417
1916-17 .. ..	8,421,654	53,114,237	61,535,891
1917-18 .. ..	11,863,251	55,095,109	66,958,360
1918-19 .. ..	21,255,101	62,192,889	83,447,990
Total .. ..	45,958,072	222,296,921	268,254,993

The expenditure in 1919-20, which will be mainly incidental to Repatriation, has been estimated at £77,233,625, of which £24,899,046 will come from Revenue, and £52,334,579 from Loan Funds. Full details of the war expenditure from Revenue and from Loan are given in the subjoined tables.

WAR SERVICES EXPENDITURE FROM REVENUE, 1914-15 TO 1918-19.

Heading.	1914-15.	1915-16.	1916-17.	1917-18.	1918-19.
	£	£	£	£	£
Special Appropriations—					
Interest, Commonwealth Loans .. ..	..	..	2,738,673	4,574,817	7,709,771
Interest, Imperial Loans .. ..	..	..	2,082,258	2,477,288	2,377,690
Sinking Fund, Commonwealth Loans .. ..	..	..	689,384	515,781	955,303
Sinking Fund, Imperial Loans .. ..	..	..	477,743	245,410	245,410
Annual Votes—					
Defence .. ..	640,217	3,005,994	550,377	532	310
Navy .. ..	..	771,855	686,701	..	272,608
Treasury .. ..	..	..	1,186,488	3,043,046	8,373,696
Prime Minister's Department .. ..	..	..	..	999,198	8,194
Trade and Customs .. ..	..	..	10,030	7,179	9,238
Repatriation .. ..	..	..	..	..	1,300,044
Works and Railways .. ..	..	..	..	..	2,837
Total ... ..	640,217	3,777,849	8,421,654	11,863,251	21,255,101

The extremely large vote debited to the Treasury in 1918-19 includes £3,430,000, which represents two years' interest to the Imperial Government for the maintenance of troops, and £4,827,368 spent on War Pensions. The total vote for the latter purpose was £5,000,000, and the balance of £172,632 was paid into Trust Funds.

#### WAR EXPENDITURE FROM WAR LOAN FUND.

Department.	1914-15.	1915-16.	1916-17.	1917-18.	1918-19.
	£	£	£	£	£
Defence .. ..	14,471,118	31,938,863	47,116,871	52,877,295	49,434,567
Navy .. ..	..	5,093,530	3,324,181	569,888	7,194,345
Treasury .. ..	..	..	386,743	1,128,907	5,314,153
Trade and Customs .. ..	..	391,175	111,822	12,778	39,141
Prime Minister .. ..	..	..	2,083,483	420,759	120,863
Home and Territories .. ..	..	..	91,137	85,482	4,458
Repatriation .. ..	..	..	..	..	85,362
<b>Total .. ..</b>	<b>14,471,118</b>	<b>37,423,568</b>	<b>53,114,237</b>	<b>55,095,109</b>	<b>62,192,889</b>

#### (D) Subsidy Paid to States.

1. **Payments to the Several States.**—In the following table are furnished particulars relative to the amounts actually paid to the several States on account of each of the financial years 1913-14 to 1918-19 :—

#### COMMONWEALTH SUBSIDY PAID TO STATES, 1913-14 TO 1918-19.

State.	1913-14.	1914-15.	1915-16.	1916-17.	1917-18.	1918-19.
	£	£	£	£	£	£
New South Wales	2,248,241	2,287,295	2,297,872	2,238,913	2,317,783	2,380,139
Victoria .. ..	1,733,229	1,757,894	1,743,467	1,722,409	1,739,481	1,764,239
Queensland .. ..	810,274	831,486	836,743	823,771	845,913	856,300
South Australia .. ..	540,113	542,715	540,649	531,340	535,808	549,593
Western Australia	613,606	606,900	591,064	569,982	561,129	556,505
(a) Tasmania .. ..	247,536	247,485	247,200	246,004	250,260	257,557
<b>(a) Total .. ..</b>	<b>6,192,999</b>	<b>6,273,775</b>	<b>6,256,995</b>	<b>6,180,419</b>	<b>6,250,374</b>	<b>6,364,333</b>

(a) Not including special grant of £90,000 to Tasmania.

The normal rate of increase was checked in 1914-15 owing to the departure of the troops, and in 1915-16 four of the States, from this cause, shewed a decrease. This was still more marked in 1916-17, but, owing to the return of soldiers, increases were manifested in 1917-18 and 1918-19. The amounts allotted to Tasmania are exclusive of the instalments of the special payment.

The amounts of subsidy given in the preceding table are based upon an annual payment of £1 5s. per capita, with a special concession to Western Australia. This follows the provisions of the "Commonwealth Surplus Revenue Act" which was passed in 1910 and came into effect upon 1st July, for a period of ten years, after which it became subject to revision. This period expired on 30th June, 1920, and it is now possible for Parliament to extend the Act for a further period, or to make new financial provisions for a Commonwealth subsidy to the States. The matter was discussed at a meeting of Commonwealth and State Ministers held in January, 1919, at Melbourne. The Commonwealth Treasurer of the day (Mr. Watt) made the following tentative proposal as the basis of a new arrangement :—In 1920-21 the States were to receive 22s. 6d. per capita, and in each succeeding year an amount diminishing by 2s. 6d. per head until 1925-26, when they would receive 10s. per head, after which the arrangement would come up for further revision. The Conference, however, adjourned without coming to a decision. It was subsequently announced that the matter would come up for decision at the forthcoming Federal Convention.

### § 3. Trust Fund and Miscellaneous.

1. **Trust Accounts.**—The Trust Fund credit balance on 30th June, 1919, amounted to £75,058,977, as compared with £71,189,698 for the corresponding date in the year ending 30th June, 1918. These enormous amounts are due mainly to the Australian Notes Account referred to in detail in para. 3 hereunder. Other large items are "London Liabilities" and "Invalid and Old-age Pensions." Details concerning the most important trust accounts contributing to this amount are as follows:—

#### COMMONWEALTH TRUST FUND, 30th JUNE, 1919.

Trust Accounts.	Balance at 30th June, 1919.	Trust Accounts.	Balance at 30th June, 1919.
	£		£
Debts due to Enemy Subjects ..	4,539	Port Augusta Railway Sinking Fund ..	48,016
Public Trustee ..	19,976	Loans Sinking Fund ..	1,974,037
General Average Deposits ..	11,767	War Savings Certificates, Interest	
Defence Clothing Material ..	297,022	Account ..	350,929
Small Arms Ammunition ..	322,457	Commonwealth Government Steamers,	
Small Arms ..	20,241	Earnings and Expenses ..	22,212
Unclaimed Pay ..	16,900	Detained Enemy Vessels ..	61,695
Naval Dockyard ..	2,702	Williamstown Dockyard ..	1,537
Deferred Naval Pay ..	285,184	Australian Metal Company ..	2,198
War Contributions ..	2,583	Norfolk Island Account ..	10,137
Money Order ..	794,500	Northern Territory ..	17,737
International Postal Order ..	847	Commonwealth Railways ..	73,616
Interest—Imperial Government ..	2,056,338	Other Trust Monies ..	395,843
Insurance ..	622,105	War Loan Securities—repurchase ..	107,422
Pensions ..	3,663,308	Repatriation ..	172,407
London Liabilities ..	3,087,702	Miscellaneous ..	61,927
Australian Notes Account ..	60,475,123		
Northern Territory Sinking Fund ..	75,970	Total ..	75,058,977

2. **Distribution.**—The amounts to credit of Trust Fund in the several States on 30th June, 1919, were as follows:—New South Wales, £2,034,028; Victoria, £71,353,860; Queensland, £680,639; South Australia, £466,044; Western Australia, £273,364; and Tasmania, £251,042.

3. **Australian Notes Account.**—After the passage of the Australian Notes Act, Australian notes began to appear in circulation in December, 1910. For the first half of the calendar year 1911, they circulated side by side with bank notes and Queensland Treasury notes. After 30th June, 1911, the penal clauses of the Notes Act came into operation, and the banks and the Queensland Government began to withdraw their notes from active circulation. By the end of the year the process was virtually complete. On 30th June, 1919, the notes issued and unredeemed amounted to £55,401,727. Against this there was a reserve in gold coin of £24,232,622 or 43.74 per cent., and other assets, of which the most important were investments in Government Stock and fixed deposits, totalling £36,100,941 and returning an annual income of about £1,400,000.

The position, according to a Treasury return issued at the end of July, 1920, was as follows:—

#### COMMONWEALTH NOTES ISSUED AND UNREDEEMED AT 28th JULY, 1920.

	£
10s. ..	2,237,739
£1 ..	14,349,143
£5 ..	8,812,290
£10 ..	4,132,850
£20 ..	684,460
£50 ..	1,551,350
£100 ..	1,684,100
£1,000 ..	23,990,000

£57,441,932

The amount of the gold reserve was £23,651,100, representing 41.17 per cent. of the liability.

The subject is discussed at some length in Section **xxi**, Sub-section 2, *Banking*.

**4. Advances by Commonwealth Government to States.**—Reference has been made in the previous paragraph to the investments constituting the assets of the Australian Notes Account. A large proportion has been advanced to the respective State Governments for short periods, sometimes as low as one year. This is an interesting departure in Australian Public Finance, and in view of the financial relations thus brought about between the Commonwealth and State Governments, the following table is appended, giving full particulars of the investments of £36,100,941, to which reference has already been made :—

**AUSTRALIAN NOTES ACCOUNT.—PARTICULARS OF INVESTMENT AS AT  
30th JUNE, 1919.**

Investment.	Amount.	Rate of Interest.	Date of Maturity.	Annual Amount of Interest.
	£	%		£
Commonwealth Inscribed Stock ..	3,830,000	3½	1962-1972	134,050
Commonwealth War Loan Stock ..	63,640	4½	1925	2,864
Commonwealth Treasury Bills ..	3,650,501	4	(a)	146,020
<b>STATE GOVERNMENT SECURITIES—</b>				
New South Wales Stock ..	800,000	3½	1919	30,000
New South Wales Treasury Bills ..	7,400,000	4½	(b)	305,250
Victorian Debentures (face value, £890,000) ..	784,000	3½	1921	28,000
Victorian Debentures ..	3,900,000	4½	(b)	160,875
Victorian Government Securities ..	150,000	5½	..	7,875
Queensland Government Securities ..	800,000	5½	..	2,000
South Australian Treasury Bills ..	2,600,000	4½	(b)	107,250
Western Australian Stock ..	590,000	3½	1926	22,125
Western Australian Treasury Bills ..	3,100,000	4½	(b)	127,875
Tasmanian Stock ..	460,000	3½	1921	17,250
Tasmanian Treasury Bills ..	1,000,000	4½	(b)	41,250
<b>FIXED DEPOSITS—</b>				
Sundry Banks ..	6,972,800	3 to 4½	1916-17	not available
<b>Total</b> ..	<b>36,100,941</b>	<b>..</b>	<b>..</b>	<b>not available</b>

(a) Not fixed. (b) Treasury Bills with currency of two years from date of loan instalment.

In the financial year 1913-14 the Commonwealth Government called in as far as possible its outstanding advances to the State Governments. The money lent on fixed deposit was taken up as the term expired; and furthermore, the Commonwealth Government, requiring additional money for the expenditure on public works, etc., induced some of the State Governments to discount a portion of their securities held by the Commonwealth. The money thus obtained was spent in the purchase of further Commonwealth Inscribed Stock, thus increasing the Loan Fund, to which reference is made in the next section. On the outbreak of war the Commonwealth Government agreed to lend to the States (Queensland standing out of the arrangement) the sum of £18,000,000 for the purpose of maintaining the expenditure on public works. The bulk of the money, lent to the States from the Note Account, was advanced in pursuance of that undertaking, and carried interest at 4½ per cent.

**5. London Flotations on behalf of States.**—Act No. 17 of 1916 authorised the Treasurer to borrow £8,940,000 in the United Kingdom, and Act No. 16 of 1917 to raise £8,000,000, and to lend the amount to the several States, other than that of New South Wales, and, pending the borrowing of the money, to advance the amounts set forth in

the Acts out of loans made by the Government of the United Kingdom to the Commonwealth. In pursuance of these Acts, £16,750,000 was distributed to the States up to 30th June, 1919. The money was allocated to the States as follows:—

**COMMONWEALTH LOANS RAISED IN LONDON ON BEHALF OF STATES  
AS AT 30th JUNE, 1919.**

State.	£
Victoria .. .. .	1,954,000
Queensland .. .. .	5,462,500
South Australia .. .. .	4,116,000
Western Australia .. .. .	4,150,500
Tasmania .. .. .	1,067,000
Total .. .. .	16,750,000

In addition to these amounts the Commonwealth Government had advanced as at 30th June, 1919, the sum of £1,087,136 to the States for the purpose of settling returned soldiers on the land. This sum was allocated as follows:—New South Wales, £20,000; Victoria, £738,791; Queensland, £254,036; Western Australia, £53,934; and Tasmania, £20,375. In addition, New South Wales was advanced £15,109, and Victoria £1,160 for the construction of silos for wheat storage.

6. **Surplus Revenue.**—Until the end of 1906–7, the whole balance of the Consolidated Revenue Fund was paid to the States. From 1907–8, and until the abolition of the book-keeping provisions of the Constitution, the States received only three-fourths of the net Customs and Excise Revenue, and the balance of the Consolidated Revenue Fund was transferred to the Invalid and Old-age Pensions Trust Account, and the Naval Defence Trust Account, to provide for expenditure in subsequent years. The surplus existing on 30th June, 1919, is to be used for the payment of Invalid and Old-age Pensions, and War Pensions. A statement of surpluses and deficiencies for the past six years is hereto appended.

**COMMONWEALTH SURPLUS REVENUE, 1913–14 TO 1918–19.**

Year.	Surplus.	Deficiency.	Accumulated Surplus at end of Year.
	£	£	£
1913–14 .. .. .	..	1,418,958	1,224,347
1914–15 .. .. .	..	1,224,347	..
1915–16 .. .. .	3,000,000	..	3,000,000
1916–17 .. .. .	..	922,573	2,077,427
1917–18 .. .. .	1,848,393	..	3,925,820
1918–19 .. .. .	..	402,763	3,523,057

### § 4. Commonwealth Public Debt.

Although it was not until 1915 that the Federal Government appeared before the public as a direct borrower, there had been a Commonwealth Public Debt for many years. It now includes several items, such as the balance of the debt taken over from South Australia, the money owing to the States for transferred properties, the Commonwealth General Loan Fund, the loans for military purposes, etc. In view of the large expansion of the Public Debt, and its present importance in Commonwealth public finance, the different items are treated seriatim in the sub-sections that follow.

1. **Loans Taken Over from South Australia.**—The first portions of the debt were contracted at the beginning of 1911, when the Commonwealth assumed responsibility for the administration and the liabilities of the Northern Territory and the Port Augusta-Oodnadatta Railway. At 30th June, 1911, the debt on account of the former was £3,657,836, and on account of the latter, £2,274,486—a total of £5,932,322. As the securities fall in they are redeemed by the Commonwealth Government, the money



required being taken from the Loan Fund, which was created for this purpose, amongst others. This item is thus a constantly diminishing one, and on 30th June, 1919, stood at £4,192,111, of which £2,433,108 was on account of the Northern Territory, and £1,759,003 on account of the railway.

2. **Loan Fund for Public Works, etc.**—Up to 1911 the Commonwealth Government had met its Public Works expenditure out of Revenue. In that year, however, the Commonwealth being faced with the heavy prospective cost of the Transcontinental Railway and the Federal Capital Territory, it was decided to initiate a Loan Fund similar to those of the States. The flotation of this Fund was greatly assisted by the fact that the Treasury at this time held a large quantity of gold, principally on behalf of the Australian Notes Account, at that time only just inaugurated. Up to 30th June, 1914, the money required for loan expenditure was taken mainly from this account at 3½ per cent., and inscribed stock of an equivalent value created. Since the outbreak of war the creation of inscribed stock has ceased, the money required for the Loan Fund being obtained by the issue of Treasury Bills. The relation between the magnitude of the Loan Fund and the expenditure therefrom is shewn for the last six years in the following table:—

**SECURITIES CONSTITUTING COMMONWEALTH LOAN FUND FOR WORKS, ETC.,  
AND EXPENDITURE THEREFROM, 1914 TO 1919.**

Year ended 30th June —	Commonwealth Loan Fund.			Expenditure in year ended 30th June.	Total Expenditure up to year ended 30th June.	Unexpended Balance.
	Inscribed Stock.	Treasury Bills.	Total Receipts.			
	£	£	£	£	£	£
1914 ..	4,100,000	..	4,100,000	2,155,261	4,003,763	96,237
1915 ..	4,580,000	1,578,202	6,158,202	2,154,439	6,158,202	..
1916 ..	4,580,000	4,437,543	9,017,543	2,859,341	9,017,543	..
1917 ..	4,580,000	4,437,543	9,017,543	..	9,017,543	..
1918 ..	4,580,000	6,240,990	10,820,990	1,803,447	10,820,990	..
1919 ..	4,580,000	7,670,881	12,250,881	1,429,891	12,250,881	..

In addition to the securities enumerated in the preceding table, £371,118 worth of Treasury Bills were issued in 1914-15 in aid of Revenue. They were repaid by the Consolidated Revenue Fund in 1916-17.

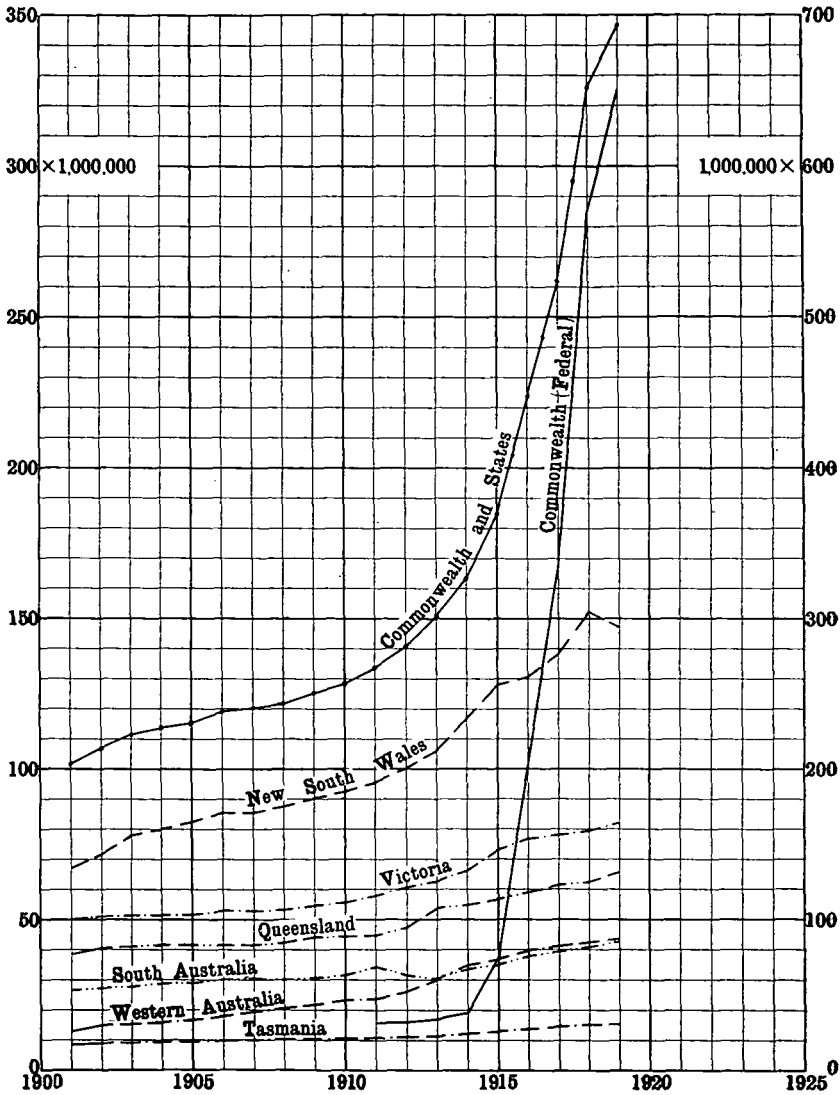
The preceding table gives the total expenditure. The details of the expenditure for six years are as follows:—

**COMMONWEALTH LOAN EXPENDITURE, DETAILS, 1914 TO 1919.**

Particulars.	1913-14.	1914-15.	1915-16.	1916-17.	1917-18.	1918-19.
	£	£	£	£	£	£
Railways Construction—Trans-Australian Railway ..	1,346,040	1,670,459	1,646,953	..	410,596	156,187
Northern Territory ..	126,529	94,392	126,592	..	42,178	(c) 1,226
Loan Redemption—Oodnadatta Railway ..	135,627	15,077	923	..	..	339,408
Northern Territory ..	685	13,042	400,000	..	..	..
Papua—Railways and wharves ..	685	13,042	12,829	..	..	..
Posts and Telegraphs—Purchase of ..	..	..	..	..	..	..
land ..	42,598	84,500	92,712	..	2,811	1,621
Construction of ..	..	..	..	..	..	..
conduits ..	258,407	178,142	271,211	..	67,375	116,760
Acquisition of Land—London (a) ..	64,887	19,274	113,744	..	69,991	46,120
Perth, Western ..	..	..	..	..	..	..
Australia ..	..	..	..	..	24,347	..
Federal Territory ..	180,488	36,770	127,537	..	90,703	1,395
Defence machinery, etc.; Dockyards, ..	..	42,782	66,840	..	440,200	245,802
Cockatoo Island; Naval Bases, etc. ..	..	..	..	..	355,397	250,343
Fleet Construction and Naval Bases ..	..	..	..	..	299,849	273,481
Miscellaneous ..	..	..	..	..	..	..
Total ..	2,155,261	2,154,438	2,859,341	(b) ..	1,803,447	1,429,891

(a) Including cost of erection of buildings. (b) There were no transactions in this Fund for 1916-17, except the cancelling of £371,118 Treasury Bills already referred to. (c) Credited by repayment.

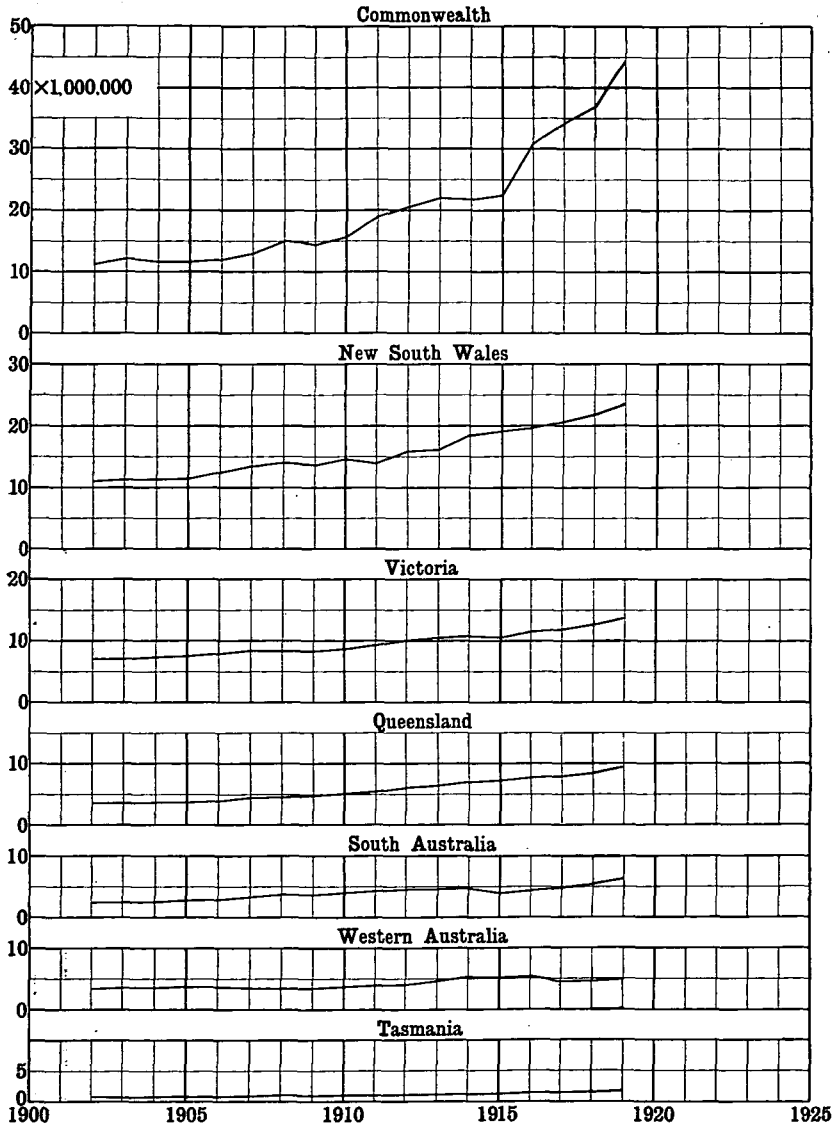
## AUSTRALIAN PUBLIC DEBT—COMMONWEALTH AND STATES, 1900-1 TO 1918-19.



See pp. 784, 802.

EXPLANATION OF GRAPH.—The base of each small square represents an interval of one year, while the vertical height represents £10,000,000 in the case of the Commonwealth (Federal) and States Debts the scale for which is on the left hand side, and £20,000,000 for Commonwealth and States combined the scale for which is on the right hand. The Commonwealth (Federal) debt commenced in the year 1911.

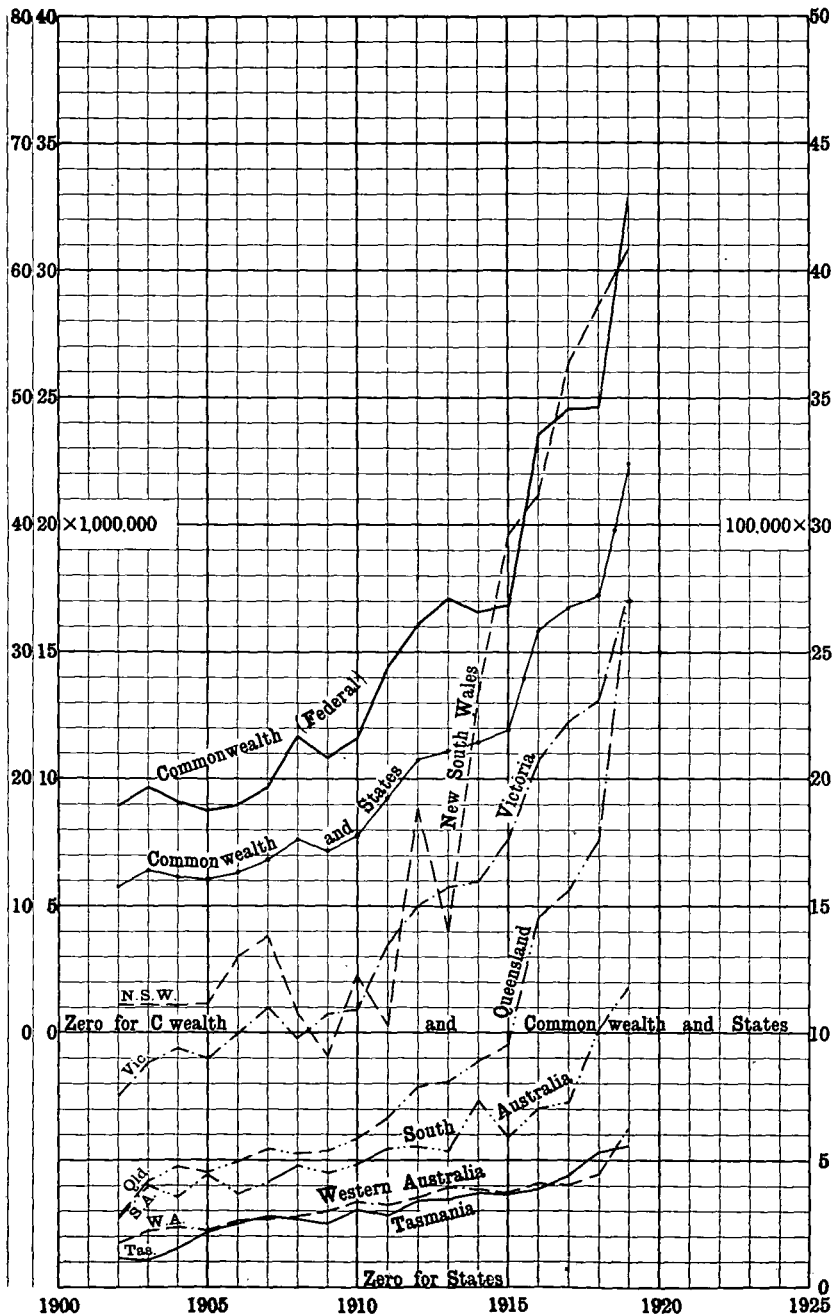
AUSTRALIAN CONSOLIDATED REVENUE—COMMONWEALTH AND STATES, 1901-2 TO 1918-19.



See pp. 756, 788.

EXPLANATION OF GRAPHS.—The base of each small square represents an interval of one year, while the vertical height represents £5,000,000. The zero lines in each case are marked thus "0."

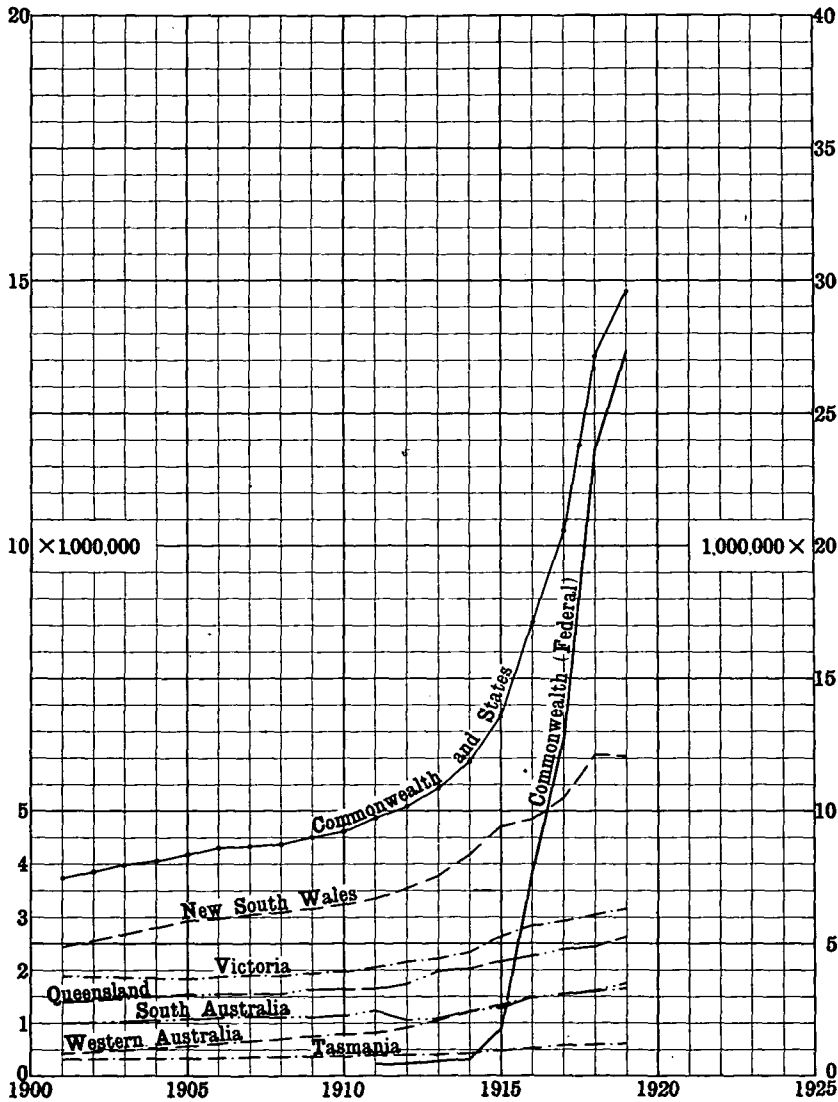
## TAXATION.—COMMONWEALTH AND STATES, 1901-2 TO 1918-19.



See pp. 756, 790.

EXPLANATION OF GRAPH.—The base of each small square represents an interval of one year. Of the two scales on the left-hand the outer one is that for the Commonwealth and States combined, the vertical height of each square representing £2,000,000 and the inner one that for the Commonwealth (Federal), the vertical height representing £1,000,000. The scale on the right-hand is that for the States and the vertical height of each small square represents £100,000.

## INTEREST ON PUBLIC DEBT.—COMMONWEALTH AND STATES, 1900-1 TO 1918-19.



EXPLANATION OF GRAPH.—The base of each small square represents an interval of one year while the vertical height represents £500,000 in the case of the Commonwealth (Federal) and States, the scale for which is on the left-hand side and £1,000,000 in the case of the Commonwealth and States combined for which the scale is on the right-hand side.

The main items in the "Miscellaneous" for 1917-18 were £200,000 capital required for the "Plant and Stores Suspense Account" established by the Commonwealth Railways Act 1917, and £52,410 for an Acetate of Lime Factory. In 1918-19 the only large item in "Miscellaneous" was £55,760 payable as a contribution under the River Murray Waters Act 1915. The expenses of interest and sinking fund are allocated among the different departments which have benefited, as follows:—

**LIABILITIES OF DIFFERENT DEPARTMENTS WITH REGARD TO LOAN FUND,  
1918-19.**

Department.	Interest on Inscribed Stock.	Sinking Fund. Inscribed Stock.	Interest on Treasury Bills.	Total.
	£	£	£	£
Prime Minister .. .. .	17,034	2,433	8,747	28,214
Home and Territories .. .. .	40,974	5,853	43,907	90,734
Defence .. .. .	..	..	5,917	5,917
Navy .. .. .	28	40	42,495	42,563
Trade and Customs.. .. .	..	..	2,200	2,200
Works and Railways .. .. .	83,697	11,957	142,386	238,040
Postmaster-General .. .. .	18,567	16,271	27,853	62,691
<b>Total .. .. .</b>	<b>160,300</b>	<b>36,554</b>	<b>273,505</b>	<b>470,359</b>

3. **Properties Transferred from States.**—At the time of Federation, when the Commonwealth took over the control of a great many departments which had previously been administered by the States, a large amount of property was handed over to the Commonwealth Government. This consisted mainly of Post Offices, Customs Houses, Defence works, and other buildings necessary to the effective working of the transferred departments. In the early days of the "Braddon Clause," when the Federal Government was spending less than its statutory proportion of the Customs revenue, the question of suitable compensation to the States did not become acute; but, when the "Braddon Clause" was replaced by another arrangement between Commonwealth and States, much less favourable to the latter, the time had evidently come to put matters on a more definite footing. In the Commonwealth accounts of the last nine years, certain amounts (independent entirely of the subsidy) have been paid to the States as "Interest on Transferred Properties." These amounts have been substantially based upon a valuation made by the old Home Affairs Department, with the following result:—

**ORIGINAL VALUATION OF TRANSFERRED PROPERTIES.**

State.	Department.				
	Postmaster-General.	Defence.	Trade and Customs.	Home Affairs.	Total.
	£	£	£	£	£
New South Wales .. .. .	2,337,316	1,182,003	154,009	1,320	3,674,648
Victoria .. .. .	1,332,862	805,389	190,657	1,266	2,330,174
Queensland .. .. .	925,628	386,802	202,082	7,356	1,521,868
South Australia .. .. .	842,281	161,140	28,486	815	1,032,722
Western Australia .. .. .	600,895	64,842	37,714	835	704,286
Tasmania .. .. .	214,906	121,490	48,212	143	384,751
<b>Total .. .. .</b>	<b>6,253,888</b>	<b>2,721,666</b>	<b>661,160</b>	<b>11,735</b>	<b>9,648,449</b>

Since the valuation some transfers and retransfers have been made. The estimated value of the transferred properties for the last six years is given in the table in sub-section 7 hereinafter.

4. War Loan from the Imperial Government.—On the outbreak of the European war in 1914, the Commonwealth Government contracted a loan from the Imperial Government for the purpose of financing the large military expenditure which was seen to be inevitable. At first, the arrangement was that the Imperial Government should advance the sum of £18,000,000 in twelve monthly instalments of £1,500,000 each. It was soon found, however, that this would be insufficient, and consequently the Imperial Government made a fresh advance of £6,500,000, also to be paid in monthly instalments. A third loan of £25,000,000 was subsequently contracted for, of which £12,000,000 was received by 30th June, 1916, and £11,000,000 in 1916–17. The total capital debt thus created up to 30th June, 1919, is set out in the following table :—

**CAPITAL DEBT TO IMPERIAL GOVERNMENT ON ACCOUNT OF WAR LOANS,  
30th JUNE, 1919.**

Authority.	Imperial Loans—Capital Debt created up to 30th June, 1919.			
	Issues, 3½%.	Issues, 4½%.	Issues, 5%.	Total.
	£	£	£	£
War Loan Act 1914—£18,000,000 ..	1,263,158	11,500,000	5,757,540	18,520,698
War Loan Act No. 2 1915—£6,500,000 ..	..	..	6,885,656	6,885,656
War Loan Act (United Kingdom) No. 2 1916—£25,000,000 (a) .. ..	..	..	23,675,705	23,675,705
	1,263,158	11,500,000	36,318,901	49,082,059

(a) Only £23,000,000 has been advanced.

In addition to this capital indebtedness, a further sum of £37,139,000 is due to the British Government for the maintenance of Australian troops.

5. Flotation of War Loans in Australia.—In addition to the advances from the Imperial Government, the Commonwealth Government has raised large amounts of money for the prosecution of the war, by direct application to the investing public of Australia. Acts No. 21 and No. 50 of 1915 authorised the Commonwealth to make application for £20,000,000 and £18,000,000 respectively, and in pursuance of these a loan of £5,000,000 was placed upon the market late in 1915, and a further amount of £10,000,000 early in 1916. These issues—unprecedented in Australian finance—were entirely successful, the latter being subscribed twice over, and the former more than two and a-half times. Both loans were issued at par, bore interest at 4½ per cent., and were redeemable on 15th December, 1925. The expenses included a commission of two shillings per cent. to the Commonwealth Bank, commission to brokers at ½ per cent., and miscellaneous items such as printing. The total cost of flotation, however, was most moderate, amounting only to £86,103, or less than five shillings per cent. of the amount subscribed. The two Acts already mentioned were succeeded by a third, which authorised the Commonwealth Parliament to raise a further sum of £50,000,000. In pursuance of this a third issue was placed upon the market, closing on 1st August, 1916, and subsequently a fourth issue, closing on 8th February, 1917. It may be mentioned that whilst the expenses of flotation were small, the accrued interest was by no means negligible. Owing mainly to this, the net proceeds to the Federal Government only amounted to about 98½ per cent., consequently, when allowance is made for redemption at par, the Government pays about £4 14s. per cent. interest, instead of the nominal 4½ per cent. In view, however, of the advancing rate of interest, this could not be called excessive.

A fifth Commonwealth War Loan, floated in November, 1917, realised £21,213,780, and a sixth loan, floated in April, 1918, realised £42,951,120. The sixth issue differed from the preceding ones in that it gave the investor the option of 4½ per cent. free of income tax, or 5 per cent. subject to tax, the bulk of the money being invested in the former security. The fifth and sixth loans, moreover, are redeemable on 15th December, 1927, thus to a large extent relieving the pressure on 1925 as year of maturity.

A seventh loan was floated in September and October, 1918. It was entirely a 5 per cent. loan, was repayable in 1923 after a currency of 5 years, and realised £44,083,750. Full particulars of the respective issues are as follows:—

## PARTICULARS OF LOCAL AUSTRALIAN WAR LOANS, TO 30th JUNE, 1919.

Heading.	1st Issue.	2nd Issue.	3rd Issue.	4th Issue.	5th Issue.	6th Issue.		7th Issue.	Total.
						4½ per cent.	5 per cent.		
	No.	No.	No.	No.	No.	No.	No.	No.	No.
Number of Subscribers—									
For Inscribed Stock ..	8,603	12,450	13,660	13,666	9,882	17,781	8,549	16,303	100,894
For Treasury Bonds ..	10,145	16,495	88,382	53,806	31,826	72,526	45,008	228,891	545,079
Total ..	18,748	28,945	102,042	67,472	41,708	90,307	53,557	243,194	645,973
Amount Subscribed—	£	£	£	£	£	£	£	£	£
For Inscribed Stock ..	9,581,120	16,271,710	15,417,880	14,695,240	14,276,790	14,169,600	4,441,470	14,886,730	103,740,540
For Treasury Bonds ..	3,808,320	5,383,970	8,169,770	6,888,780	6,936,990	22,157,780	2,182,270	29,197,020	84,724,900
Total ..	13,389,440	21,655,680	23,587,650	21,584,020	21,213,780	36,327,380	6,623,740	44,083,750	188,465,440
						42,951,120			
Accrued Interest	221,502	324,169	326,887	254,071	239,319	423,589	72,767	361,010	2,223,314
Expenses of Flotation ..	35,451	50,652	52,278	45,795	53,317	103,403	18,854	140,410	500,160
Total deductions	256,953	374,821	379,165	299,866	292,636	526,992	91,621	501,420	2,723,474
Net proceeds of Loan ..	13,132,487	21,280,859	23,208,485	21,284,154	20,921,144	35,800,388	6,532,119	43,582,330	185,741,966
						42,332,507			
Amount required	5,000,000	10,000,000	No definite amount asked for.	18,000,000	20,000,000	40,000,000		40,000,000	..

6. Total Commonwealth Public Debt.—Separate consideration has already been given to the items composing the Public Debt. The table appended to this sub-section shows the entire debt of the Commonwealth (apart from the States) at yearly intervals since 1914. The liability on account of the note issue is excluded, but the liability on account of the transferred properties has been included for the entire period. The Commonwealth Public Accounts first took cognizance of this item in 1913 although the debt had been incurred much earlier.



## PUBLIC DEBT OF THE COMMONWEALTH AS AT 30th JUNE, 1914 TO 1919.

Details.	1914.	1915.	1916.	1917.	1918.	1919.
	£	£	£	£	£	£
Balance of loans taken over from South Australia—						
(a) On account of Northern Territory ..	3,359,891	3,359,891	2,778,266	2,772,516	2,772,516	2,433,108
(b) On account of Oodnadatta railway ..	1,935,431	1,920,354	1,896,132	1,759,003	1,759,003	1,759,003
Value of properties transferred by States ..	9,787,011	10,777,161	10,781,797	10,789,739	11,202,515	11,202,619
Amount of Commonwealth Loan Fund—						
Inscribed Stock ..	4,100,000	4,580,000	4,580,000	4,580,000	4,580,000	4,580,000
Treasury Bills ..	..	1,949,319	4,808,661	4,437,543	6,240,990	7,670,881
War Loan from British Government ..	..	14,842,105	36,774,269	47,774,269	49,082,059	49,082,059
Commonwealth Internal Loans ..	..	..	34,965,430	80,242,510	143,190,680	184,437,870
Accrued Deferred Pay, A.I.F. States ..	..	..	4,759,730	9,373,977	10,309,908	5,500,000
Loans raised on behalf of States ..	..	..	..	7,500,000	12,000,000	16,750,000
Miscellaneous ..	..	..	..	..	42,917,398	42,355,207
Total ..	19,182,333	37,423,830	101,344,285	169,229,557	284,055,069	325,770,747
Commonwealth Debt per capita ..	£3 17 11	£7 11 6	£20 13 5	£34 11 3	£57 0 8	£63 7 6

It will be noticed that the amount of the Commonwealth Internal Loans does not quite agree with the totals of the first seven issues in the table on page 783. This is owing to the fact that stock to a considerable amount has been presented as payment of Estate Duty, and cancelled, the payments being accepted in accordance with the provisions of section 5 of the Commonwealth Inscribed Stock Act 1915. The amount of £184,437,870 is the balance of the first seven issues. To this must be added £5,193,912 raised by the sale of War Savings Certificates, and £22,295 by the sale of War Savings Stamps. The item "Miscellaneous" is made up of the last two amounts and a sum of £37,139,000 due to the British Government for the maintenance of Australian troops.

7. *Place of Flotation.*—The loans taken over from South Australia, which constituted the first portion of the Federal Public Debt, included both London and Australian securities. The presence in the Treasury of a large holding of gold, and the moderate rate of interest ruling on gilt-edged securities, made the conditions in 1911, and for some little time afterwards, very favourable for the flotation of local loans. London securities were redeemed as they fell due, and replaced by the 3½ per cent. stock of the Loan Fund. Consequently, up to 1914 the amount of the securities repayable in London fell steadily, and the amount repayable in Australia rose rapidly. In 1915, however, the military loan from the Imperial Government caused a sharp rise in the amount of the securities repayable in London, which was maintained in the two following years. This was, however, more than offset by the flotation of the local war loans. Appended is a table shewing particulars of the loans of the Commonwealth for six financial years which have been floated in London and Australia respectively. A separate column is reserved for the cost of the transferred properties, which, for obvious reasons, it is impossible to allocate:—

## COMMONWEALTH PUBLIC DEBT.—LONDON AND AUSTRALIAN FLOTATIONS, 1914 TO 1919.

Year ended 30th June—	Payable in—		Value of Transferred Properties.	Total.
	London.	Australia.		
	£	£	£	£
1914 .. ..	3,510,921	5,884,401	9,787,011	19,182,333
1915 .. ..	18,337,949	8,313,720	10,777,161	37,428,830
1916 .. ..	40,063,440	50,499,048	10,781,797	101,344,285
1917 .. ..	58,426,312	100,013,506	10,789,739	169,229,557
1918 .. ..	102,579,102	170,273,452	11,202,515	284,055,069
1919 .. ..	106,123,102	208,445,026	11,202,619	325,770,747

8. **Rates of Interest.**—When the first debt was taken over from South Australia it consisted in the main of a mass of securities varying from 3 per cent. to 4 per cent., the average rate of interest for the first year being £3 12s. 4d. For the first three years the increase in the debt was due almost entirely to the expansion of the 3½ per cent. stock of the Loan Fund, and as a consequence the average rate of interest fell steadily, until on 30th June, 1914, it stood at £3 11s. 10d. Then came the loans for military purposes, and the fall in the average rate was ultimately converted into a rise which is likely to be maintained, since there is not likely to be any further borrowing for some time at a rate of less than 5 per cent. In fact, the influence of the heavy borrowing of the last four years at high rates is already reflected in the average rate of interest, which rose during that period by more than 1 per cent. It is notoriously difficult to forecast the future of the rate of interest, but the influence of the large Imperial War Loans on gilt-edged securities has been so far-reaching, that in all probability during the next decade the average rate of interest on the Federal Public Debt will rise continuously.

The accompanying table gives full particulars concerning the interest for the six financial years ended 30th June, 1919 :—

#### RATES OF INTEREST ON COMMONWEALTH PUBLIC DEBT, 1914 TO 1919.

Rates of Interest.	Year ended 30th June—					
	1914.	1915.	1916.	1917.	1918.	1919.
%	£	£	£	£	£	£
Not bearing interest ..	..	..	4,759,730	9,373,977	..	..
3 ..	35,612	35,612	35,063	35,063	35,063	35,063
3½ ..	14,058,768	30,371,023	16,796,712	16,804,654	17,217,430	17,217,534
£3/12/3	748,404	748,404	720,411	720,411	720,411	720,411
3¾ ..	1,798,383	1,798,383	1,399,758	1,394,008	1,394,008	1,054,600
4 ..	2,541,166	4,475,408	7,156,070	6,647,823	8,451,270	9,881,161
4½ ..	..	..	56,076,541	101,353,621	200,261,846	192,766,897
5 ..	..	..	14,400,000	25,400,000	43,975,041	87,345,081
5¼ ..	..	..	..	4,000,000	4,000,000	4,000,000
5½ ..	..	..	..	3,500,000	8,000,000	12,750,000
Total ..	19,182,333	37,428,830	101,344,285	169,229,557	284,055,069	325,770,747
Average rate of interest ..	£3/11/10	£3/11/6	£4/2/10	£4/4/8	£4/10/9	£4/12/2

A table is appended shewing the amounts payable as interest on the Commonwealth Public Debt as at 30th June in the years 1914–19 inclusive. The rapid increase is due not only to the great expansion of the War Loan Fund, but also to the high rate of interest on recent loans.

#### AMOUNT OF INTEREST PAYABLE ON COMMONWEALTH PUBLIC DEBT AS AT 30th JUNE—

Year.	£
1914 ..	689,247
1915 ..	1,337,546
1916 ..	4,196,404
1917 ..	7,166,105
1918 ..	12,879,793
1919 ..	15,017,497

9. **Dates of Maturity.**—A table is appended giving the dates of maturity of the several portions of the Commonwealth debt. The Commonwealth Government has refrained from issuing interminable stock, although as regards about one-fifth of the

debt no definite date of maturity had been assigned on 30th June, 1918. It will be noticed that about £200,000,000 falls due in the space of four years, 1923-27, the bulk of this being represented by the balance of the first seven internal loans.

**DUE DATES OF THE COMMONWEALTH PUBLIC DEBT OUTSTANDING ON  
30th JUNE, 1919.(a)**

Due Dates.	Amounts.	Due Dates.	Amounts.	Due Dates.	Amounts.
	£		£		£
1920 ..	176,714	1926 ..	66,801	1939 ..	860,291
1921 ..	47,100	1927 ..	76,126,565	1945 ..	11,500,000
1922 ..	4,000,125	1928 ..	1,263,158	1947 ..	36,318,901
1923 ..	43,381,370	1930 ..	750,950	1972 ..	4,580,000
1924 ..	1,553,952	1935 ..	40,063	Indefinite ..	66,783,620
1925 ..	77,694,380	1936 ..	626,757		
				Total ..	325,770,747

(a) Those loans in the case of which the Government has the option of redemption during a specified period have been in each case classified according to the latest date of maturity.

On pages 777 and 778 will be found a series of graphs illustrating the rise in the revenue, public debt, and taxation of the Commonwealth and States since 1902, the year 1901-2 being the first complete financial year since Federation.

## SECTION XX.

### STATE FINANCE.

#### § 1. General.

1. **Functions of State Governments.**—In any comparison of the finances of the several States due recognition must be made of the actual functions assumed by the respective Governments, and of the local conditions and requirements in each case. Direct comparisons of public expenditure are thus rendered difficult, owing to the fact that functions which in one State are assumed by the Central Government are in another State relegated to local governing bodies, and further by the fact that costly developmental work may, under certain conditions, be not only economically justifiable, but may be an essential of progress, whilst parsimonious expenditure may be a serious economic blunder. A large expenditure may, therefore, be an indication either of gross extravagance and bad economy on the one hand, or of healthy and vigorous progress and good economy on the other.

Similarly, as regards revenue, imposts which in some States are levied by the Central Government, are in others considered as matters to be dealt with locally. Under these circumstances care is needed in instituting comparisons between the several States, and the particulars contained in this section should be read in connexion with those contained in the section dealing with Local Government. It should also be noted that in many ways the budgets of the Australian Governments differ materially from those of most European countries, owing to the inclusion therein of the revenue and expenditure of departments concerned in rendering public services, such for instance as railways, tramways, water supply, etc., which, in other countries are often left to private enterprise.

2. **Accounts of State Governments.**—The various financial transactions of the States are in each case concerned with one or other of three Funds—the “Consolidated Revenue Fund,” the “Trust Funds,” and the “Loan Funds.” All revenue collected by the State is placed to the credit of its Consolidated Revenue Fund, from which payments are made under the authority of an Annual Appropriation Act passed by the Legislature, or by a permanent appropriation under a special Act. The hypothecation of the revenue from a specific tax to the payment for some special service is not practised in Australia, all statutory appropriations ranking on an equality as charges on the Consolidated Revenue Fund. The Trust Funds comprise all moneys held in trust by the Government, and include such items as savings banks funds, sinking funds, insurance companies’ deposits, etc. The Loan Funds are credited with all loan moneys raised by the State, and debited with the expenditure therefrom for public works or other purposes.

3. **Inter-relation of Commonwealth and State Finance.**—The principal alteration in State finance, brought about by Federation, has been that the States have transferred to the Commonwealth the large revenue received by the Customs and Postal Departments and have been relieved of the expenditure connected with these and the Defence Departments, while, in their place, a new item of State revenue has been introduced, viz., the payment to the States of a Commonwealth subsidy. Provision for the taking over by the Commonwealth of certain of the public debts of the States is made in section 105 of the Constitution, and a proposed law extending this provision to the whole of the State indebtedness, which passed both Houses of the Federal Legislature by the statutory majority, was submitted to a referendum at the election in April, 1910, and received the requisite endorsement by the electorate. No action has as yet been taken, although the subject has, on more than one occasion, been under discussion.

## § 2. State Consolidated Revenue Funds.

### (A) Receipts.

1. **Sources of Revenue.**—The principal sources of State revenue are :—

- (a) Taxation.
- (b) The public works and services controlled by the State Governments.
- (c) Sale of and rental from Crown lands.
- (d) The Commonwealth subsidy.
- (e) Miscellaneous sources, comprising fines, fees, interest, etc.

Of these sources, that yielding the largest revenue for the States as a whole is the group of public works and services, the principal contributor being the Government railways and tramways. Next in magnitude comes Taxation, followed in order by the Commonwealth Subsidy and Land Revenue.

2. **Amount Collected.**—The following table furnishes particulars of the total amount of consolidated revenue received by the several States during the six years 1913-14 to 1918-19 :—

STATE REVENUE, 1913-14 TO 1918-19.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	All States.
	£	£	£	£	£	£	£
1913-14	18,298,625	10,730,961	6,973,259	4,822,766	5,205,343	1,238,085	47,269,039
1914-15	18,928,551	10,529,017	7,202,658	3,973,310	5,140,725	1,244,095	47,018,356
1915-16	19,629,442	11,470,875	7,706,365	4,356,967	5,356,978	1,376,493	49,897,120
1916-17	20,537,835	11,813,879	7,880,893	4,874,603	4,577,007	1,369,368	51,053,585
1917-18	21,577,229	12,672,787	8,491,482	5,526,226	4,622,536	1,503,047	54,393,307
1918-19	23,448,166	13,044,088	9,415,543	5,798,313	4,944,850	1,581,984	58,232,944

The figures given in this table relate in each instance to the financial year ended 30th June.

During the five years from 30th June, 1914, to 30th June, 1919, the aggregate revenues of the States increased by no less a sum than £10,963,905, or about 24 per cent. Increases were in evidence in all the States except Western Australia, the largest being that of £5,149,541 in New South Wales. This general advance is the more notable since, during recent years, a much smaller amount has been received from the Commonwealth, in the way of subsidy, than was the case up to 1910.

3. **Revenue per Head.**—Details concerning the revenue per head of population, collected in the several States of the Commonwealth during the six years 1913-14 to 1918-19, are furnished in the table given hereunder. It will be seen that throughout the period Western Australia has collected by far the largest amount per head, and that Tasmania has collected the least.

STATE REVENUE PER HEAD OF POPULATION, 1913-14 TO 1918-19.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	All States.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
1913-14 ..	9 19 10	7 12 0	10 11 3	10 19 2	16 4 8	6 2 9	9 14 1
1914-15 ..	10 3 1	7 7 2	10 12 10	8 19 11	15 18 3	6 3 6	9 10 3
1915-16 ..	10 10 1	8 1 10	11 6 6	9 18 2	16 16 11	6 16 11	10 2 4
1916-17 ..	11 1 0	8 8 9	11 15 4	11 5 9	14 16 5	6 17 0	10 9 5
1917-18 ..	11 9 7	8 19 7	12 6 8	12 13 4	14 18 9	7 8 0	11 0 5
1918-19 ..	12 3 0	9 2 4	13 11 2	13 0 2	15 15 6	7 11 6	11 11 6

In all the States, during the period, with the exception of Western Australia, there has been a marked increase in the State revenue collections per head, the most noticeable advance being £2 19s. 11d. in the case of Queensland. Western Australia throughout the period has led the other States, and in 1918-19 the revenue per head in that State exceeded the Commonwealth average by about 36 per cent. South Australia shewed a marked decline in 1914-15, due largely to a diminished revenue from public works and services, but has since recovered.

4. Details for 1918-19.—Classifying the revenue of the several States in the manner indicated in § 2 (A) 1 above, particulars for the year 1918-19 are as follows :—

## DETAILS OF STATE REVENUE, 1918-19.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	All States.
	£	£	£	£	£	£	£
Taxation ..	4,083,990	2,744,946	2,772,269	1,185,451	629,061	555,537	11,971,254
Public works and services ..	14,490,493	7,122,668	4,115,269	3,314,008	2,681,017	493,069	32,216,524
Land ..	1,828,407	285,636	1,083,853	290,378	345,065	85,571	3,918,910
Commonwealth subsidy ..	2,380,139	1,764,239	853,367	549,593	556,505	(a) 347,557	6,451,400
Miscellaneous ..	665,137	1,126,599	590,785	458,883	733,202	100,250	3,674,856
Total ..	23,448,166	13,044,088	9,415,543	5,798,313	4,944,850	1,581,984	58,232,944

(a) Including special grant of £90,000.

It will be noted that the amounts returned under the heading "Commonwealth subsidy" do not always agree with those given in the chapter on Commonwealth Finance, page 772. This arises from the fact that the State figures shew the amount for which credit was taken by the State during the financial year 1918-19, whilst the Commonwealth figures shew the amounts paid to State Treasurers on account of that financial year.

5. Revenue per Head, 1918-19.—Particulars concerning the revenue per head of population in each State derived from the several sources enumerated in the preceding paragraph are given hereunder :—

## STATE REVENUE FROM VARIOUS SOURCES PER HEAD OF POPULATION, 1918-19.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	All States.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Taxation ..	2 2 4	1 18 4	3 19 10	2 13 2	2 0 2	2 13 2	2 7 7
Public works and services ..	7 10 2	4 19 7	5 18 6	7 8 9	8 11 1	2 7 3	6 8 1
Land ..	0 18 11	0 4 0	1 11 3	0 13 0	1 2 0	0 8 2	0 15 7
Commonwealth subsidy ..	1 4 8	1 4 8	1 4 7	1 4 8	1 15 6	1 13 4	1 5 8
Miscellaneous ..	0 6 11	0 15 9	0 17 0	1 0 7	2 6 9	0 9 7	0 14 7
Total ..	12 3 0	9 2 4	13 11 2	13 0 2	15 15 6	7 11 6	11 11 6

The magnitude of the revenue per head from public works and services in the case of Western Australia is mainly due to the fact that the number of miles of railway in that State is large compared with the population, while the revenue-earning power of the railways is also high.

6. Relative Importance of Sources of Revenue.—The following table furnishes an indication of the relative importance of the different sources of revenue in the several

States, the figures given being the percentage which each item of revenue bears to the total for the State for the year 1918-19 :—

PERCENTAGE OF ITEMS ON TOTAL STATE REVENUE, 1918-19.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	All States.
	%	%	%	%	%	%	%
Taxation .. ..	17.41	21.04	29.44	20.44	12.72	35.11	20.56
Public works and services ..	61.80	54.60	43.71	57.15	54.22	31.17	55.33
Land .. ..	7.80	2.19	11.51	5.01	6.98	5.41	6.72
Commonwealth subsidy .. ..	10.15	13.53	9.06	9.50	11.25	21.97	11.08
Miscellaneous .. ..	2.84	8.64	6.28	7.90	14.83	6.34	6.31
Total .. ..	100.00	100.00	100.00	100.00	100.00	100.00	100.00

7. State Taxation.—(a) *Details, 1918-19.* Prior to the inauguration of Federation the principal source of revenue from taxation was the return from duties of Customs and Excise. At the present time the most productive form of State taxation is the income tax, which is now imposed in all the States (Western Australia, the last of the States to adopt this method of taxation, having passed the necessary legislation during the Parliamentary session of 1907). For 1918-19 probate and succession duties and stamp duties occupied second place. In addition to these a State land tax is now collected in all the States, license fees of various kinds are also collected in all the States, while a dividend tax is levied in Western Australia. The total revenue from taxation collected by the States during the year 1918-19 was £11,971,254, details of which are set forth in the table given hereunder :—

STATE REVENUE FROM TAXATION, 1918-19.

Taxation.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	All States.
	£	£	£	£	£	£	£
Probate and succession duties	575,875	718,194	387,742	221,729	40,329	64,410	3,701,584
Other stamp duties .. ..	687,304	583,818	213,130	112,104	96,949		1,180,793
Land tax .. ..	2,800	324,232	578,253	154,621	34,182	86,705	6,123,446
Income tax .. ..	2,355,243	928,210	1,677,335	542,007	(a)359,623	261,028	515,233
Licenses .. ..	167,359	179,338	85,054	28,706	40,324	14,452	450,198
Other taxation .. ..	295,409	11,154	43,885	25,258	42,499	31,993	
Total .. ..	4,083,990	2,744,946	2,772,269	1,185,451	629,061	555,537	11,971,254

(a) Includes £133,062 dividend tax.

(b) *Summary, 1913-14 to 1918-19.* The total amount raised by means of taxation by the several State Governments during the six years 1913-14 to 1918-19 is given in the following table :—

STATE REVENUE FROM TAXATION, 1913-14 TO 1918-19.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	All States.
	£	£	£	£	£	£	£
1913-14 ..	2,330,005	1,598,876	887,798	730,640	386,104	371,413	6,304,836
1914-15 ..	2,955,670	1,762,041	954,457	588,690	371,960	367,577	7,000,395
1915-16 ..	3,117,221	2,074,839	1,455,358	701,511	407,997	384,820	8,141,746
1916-17 ..	3,629,404	2,237,016	1,564,044	726,645	402,336	438,632	8,998,077
1917-18 ..	3,860,501	2,310,723	1,761,232	1,016,887	449,457	533,383	9,932,183
1918-19 ..	4,083,990	2,744,946	2,772,269	1,185,451	629,061	555,537	11,971,254

During the period between 30th June, 1914, and 30th June, 1919, the aggregate State revenue from taxation increased by about 90 per cent., the increase varying considerably in the several States. The remarkable increase of the last five years in New South Wales is due principally to the broadening of the basis of the State Income Tax, and increased receipts from Stamp Duties. Queensland collected a land tax for the first time in 1915-16, and substantially increased the income tax in 1918-19. Tasmania imposed in 1917-18 a super tax on incomes, and a tax on motor vehicles. The total increase in State taxation for the year 1918-19 amounted to £2,039,071, or more than 20 per cent.

The revenue from State taxation per head of population, collected in the several States during each of the years 1913-14 to 1918-19, was as follows :—

## STATE TAXATION PER HEAD, 1914-15 TO 1918-19.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	All States.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
1913-14 ..	1 5 5	1 2 8	1 6 11	1 13 2	1 4 1	1 16 10	1 5 11
1914-15 ..	1 11 8	1 4 8	1 8 2	1 6 8	1 3 0	1 16 6	1 8 4
1915-16 ..	1 13 4	1 9 3	2 2 9	1 11 11	1 5 8	1 18 3	1 13 0
1916-17 ..	1 19 1	1 12 0	2 6 9	1 13 8	1 6 1	2 3 11	1 16 11
1917-18 ..	2 1 1	1 12 9	2 11 2	2 6 7	1 9 1	2 12 6	2 0 3
1918-19 ..	2 2 4	1 18 4	3 19 10	2 13 2	2 0 2	2 13 2	2 7 7

Taking the States as a whole, the State taxation increased by 21s. 8d. per head during the period from 1913-14 to 1918-19, the most marked increase occurring in the case of Queensland. Most of the advance took place in the last two years, and was chiefly due to the Land Tax.

8. Commonwealth and State Taxation.—For the purpose of obtaining an accurate view of the extent of taxation imposed on the people of the Commonwealth by the central governing authorities, it is necessary to add together the Commonwealth and State collections. This has been done in the table given hereunder, which contains particulars concerning the total taxation for each of the years 1913-14 to 1918-19, as well as the amount per head of population :—

## COMMONWEALTH AND STATE TAXATION, 1913-14 TO 1918-19.

Particulars.	1913-14.	1914-15.	1915-16.	1916-17.	1917-18.	1918-19.
	£	£	£	£	£	£
Commonwealth taxation ..	16,587,906	16,870,596	23,533,529	24,527,040	24,660,743	32,864,486
State taxation ..	6,304,836	7,000,395	8,141,746	8,998,077	9,932,183	11,971,254
Total ..	22,892,742	23,870,991	31,675,275	33,525,117	34,538,926	44,835,740
Taxation per head ..	£4/14/0	£4/16/7	£6/8/5	£6/17/6	£7/0/0	£8/18/3

Whilst the Commonwealth taxation increased during the period by £16,276,580, the State taxation advanced by £5,666,418, the aggregate increase being £21,942,998. The amount *per capita* of total taxation remained fairly constant for some years previous to 1914-15, at an average of about £4 15s. In the last four years, however, it has reached



an abnormally high amount, owing to the imposition of fresh direct taxation by the Commonwealth Government. The large increase in Commonwealth taxation in recent years is mainly due to the appearance of the Federal land tax, Federal income tax, Federal succession duties, and other taxes.

9. **Public Works and Services.**—A very large proportion of the revenue of all the States of the Commonwealth is made up of the receipts from the various public works and services under the control of the several Governments. The principal of these are railways and tramways, harbour works, and water supply and sewerage, while in addition, State batteries for the treatment of auriferous ores exist in Western Australia, and various minor revenue-producing services are rendered by the Governments of all the States. For the year 1918-19 the aggregate revenue from these sources totalled £32,216,524, or nearly 55 per cent. of the revenue from all sources. Details of revenue from public works and services for the year 1918-19 are as follows:—

#### STATE REVENUE FROM PUBLIC WORKS AND SERVICES, 1918-19.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	All States.
	£	£	£	£	£	£	£
Railways and tramways ..	12,183,026	6,422,133	3,983,077	2,379,808	2,012,811	397,146	27,378,001
Harbour services ..	705,830	101,210	31,430	238,503	106,287	..	1,183,260
Public batteries ..	..	828	..	..	57,876	..	58,704
Water supply and sewerage	1,234,340	2234,846	..	300,114	371,615	..	2,140,915
Other public services ..	367,297	363,651	150,762	395,583	132,428	95,223	1,455,644
<b>Total .. ..</b>	<b>14,490,493</b>	<b>7,122,668</b>	<b>4,115,269</b>	<b>3,314,008</b>	<b>2,681,017</b>	<b>493,069</b>	<b>32,216,524</b>

(a) Water supply only.

10. **Land Revenue.**—The revenue derived by the States from the sale and rental of Crown lands has, with few exceptions, been treated from the earliest times as forming part of their respective Consolidated Revenue Funds, and has been applied to meet ordinary current expenses. Where the rentals received are for lands held for pastoral or for residential purposes, such application of the revenue appears perfectly justifiable. On the other hand, where the rentals are those of mineral and timber lands, and in all cases of sales of lands, such a proceeding is essentially a disposal of capital in order to defray current expenses and as a matter of financial procedure is open to criticism. In the following table particulars of revenue derived from sales and rental of Crown lands are given for the year 1918-19:—

#### STATE LAND REVENUE, 1918-19.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	All States.
	£	£	£	£	£	£	£
Sales ..	1,059,923	138,648	291,890	151,116	300,604	50,686	1,992,867
Rentals ..	768,484	146,988	791,963	139,262	44,461	34,885	1,926,043
<b>Total ..</b>	<b>1,828,407</b>	<b>285,636</b>	<b>1,083,853</b>	<b>290,378</b>	<b>345,065</b>	<b>85,571</b>	<b>3,918,910</b>

11. **Commonwealth Subsidy.**—The payments to the States of Commonwealth subsidy represent in each instance a considerable proportion of the States' revenue, and for the year 1918-19 aggregated £6,451,400. This represents a great decline from the amounts

received up to 1910, owing to the new system of allotting the subsidy. The percentage which the subsidy received by each State for 1918-19 was of the total revenue of that State is shewn in the following table :—

**COMMONWEALTH SUBSIDY PAID TO STATES DURING 1918-19.**

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	All States.
	£	£	£	£	£	£	£
Commonwealth subsidy	2,380,139	1,764,239	853,367	549,593	556,505	(a) 347,557	6,451,400
Total revenue	23,448,166	13,044,088	9,415,543	5,798,313	4,944,850	1,581,984	58,232,944
Percentage of subsidy on revenue	% 10.15	% 13.53	% 9.06	% 9.50	% 11.25	% 21.97	% 11.08

(a) Including special grant of £90,000.

The amount of subsidy here shewn is that for which the several States took credit during the year 1918-19. (See also page 789.)

**12. Miscellaneous Items of Revenue.**—In addition to the foregoing sources of revenue there are in each State several miscellaneous ones, including such items as interest, fines, fees, etc., which for the year 1918-19 aggregated £3,674,856.

**(B) Disbursements.**

**1. Heads of Expenditure.**—The principal heads of State expenditure from Consolidated Revenue Funds are :—

- (a) Interest and sinking funds in connection with public debt.
- (b) Working expenses of railways and tramways.
- (c) Justice.
- (d) Police.
- (e) Penal establishments.
- (f) Education.
- (g) Medical and charitable expenditure.
- (h) All other expenditure.

Of these items, that of working expenses of railways and tramways was the most important, and for the year 1918-19 represented about 35 per cent. of the aggregate expenditure from the Consolidated Revenue Fund. Next in order for that year was the item of interest and sinking fund in connexion with the public debt, then education, medical and charitable expenditure, and police in the order named.

**2. Total Expenditure.**—The total expenditure from Consolidated Revenue Funds in the several States during each of the years 1913-14 to 1918-19 is furnished in the table given hereunder :—

**STATE EXPENDITURE, CONSOLIDATED REVENUE FUNDS, 1913-14 TO 1918-19.**

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	All States.
	£	£	£	£	£	£	£
1913-14	17,701,851	10,717,642	6,962,516	4,604,130	5,340,754	1,235,014	46,561,907
1914-15	17,935,748	11,706,968	7,199,399	4,662,395	5,706,542	1,384,150	48,595,202
1915-16	18,931,814	11,683,363	7,671,573	4,741,377	5,705,201	1,340,711	50,074,039
1916-17	20,806,633	11,795,295	8,134,387	5,190,453	5,276,764	1,412,893	52,616,425
1917-18	21,553,405	12,631,169	8,900,934	5,500,419	5,328,279	1,459,748	55,373,954
1918-19	23,233,398	13,023,407	9,587,532	5,876,811	5,596,864	1,644,512	58,962,524

As in the case of the table previously given for revenue, the above figures relate to the year ended 30th June.

3. **Expenditure per Head.**—Owing to the varying conditions of the several States and the extent to which the different functions of Government are distributed therein between central and local governing authorities, the expenditure per head from Consolidated Revenue Funds differs materially in the several States, being highest in the case of Western Australia and lowest in that of Tasmania. The expenditure per head of population for each State for the years 1913–14 to 1918–19 is as follows :—

#### STATE EXPENDITURE PER HEAD, 1913–14 TO 1918–19.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	All States.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
1913–14	9 13 3	7 11 10	10 10 11	10 9 3	16 13 1	6 2 6	9 11 2
1914–15	9 12 8	8 3 8	10 12 7	10 11 1	17 13 4	6 17 5	9 16 8
1915–16	10 2 7	8 4 10	11 5 6	10 15 8	17 18 10	6 13 4	10 3 1
1916–17	11 3 11	8 8 6	12 3 0	12 0 5	17 1 9	7 1 4	10 15 10
1917–18	11 9 3	8 19 0	12 18 6	12 12 2	17 4 5	7 3 8	11 4 5
1918–19	12 0 9	9 2 0	13 16 2	13 3 8	17 17 1	7 17 6	11 14 5

The total expenditure per head has increased every year in the period under review, although there have been fluctuations in the individual States.

4. **Details of Expenditure for 1918–19.**—The following table furnishes for the year 1918–19 particulars as to the expenditure of the several States under each of the principal heads :—

#### DETAILS OF STATE EXPENDITURE, 1918–19.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	All States.
	£	£	£	£	£	£	£
Public debt (interest, sinking fund, etc.) ..	5,493,067	3,388,525	2,557,687	1,753,801	1,976,876	687,771	15,857,727
Railways and tramways (working expenses) ..	8,729,567	4,261,082	3,701,134	1,866,712	1,679,812	340,190	20,578,497
Justice ..	380,409	166,675	127,205	56,354	59,069	13,351	803,066
Police ..	646,955	401,864	249,802	151,069	133,706	54,960	1,638,356
Penal establishments ..	87,375	54,268	35,346	24,216	21,596	6,418	229,719
Education ..	2,125,659	1,238,873	804,744	412,588	386,284	160,009	5,123,157
Medical and charitable ..	1,003,246	763,692	748,669	270,280	310,737	121,183	3,217,807
All other expenditure ..	4,766,620	2,748,428	1,365,942	1,341,791	1,028,784	260,630	11,512,195
Total ..	23,233,398	13,023,407	9,587,532	5,876,811	5,596,864	1,644,512	58,962,524

5. **Expenditure per Head, 1918–19.**—The expenditure per head of population of the several States for the year 1918–19 under each of the principal items, is given hereunder :—

#### STATE EXPENDITURE PER HEAD, 1918–19.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	All States.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Public debt (interest, sinking fund, etc.) ..	2 16 11	2 7 4	3 13 8	3 18 8	6 6 2	3 5 10	3 3 0
Railways and tramways (working expenses) ..	4 10 5	2 19 7	5 6 7	4 3 9	5 7 2	1 12 7	4 1 10
Justice ..	0 4 0	0 2 4	0 3 8	0 2 6	0 3 9	0 1 4	0 3 3
Police ..	0 6 8	0 5 7	0 7 1	0 6 9	0 8 6	0 5 3	0 6 6
Penal establishments ..	0 0 11	0 0 9	0 1 0	0 1 1	0 1 5	0 0 7	0 0 11
Education ..	1 2 0	0 17 4	1 3 2	0 18 6	1 4 8	0 15 4	1 0 5
Medical and charitable ..	0 10 5	0 10 8	1 1 7	0 12 2	0 19 10	0 11 7	0 12 9
All other expenditure ..	2 9 5	1 18 5	1 19 5	3 0 3	3 5 7	1 5 0	2 5 9
Total ..	12 0 9	9 2 0	13 16 2	13 3 8	17 17 1	7 17 6	11 14 5

6. **Relative Importance.**—The relative importance of the items of expenditure enumerated above varies considerably in the several States. This will readily be seen from the following table, giving for each State the percentage of the expenditure under the various items, on the total expenditure for the State :—

**PERCENTAGE OF ITEMS ON TOTAL STATE EXPENDITURE, 1918-19.**

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	All States.
	%	%	%	%	%	%	%
Public debt (interest, sinking fund, etc.) .. .. .	23.64	26.02	26.68	29.84	35.32	41.82	26.89
Railways and tramways (working expenses) .. .. .	37.57	32.72	38.60	31.76	30.01	20.69	34.90
Justice .. .. .	1.64	1.28	1.33	0.97	1.06	0.81	1.36
Police .. .. .	2.78	3.09	2.57	2.57	2.39	3.34	2.77
Penal establishments .. .. .	0.38	0.42	0.37	0.41	0.39	0.39	0.39
Education .. .. .	9.15	9.51	8.39	7.02	6.90	9.73	8.70
Medical and charitable .. .. .	4.32	5.86	7.81	4.60	5.55	7.37	5.46
All other expenditure .. .. .	20.52	21.10	14.25	22.83	18.38	15.85	19.53
Total .. .. .	100.00	100.00	100.00	100.00	100.00	100.00	100.00

Taken together, the interest and sinking fund on the public debt, and the working expenses of the railways and tramways, represented for the year 1918-19 about 60 per cent. of the aggregate State expenditure, a proportion which has been maintained with great regularity for many years past.

**(C) Balances.**

1. **Position on 30th June, 1919.**—On various occasions in each of the States the revenue collected for a financial year has failed to provide the funds requisite for defraying the expenditure incurred during that year, the consequence being a deficit which is usually liquidated either by cash obtained from trust funds, or by the issue of Treasury bills. In some of the States a number of such deficits has occurred, interspersed with occasional surpluses, the result being an accumulating overdraft, which in certain instances assumed very large proportions. Thus, during the period of financial stress resultant upon the crisis of 1893 and the drought conditions of succeeding years, the accumulated overdrafts of several of the States grew very rapidly, and the situation has changed very much for the worse in the years preceding 1918-19, so that not one of the States now has a credit balance. The position of the balances of the several Consolidated Revenue Funds on 30th June, 1919, was as follows :—

**STATE CONSOLIDATED REVENUE FUND BALANCES, 30th JUNE, 1919.**

State.	Cash Credit Balances.	Debit Balance.		Net Result.
		Cash Overdraft.	Overdraft liquidated by Treasury Bills.	
	£	£	£	£
New South Wales .. .. .	..	244,545	..	Dr. 244,545
Victoria .. .. .	..	163,922	1,353,285	Dr. 1,517,207
Queensland .. .. .	..	171,988	..	Dr. 171,988
South Australia .. .. .	..	1,223,398	..	Dr. 1,223,398
Western Australia .. .. .	..	652,014	2,766,466	Dr. 3,418,480
Tasmania .. .. .	..	131,741	..	Dr. 131,741
Total .. .. .	..	2,587,608	4,119,751	Dr. 6,707,359

**(D) Principal State Taxes.****(a) Probate and Succession Duties.**

1. **General.**—Probate duties have been levied for a considerable time in all the States of the Commonwealth. From the provisions of the several State Acts governing the payment of duty, it will be seen that both the ordinary rates and those which apply to special beneficiaries differ widely in several cases. A table shewing the values of the estates in the various States in which probates and letters of administration were granted is shewn hereinafter. (See Section XXIII. § 5 (4).)

The duty collected in the several States for the financial years 1913–14 to 1918–19 is as follows :—

**AMOUNT OF PROBATE AND SUCCESSION DUTIES COLLECTED, 1913–14 TO 1918–19.**

State.	1913–14.	1914–15.	1915–16.	1916–17.	1917–18.	1918–19.
	£	£	£	£	£	£
New South Wales	512,529	551,629	645,554	826,769	677,433	575,875
Victoria.. ..	457,042	536,869	510,032	546,400	506,662	718,194
Queensland	89,835	112,740	136,277	146,077	121,986	(a)
South Australia ..	226,367	113,734	183,919	134,620	170,185	221,729
Western Australia	30,662	40,156	44,284	40,963	38,710	40,329
Tasmania ..	29,094	38,252	36,700	37,310	50,688	64,410
Total ..	1,345,529	1,393,380	1,556,766	1,732,139	1,565,664	1,620,537 (b)

(a) Included in Stamp Duties.

(b) Excluding Queensland.

For particulars relating to the legislation of the different States on probate and succession duties see Year Book No. 6, pp. 815–818.

**(b) Stamp Duties.**

1. **Revenue.**—The revenue derived by the several States of the Commonwealth from stamp duties for the years 1913–14 to 1918–19 is shewn in the accompanying table :—

**STAMP REVENUE (EXCLUSIVE OF PROBATE AND SUCCESSION DUTIES),  
1913–14 TO 1918–19.**

State.	1913–14.	1914–15.	1915–16.	1916–17.	1917–18.	1918–19.
	£	£	£	£	£	£
New South Wales	377,707	552,762	522,992	550,211	616,180	687,304
Victoria.. ..	278,240	289,384	400,056	376,196	507,573	583,818
Queensland	205,635	208,664	185,734	175,186	205,674	a 387,742
South Australia ..	101,094	81,007	114,169	145,079	179,521	213,130
Western Australia	77,051	64,398	64,858	67,035	80,720	112,104
Tasmania ..	83,202	73,754	69,888	77,636	96,215	96,949
Total ..	1,122,929	1,269,969	1,357,697	1,391,343	1,685,883	2,081,047

a Including Queensland probate and succession duties.

2. **Bank Notes.**—Promissory notes issued by any bank were not required to bear a duty stamp either impressed or adhesive, and might be re-issued as often as thought fit. An annual composition was, however, paid in lieu of stamp duty up to 1910. This

composition was payable quarterly, and was the same in all States, being at the rate of £2 per annum on every £100 or part thereof of the average annual amount of bank notes in circulation. On 2nd June, 1893, the Treasury Notes Act of Queensland was assented to, by which the issue of Treasury notes payable on demand was authorised. These notes were used exclusively by the banks in that State, but their issue was prohibited by the Federal Bank Note Tax Act, and they have now passed out of circulation. (See Section XXI., Private Finance.)

The issue of bank notes by the banks has practically ceased owing to this Act, which passed the Federal Parliament in the session of 1910, and was assented to on 10th October, 1910. Further reference is made to the Act in the section dealing with Private Finance. It is sufficient to say here that it imposed a tax of 10 per cent. per annum on all bank notes issued or re-issued by any bank in the Commonwealth after the commencement of the Act and not redeemed.

For further details concerning Stamp Duty Legislation, see Year Book No. 7, p. 723.

### (c) Land Tax.

1. **General.**—All the States now impose a Land Tax, although Queensland, the last State to fall into line, only collected its first levy in 1915–16. Western Australia imposed its first tax in 1907, but in the other States the impost is of very long standing.

The following table shews the amount collected by means of such taxes during the financial years 1913–14 to 1918–19 :—

STATE LAND TAX COLLECTIONS, 1913–14 TO 1918–19.

State.	1913–14.	1914–15.	1915–16.	1916–17.	1917–18.	1918–19.
	£	£	£	£	£	£
New South Wales	4,692	3,346	3,190	3,215	2,921	2,800
Victoria..	302,224	303,550	352,353	369,486	353,156	324,232
Queensland ..	..	..	247,044	362,535	344,547	578,253
South Australia ..	136,602	131,896	154,483	139,372	165,469	154,621
Western Australia	46,201	36,433	47,716	42,431	63,388	34,182
Tasmania ..	79,085	80,863	82,436	83,595	84,701	86,705
Total ..	568,804	556,088	887,222	1,000,634	1,014,182	1,180,793

### (d) Income Tax.

1. **General.**—A duty on the income of persons, whether it be derived from personal exertion or from property, is now imposed in all the States of the Commonwealth. As might be expected, the rates, exemptions, etc., are widely divergent in the different States, but the general principles of the several Acts are similar. The Dividend Duties Acts of Queensland and Western Australia—the former of which is now repealed—supplied to a certain extent the place of an income tax in those States in former years, but, with the increasing demands upon the State Treasury, the levying of a direct income tax has been found necessary.

In the following table particulars are furnished concerning the total amount collected in the several States during the years 1913–14 to 1918–19. In the case of Western Australia the amount of dividend duty collected is included, this tax being closely allied to the income tax.

## STATE INCOME AND DIVIDEND TAXES, 1913-14 TO 1918-19.

State.	1913-14.	1914-15.	1915-16.	1916-17.	1917-18.	1918-19.
	£	£	£	£	£	£
New South Wales	1,290,370	1,653,923	1,707,403	1,973,477	2,182,117	2,355,243
Victoria ..	527,705	506,214	702,745	766,746	773,468	928,210
Queensland ..	472,918	517,273	766,560	756,292	967,420	1,677,335
South Australia ..	240,996	236,270	212,418	264,946	452,303	542,007
Western Australia	174,558	174,561	195,249	196,221	207,963	359,623
Tasmania ..	162,458	157,595	177,730	216,278	259,869	261,028
Total ..	2,869,005	3,245,836	3,762,105	4,173,960	4,843,140	6,123,446

## § 3. Trust Funds.

1. *Nature.*—In addition to the moneys received by the several State Governments as revenue, and paid to the credit of their respective Consolidated Revenue Funds, considerable sums are held by the Governments in trust for various purposes. One of the chief sources of these trust funds is the State Savings Bank, which exists in each State either as a Government department or under the control of a Board acting under Government supervision or Government guarantee. In most of the States also, sinking funds for the redemption of public debt are provided, and the moneys accruing thereto are paid to the credit of the appropriate trust funds. A similar course is followed in the case of municipal sinking funds placed in the hands of the Government. In all the States except New South Wales, life assurance companies carrying on business are required to deposit a substantial sum in cash or approved securities with the Government, and these deposits go to further swell the trust funds. Various other deposit accounts, superannuation funds, suspense accounts, etc., find a place in these funds. The trust funds have at various times enabled the several State Treasurers to tide over awkward financial positions, but the propriety of allowing deficits to be frequently liquidated in this manner is open to question.

2. *Extent of Funds.*—The amount of such funds held by the several State Governments on 30th June, 1919, was as follows :—

## STATE TRUST FUNDS ON 30th JUNE, 1919.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	All States.
	£	£	£	£	£	£	£
Amount of trust funds	6,222,291	12,286,480	188,259	2,333,148	14,486,134	902,539	36,042,333

## § 4. Loan Funds.

1. *Nature.*—As early in the history of Australia as 1842 it was deemed expedient to supplement the revenue collections by means of borrowed moneys, the earliest of the loans so raised being obtained by New South Wales for the purpose of assisting immigration, at rates of interest varying from 2½d. to 5½d. per £100 per diem, or approximately from 4½ per cent. to 8 per cent. per annum. The principal reason for Australian public borrowing, however, has been the fact that the Governments of the several States have, in addition to ordinary administrative duties, undertaken the performance of many functions which, in other countries, are usually entrusted to local authorities, or left to the initiative of private enterprise. Principal amongst these have been the construction of railways and the control of the railway systems of the several States, while the assumption by the State Governments of responsibilities in connexion with improvements to harbours and rivers, and the erection of lighthouses, as well as the construction of works for the purposes of water supply and sewerage, have materially swelled the amounts which it has been considered expedient to obtain by means of loans.

The Australian State loan expenditure and public debt thus differ very materially from those of most European countries, and also from those of the Commonwealth, where such expenditure was very largely incurred for purposes of defence, or absorbed in the prosecution of war. The State debts of Australia, on the other hand, consist in the main of moneys raised and expended with the object of assisting the development of the resources of the Commonwealth, and are, to a very large extent, represented by tangible assets such as railways, tramways, waterworks, etc.

2. **Loan Expenditure, 1918-19.**—During the year ended 30th June, 1919, the actual expenditure of the Australian States from loan funds amounted to £13,218,776, New South Wales with a total of £3,918,887 being the principal contributor to this amount. The chief item of expenditure for the year was that of railways and tramways, which represented a total of £4,363,708, water supply and sewerage works contributing the amount of £1,915,534; the expenditure on harbours, rivers, etc., and roads and bridges totalling £997,334, and land purchases for settlement, loans to local bodies, advances to settlers, etc., were the most important of the remaining items. The item "land purchases for settlement" is particularly prominent, and is likely to remain so for some time to come. Details for the year for each State are given in the following table:—

## STATE LOAN EXPENDITURE, 1918-19.

Heads of Expenditure.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	All States.
	£	£	£	£	£	£	£
Railways and tramways ..	1,543,857	878,384	1,416,302	324,041	161,959	39,165	4,363,708
Water supply and sewerage ..	1,027,708	412,267	839	428,084	46,636	..	1,915,534
Harbours, rivers, etc. }	309,650	374,325	..	139,086	74,258	100,015	997,334
Roads and bridges }	47,281	642	114,131	42,057	21,570	30,624	256,305
Public buildings ..	..	(a) 415	..	..	16,152	..	15,737
Development of mines, etc. ..	7,942	3,766	..	1,055,904	153,948	(a) 3,916	1,217,644
Advances to settlers ..	..	1,157,230	..	(a) 6,465	138,135	208,533	1,497,433
Land purchases for settlement ..	(a) 5,743	..	470,972	..	..	78,609	543,838
Loans to local bodies ..	7,206	..	74	(a) 27,554	..	..	(a) 20,274
Rabbit-proof fences ..	980,986	106,322	734,094	51,013	437,078	122,024	2,431,517
Other public works and purposes ..	..	..	..	..	..	..	..
Total ..	3,918,887	2,932,521	2,736,412	2,006,166	1,049,736	575,054	13,218,776

(a) Repayment.

3. **Aggregate Loan Expenditure.**—The total loan expenditure of the Australian States from the initiation of the borrowing system to the 30th June, 1919, has amounted to no less a sum than £394,938,563. The manner in which this sum has been spent in the several States is furnished in the following table:—

## AGGREGATE STATE LOAN EXPENDITURE TO 30th JUNE, 1919.

Heads of Expenditure.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	All States.
	£	£	£	£	£	£	£
Railways and tramways ..	90,405,038	55,550,911	39,854,697	20,962,909	17,974,822	5,505,765	230,254,142
Telegraphs and telephones ..	1,761,844	..	996,587	991,773	..	142,410	3,892,614
Water supply and sewerage ..	25,969,462	12,803,705	3,148,857	9,780,140	4,931,864	..	56,634,028
Harbours, rivers, etc. }	16,959,042	2,867,009	3,353,790	5,421,823	4,087,658	4,959,912	37,649,234
Roads and bridges }	1,457,536	149,323	363,084	291,615	..	128,224	2,389,782
Defence ..	7,978,273	2,410,355	2,051,104	1,552,723	818,633	1,245,770	16,056,858
Public buildings ..	569,930	..	2,763,070	..	395,312	235,000	3,963,312
Immigration ..	..	510,659	..	5,111	1,744,731	..	2,260,501
Development of mines, etc. ..	66,402	878,915	..	3,820,391	2,762,676	103,521	7,631,905
Advances to settlers ..	489,000	6,469,334	..	1,982,211	462,797	621,657	10,024,999
Land purchases for settlement ..	(a) 7,576	..	2,879,293	..	64,491	1,341,850	4,278,058
Loans to local bodies ..	52,662	..	..	264,235	328,703	..	645,600
Rabbit-proof fences ..	2,079,426	6,077,073	2,880,631	2,683,479	4,193,543	1,343,378	19,257,530
Other public works and purposes ..	..	..	..	..	..	..	..
Total ..	147,781,039	87,717,284	58,291,113	47,756,410	37,765,230	15,627,487	394,938,563

(a) Repayment.



It must be noted that the figures furnished in this table represent the amounts actually spent, and consequently differ somewhat from those given later in the statements relating to the public debt, which represent amount of loans still unpaid at a given date. The loan expenditure statement includes all such expenditure, whether the loans by means of which the necessary funds were raised have been repaid or are still in existence. On the other hand, in the public debt statement loans repaid are excluded, but in the case of loans still outstanding each is shewn according to the amount repayable at maturity, not according to the amount originally available for expenditure.

4. **Relative Importance of Loan Items.**—The relative importance of the different items of loan expenditure given in the foregoing table varies considerably in the several States, but in each instance the expenditure on railways and tramways predominates, the percentage of this item on total expenditure ranging between the limits of 35 per cent. in the case of Tasmania and 68 per cent. in that of Queensland. The following table gives for each State the percentage of each item on the total loan expenditure of that State to 30th June, 1919:—

**PERCENTAGE OF EACH ITEM ON TOTAL LOAN EXPENDITURE OF THE STATES  
TO 30th JUNE, 1919.**

Heads of Expenditure.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	All States.
	%	%	%	%	%	%	%
Railways and tramways ..	61.17	63.33	68.38	43.90	47.60	35.23	53.30
Telegraphs and telephones ..	1.19	..	1.71	2.08	..	0.91	0.99
Water supply and sewerage..	17.55	14.60	5.40	20.48	13.06	..	14.34
Harbours, rivers, etc.	11.48	3.27	5.75	11.35	10.82	31.74	9.53
Roads and bridges	..	..	..	..	..	..	..
Defence ..	0.99	0.17	0.62	0.61	..	0.82	0.61
Public buildings ..	5.40	2.75	3.52	3.25	2.17	7.97	4.07
Immigration ..	0.39	..	4.74	..	1.05	1.50	1.00
Development of mines, etc.	..	0.58	..	0.01	4.62	..	0.57
Advances to settlers ..	0.04	1.00	..	8.00	7.32	0.66	1.93
Land purchases for settlement	0.35	7.38	..	4.15	1.22	3.98	2.54
Loans to local bodies ..	0.00	..	4.94	..	0.17	8.59	1.08
Rabbit-proof fences ..	0.03	..	..	0.55	0.87	..	0.16
Other public works and purposes ..	1.41	6.92	4.94	5.62	11.10	8.60	4.88
Total ..	100.00	100.00	100.00	100.00	100.00	100.00	100.00

5. **Loan Expenditure in Successive Years.**—In the following table are given particulars relative to the loan expenditure of the several States during each of the years 1913–14 to 1918–19:—

**STATE LOAN EXPENDITURE, 1913–14 TO 1918–19.**

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	All States.
	£	£	£	£	£	£	£
1913–14..	9,126,844	3,276,994	2,190,150	2,762,686	2,883,169	498,141	20,737,984
1914–15..	6,996,107	5,351,830	2,638,266	2,532,759	2,521,608	785,269	20,825,839
1915–16..	8,173,104	4,473,569	3,061,839	2,097,197	1,584,643	880,394	20,270,746
1916–17..	6,862,179	2,440,966	2,267,962	1,811,531	855,184	476,472	14,714,294
1917–18..	4,487,511	1,931,679	1,828,320	1,586,766	1,054,177	518,929	11,407,382
1918–19..	3,918,887	2,932,521	2,736,412	2,006,166	1,049,736	575,054	13,218,776

Throughout the six years under review the loan expenditure of New South Wales exceeded that of any other of the States, and for many years has represented nearly 40 per cent. of the aggregate of Australia.

6. *Loan Expenditure per Head.*—The loan expenditure per head of population varies materially in the different States and in different years, reaching its highest point for the five years under review in Western Australia in 1913-14 with £7 16s. 2d. per head, and its lowest in Victoria in 1908-9 with 17s. 7d. per head. Particulars concerning the loan expenditure per head for the six years 1913-14 to 1918-19 are given hereunder:—

STATE LOAN EXPENDITURE PER HEAD, 1913-14 TO 1918-19.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	All States.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
1913-14 ..	4 19 8	2 6 5	3 6 4	6 5 6	8 19 10	2 9 5	4 5 1
1914-15 ..	3 15 1	3 14 10	3 17 3	5 14 8	7 16 2	3 18 0	4 4 4
1915-16 ..	4 7 6	3 3 1	4 10 0	4 15 5	4 19 8	4 7 7	4 2 2
1916-17 ..	3 13 10	1 14 10	3 7 9	4 3 11	2 15 4	2 7 8	3 0 4
1917-18 ..	2 7 9	1 7 5	2 13 1	3 12 9	3 8 2	2 11 1	2 6 3
1918-19 ..	2 0 7	2 0 10	3 18 10	4 10 0	3 7 0	2 15 1	2 12 7

### § 5. Public Debt.

1. *Initiation of Public Borrowing.*—The earliest of the loans raised in Australia for Government purposes was that obtained by New South Wales in 1842. This and nine other loans raised prior to 1855 were all procured locally. In the last-mentioned year Australia's first appearance on the London market occurred, the occasion being the placing of the first instalment of the New South Wales 5 per cent. loan for £683,300. Victoria first appeared as a borrower in 1854, and made its first appearance on the London market in 1859. In the remaining States the first public loans were raised in the following years:—Queensland 1861, South Australia 1854, Western Australia 1845, and Tasmania 1867.

2. *Nature of Securities.*—All the earlier loans raised by the Australian States were obtained by the issue of debentures, some of which were repayable at fixed dates, and others by annual or other periodical drawings. In more recent years, however, the issue of debentures has given place to a great extent to that of inscribed stock, the inscription in the case of local issues being carried out by the State Treasuries, and in the cases of loans floated in London being mainly performed by the Bank of England and the London and Westminster Bank. The issue of debentures has not, however, been entirely discontinued, for within recent years debentures to a large amount have been placed on the market by the Government of New South Wales. In other States also, recent issues of debentures have taken place, the occasions usually being those in which the term of the loan is less than that ordinarily attaching to issues of inscribed stock. Another form of security is that variously known as the Treasury bill or Treasury bond. This is usually merely a short term debenture having a currency in most instances of from three to five years. The bonds are issued in certain cases to liquidate deficiencies in revenue, and in others to obtain moneys for the purpose of carrying on public works at a time when it is deemed inexpedient to place a permanent loan on the market. The amount of the public debt of the several States held in each of these forms of security is furnished in the table hereunder:—

PUBLIC DEBT OF THE AUSTRALIAN STATES, 30th JUNE, 1919.

State.	Debentures.	Inscribed Stock.	Treasury Bills.		Total Amount Outstanding.
			For Public Works and Services.	In aid of Revenue.	
	£	£	£	£	£
New South Wales ..	14,704,750	120,925,366	11,544,420	..	147,174,536
Victoria ..	26,910,857	50,815,787	2,952,000	1,353,285	82,031,929
Queensland ..	23,515,399	39,632,337	..	1,379,350	(a) 65,581,121
South Australia ..	2,039,000	32,505,856	8,105,350	..	42,650,206
Western Australia ..	1,376,255	34,007,326	5,359,990	2,893,505	43,637,076
Tasmania ..	2,382,631	11,898,650	1,000,000	..	15,281,281
Total ..	70,928,892	289,785,322	28,961,760	5,626,140	(a) 396,356,149

(a) Including loans of £1,054,035 from the Commonwealth Government not represented by securities.

The manner in which the amount of public debt of the Australian States held under these various forms of security has grown during the past six years will be seen from the following table:—

**PUBLIC DEBT OF THE AUSTRALIAN STATES, 1913-14 TO 1918-19.**

Date.	Debentures.	Inscribed Stock.	Treasury Bills.		Total Amount Outstanding.
			For Public Works and Services.	In aid of Revenue.	
	£	£	£	£	£
30th June, 1914 ..	37,160,145	265,734,131	13,572,562	1,131,950	317,598,788
" 1915 ..	47,550,115	269,686,934	23,658,270	2,030,350	342,925,669
" 1916 ..	51,069,616	277,268,688	27,074,647	2,400,820	357,813,771
" 1917 ..	60,364,239	279,252,215	29,782,535	3,118,635	372,517,624
" 1918 ..	63,616,822	296,459,069	28,468,060	3,996,210	392,540,161
" 1919 ..	70,928,892	289,785,322	28,961,760	5,626,140	(a)396,356,149

(a) See footnote (a) to previous table.

During the period between 30th June, 1914, and 30th June, 1919, the public debt of the States increased by £78,757,361, or at the rate of about £15,750,000 per annum.

**3. Increase in Indebtedness of the Several States.**—The table given hereunder furnishes particulars of the increase which has taken place during the past five years in the public debts of the several States:—

**PUBLIC DEBT OF THE AUSTRALIAN STATES, 30th JUNE, 1914 TO 1919.**

Date.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	All States.
	£	£	£	£	£	£	£
30th June, 1914 ..	116,695,031	66,130,726	54,523,506	33,564,332	34,420,181	12,265,012	317,598,788
" 1915 ..	127,735,405	73,083,927	56,869,046	35,081,623	37,022,622	13,133,046	342,925,669
" 1916 ..	130,514,018	76,775,032	58,732,843	37,993,289	39,889,676	13,908,913	357,813,771
" 1917 ..	138,138,347	78,125,395	61,303,136	39,364,280	40,914,826	14,671,640	372,517,624
" 1918 ..	152,584,693	79,595,646	62,296,986	40,621,480	42,304,001	15,137,355	392,540,161
" 1919 ..	147,174,536	82,031,929	65,581,121	42,650,206	43,637,076	15,281,281	396,356,149

The State in which the greatest increase in indebtedness was experienced during the period is New South Wales, which added £30,479,505 during the period under review. On the other hand, the public debt of Tasmania increased by about £3,000,000 only. There was an apparent decline in the Public Debt of New South Wales in 1918-19. This was due to the fact that the debt in 1917-18 included stock raised in February, 1918, for the redemption of loans maturing in September, 1918.

**4. Indebtedness per Head.**—The indebtedness per head of population varies considerably in the several States, being highest in the case of Western Australia, and lowest in that of Victoria. Details for the period from 30th June, 1914, to 30th June, 1919, are as follows:—

**PUBLIC DEBT OF AUSTRALIAN STATES PER HEAD, 30th JUNE, 1914 TO 1919.**

Date.	N.S.W.			Victoria.			Q'land.			S. Aust.			W. Aust.			Tasmania.			All States.		
	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.
30th June, 1914 ..	62	17	9	46	10	1	80	6	4	78	12	0	106	5	0	62	6	9	64	10	5
" 1915 ..	68	7	2	51	4	9	82	9	2	80	1	6	114	15	9	66	3	9	69	5	3
" 1916 ..	70	6	0	54	12	1	85	8	8	87	12	7	126	15	2	70	8	6	72	19	7
" 1917 ..	73	18	6	55	14	0	89	19	7	91	11	4	132	12	3	74	7	0	76	1	9
" 1918 ..	79	17	4	56	3	5	89	19	11	92	0	6	135	19	6	74	12	6	78	16	3
" 1919 ..	74	19	4	55	18	3	92	0	0	93	11	2	135	0	2	72	9	4	77	2	1

5. **Flotation of Loans.**—The early loans of the Australian States, usually for comparatively small amounts, were raised locally, but, with the increasing demand for loan funds and the more favourable terms offering in the London than in the local money market, the practice of placing Australian public loans in London came into vogue, and for many years local flotations, except for short terms or small amounts, were comparatively infrequent. In more recent years, however, the accumulating stocks of money in Australia seeking investment have led to the placing of various redemption and other loans locally, with very satisfactory results. In the following table are given particulars of loans of the several States outstanding on 30th June, 1919, which had been floated in London and Australia respectively :—

## PUBLIC DEBT OF AUSTRALIAN STATES, 30th JUNE, 1919.

State.	Floated in London.		Floated in Australia.		Total Public Debt.
	Amount.	Percentage on Total Debt.	Amount.	Percentage on Total Debt.	
	£	%	£	%	£
New South Wales ..	98,989,891	67.26	48,184,645	32.74	147,174,536
Victoria ..	43,400,300	52.91	38,631,629	47.09	82,031,929
Queensland ..	51,855,647	79.07	13,725,474	20.93	65,581,121
South Australia ..	23,034,057	54.01	19,616,149	45.99	42,650,206
Western Australia ..	31,008,858	71.06	12,628,218	28.94	43,637,076
Tasmania ..	9,911,250	64.86	5,370,031	35.14	15,281,281
Total ..	258,200,003	65.14	138,156,146	34.86	396,356,149

The following table, giving corresponding particulars for the aggregate indebtedness of the Australian States at the end of each of the financial years 1913–14 to 1918–19, furnishes an indication of the rapidity with which the local holdings of Australian securities have grown in recent years :—

## PUBLIC DEBT OF AUSTRALIAN STATES, 30th JUNE, 1914 TO 1919.

Date.	Floated in London.		Floated in Australia.		Total Public Debt.
	Amount.	Percentage on Total Debt.	Amount.	Percentage on Total Debt.	
	£	%	£	%	£
30th June, 1914 ..	224,061,456	70.55	93,537,332	29.45	317,598,788
„ 1915 ..	229,212,541	66.84	113,713,128	33.16	342,925,669
„ 1916 ..	232,040,101	64.85	125,773,670	35.15	357,813,771
„ 1917 ..	243,735,172	65.43	128,782,452	34.57	372,517,624
„ 1918 ..	261,107,683	66.52	131,432,478	33.48	392,540,161
„ 1919 ..	258,200,003	65.14	138,156,146	34.86	396,356,149

It will be seen that in the course of five years the London indebtedness of the States has increased by £34,138,547, while the local indebtedness has increased by no less than £44,618,814. In other words, the Australian proportion had on 30th June, 1919, grown to more than one-third, and has remained at about one-third for the last four years.

It will be noticed in the foregoing table that the Australian indebtedness of the States increased during the year 1918–19 to a figure absolutely higher than had ever before been attained. This was due, in the main, to an arrangement with the Commonwealth Government, which was concluded shortly after the outbreak of war. It seemed very probable, at that period, that London would be reluctant to make

advances for other than military purposes, and this would have seriously embarrassed several of the States which were committed to a vigorous public works and developmental policy. The Commonwealth Government met the situation by advancing £18,000,000 to five of the States in the following proportion:—New South Wales, £7,400,000; Victoria, £3,900,000; South Australia, £2,600,000; Western Australia, £3,100,000; and Tasmania, £1,000,000. Victoria contracted her portion of the debt in debentures, whereas the remaining States chose Treasury bills, but otherwise the conditions were the same. The Commonwealth Government paid the money in monthly instalments, and the rate of interest was fixed at  $4\frac{1}{2}$  per cent. The money was taken entirely from the Australian Notes Account, and the whole transaction furnishes another illustration of the increasingly intimate financial relationship between the Commonwealth and State Governments, to which reference was made in the preceding chapter, (page 774). Further advances were made to the States by the Commonwealth in 1916–19 out of the proceeds of loans contracted in London. The loans aggregated £16,750,000, and carried interest partly at  $5\frac{1}{2}$  per cent., and partly at  $5\frac{1}{4}$  per cent. Lastly, advances have been made by the Commonwealth Government to some of the State Governments for the purpose of settling returned soldiers on the land, and for the construction of silos for wheat storage. By agreement between the State Treasurers and the Commonwealth Treasurer, the £18,000,000 already referred to is to be repaid within five years of the termination of the war, but not later than 1925.

6. Rates of Interest.—As mentioned above, the highest rate of interest paid in connection with the earliest Australian public loans was fivepence farthing per £100 per diem, or, approximately, 8 per cent. per annum. At the present time the principal rates of interest payable on Australian public securities are  $5\frac{1}{4}$  per cent.,  $5\frac{1}{2}$  per cent., 5 per cent.,  $4\frac{1}{2}$  per cent.,  $4\frac{1}{4}$  per cent., 4 per cent.,  $3\frac{3}{4}$  per cent.,  $3\frac{1}{2}$  per cent., and 3 per cent. It is most probable, however, that the amount of outstanding debt at the higher rates will increase materially in the future, since conversion can scarcely be effected at present at a lower rate of interest than 5 per cent. The average rate payable on the aggregate indebtedness of the Australian States is about 4 per cent. For the separate States the average rate payable varies considerably, being lowest in the case of Western Australia and highest in that of South Australia; the difference between these two average rates is about  $\frac{2}{3}$  per cent. In the table given hereunder particulars are furnished of the rates of interest payable on the public debt of the several States of the Commonwealth on 30th June, 1919:—

#### RATES OF INTEREST PAYABLE ON PUBLIC DEBT OF STATES, 30th JUNE, 1919.

Rate of Interest.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	All States.
%	£	£	£	£	£	£	£
$5\frac{1}{4}$ ..	16,076,000						16,076,000
$5\frac{1}{2}$ ..	6,000,000	1,304,000	4,187,500	5,494,627	3,050,500	887,375	20,924,002
$5\frac{1}{2}$ ..	2,786,600	1,445,544	2,075,000	855,550	1,100,000	200,000	8,462,694
5 ..	6,686,925	(a) 4,317,542	325,400	4,551,773	658,480	1,560,009	18,100,129
$4\frac{1}{2}$ ..		(b) 6,658,860		500,000			7,158,860
$4\frac{1}{2}$ ..	12,034,379	(c) 3,481,975	13,462,650	2,804,815	1,688,820	434,904	(c) 33,907,543
$4\frac{1}{2}$ ..		505,500				146,750	646,250
$4\frac{1}{2}$ ..	7,400,000	3,900,000		2,600,000	3,100,000	1,000,000	18,000,000
4 ..	28,143,541	19,356,965	18,667,450	8,331,864	12,721,786	5,100,217	92,321,823
$3\frac{3}{4}$ ..	18,514,098	230,183	2,550,050	5,374,645	1,650,000	515,822	23,834,798
$3\frac{1}{2}$ ..	37,480,121	30,682,992	18,569,653	6,209,650	12,317,490	4,963,418	110,222,724
3 ..	17,047,072	10,147,368	5,489,383	5,927,282	7,350,000	(e) 478,786	46,439,891
Overdue, not bearing interest ..	5,800	1,000	600	..	..	..	7,400
Total ..	147,174,536	82,031,929	(d) 65,581,121	42,650,206	43,637,076	15,281,231	(d) 306,356,149
Average rate	£4/2/0	£3/17/6	£3/19/10	£4/2/7	£3/17/1	£4/0/7	£4/0/3

(a) Including £20,000 at  $4\frac{1}{2}$  per cent. (b) Including £20,000 at  $4\frac{1}{2}$  per cent. (c) Including £350,000 at  $4\frac{1}{2}$  per cent. (d) Including £254,035 for which rate of interest has not been fixed. (e) Including £24,718 at  $3\frac{1}{2}$  per cent.

The rapid increase which has taken place in recent years in the amount of Australian Government securities, bearing interest at the higher rates, is clearly shown in the table hereunder, which gives particulars concerning the aggregate amount of the Australian indebtedness, at the several rates of interest, on 30th June in each of the years 1915 to 1919 :—

**RATES OF INTEREST PAYABLE ON PUBLIC DEBT OF STATES, 30th JUNE, 1914 TO 1919.**

Rate of Interest.	30th June, 1914.	30th June, 1915.	30th June, 1916.	30th June, 1917.	30th June, 1918.	30th June, 1919.
%	£	£	£	£	£	£
6 ..	74,900	49,900	39,900	19,900	1,900	
5½ ..	..	..	..	..	13,076,000	16,076,000
5½ ..	..	..	..	5,590,000	10,180,000	20,924,002
5½ ..	..	..	2,950,000	6,695,400	6,695,400	8,462,694
5 ..	142,700	2,146,800	7,010,675	14,753,617	17,582,034	18,100,129
4½ ..	..	..	..	..	7,158,860	7,158,860
4½ ..	39,300	25,279,647	28,155,096	32,845,044	38,146,932	33,557,543
4½ ..	..	300,000	600,000	..	..	350,000
4½ ..	..	290,750	771,250	901,000	801,000	646,250
4 ..	..	10,625,000	18,000,000	18,000,000	18,000,000	18,000,000
4 ..	111,771,586	100,551,888	97,965,741	95,382,445	93,220,106	92,321,823
3½ ..	27,679,770	26,372,084	25,989,072	24,714,487	24,376,838	23,834,798
3½ ..	131,292,054	130,392,839	129,732,699	127,146,373	124,075,299	110,222,724
3 ..	46,592,430	(a) 46,567,286	(a) 46,591,188	(a) 46,450,341	(a) 46,376,402	(a) 46,439,891
Not bearing interest ..	6,048	349,475	8,150	19,017	8,250	7,400
Total public debt ..	317,598,738	342,925,669	357,813,771	372,517,624	392,540,161	(b) 396,356,149
Average rate per cent. payable..	£3/12/6	£3/13/11	£3/15/1	£3/16/6	£3/18/6	£4/0/3

(a) Including £24,718 at 3½ per cent. (b) Including £254,035 for which rate of interest has not been fixed.

The feature of this table is the rapid rise in the average rate of interest. The process started in 1912, but was accelerated by the war, which has virtually made 5½ per cent. the present minimum rate of interest for gilt-edged securities. The average rate is likely to rise for some considerable time, since securities falling due in the immediate future will, in all likelihood, have to be renewed at a higher rate of interest.

**7. Interest per Head.**—The relative burden of the debts of the several States in respect of interest payments will be seen from the following table, which gives for the 30th June, 1919, the amount of interest paid during the financial year ending at that date, and also the corresponding amount per head of population :—

**STATE DEBTS.—INTEREST PAID DURING 1918-19.**

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	All States.
	£	£	£	£	£	£	£
Total annual interest paid ..	5,462,091	3,056,317	(a) 2,557,637	1,733,801	1,658,951	509,087	15,063,834
Annual interest paid per head ..	£2/16/7	£2/2/0	£3/13/8	£3/17/10	£5/5/10	£2/17/4	£2/19/11

(a) Inclusive of flotation expenses.

**8. Dates of Maturity.**—An important point of difference between the securities of the Australian Governments, whether in the form of inscribed stock, debentures, or Treasury bills, and such a well-known form of security as British Consols, is that whereas the latter are interminable, the Australian Government securities have in almost all cases a fixed date for repayment, there being only a few exceptions, which are included in the following table under the headings "interminable" and "indefinite." The "indefinite" includes amounts which are payable by the respective Governments after giving a specified notice, and also certain amounts owing to the Commonwealth Government. The terms of the loans raised by the issue of debentures and inscribed stock have varied considerably

in the different States, ranging between fifteen and fifty years, while loans obtained by means of Treasury bills have usually been for such short terms as from six months to five years. In the case of the majority of the loans the arrival of the date of maturity means that arrangements for renewal are necessary in respect of the greater portion of the loan, as it is only in exceptional cases that due provision for redemption has been made. The condition of the money market at the date of maturity has an important bearing on the success or otherwise with which the renewal arrangements can be effected, and consequently, in order to obviate the necessity for making an application to the market at an unfavourable time, several of the States have now adopted the practice of specifying a period of from ten to twenty years prior to the date of maturity within which the Government, on giving twelve, or in some cases six months' notice, has the option of redeeming the loan. By such means advantage may be taken by the Government during the period of opportunities that may offer for favourable renewals. Particulars concerning the due dates of the loans of the several States outstanding on 30th June, 1919, are given in the following table.

Those loans in the case of which the Government has the option of redemption during a specified period have been in each instance classified according to the latest date of maturity :—

**DUE DATES OF THE PUBLIC DEBTS OF THE SEVERAL STATES OUTSTANDING  
ON 30th JUNE, 1919.**

Due Dates.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	Total.
	£	£	£	£	£	£	£
Overdue ..	7,405,800	1,000	600				7,407,400
1919 ..	11,543,895	4,268,960		952,809	262,070	215,188	17,242,922
1920 ..	5,733,120	8,468,696		1,537,959		996,930	16,736,705
1921 ..	5,725,843	8,416,495		2,101,904	116,710	784,622	17,145,574
1922 ..	7,149,400	8,041,890	2,828,750	2,640,104	1,701,005	536,384	22,897,533
1923 ..	8,090,482	9,977,198		3,055,246	1,393,470	170,767	22,687,163
1924 ..	16,758,065	592,390	13,140,634	1,758,172	763,570	152,810	33,165,641
1925 ..	311,799	6,679,740	12,007,200	473,607		1,173,251	20,645,597
1926 ..	415,000	5,115,000	338,600	2,143,004	1,922,305	269,948	10,203,857
1927 ..	15,180,784	2,006,450	4,352,050	1,976,801	5,550,500	1,113,051	30,179,636
1928 ..	36,000	962,525	445,400	846,308		231,304	2,521,537
1929 ..	4,000	794,811	1,000	221,618		378,595	1,400,024
1930 ..		1,814,650	3,704,800	302,425		19,292	5,841,167
1931 ..		1,061,848		450		19,292	1,081,390
1932 ..	13,076,000	929,550		1,225	1,380,540	19,292	15,406,607
1933 ..	9,686,300			368,912	716,708	19,292	10,791,212
1934 ..				1,043,421	1,866,318	21,316	2,931,055
1935 ..	15,500,000			1,478,499	8,358,185	162,796	25,499,480
1936 ..		300,000		4,250,380	1,240,000	22,908	5,813,288
1937 ..				15,586		34,912	50,498
1938 ..				92,383	141,250	24,735	258,368
1939 ..				2,569,499	36,545	35,891	2,641,935
1940 ..		248,900		14,860		5,633,209	5,896,969
1941 ..		324,380	462,300			30,592	817,272
1942 ..		485,100	15,000			30,592	520,692
1943 ..		3,600				30,592	34,192
1944 ..		400				30,592	30,992
1945 ..			7,516,050			30,592	7,546,642
1946 ..		217,400				30,592	247,992
1947 ..			4,498,693		2,000,000	30,592	6,529,285
1948 ..						30,592	30,592
1949 ..		11,699,471				30,590	11,730,061
1950 ..	12,250,000		6,946,600			2,829,407	22,026,007
1951 ..			999,600			31,079	1,030,679
1952 ..						31,079	31,079
1953 ..			2,147,809			19,651	2,167,460
1954 ..		123,874				19,651	143,525
1955 ..					4,437,000	19,651	4,456,651
1956 ..						19,652	19,652
1960 ..		2,979,700	2,000,000	3,000,000	1,000,000		8,979,700
1962 ..	10,500,000				6,000,000		16,500,000
1964 ..					1,566,000		1,566,000
1965 ..			1,122,000				1,122,000
1970 ..			2,000,000				2,000,000
Interminable ..	532,890						532,890
Annual drawings ..					84,900		84,900
Indefinite ..	7,275,158	6,518,101	1,054,035	11,805,034	3,100,000		29,752,328
Total ..	147,174,536	82,031,929	65,581,121	42,650,206	43,637,076	15,281,281	396,356,149

9. **Sinking Funds.**—The practice of providing for the ultimate extinction of the public debt by means of the creation of sinking funds, receiving definite annual contributions from Consolidated Revenue, and accumulating at compound interest, has only been consistently adopted in the case of Western Australia. This State has established, in connection with each of its loans, sinking funds varying from 1 per cent. to 3 per cent. per annum of the nominal amount of the loan. These funds are placed in the hands of trustees in London, by whom they are invested in the securities of the British, Indian, and Colonial Governments, and applied from time to time to the redemption of loans falling due. In the remaining States the sinking fund provision made is varied, consisting in certain instances of the revenues from specified sources, in others of the Consolidated Revenue Fund surplus, and in others again of fixed annual amounts. In the following table are given particulars of the sinking funds of each State, and the net indebtedness of each after allowance for sinking fund has been made, the details given being those for 30th June, 1919 :—

**STATE SINKING FUNDS AND NET INDEBTEDNESS, 30th JUNE, 1919.**

State.	Gross Indebtedness.	Sinking Fund.	Net Indebtedness.	Net Indebtedness per Head.
	£	£	£	£ s. d.
New South Wales ..	147,174,536	388,259	146,786,277	74 15 3
Victoria ..	82,031,929	2,600,778	79,431,151	54 2 9
Queensland ..	65,581,121	385,540	65,195,581	91 9 2
South Australia ..	42,650,206	1,509,930	41,140,276	90 4 7
Western Australia ..	43,637,076	6,139,008	37,498,068	116 0 10
Tasmania ..	15,281,281	646,197	14,635,084	69 8 0
<b>Total ..</b>	<b>396,356,149</b>	<b>11,669,712</b>	<b>384,686,437</b>	<b>74 16 8</b>

With the object of setting out the entire liability of the Australian public, the Commonwealth and State debts have been brought together into one statement, in the appended table. It will be noticed that there is a column headed "deduction for debts counted twice." This includes transferred properties for every year, and, for the last three years, loans raised in London by the Commonwealth on behalf of the States.

**PUBLIC DEBT OF AUSTRALIA FOR SIX YEARS, 1913-14 TO 1918-19.**

Year ended 30th June.	Public Debt of Commonwealth	Public Debt of States.	Total of two preceding Columns.	Deduction for Debts Counted Twice.	Balance being Public Debt of Australia.	Public Debt per Capita.
	£	£	£	£	£	£
1914..	19,182,333	317,598,788	336,781,121	9,787,011	326,994,110	66 8 9
1915..	37,428,830	342,925,669	380,354,499	10,777,161	369,577,338	74 12 11
1916..	101,344,285	357,813,771	459,158,056	10,781,797	448,376,259	91 9 0
1917..	169,229,557	372,517,624	541,747,181	18,289,739	523,457,442	106 18 4
1918..	284,055,069	392,540,161	676,595,230	23,202,515	653,392,715	131 3 10
1919..	325,770,747	396,356,149	722,126,896	27,952,619	694,174,277	135 0 10

On pages 777 to 780 will be found a series of graphs illustrating the rise in the revenue, public debt, and taxation of the Commonwealth and States since 1902, the year 1901-2 being the first complete financial year since Federation.



## SECTION XXI.

## PRIVATE FINANCE.

## § 1. Currency.

1. *The Three Australian Mints.*—Soon after the discovery of gold in Australia steps were taken for the establishment of a branch of the Royal Mint in Sydney. The formal opening took place on the 14th May, 1855. The Melbourne branch of the Royal Mint was opened on the 12th June, 1872, and the Perth branch on the 20th June, 1899. The States of New South Wales, Victoria, and Western Australia provide an annual endowment, in return for which the mint receipts are paid into the respective State Treasuries, and it may be said that, apart from expenditure on buildings, new machinery, etc., the amounts paid into the Treasuries fairly balance the mint subsidies.

2. *Receipts and Issues in 1917.*—(i) *Assay of Deposits Received.* The number of deposits received during 1917 at the Sydney Mint was 526, of a gross weight of 436,006 ozs.; at the Melbourne Mint, there were 2,376, of a gross weight of 297,046.36 ozs.; and at the Perth Mint, 2,868, of a gross weight of 1,198,755 ozs. The average composition of these deposits in Sydney was, gold 940.1, silver 31.6, base 28.3 in every 1,000 parts; Melbourne, gold 859.6, silver 94.5, base 45.9 in every 1,000 parts; and Perth, gold 808.8, silver 137.0, base 54.2 in every 1,000 parts. As many parcels have, however, undergone some sort of refining process before being received at the mint, the average assay for gold shews higher in these figures than for gold as it naturally occurs.

(ii) *Issues.* The Australian mints, besides issuing gold coin in the shape of sovereigns and half-sovereigns, also issue gold bullion, partly for the use of local manufacturers (jewellers and dentists), and partly for export, India taking annually a considerable quantity of gold cast into 10-oz. bars. Owing, however, to the prohibition by the Commonwealth Government of the export of gold, the issue of bars for India ceased in July, 1916. The issues during 1917 are shewn in the table below:—

ISSUES OF GOLD FROM AUSTRALIAN MINTS DURING 1917.

Mint.	Coin.			Bullion.	Total.
	Sovereigns.	Half-sovereigns.	Total.		
	£	£	£	£	£
Sydney ..	1,666,000	..	1,666,000	72,679	1,738,679
Melbourne ..	934,469	..	934,469	149,821	1,084,290
Perth ..	4,110,286	..	4,110,286	4,875	4,115,161
Total ..	6,710,755	..	6,710,755	227,375	6,938,130

In addition to the issue of gold, the Sydney and Perth mints distribute silver and bronze Australian coins struck elsewhere.

(iii) *Withdrawals of Worn Coin.* The mints receive light and worn coin for recoinage, gold being coined locally, while silver is forwarded to London. The value of gold coin so received in 1917 was £102, viz. :—Sydney, £54; Melbourne, £34; and Perth, £14. The value of worn silver coins received during 1917 was £22,779, viz. :—Sydney, £17,600; Melbourne, £5,179; and Perth, nil.

3. **Total Receipts and Issues.**—(i) *Receipts.* The total quantities of gold received at the three mints since their establishment are stated in the gross as follows:—Sydney, 38,221,623.49 ozs.; Melbourne, 37,300,119.70 ozs.; and Perth, 24,740,152.80 ozs. As the mints pay for standard gold (22 carats) at the rate of £3 17s. 10½d. per oz., which corresponds to a value of £4 4s. 11½d. per oz. fine (24 carats), it is possible to arrive at the number of fine ounces received from the amounts paid for the gold received. These amounts were:—Sydney, £141,162,625; Melbourne, £146,628,219; Perth, £86,670,675 corresponding to—Sydney, 33,232,720 ozs. fine; Melbourne, 34,264,095 ozs. fine; and Perth, 20,404,142 ozs. fine. Silver found in assaying is paid for if it exceeds 8 per cent.; in Sydney it has been paid for at the rate of 1s. 6d. per oz. fine since 12th May, 1902; in Melbourne the price is fixed monthly by the Deputy-Master of the Mint; and in the Perth accounts it has been taken at 1s. per oz.

(ii) *Issues.* The total values of gold coin and bullion issued by the three mints are shewn in the table hereafter. It may be said that rather more than one-half of the total gold production of Australasia has passed through the three Australian mints, the production of the Commonwealth States to the end of 1917 being valued at £589,128,566, and that of New Zealand at £87,046,887, or a total of £676,175,453.

#### TOTAL ISSUES OF GOLD FROM AUSTRALIAN MINTS TO END OF 1917.

Mint.	Coin.			Bullion.	Total.
	Sovereigns.	Half-sovereigns.	Total.		
	£	£	£	£	£
Sydney ..	129,634,500	4,781,000	134,415,500	6,754,518	141,170,018
Melbourne ..	134,813,500	946,780	135,760,280	10,872,625	146,632,905
Perth ..	78,389,102	257,344	78,646,446	7,984,631	86,631,077
Total ..	342,837,102	5,985,124	348,822,226	25,611,774	374,434,000

The total issues of Imperial silver coins from the opening of the Mints to the end of 1917 were £2,415,200, viz.:—Crowns, £3,500; double florins, £4,585; half-crowns, £722,600; florins, £528,215; shillings, £606,200; sixpences, £253,220; and threepences, £296,880.

Imperial bronze coins to the value of £180,150 have also been issued to the end of 1917, viz.:—Pence, £126,640; half-pence, £53,310; and farthings, £200.

(iii) *Withdrawals of Worn Coin.* Complete figures as to the withdrawal of gold coin are as follows:—Sydney, £1,084,381; Melbourne, £751,600 (since and including 1890); and Perth, £436.

Withdrawals of worn silver coin amounted to £592,773 in Sydney, to £554,261 in Melbourne, and to £52,491 in Perth.

4. **Standard Weight and Fineness of Coinage.**—The coinage of the Commonwealth is the same as that of the United Kingdom, and the same provisions as to legal tender hold good, viz., while gold coins are legal tender to any amount, silver coins are only so for an amount not exceeding forty shillings, and bronze coins up to one shilling. As will be seen from the table below, the standard weights of the sovereign and half-sovereign are respectively 123.27447 grains and 61.63723 grains, but these coins will pass current if they do not fall below 122.5 grains and 61.125 grains respectively.

## STANDARD WEIGHT AND FINENESS OF COMMONWEALTH COINAGE.

Denomination.	Standard Weight.	Standard Fineness.
	Grains.	
<b>GOLD—</b>		Eleven-twelfths fine gold, viz. :— Gold .. 0.91667 } 1.00000 Alloy .. 0.08333 }
Sovereign ..	123.27447	
Half-sovereign ..	61.63723	
<b>SILVER—</b>		Thirty-seven-fortieths fine silver, viz. :— Silver .. 0.925 } 1.000 Alloy .. 0.075 }
Crown ..	436.36363	
Double florin ..	349.09090	
Half-crown ..	218.18181	
Florin ..	174.54545	
Shilling ..	87.27272	
Sixpence ..	43.63636	Mixed metal, viz. :— Copper.. 0.95 } 1.00 Tin .. 0.04 Zinc .. 0.01 }
Threepence ..	21.81818	
<b>BRONZE—</b>		
Penny ..	145.83333	
Halfpenny ..	87.50000	
Farthing ..	43.75000	

5. Prices of Silver and Australian Coinage.—(i) *Prices of Silver.* The value of silver has greatly decreased since its demonetisation and restricted coinage in almost the whole of Europe. A noticeable increase has, however, taken place since 1915, the price of silver following the general trend of world prices. Its average price in the London market in recent years is shewn in the subjoined table :—

## AVERAGE PRICE OF SILVER IN LONDON MARKET, 1879 TO 1917.

Year.	Price per Standard Oz.	Year.	Price per Standard Oz.	Year.	Price per Standard Oz.
	d.		d.		d.
1879 ..	51.1875	1892 ..	39.8125	1905 ..	27.8125
1880 ..	52.2500	1893 ..	35.6250	1906 ..	30.8750
1881 ..	51.7500	1894 ..	29.0000	1907 ..	30.1875
1882 ..	51.8125	1895 ..	29.8750	1908 ..	24.3750
1883 ..	50.5625	1896 ..	30.7500	1909 ..	23.6875
1884 ..	50.6875	1897 ..	27.5625	1910 ..	24.6875
1885 ..	48.6250	1898 ..	26.9375	1911 ..	24.5625
1886 ..	45.3750	1899 ..	27.5000	1912 ..	28.0625
1887 ..	44.6250	1900 ..	28.3125	1913 ..	27.5625
1888 ..	42.8750	1901 ..	27.2500	1914 ..	25.3125
1889 ..	42.6875	1902 ..	24.1250	1915 ..	23.6875
1890 ..	47.7500	1903 ..	24.7500	1916 ..	31.3125
1891 ..	45.0625	1904 ..	26.3750	1917 ..	40.8750

(ii) *Profits on Coinage of Silver.* As sixty-six shillings are coined out of one pound troy of standard silver, the silver required to produce £3 6s. of coin was only worth on the average £2 0s. 10d. during 1917; the difference of £1 5s. 2d. represents, therefore, the gross profit or seignorage made on the coinage of every £3 6s. Negotiations took place for a number of years between the Imperial authorities and the Governments of New South Wales and Victoria, which in 1898 resulted in permission being granted to the two Governments named to coin silver and bronze coin at the Sydney and Melbourne Mints for circulation in Australia. No immediate steps were, however, taken in the matter, and as section 51 of the Commonwealth Constitution makes legislation concerning "currency, coinage, and legal tender" a federal matter, the question remained in abeyance until the latter part of 1908, when the Commonwealth Treasurer announced his intention of initiating the coinage of silver in the future.

(iii) *Coinage Bill.* In 1909 a Coinage Bill was introduced in the Commonwealth Parliament, which provided that the future Australian coinage should consist of the following coins :—In gold, £5, £2, £1, and 10s. ; in silver, 2s., 1s., 6d., and 3d. ; and in

bronze, 1d. and  $\frac{1}{2}$ d. Gold was to be legal tender up to any amount, silver up to 40s., and bronze up to 1s. Ultimately the coinage was to be undertaken in Australia, but for the time an agreement was made with the authorities of the Royal Mint in London, under the terms of which the coinage was to be done in London on account of the Commonwealth Government. Orders were given for the immediate coinage of £200,000 worth of silver, viz., one million florins, one million shillings, one million sixpences, and two million threepences. The coins were to bear on the obverse H.M. the King's head, with the Latin inscription which appears on the British coins, and on the reverse the Australian coat-of-arms, with the denomination and the date. The Imperial authorities undertook to withdraw £100,000 worth of the existing silver-coinage per annum at its face value. The first consignment of the new coinage arrived in Australia early in 1910, and in a short time all the silver coins contracted for were supplied to the Royal Mints, Australia. Copper coins of the value of £10,000, viz., 1,560,000 pennies and 1,680,000 halfpennies, of a design similar to that of the silver coins, were ordered. It was not, however, intended to withdraw any of the existing copper coins, but merely to make good the "leakage," which was considerable.

The issue in 1917 was £596,775 silver, and £28,200 bronze, according to a statement issued by the Commonwealth Treasury. The total issue since 1910 amounted to £3,007,075 silver, and £120,740 bronze.

## § 2. Banking.

1. **Banking Facilities.**—*Head Offices of Banks.* Of the twenty-one banks trading in the Commonwealth on 30th June, 1919, four have their head offices in London, viz., the Bank of Australasia; the Union Bank of Australia Limited; the English, Scottish and Australian Bank Limited; and the London Bank of Australia Limited. The head offices of the following four banks are in Sydney—The Commonwealth Bank of Australia, The Bank of New South Wales, the Commercial Banking Company of Sydney Limited, and the Australian Joint Stock Bank Limited (now the Australian Bank of Commerce Limited). Four banks have their head offices in Melbourne, viz., the National Bank of Australasia Limited, the Commercial Bank of Australia Limited, the Bank of Victoria Limited, and the Royal Bank of Australia Limited. Brisbane is the headquarters of two banks, viz., the Queensland National Bank Limited, and the Bank of Queensland Limited. Only one bank has at present its head office in Adelaide, viz., the Bank of Adelaide; one in Perth, viz., the Western Australian Bank; and one in Hobart, the Commercial Bank of Tasmania Limited. The Bank of New Zealand has its headquarters in Wellington. Of the three remaining banks, the Comptoir National d'Escompte de Paris has its head office in Paris, the Ballarat Banking Company in Ballarat, and the Yokohama Specie Bank in Yokohama, Japan. It is proposed, in the few instances where the banks are referred to by name, to arrange them in the order just given, with the exception of the Commonwealth Bank, which is placed first.

It is worthy of note that the bank amalgamations, which have been such a feature in British banking of late years, have appeared in Australia, and materially reduced the number of competitive joint stock banks. During the calendar years 1917 and 1918 the following have been recorded :—(a) the Royal Bank of Queensland Limited with Bank of North Queensland Limited; (b) City Bank of Sydney with Australian Bank of Commerce Limited; (c) National Bank of Tasmania Limited with Commercial Bank of Australia Limited; and (d) National Bank of Australia Limited with Colonial Bank of Australasia Limited. This accounts for the reduction in number of independent joint stock banks operating in Australia.

A further amalgamation has recently been announced (in August, 1920), viz., the London Bank of Australia Ltd. and the English, Scottish and Australian Bank Ltd. These will, however, appear as independent banks until the returns for 1920–21 are published.

2. **Banking Legislation.**—Under Section 51 of the Commonwealth Constitution Act the Commonwealth Parliament has power to legislate with respect to "Banking, other than State banking, also State banking extending beyond the limits of the State concerned, the incorporation of banks, and the issue of paper money." For a few years the only Commonwealth banking legislation passed was Act No. 27 of 1909,

"An Act relating to Bills of Exchange, Cheques, and Promissory Notes," which came into force on the 1st February, 1910. In the session of 1910, however, two Acts relating to banking were passed by the Federal Parliament. The first was the Australian Notes Act No. 11 of 1910, assented to on the 16th September, 1910, and proclaimed 1st November, 1910; and the second the Bank Notes Tax Act No. 14, 1910, assented to on 10th October, 1910, and proclaimed 1st July, 1911. Under the first of these Acts the Commonwealth Treasurer was empowered to issue notes which were to be legal tender throughout the Commonwealth. The notes were issued in denominations of 10s., £1, £5, £10, £20, £50, and £100. The Act directed the Treasurer to hold the following reserve of gold coin :—

- (a) An amount not less than one-fourth of the amount of Australian notes issued up to seven million pounds;
- (b) An amount equal to the amount of Australian notes issued in excess of seven million pounds.

For the purpose of estimating the reserve, notes which have been redeemed are not included amongst those issued.

The portion of the Act relating to the reserve was amended by Act No. 21 of 1911, which was assented to on 22nd December, 1911. According to this amending Act the clause relating to the reserve now reads as follows :—"The Treasurer shall hold in gold coin a reserve of not less than one-fourth of the amount of Australian notes issued." It was intended that this amendment should come into force on 1st July, 1912, but the Federal Treasurer afterwards announced that its operation would be deferred until after the Commonwealth elections of 1913. These elections resulted in the return to power of another administration, and the new Treasurer, Sir John Forrest, announced his intention of maintaining the reserve at the rate provided for in the original Act during his tenure of office. This only lasted until September, 1914, but there has not, since then, been a very great diminution in the proportionate gold reserve, which in July, 1920, stood at about 41½ per cent.

The Australian Notes Act prohibited the circulation of notes issued by a State six months after the commencement of the Act, and such notes then ceased to be legal tender. In addition, the Bank Notes Act imposed a tax of 10 per cent. per annum in respect of all bank notes issued or re-issued by any bank in the Commonwealth after the commencement of this Act and not redeemed.

The Notes Act and the Bank Notes Act were supplemented in the following year by the passing of No. 18 of 1911, "An Act to provide for a Commonwealth Bank," which passed both Houses and was assented to on 22nd December, 1911. The early steps in the foundation of the Bank have been described in previous issues from No. 6 to No. 10 inclusive, and will not be repeated here.

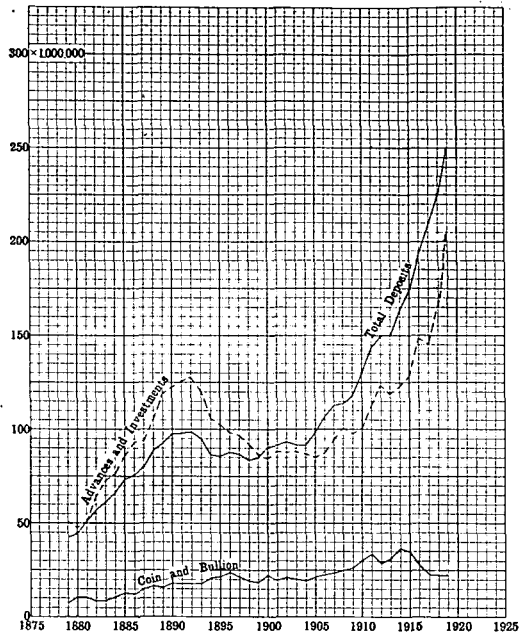
As the initial expenses of the bank were heavy, and as no capital was advanced, the early operations resulted in a small loss. This was debited to the profit and loss account of the bank, and the increasing prosperity of the institution was shewn by the way in which the original debit was reduced, until on 30th June, 1915, it was entirely extinguished. The following table shews the results of the transactions of the bank for the last five financial years :—

#### COMMONWEALTH BANK.—NET RESULT OF TRANSACTIONS, 1915 TO 1919.

Net Result at 30th June—				General Bank.	Savings Bank.	Entire Bank.
				£	£	£
1915	..	..	..	Cr. 56,905	Dr. 54,684	Cr. 2,221
1916	..	..	..	Cr. 181,445	Dr. 34,376	Cr. 147,069
1917	..	..	..	Cr. 522,467	Cr. 3,825	Cr. 526,292
1918	..	..	..	Cr. 991,934	Cr. 84,092	Cr. 1,076,026
1919	..	..	..	Cr. 1,726,532	Cr. 196,438	Cr. 1,922,970

It will be seen from the above that the general bank became profitable at a much earlier stage than the savings bank. According to the provisions of section 30 of the Bank Act, the net profit of £1,922,970 disclosed at 30th June, 1919, was divided equally between a bank reserve fund and a redemption fund. The reserve fund is available for the payment of any liabilities of the bank. The redemption fund is available for the

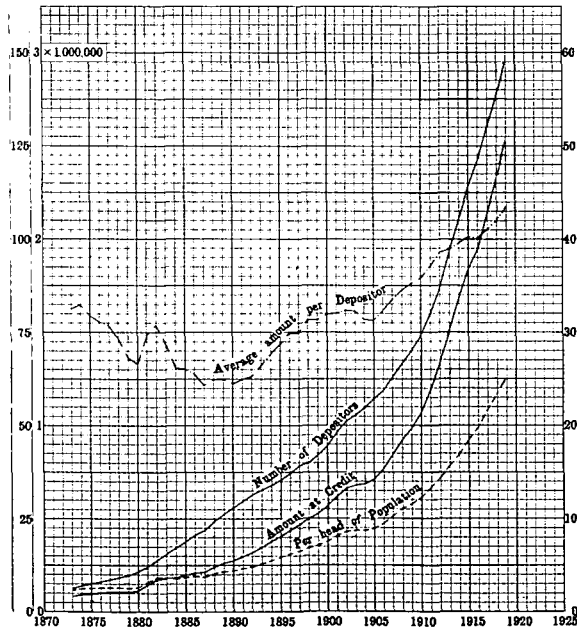
## AUSTRALIAN BANKING STATISTICS.—CHEQUE-PAYING BANKS IN AUSTRALIA, 1879-1919.



See pp. 817 to 819.

EXPLANATION OF GRAPH.—The base of each small square represents an interval of one year, and its vertical height a sum of £5,000,000.

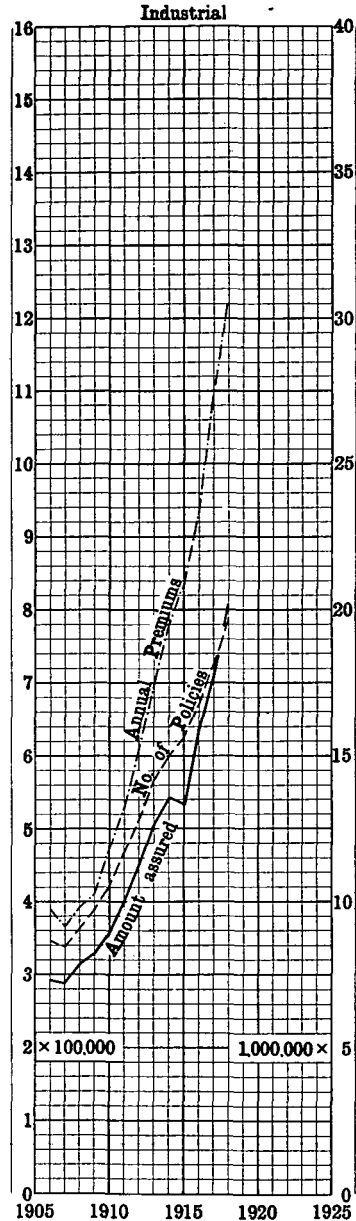
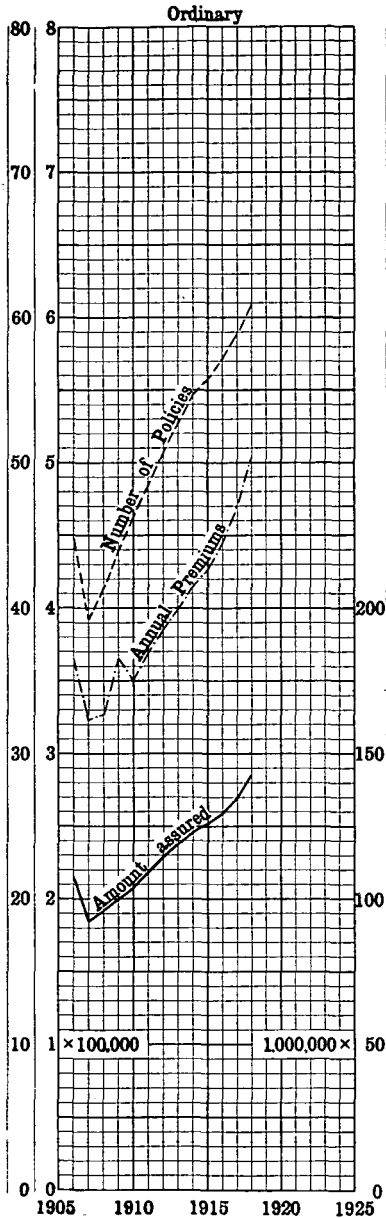
## SAVINGS BANKS IN AUSTRALIA, 1873-1919.



See pp. 823 to 826.

EXPLANATION OF GRAPH.—The base of each small square represents an interval of one year. Of the two scales on the left, the outer one represents the amount at credit, and the inner one the number of depositors, while the vertical height of each small square represents £2,500,000 and 50,000 in number respectively. The scale on the right represents the average amount per depositor, and per head of population respectively, while the vertical height of each small square represents £1.

GRAPHS SHEWING LIFE ASSURANCE IN ORDINARY AND INDUSTRIAL DEPARTMENTS  
IN THE COMMONWEALTH OF AUSTRALIA, 1906-1918.



See pp. 827, 828.

EXPLANATION OF GRAPHS.—The base of each small square represents in each graph an interval of one year.

In the case of the "Ordinary" Assurance graph, there are three scales—two on the left—the outer one representing the Annual Premiums, and the inner one the number of Policies in force,—and one on the right representing the Amount Assured, exclusive of bonus additions. The vertical height of each small square represents £100,000, 10,000 in number and £5,000,000 respectively.

In the case of the "Industrial" Assurance graph, the scale on the left represents the Annual Premiums and the number of Policies in force, and the scale on the right the Amount Assured, exclusive of bonus additions. The vertical height of each small square represents £20,000, 20,000 in number and £500,000 respectively.

repayment of any money advanced to the bank by the Treasurer, or for the redemption of debentures or stock which may be issued by the bank; and any excess may be used for the purpose of the redemption of any Commonwealth debts, or State debts taken over by the Commonwealth.

The Acts under which the various banks are incorporated are not all of the same nature, but it may be stated that while most of the older banks were incorporated by special Acts, e.g., the Bank of New South Wales, by Act of Council 1817; the Bank of Australasia, by Royal Charter; the Bank of Adelaide, by Act of the South Australian Parliament; and the Bank of New Zealand, by Act of the General Assembly of New Zealand, the newer banks are generally registered under a "Companies Act," or some equivalent Act. This is also the case with those banks which, after the crisis of 1893, were reconstructed.

3. **Capital Resources of Banks.**—The paid-up capital of the cheque-paying banks, together with their reserve funds, the rate per cent., and the amount of their last dividends, are shewn in the table hereunder. The information relates to the balance-sheet last preceding the 30th June, 1919. In regard to the reserve funds it must be stated that in the case of some of the banks these are invested in Government securities, while in other cases they are used in the ordinary business of the banks, and in a few instances they are partly invested and partly used in business.

#### CAPITAL RESOURCES OF CHEQUE-PAYING BANKS, 1918-19.

Bank.	Paid-up Capital.	Rate per cent. per annum of last Dividend and Bonus.	Amount of last Half-yearly Dividend and Bonus.	Amount of Reserved Profits.
	£	%	£	£
Commonwealth Bank of Australia ..	2,000,000	14 and Bonus 3	170,000	1,922,970
Bank of Australasia ..	2,000,000	14	140,000	3,000,000
Union Bank of Australia Ltd. ..	539,438	10	48,549*	2,050,000
English, Scottish and Australian Bank Ltd. ..	669,785 <sup>1</sup>	9	29,829	550,000
London Bank of Australia Ltd. ..	3,959,160	10	97,811*	420,000
Bank of New South Wales ..	2,382,019	10	100,000	3,100,000
Commercial Banking Coy. of Sydney Ltd. ..	1,198,679	5	29,967	2,080,000
Australasian Bank of Commerce Ltd. ..	2,000,000	8	78,789	145,000
National Bank of Australasia Ltd. ..	2,213,009*	4	42,347	1,090,000
Commercial Bank of Australia Ltd. ..	1,478,010*	7	51,730	..
Bank of Victoria Ltd. ..	500,000	8	12,000	475,000
Royal Bank of Australia Ltd. ..	691,851	10	12,000*	320,000
Queensland National Bank Ltd. ..	450,000	6	13,500	247,000
Bank of Queensland Ltd. ..	500,000	10	25,000	..
Bank of Adelaide ..	250,000	20	25,000	570,000
Western Australian Bank ..	300,000	14	14,000	700,000
Commercial Bank of Tasmania Ltd. ..	..	..	..	190,000
Bank of New Zealand ..	2,279,989	12 and Bonus 3 Ordinary and B Preferential, 10 A Preferential 4 Guaranteed	237,000*	2,350,000
Comptoir National d'Escompte de Paris ..	8,000,000	6	480,000*	1,742,526
Ballarat Banking Coy. Ltd. ..	85,000	10	4,250	91,000
Yokohama Specie Bank ..	4,200,000	12	252,000	2,500,000
Total ..	35,696,940	..	..	23,543,496

1. Including calls in arrear. 2. Subject to estimated deficiency in connection with Special Assets Trusts Coy. Ltd. 3. £416,760 preferential, £1,061,250 ordinary. 4. For twelve months. 5. Dividend for quarter.

4. **Liabilities and Assets of Banks.**—(i) *Liabilities of Banks for Quarter ended 30th June, 1919.* As already stated, the banks transacting business in any State are obliged, under the existing State laws, to furnish a quarterly statement of their assets and liabilities, which contains the averages of the weekly statements prepared by the bank



for that purpose, and they have, during the years 1908-19, furnished quarterly statements to the Commonwealth Statistician. As all other financial returns in this work embrace, so far as possible, a period ended 30th June, 1919, it seems advisable to give the banking figures for the quarter ended on that date, and, where they are shewn for a series of years, similarly to use the figures for the June quarter of each year. The liabilities are those to the general public, and are exclusive of the banks' liabilities to their shareholders, which are shewn in the preceding table:—

**AVERAGE LIABILITIES OF BANKS IN EACH STATE OF THE COMMONWEALTH AND THE NORTHERN TERRITORY FOR THE QUARTER ENDED 30th JUNE, 1919.**

State.	Notes in Circulation not Bearing Interest.	Bills in Circulation not Bearing Interest.	Balances Due to Other Banks.	Deposits.			Total Liabilities.
				Not Bearing Interest.	Bearing Interest. (b)	Total.	
	£	£	£	£	£	£	£
New South Wales	69,510	738,596	3,076,244	45,215,579	48,649,514	93,865,093	97,749,443
Victoria ..	93,935	234,161	1,583,626	35,018,279	43,319,179	78,337,458	80,249,180
Queensland ..	(a)	739,863	608,030	17,979,136	17,497,915	35,477,051	36,824,944
South Australia ..	25,106	38,324	796,569	12,142,400	11,508,145	23,650,545	24,510,544
Western Australia	26,628	49,212	342,512	5,471,370	5,191,773	10,663,143	11,081,495
Tasmania ..	6,576	13,159	110,891	3,012,999	3,707,382	6,720,381	6,851,007
Northern Territory	..	75	22,737	148,804	195,779	344,583	367,395
Total ..	221,755	1,813,390	6,540,609	118,988,567	130,069,687	249,058,254	257,634,008

(a) In Queensland, Treasury Notes were used instead of bank notes.

(b) Including £16,578,767 Commonwealth Savings Bank Deposits.

(ii) *Assets of Banks for Quarter ended 30th June, 1919.* The average assets of the banks are shewn in the following table:—

**AVERAGE ASSETS OF BANKS IN EACH STATE OF THE COMMONWEALTH AND THE NORTHERN TERRITORY FOR THE QUARTER ENDED 30th JUNE, 1919.**

State.	Coined Gold and Silver and other Metals.	Gold and Silver in Bullion or Bars.	Government and Municipal Securities.	Landed and House Property.	Notes and Bills of other Banks.	Balances Due from other Banks.	Discounts, Overdrafts, and all other Assets.	Australian Notes.	Total Assets.
	£	£	£	£	£	£	£	£	£
N.S.W. ...	10,357,967	369,120	17,909,276	2,378,001	637,070	4,352,200	70,891,172	12,151,457	119,046,263
Victoria ..	5,062,556	77,813	4,945,547	1,388,101	767,582	1,445,468	53,645,558	10,896,485	78,229,110
Q'land ..	2,282,425	89,897	1,355,528	777,403	446,725	655,869	21,773,778	6,319,908	33,701,533
S. Aust. ...	1,757,529	2,285	409,376	285,186	200,132	546,006	17,280,249	3,511,218	23,991,981
W. Aust.	1,217,724	251,776	669,933	225,461	132,661	557,797	10,562,174	1,840,742	15,458,268
Tasmania	657,309	422	1,525,528	160,198	44,931	162,586	3,785,362	1,030,937	7,367,273
Nor. Ter.	5,516	2,570	..	1,200	45,321	78,809	14,532	8,360	156,308
Total	21,341,026	793,883	26,815,188	5,215,550	2,274,422	7,798,735	177,952,825	35,759,107	277,950,736

(iii) *Liabilities of Banks for June Quarters, 1914 to 1919.* In the subjoined table, which shows the average liabilities of the banks for the quarters ended 30th June, 1914 to 1919, for the Commonwealth as a whole, it will be seen that the growth in total liabilities is almost entirely due to an increase in the deposits, and that deposits not bearing interest and deposits bearing interest have both shared in that increase :—

**AVERAGE LIABILITIES OF BANKS IN THE COMMONWEALTH FOR THE QUARTER ENDED 30th JUNE, IN THE YEARS 1914 TO 1919.**

Year.	Notes in Circulation not Bearing Interest.	Bills in Circulation not Bearing Interest.	Balances Due to Other Banks.	Deposits.			Total Liabilities.
				Not Bearing Interest.	Bearing Interest. (a)	Total.	
	£	£	£	£	£	£	£
1914 .. ..	306,809	1,089,548	2,750,788	70,195,462	93,659,093	163,854,555	168,001,700
1915 .. ..	275,589	1,140,592	3,347,646	75,380,916	99,598,420	174,979,336	179,743,163
1916 .. ..	257,621	1,263,622	4,389,228	92,821,872	100,118,758	192,940,630	198,851,101
1917 .. ..	244,806	1,439,019	3,660,853	105,390,961	103,739,427	209,130,388	214,475,066
1918 .. ..	229,639	1,726,045	4,486,497	112,262,321	112,504,432	224,766,753	231,208,934
1919 .. ..	221,755	1,813,390	6,540,609	118,988,567	130,069,687	249,058,254	257,634,008

(a) Including Commonwealth Savings Bank Deposits.

(iv) *Assets of Banks for June Quarters, 1914 to 1919.* A similar table shewing the average assets of the banks for the June quarters of each of the years 1914 to 1919 is shewn below.

**AVERAGE ASSETS OF BANKS IN THE COMMONWEALTH FOR THE QUARTER ENDED 30th JUNE, IN THE YEARS 1914 TO 1919.**

Year.	Coined Gold and Silver and other Metals.	Gold and Silver in Bullion or Bars.	Landed and other Property.	Notes and Bills of other Banks.	Balances Due from other Banks.	All other Debts Due to the Banks.(a)	Total Assets.
	£	£	£	£	£	£	£
1914 .. ..	35,385,924	1,024,100	4,592,951	1,785,498	4,737,862	127,922,971	175,449,306
1915 .. ..	33,888,106	1,015,017	5,064,575	1,671,105	4,070,229	148,603,014	194,312,046
1916 .. ..	26,957,576	843,214	5,237,167	1,756,796	5,526,231	179,232,575	219,553,559
1917 .. ..	21,685,410	1,156,033	5,288,199	2,035,297	5,429,884	176,739,172	212,333,995
1918 .. ..	21,518,264	889,032	5,300,834	2,149,799	6,087,990	200,386,561	236,332,480
1919 .. ..	21,341,026	793,883	5,215,550	2,274,422	7,798,735	240,527,120	277,950,736

(a) Including Government and Municipal securities, and Australian notes.

As the table shews, the increase in the total amount of assets is mainly due to advances. The marked advance in the item "all other debts" in the year 1915 was due to the large expansion of the Australian note issue, owing to the war. The decline in 1917 was due to a fall in the advances, which was not quite balanced by the rise in Government securities. The great increases of 1918 and 1919 are almost exactly accounted for by the increase in the advances, due largely to the action of the banks in financing wheat and other commodities awaiting shipment; also in assisting individuals to invest in war loan. The banks materially assisted the Federal Government in its war finance by advancing £10,000,000 in gold, receiving in return an equivalent amount in Australian notes, which they undertook not to present for payment until the termination of the war.

**5. Percentage of Coin, Bullion, and Australian Notes to Liabilities at Call.—**

(i) *Commonwealth.* Although it is not strictly correct to assume that the division of deposits into those bearing interest and not bearing interest would in every case coincide with a division into fixed deposits and current accounts, the division, in default of a better one, must be adopted, and in the following table "liabilities at call" are therefore understood to include the note circulation of the banks and the deposits not bearing interest. From 1912 onwards, however, the former item has steadily decreased, and is now almost negligible as compared with the deposits not bearing interest.

**PERCENTAGE OF COIN, BULLION, AND AUSTRALIAN NOTES TO LIABILITIES AT CALL, COMMONWEALTH BANKS, 1914 TO 1919.**

Year.	Liabilities at Call.	Coin, Bullion, and Australian Notes.	Percentage to Liabilities at Call.
	£	£	%
1914 .. .. .	70,502,271	41,446,540	58.79
1915 .. .. .	75,656,505	55,376,352	73.19
1916 .. .. .	93,079,493	58,312,009	62.65
1917 .. .. .	105,635,767	53,777,126	50.91
1918 .. .. .	112,491,960	56,359,868	50.10
1919 .. .. .	119,210,322	57,894,016	48.56

It would appear from the figures just given that the banks generally consider it advisable to hold about half the amount of liabilities at call in coin and bullion. In the year 1914 the ratio rose to more than four-sevenths, and in 1915 to nearly three-fourths. The result of over 73 per cent. for 1915 was abnormal, and was due to the rise in the holdings of Australian notes, which are being held in excess of requirements. The subsequent fall is due partly to an increase in the deposits, and partly to a diminution in the holding of gold coin.

(ii) *Queensland Treasury Notes.* No bank notes are issued by any of the banks in Queensland, where a Treasury note took the place of bank notes from 1893. These Treasury notes are disregarded in the quarterly statements of the banks; according to Treasury returns the amount outstanding on 30th June, 1919, was £25,600. Under the Australian Notes Act, previously referred to, the issue of notes by a State is now prohibited.

(iii) *States.* The proportion of coin, bullion, and Australian notes to liabilities at call varies considerably in the different States, and even sometimes in the same State from year to year. A table is appended shewing the percentage for each State for the quarter ended 30th June in each of the years 1914 to 1919 :—

**PERCENTAGE OF COIN, BULLION, AND AUSTRALIAN NOTES TO LIABILITIES AT CALL, COMMONWEALTH BANKS, 1914 TO 1919.**

Year.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	N. Ter.	All States.
	%	%	%	%	%	%	%	%
1914 ..	57.66	55.16	47.85	74.93	102.60	50.04	19.53	58.79
1915 ..	66.50	69.13	63.82	115.07	139.21	68.90	20.80	73.19
1916 ..	56.02	62.94	56.78	72.93	127.61	72.55	13.40	62.65
1917 ..	49.34	49.51	46.71	54.11	80.41	62.89	11.50	50.91
1918 ..	48.06	48.95	51.55	54.81	57.06	61.30	12.66	50.10
1919 ..	50.52	45.67	48.35	43.32	60.21	55.92	11.05	48.56

**6. Deposits and Advances.**—(i) *Total Deposits.* The total amount of deposits held by the banks shews a steady advance during the period under review.

**TOTAL DEPOSITS IN COMMONWEALTH BANKS, 1914 TO 1919.**

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	N. Ter.	All States.
	£	£	£	£	£	£	£	£
1914 ..	62,927,433	52,027,824	24,244,483	12,248,015	6,858,956	5,415,462	132,382	163,854,555
1915 ..	68,170,388	54,159,707	27,369,725	11,857,003	7,539,468	5,710,106	172,939	174,979,336
1916 ..	80,046,047	59,280,709	25,648,722	13,631,827	8,070,380	6,042,451	220,494	192,940,630
1917 ..	84,049,266	65,241,651	29,215,467	15,812,959	8,519,498	5,966,908	324,639	209,130,388
1918 ..	86,489,590	68,663,889	34,133,083	18,594,391	9,770,507	6,750,979	364,314	224,766,753
1919 ..	93,865,093	73,337,458	35,477,051	23,650,545	10,663,143	6,720,381	344,583	249,058,254

(ii) *Deposits per Head of Population.* To shew the extent to which the population makes use of the banking facilities afforded to it, a table is given hereunder shewing the

amount of total deposits per head of mean population for each of the years 1914 to 1918. The figures must not be taken as representative of the savings of the people, as a large proportion of the deposits is non-interest-bearing and therefore presumably used in the business of the banks' customers, together with a small part of the interest-bearing deposits.

**DEPOSITS PER HEAD OF POPULATION IN COMMONWEALTH BANKS,  
1914 TO 1919.**

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	N. Ter.	All States.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
1914 ..	34 18 10	37 5 4	36 14 11	28 17 2	22 12 6	28 0 0	36 7 8	34 4 7
1915 ..	36 8 10	37 18 6	39 16 2	26 19 0	23 7 2	28 12 5	41 9 1	35 6 8
1916 ..	42 19 0	42 0 6	37 9 1	31 6 3	25 11 8	30 9 7	45 10 9	39 5 5
1917 ..	44 19 9	46 9 9	43 2 2	36 14 7	27 12 9	30 2 5	64 12 10	42 15 1
1918 ..	45 7 2	48 10 5	49 13 3	42 6 11	31 9 8	33 4 0	71 4 6	45 5 1
1919 ..	48 0 4	53 13 9	50 4 2	52 6 6	33 5 8	31 19 9	71 19 1	48 14 9

(iii) *Total Advances.* In the quarterly statements furnished by the banks the column headed "all other debts due to the banks," is made up of such miscellaneous items as bills discounted, promissory notes discounted, overdrafts on personal security, overdrafts secured by deposit of deeds or by mortgage, etc. The quarterly returns furnished to the Commonwealth Statistician in 1908 and 1909 provided for a division of the amounts contained under this heading into a number of sub-headings, but all the banks were not in a position to make the necessary division, so that under present circumstances it is impossible to separate these items, and the total amounts contained in the column must, therefore, be treated as advances. The following table shews the totals for each State during the years 1914 to 1919. The fall in 1917 was due to the fact that the banks were not called upon to finance the harvest, this being undertaken by the Imperial Government. Part of the very large rise in 1917-19 is due to the advances made by the banks to their clients, to enable them to subscribe to the Commonwealth War Loans.

**ADVANCES BY COMMONWEALTH BANKS, 1914 TO 1919.**

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	N. Ter.	All States.
	£	£	£	£	£	£	£	£
1914 ..	43,423,580	35,667,449	17,114,230	8,142,197	8,024,452	3,132,988	4,314	115,509,210
1915 ..	45,305,098	35,233,268	17,304,016	8,078,242	8,503,033	2,880,489	8,332	117,312,478
1916 ..	50,443,748	41,990,188	18,456,103	10,156,148	9,414,042	2,871,661	4,141	133,336,031
1917 ..	48,592,808	36,929,442	17,753,800	8,459,562	9,057,389	2,988,916	5,935	123,787,862
1918 ..	56,176,269	42,185,873	18,685,598	10,877,107	9,183,968	3,265,637	36,006	140,410,458
1919 ..	70,591,172	53,645,558	21,773,778	17,280,249	10,562,174	3,785,362	14,532	177,952,825

(iv) *Proportion of Advances to Deposits.* The percentage borne by advances to total deposits shews to what extent the needs of one State have to be supplied by the resources of another State, and where the percentage for the Commonwealth as a whole exceeds 100 (as it did in the early years of the century), the banks must have supplied the deficiency from their own resources, or from deposits obtained outside the Commonwealth. The following figures shew, however, that the banking business of the Commonwealth has been self-contained during the period under review :—

**PERCENTAGE OF ADVANCES TO TOTAL DEPOSITS, COMMONWEALTH BANKS,  
1914 TO 1919.**

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	Nor. Ter.	All States.
	%	%	%	%	%	%	%	%
1914 ..	69.01	68.55	70.59	66.48	116.99	57.85	3.26	70.49
1915 ..	66.46	65.05	63.22	68.13	112.78	50.45	7.82	67.04
1916 ..	63.02	70.83	71.96	74.50	116.65	47.52	1.88	69.11
1917 ..	57.81	56.60	60.77	53.50	106.31	50.09	1.83	59.19
1918 ..	64.95	61.44	54.74	58.50	94.00	48.37	9.88	62.47
1919 ..	75.52	68.48	61.43	73.06	99.05	56.33	4.22	71.45

**7. Clearing Houses.**—The Sydney Banks' Exchange Settlement and the Melbourne Clearing House, at which two institutions settlements are effected daily between the banks doing business in New South Wales and Victoria respectively, publish figures of the weekly clearances effected. From these figures it appears that in 1919 the total clearances in Sydney amounted to £590,098,000, and in Melbourne to £544,211,000. These figures represent an increase for Sydney of £37,882,000 on those for 1918, and for Melbourne of £50,443,000. Owing to the different distribution of the banking business in the two cities these figures do not, however, afford a fair comparison of the volume of banking business transacted in Sydney and Melbourne. For Adelaide the clearances in 1919 totalled £123,880,000, an increase for the year of £18,175,000. Returns for all Australian Clearing Houses for the last six years are shewn in the following table:—

**YEARLY TOTAL OF BILLS, CHEQUES, ETC., PASSED THROUGH AUSTRALIAN CLEARING HOUSES, 1914 TO 1919.**

Year.	Sydney.	Melbourne.	Brisbane.	Adelaide.	Perth.
	£	£	£	£	£
1914 .. ..	353,068,000	299,668,000	84,925,000	70,031,000	..
1915 .. ..	357,803,000	299,295,000	96,291,000	60,950,000	..
1916 .. ..	422,371,000	357,788,000	100,064,000	71,433,000	40,366,000
1917 .. ..	444,532,000	377,300,000	119,501,000	83,866,000	41,370,000
1918 .. ..	552,216,000	493,768,000	134,050,000	105,705,000	50,518,000
1919 .. ..	590,098,000	544,211,000	128,006,000	123,880,000	56,900,000

### § 3. Companies.

**1. General.**—Returns in regard to registered companies are defective, and, with few exceptions, are not available for Tasmania. They embrace (a) Returns relating to Trustees, Executors and Agency Companies; (b) Returns relating to Registered Building and Investment Societies; and (c) Returns relating to Registered Co-operative Societies.

**2. Trustees, Executors and Agency Companies.**—Returns are available of eight Victorian, two New South Wales, one Queensland, three South Australian, one Western Australian, two Tasmanian companies, and two with head offices in New Zealand. The paid-up capital of these nineteen companies amounted to £633,180; reserve funds and undivided profits to £555,206; other liabilities, £238,106; total liabilities, £1,426,492. Among the assets are included:—Deposits with Governments, £256,127; other investments in public securities, fixed deposits, etc., £299,055; loans on mortgage, £123,007; property owned, £467,932; other assets, £280,371. The net profits for the year were £114,139, and the amount of dividends and bonuses £66,842. Returns as to the amount at credit of estates represented by assets are available for only ten companies, the total shewn being £54,748,485.

Probably about £25,000,000 would have to be added to this amount for the remaining nine companies, so that the total amount would probably be about £80,000,000. None of these companies receives deposits, and advances are only made under exceptional circumstances, and to a very limited extent, the total so shewn in the last balance-sheets being but £100,082.

**3. Registered Building and Investment Societies.**—Returns have been received of a total of 205 societies, viz., 122 in New South Wales, 31 in Victoria, 11 in Queensland, 23 in South Australia, 14 in Western Australia, and 4 in Tasmania. The balance-sheets

cover various periods ended during the second half of 1918 and the first half of 1919, so that the returns may be assumed to correspond roughly to the financial year 1918-19. The liabilities of the societies are stated as follows :—

#### LIABILITIES OF REGISTERED BUILDING AND INVESTMENT SOCIETIES, 1918-19.

State.	Paid-up Capital or Subscriptions.	Reserve Funds.	Deposits.	Bank Overdrafts and other Liabilities.	Total Liabilities.
	£	£	£	£	£
New South Wales ..	1,817,772	(a)	485,910	238,355	2,542,037
Victoria ..	1,307,022	370,830	707,829	105,901	2,491,582
Queensland ..	494,707	49,527	85,685	27,422	657,341
South Australia ..	282,492	19,726	3,414	294,895	600,527
Western Australia ..	141,478	465	25,838	11,878	179,659
Tasmania ..	99,104	59,591	145,645	11,804	316,144
Total ..	4,142,575	500,139	1,454,321	690,255	6,787,290

(a) Included in paid-up capital or subscriptions.

The assets of the companies for the same period were as follows :—

#### ASSETS OF REGISTERED BUILDING AND INVESTMENT SOCIETIES, 1918-19.

State.	Advances on Mortgage.	Landed and House Property, Furniture, etc.	Cash in Hand and on Deposit and other Assets.	Total Assets.
	£	£	£	£
New South Wales ..	2,175,469	(a)	366,568	2,542,037
Victoria ..	2,024,902	427,132	103,719	2,555,753
Queensland ..	603,712	13,527	41,507	658,746
South Australia ..	578,946	3,079	29,427	611,452
Western Australia ..	174,026	150	5,483	179,659
Tasmania ..	274,702	10,240	31,202	316,144
Total ..	5,831,757	454,128	577,906	6,863,791

(a) Included with other assets.

Statistical information, so far as is available, is furnished in the following table :—

#### REGISTERED BUILDING AND INVESTMENT SOCIETIES, 1918-19.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	All States.
Number of societies ..	122	31	11	23	14	4	205
Number of shareholders ..	(a)	7,324	4,692	9,314	3,366	1,685	(b) 26,381
Number of shares ..	(a)	(a)	836,695	25,309	10,825	14,073	(c) 886,902
Number of borrowers ..	(a)	(a)	4,162	2,525	1,353	1,311	(b) 18,398
Income for year from interest £	129,362	164,703	42,678	31,688	(d)	20,865	389,296
Working expenses for year £	100,046	65,353	10,349	7,193	4,564	6,221	193,726
Amount of deposits during year ..	£ 227,548	797,308	35,660	5,249	48,851	27,689	1,142,305
Repayment of loans during year ..	£ 257,826	608,253	178,532	109,250	50,291	61,009	1,263,161
Loans granted during year ..	£ 343,356	462,910	136,484	127,428	46,572	48,250	1,165,000

(a) Not available. (b) Exclusive of New South Wales. (c) Exclusive of New South Wales and Victoria. (d) Included in repayment of loans.

4. **Registered Co-operative Societies.**—Returns are available of 131 societies, of which 44 are in New South Wales, 64 in Victoria, 4 in Queensland, 6 in South Australia, and 13 in Western Australia. As in the case of Building and Investment Societies, so in the case of Co-operative Societies the balance-sheets cover various periods ended during the financial year 1918-19. The liabilities of the 131 societies are shewn in the following table :—

**LIABILITIES OF REGISTERED CO-OPERATIVE SOCIETIES, 1918-19.**

State.	Paid-up Capital.	Reserve Funds.	Bank Overdrafts and Sundry Creditors.	Other Liabilities, Profit and Loss Account, etc.	Total Liabilities.
	£	£	£	£	£
New South Wales ..	348,341	194,914	(a)	184,100	727,355
Victoria ..	147,442	56,284	238,294	70,160	512,180
Queensland ..	7,678	..	5,545	16,284	29,507
South Australia ..	226,240	17,768	15,823	61,220	321,051
Western Australia ..	19,256	3,226	21,310	63,076	106,868
<b>Total ..</b>	<b>748,957</b>	<b>272,192</b>	<b>280,972</b>	<b>394,840</b>	<b>1,696,961</b>

(a) Included in other liabilities.

The assets of the societies are shewn hereunder :—

**ASSETS OF REGISTERED CO-OPERATIVE SOCIETIES, 1918-19.**

State.	Stock and Fittings.	Cash in Hand and Sundry Debtors.	Freehold and other Property and other Assets.	Total Assets.
	£	£	£	£
New South Wales ..	563,669	131,237	32,449	727,355
Victoria ..	248,361	160,177	126,342	534,880
Queensland ..	8,264	8,643	15,344	32,251
South Australia ..	237,626	72,384	30,349	340,359
Western Australia ..	76,809	24,641	5,418	106,868
<b>Total ..</b>	<b>1,134,729</b>	<b>397,082</b>	<b>209,902</b>	<b>1,741,713</b>

The following table gives statistical information, so far as available :—

**REGISTERED CO-OPERATIVE SOCIETIES, 1918.**

Details.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	All States. (a)
Number of Societies on 31st December, 1918 ..	44	64	4	6	19	137
Total No. of members on 31st December, 1918 ..	43,239	19,789	17,364	14,276	2,431	97,099
Total income for year 1918 ..	£ 2,215,688	1,129,852	25,358	568,764	227,847	4,167,509
Working expenses for year ended 31st December, 1918 ..	£ 2,068,156	154,414	21,553	93,473	180,331	2,517,927

(a) Exclusive of Tasmania.

### § 4. Savings Banks.

1. **General.**—The total number of savings banks, with their branches and agencies, in the Commonwealth at the middle of 1919 was 2,278, distributed as follows:—New South Wales, 636; Victoria, 480; Queensland, 504; South Australia, 312; Western Australia, 197; and Tasmania, 149.\* These figures are exclusive of the Commonwealth Savings Bank, except in the State of Tasmania, in which the Commonwealth Savings Bank absorbed the State Savings Bank. In the Northern Territory the Commonwealth Savings Bank alone is in operation.

In the following tables the figures for all the States except Tasmania refer to financial years ended 30th June. In the case of Tasmania, figures for the two joint-stock savings banks are made up to the last day of February in each year. In the case of the Commonwealth Bank, figures are made up to the 30th June, 1919.

2. **Depositors.**—The total number of depositors, i.e., of persons having accounts open, not of those making deposits, in each of the last ten years is shewn in the following table:—

NUMBER OF DEPOSITORS IN SAVINGS BANKS (b), 1913-14 TO 1918-19.

Year.	N.S.W.	Victoria. (a)	Q'land.	S. Aust. (a)	W. Aust. (a)	Tasmania.	N. Ter.	All States.
1913-14 ..	693,618	735,400	201,163	267,805	134,510	76,000	292	2,108,788
1914-15 ..	755,835	781,490	229,023	232,169	144,777	80,446	716	2,274,456
1915-16 ..	806,882	821,208	249,235	299,308	157,355	86,489	1,139	2,421,616
1916-17 ..	872,351	869,058	281,585	319,960	172,084	91,680	1,366	2,608,084
1917-18 ..	920,337	913,875	313,248	337,709	182,140	95,154	1,274	2,763,737
1918-19 ..	984,951	966,543	343,424	357,310	192,879	99,565	1,167	2,945,839

(a) Inclusive of depositors in penny savings banks.

(b) Inclusive of Commonwealth Savings Bank.

The subjoined table shews the above figures in relation to the population of the States; it must, of course, be borne in mind that savings bank accounts are not restricted to the adult population, but that it is, on the contrary, a very usual practice to open accounts in the names of children. Even so, the proportion is a large one, amounting in the case of the Commonwealth to about four-sevenths and rising in Victoria to nearly two-thirds and in South Australia to more than three-quarters. In the case of this table and the one that follows, it may be pointed out that as it is possible for the same person to have accounts in both Commonwealth and State Savings Banks, the figures given are probably slightly in excess of the number of individual depositors.

DEPOSITORS IN SAVINGS BANKS(a) PER 1,000 OF POPULATION,  
1913-14 TO 1918-19.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	N. Ter.	All States.
1913-14 ..	373	517	296	607	415	386	80	428
1914-15 ..	404	548	332	637	449	405	161	459
1915-16 ..	434	584	362	690	500	438	235	494
1916-17 ..	467	620	413	744	557	473	271	532
1917-18 ..	482	645	453	768	585	469	242	555
1918-19 ..	501	659	482	784	597	472	237	573

(a) Inclusive of Commonwealth Savings Bank.

\* Year 1913.



3. Deposits.—The total amount of deposits in the savings banks of the six States reaches the large sum of one hundred and twenty-eight million pounds, and would no doubt be even larger if the banks did not restrict interest-bearing deposits to certain limits. It must be remembered that though not granting facilities to draw cheques, the Australian savings banks practically afford the small tradesman all the advantages of a current account, in addition to which they also allow him interest on his minimum monthly balance, instead of charging him a small fee for keeping his account, as the ordinary banks do. The rates of interest allowed, and the limits of interest-bearing deposits, are as follows:—New South Wales, Government Savings Bank,  $3\frac{1}{2}$  per cent. up to £500; Victoria, 4 per cent. on first £350, and on deposit stock up to £1,000; Queensland,  $3\frac{1}{2}$  per cent. up to £1,000; South Australia,  $2\frac{1}{2}$  per cent. on accounts closed during the year, and 4 per cent. up to £350 on accounts remaining open; Western Australia,  $3\frac{1}{2}$  per cent. from £1 to £500, and 3 per cent. from £500 to £1,000; also 4 per cent. on deposit stock up to £1,000; Hobart Trustees' Savings Bank, 4 per cent. up to £300; Launceston Trustees' Savings Bank, 4 per cent. up to £150, and Commonwealth Savings Bank,  $3\frac{1}{2}$  per cent. on the first £1,000, and 3 per cent. upon another £300. The savings banks of five of the States—New South Wales, Victoria, Queensland, South Australia, and Western Australia—have, for the further benefit of depositors, entered into a reciprocity arrangement, under which money deposited in one State may be drawn out in another State, even by telegraph. The two Savings Banks in New South Wales amalgamated on 1st May, 1914. The Act of amalgamation provided for interest at the rate of  $3\frac{1}{2}$  per cent. on the accounts carried to the combined institution. If the rate of interest to Government Savings Bank depositors should fall subsequently below 3 per cent., the transferred accounts of the old Barrack Street Bank were to receive a preferential rate of interest of  $\frac{1}{2}$  per cent. Otherwise their accounts will not receive less than  $3\frac{1}{2}$  per cent. These preferential rights of interest conserved to the old Barrack Street depositors were for a period of ten years.

The table below shews the total amounts at credit of depositors in each of the last ten years:—

#### DEPOSITS IN SAVINGS BANKS(a), 1913-14 TO 1918-19.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	N. Ter.	All States.
	£	£	£	£	£	£	£	£
1913-14 ..	32,363,069	24,533,519	10,166,946	9,366,490	4,932,895	2,178,305	18,709	83,559,933
1914-15 ..	35,562,649	26,996,025	11,972,965	9,595,156	5,149,536	2,301,336	42,643	91,620,310
1915-16 ..	37,363,272	28,789,426	12,858,636	10,035,036	5,338,009	2,534,266	77,856	97,076,601
1916-17 ..	40,836,747	31,581,266	14,725,959	11,351,343	5,846,109	2,695,274	102,348	107,139,046
1917-18 ..	43,039,012	34,598,186	16,501,325	12,899,036	6,290,027	2,917,235	95,071	116,339,892
1918-19 ..	47,070,342	38,772,024	17,510,975	14,803,237	7,002,473	3,255,393	81,097	128,525,541

(a) Inclusive of Commonwealth Savings Bank.

A comparison between the tables shewing the number of depositors and the amount of deposits reveals the fact that the average amounts to the credit of each depositor are considerably larger in some States than in others; in other words, that in one State a comparatively larger proportion of the population makes use of the savings banks, and that the natural result is a smaller amount to the credit of the individual depositor. Within the same State there is little variation in the figures from year to year, except that Victoria and South Australia have shewn a steady advance in the period under review.

#### AVERAGE AMOUNT PER DEPOSITOR IN SAVINGS BANKS(a), 1913-14 TO 1918-19.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	N. Ter.	All States.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
1913-14..	46 13 2	33 7 2	50 10 10	34 18 10	36 13 6	28 13 3	64 1 5	39 12 4
1914-15..	47 1 0	34 10 11	52 5 7	34 0 1	35 11 5	28 12 2	59 11 2	40 5 7
1915-16..	46 6 1	35 1 2	51 18 3	33 10 6	33 18 6	29 6 0	68 8 10	40 1 6
1916-17..	46 16 10	36 6 9	52 5 10	35 9 5	33 19 0	29 7 10	74 18 6	41 1 3
1917-18..	46 15 3	37 17 2	52 13 7	38 3 11	34 10 8	30 13 2	74 12 6	42 1 11
1918-19..	47 15 9	40 2 3	50 19 9	41 8 7	36 8 2	32 19 11	69 9 8	43 12 7

(a) Inclusive of Commonwealth Savings Bank.

The average amount deposited per head of population shows a satisfactory increase during the period under review. Since 1908-9 it has practically doubled itself, the figures for South Australia being particularly noticeable.

#### SAVINGS BANKS DEPOSITS PER HEAD OF POPULATION, 1913-14 TO 1918-19.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	N. Ter.	All States.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
1913-14..	17 8 7	17 5 1	14 19 6	21 4 0	15 4 6	11 1 5	5 2 1	16 19 6
1914-15..	19 0 1	18 18 6	17 7 2	21 13 6	15 19 4	11 12 0	9 11 9	18 10 0
1915-16..	20 1 0	20 9 6	18 16 5	23 2 11	16 19 3	12 16 8	16 1 9	19 16 1
1916-17..	21 19 5	22 11 2	21 19 0	26 5 9	18 18 7	13 9 10	20 5 11	21 17 7
1917-18..	22 10 7	24 8 5	23 16 9	29 7 0	20 4 4	14 7 7	18 0 9	23 7 2
1918-19..	23 19 7	26 8 6	24 11 4	32 9 4	21 13 4	15 11 7	16 9 7	25 0 1

4. **Annual Business.**—The annual volume of business transacted by the Australian savings banks is very large when compared with the total amount of deposits. This is mainly due to the fact already pointed out that many accounts are used as convenient current accounts. Thus, during the last year of the period under review, the total amount deposited and withdrawn (exclusive of interest added) amounted to about 180 per cent. of the total amount of deposits at the end of the previous year, while the amount at credit of depositors (inclusive of interest added) increased by only about 9 per cent. during the same year. The following table shews the business transacted during the year 1918-19:—

#### SAVINGS BANKS TRANSACTIONS DURING THE YEAR 1918-19.

State.	Total Deposits at end of Year 1917-18.	Amounts Deposited during Year 1918-19.	Interest Added during Year 1918-19.	Total.	Amounts Withdrawn during Year 1918-19.	Total Deposits at end of Year 1918-19.
	£	£	£	£	£	£
N. S. Wales ..	43,039,012	40,389,966	1,491,200	84,920,178	37,849,836	47,070,342
Victoria ..	34,598,186	36,139,547	1,177,736	71,915,469	33,143,445	38,772,024
Queensland ..	16,501,325	15,157,633	533,699	32,192,657	14,681,682	17,510,975
South Australia	12,899,036	10,460,580	479,540	23,839,156	9,035,919	14,803,237
West. Australia	6,290,027	5,780,311	204,143	12,274,481	5,272,008	7,002,473
Tasmania ..	2,917,235	2,562,764	99,685	5,579,684	2,294,291	3,285,393
Nor. Territory ..	95,071	90,316	2,239	187,626	106,529	81,097
Total ..	116,339,892	110,581,117	3,988,242	230,909,251	102,383,710	128,525,541

5. **Commonwealth Savings Bank.**—The Savings Bank department of the Commonwealth Bank started operations in Victoria on 15th July, 1912, in Queensland on 16th September, 1912, in the Northern Territory on 21st October, 1912, and in the States of New South Wales, South Australia, and Western Australia on 13th January, 1913. Business is being transacted on the usual Savings Bank lines, interest at the rate of 3½ per cent. being now allowed on deposits up to £1,000, and 3 per cent. on the next £300. Extensive use is being made of the country post-offices as local agencies, the several States having received notice that their Savings Banks would have to be removed from the post-offices by the end of 1912.

The Commonwealth Bank absorbed the Tasmanian State Savings Bank in January, 1913, on terms set out in Official Year Book No. 6. Arrangements for the transfer of the Queensland Savings Bank were completed early in 1920, and the legislation necessary to give effect to the transfer is expected shortly.

For further particulars concerning the Commonwealth Bank, see Official Year Books Nos. 6-10.

The following table shews for each State the number of depositors, and the amount at credit on 30th June, 1919, in the Commonwealth Savings Bank :—

**COMMONWEALTH SAVINGS BANK AS AT 30th JUNE, 1919.**

Locality.	Number of Depositors.	Amount at Credit.
		£
New South Wales .. .. .	163,453	5,396,963
Victoria .. .. .	104,039	4,260,457
Queensland .. .. .	81,522	3,188,829
South Australia .. .. .	35,955	1,630,407
Western Australia .. .. .	41,873	1,509,328
Tasmania .. .. .	50,404	1,428,818
Northern Territory .. .. .	1,167	81,097
Papua .. .. .	1,151	37,231
London .. .. .	9,446	256,293
Total .. .. .	489,010	17,789,423

### § 5. Life Assurance.

1. **General.**—Under section 51 of the Commonwealth Constitution Act, the Commonwealth Parliament is empowered to legislate in regard to “insurance, other than State insurance; also State insurance extending beyond the limits of the State concerned.” With the exception of Act No. 12 of 1905, “an Act relating to assurance on the lives of children by life assurance companies or societies,” no legislation relating to life assurance has been passed by the Commonwealth Parliament, and life assurance companies carry on their business under State laws where such laws are in existence, or otherwise under the provisions of various companies’ or special Acts. A Royal Commission consisting of the Honourable J. H. Hood, one of the judges of the Supreme Court of Victoria, and G. H. Knibbs, Esq., C.M.G., Commonwealth Statistician, was, however, appointed in 1908, “to inquire into and report upon the law relating to and the methods of operating, Fire, Life, Industrial, and other Insurance in Australia.” The Commission was originally required to report the result of its inquiry, before the 30th June, 1909. A progress report was issued before that date, and the time for the final report extended to the 30th June, 1910. The report relating to Life Assurance was published on 15th March, 1910, and that relating to Fire Insurance on 15th October, 1910. On the conclusions contained in these reports future Commonwealth legislation will probably be based. In fact, a bill embodying some of the conclusions was introduced into the Federal Parliament on 20th December, 1912, but, owing to lack of time, did not reach its second reading. An additional report on Social Insurance was prepared by the Commonwealth Statistician and issued on 9th September, 1910.

Returns for the year 1918 have been directly collected from life assurance societies by the Commonwealth Statistician, with results which are in the main satisfactory. Figures for 1918 refer to business in the Commonwealth only, and do not include New Zealand business.

2. **Companies Transacting Business in the Commonwealth.**—The total number of companies at present established in the Commonwealth is nineteen, of which the following nine have their head offices in New South Wales :—The Australian Mutual Provident Society, the Mutual Life and Citizens’ Assurance Company Limited, the City Mutual Life Assurance Society Limited, the Australian Metropolitan Life Assurance Company Limited, the People’s Prudential Assurance Company Limited, the Life Insurance Company, the Assurance and Thrift Association Limited, the Co-operative Assurance Company Limited, and the Australian Provincial Assurance Association Limited. The Mutual Life and Citizens’ Assurance Company Limited was formed in 1908 by the amalgamation of the Mutual Life Association of Australasia and the Citizens’ Life Assurance Company Limited. During 1910 it increased in size by amalgamating with the Australian Widows’ Fund Life Assurance Society Limited, which is therefore no longer included in the list of independent corporations. Five companies have their head offices in Victoria, viz. :—

The Australian Alliance Assurance Company, the National Mutual Life Association of Australasia Limited, the Victoria Life and General Insurance Company, the Colonial Mutual Life Assurance Society Limited, and the Australasian Temperance and General Mutual Life Assurance Society Limited. The head office of the Provident Life Assurance Company is in New Zealand, and that of the Liverpool and London and Globe Insurance Company in England. The remaining three societies belong to the United States, viz. :—The Equitable Life Assurance Society of the United States, the Mutual Life Insurance Society of New York, and the New York Life Insurance Society.

Most of the Australian companies are purely mutual; the following, however, are partly proprietary, the figures in brackets representing the shareholders' capital paid up :—The Victoria Life and General (£40,000), Mutual Life and Citizens' Assurance (£200,000), Metropolitan (£11,839), Prudential (£10,000), Life Insurance Company (£44,000), Assurance and Thrift (£17,684), Co-operative Assurance (£56,675), and Australian Provincial Association (£86,088). Of foreign companies transacting business in the Commonwealth, the Liverpool and London and Globe, the Provident, and the Equitable are partly proprietary, the shareholders' capital amounting to £265,525, £21,000, and £20,550 respectively.

**3. Ordinary and Industrial Business.**—Of the societies enumerated in the preceding paragraph, the following seven in 1918 transacted both ordinary and industrial business :—The Australian Mutual Provident Society, the Mutual Life and Citizens' Assurance Company Limited, the Australasian Temperance and General Mutual Life Assurance Society Limited, the Australian Metropolitan Life Assurance Company Limited, the Colonial Mutual Life Assurance Society, the Life Insurance Company, and the Co-operative Assurance Company.

The People's Prudential Assurance Company Limited and the Provident Life Assurance Company formerly restricted their operations to industrial business, but have now established an ordinary department.

The remaining nine societies transacted ordinary life assurance business only, with the exception of those companies which have fire and accident branches, etc.

It has been attempted in this section to keep returns relating to ordinary and to industrial business apart, so far as it is possible to do so, and figures relating to companies whose head offices are in New Zealand or in Europe or America refer to the Australian business only of those companies.

**4. Ordinary Business : Australian Business in Force, 1918.**—The subjoined table shews the ordinary life business in force at the latest dates available for the nineteen societies conducting operations in the Commonwealth :—

**ORDINARY LIFE ASSURANCE.—AUSTRALIAN BUSINESS IN FORCE, 1918.**

Society.	Policies in force, exclusive of Annuities.	Amount Assured, exclusive of Bonus Addition, etc.	Annual Premium Income, exclusive of Annuities.
	No.	£	£
Australian Mutual Provident Society .. .. .	272,333	76,471,242	2,587,977
Mutual Life and Citizens' Assurance Company Limited .. .. .	96,129	17,978,870	624,156
City Mutual Life Assurance Society .. .. .	29,984	5,622,638	226,309
Australian Metropolitan Life Assurance Company .. .. .	4,533	389,458	21,317
Australian Alliance Assurance Company .. .. .	233	79,792	1,803
National Mutual Life Association of Australasia .. .. .	83,650	20,363,866	756,538
Victoria Life and General Insurance Company .. .. .	46	82,973	526
Colonial Mutual Life Assurance Society .. .. .	32,452	6,279,994	226,881
People's Prudential Assurance Company .. .. .	4,720	351,517	(a) 27,788
Australasian Temperance and General Mutual Life Assurance Society .. .. .	51,158	6,190,350	243,099
Liverpool and London and Globe Insurance Company (Life Branch) .. .. .	224	86,891	2,441
Provident Life Assurance Company .. .. .	901	81,450	3,194
Life Insurance Company .. .. .	4,913	1,103,423	45,947
Assurance and Thrift Association Limited .. .. .	1,271	245,275	9,996
Co-operative Assurance Company .. .. .	886	227,748	8,960
Australian Provincial Assurance Association Limited .. .. .	15,559	2,882,600	117,665
Equitable Life Assurance Society of United States .. .. .	3,896	1,251,158	44,867
Mutual Life Insurance Society of New York .. .. .	2,939	1,100,238	30,236
New York Life Insurance Society .. .. .	4,560	2,043,385	70,388

(a) Including industrial.

5. **Industrial Business : Australian Business in Force, 1918.**—Similar information in regard to the industrial business of the nine societies transacting this kind of business is given in the following table :—

**INDUSTRIAL ASSURANCE.—AUSTRALIAN BUSINESS IN FORCE, 1918.**

Society.	Policies in Force.	Amount Assured.	Annual Premium Income.
	No.	£	£
Australian Mutual Provident Society .. ..	163,501	6,262,026	347,394
Mutual Life and Citizens' Assurance Company .. ..	255,269	4,892,572	279,240
Australian Metropolitan Life Assurance Company .. ..	35,727	1,031,660	52,881
Colonial Mutual Life Assurance Society .. ..	76,550	1,971,969	121,567
People's Prudential Assurance Company .. ..	5,259	126,065	(a)
Aust. Temperance and General Mutual Life Ass. Society	228,257	5,283,357	405,274
Provident Life Assurance Company .. ..	15,167	424,355	20,239
Life Insurance Company .. ..	3,617	89,605	5,659
Co-operative Assurance Company .. ..	4,798	126,749	7,431

(a) Included in ordinary.

6. **Receipts and Expenditure of Assurance Societies, 1918.**—(i) *Ordinary Business.* The following returns refer to the Australian business of all societies doing business in the Commonwealth. The People's Prudential Assurance Company, whose accounts do not distinguish between revenue and expenditure on account of ordinary and industrial business, has been included among the companies doing industrial business.

**ORDINARY LIFE ASSURANCE.—AUSTRALIAN RECEIPTS AND EXPENDITURE, 1918.**

Society.	Receipts.	Expenditure.	Excess Receipts (Addition to Funds).
	£	£	£
Australian Mutual Provident Society .. ..	4,056,859	2,858,097	1,198,762
Mutual Life and Citizens' Assurance Company .. ..	980,788	711,880	268,908
City Mutual Life Assurance Society .. ..	340,904	202,476	138,428
Australian Metropolitan Life Assurance Company .. ..	25,927	13,555	12,372
Australian Alliance Assurance Company .. ..	6,670	11,633	(a) 4,963
National Mutual Life Association of Australasia .. ..	1,222,897	680,360	542,537
Victoria Life and General Insurance Company .. ..	3,941	14,125	(a) 10,184
Colonial Mutual Life Assurance Society .. ..	374,194	208,552	165,642
Aust. Temperance and General Mutual Life Ass. Soc.	314,235	191,110	123,125
Liverpool and London and Globe (Life Branch) .. ..	3,441	16,226	(a) 12,785
Provident Life Assurance Company .. ..	3,503	2,190	1,313
Life Insurance Company .. ..	48,372	36,420	11,952
Assurance and Thrift Association Limited .. ..	12,932	6,759	6,173
Co-operative Assurance Company .. ..	10,072	7,264	2,808
Australian Provincial Assurance .. ..	120,028	98,558	21,470
Equitable Life Assurance Society .. ..	73,329	107,159	(a) 33,830
Mutual Life Insurance Society of New York .. ..	39,619	90,352	(a) 50,733
New York Life Insurance Society .. ..	77,423	120,819	(a) 43,396

(a) Decrease.

(ii) *Industrial Business.* A similar return for those societies which transact industrial business is given below. The figures for the Prudential, as stated above, are included therein.

## INDUSTRIAL LIFE ASSURANCE.—AUSTRALIAN RECEIPTS AND EXPENDITURE, 1918.

Society.	Receipts.	Expenditure.	Excess Receipts (Addition to Funds).
	£	£	£
Australian Mutual Provident Society .. ..	425,639	145,649	279,990
Mutual Life and Citizens' Assurance Company ..	333,967	294,949	39,018
Australian Metropolitan Life Assurance Company ..	55,729	47,471	8,258
Colonial Mutual Life Assurance Society .. ..	129,679	74,342	55,337
People's Prudential Assurance Company .. ..	31,134	20,803	10,331
Aust. Temperance and General Mutual Life Ass. Soc.	454,969	273,131	181,838
Provident Life Assurance Company .. ..	21,063	16,109	4,954
Life Insurance Company .. ..	5,898	5,048	850
Co-operative Assurance Company .. ..	8,003	7,103	900

7. *Liabilities and Assets of Assurance Societies, 1918.*—The liabilities of the Australian societies consist mainly of their assurance funds; as already mentioned, however, nine of the societies are partly proprietary, viz., the Mutual Life and Citizens', with a paid-up capital of £200,000; the Metropolitan, with a paid-up capital of £11,839; the Prudential, with a paid-up capital of £10,000; the Victoria Life and General, with a paid-up capital of £40,000; the Provident, with a paid-up capital of £21,000; the Life Insurance Company, with £44,000; the Assurance and Thrift, with £17,684; Co-operative Assurance Company, with £56,675; and the Australian Provincial with £86,088. With the exception of the Victoria, the Life Insurance, Assurance and Thrift, and Australian Provincial, this paid-up capital belongs in every case to the industrial branch of the respective societies. The capital of the Provident (£21,000) is held in New Zealand, that of the Liverpool and London and Globe (£265,525) in England, and that of the Equitable Life (£20,550) in the United States. None of these three amounts appears, therefore, in the two subjoined tables, where the capital of the Australian societies is included with the assurance funds. The assets consist mainly of loans on mortgage and policies, Government, municipal, and similar securities, shares, freehold property, etc. As in some cases the Australian liabilities exceed the Australian assets, it may be pointed out that this table should be read in connexion with the table on page 830, which sets out the total assets. Loans on personal security are granted by very few of the Australian societies.

(i) *Ordinary Business.* The following table shows the liabilities and assets of the societies transacting ordinary life business:—

## ORDINARY LIFE ASSURANCE.—AUSTRALIAN LIABILITIES AND ASSETS, 1918.

Society.	Liabilities.			Assets.(c)		
	Total Funds Including Paid-up Capital.	Other Liabilities.	Total.	Loans on Mortgages and Policies.	Securities, Freehold Property, etc.	Total.
	£	£	£	£	£	£
Australian Mutual Provident Society(a)	33,091,975	830,235	33,922,210	13,360,033	17,509,867	30,869,900
Mutual Life and Citizens' Assurance Co.	(b)	(b)	(b)	2,393,576	5,190,028	7,583,604
City Mutual Life Assurance Society ..	1,165,201	238,522	1,403,723	681,470	722,253	1,403,723
Australian Metropolitan Life Assurance Company ..	100,514	2,832	103,346	35,708	67,638	103,346
Australian Alliance Assurance Company ..	86,251	5,236	91,487	10,418	81,069	91,487
National Mut. Life Assoc. of Australasia	9,122,987	492,410	9,615,397	5,695,227	3,920,170	9,615,397
Victoria Life and General Insurance Co.	81,962	4,731	86,693	7,971	78,722	86,693
Colonial Mutual Life Assurance Society	3,304,616	239,784	3,544,350	902,984	2,641,366	3,544,350
Australasian Temperance and General Mutual Life Assurance Society(a) ..	2,573,946	261,131	2,835,077	774,936	2,060,141	2,835,077
Liverpool and London and Globe (Life Branch) ..	(b)	(b)	(b)	(b)	(b)	(b)
Provident Life Assurance Company ..	8,893	604	9,497	269	8,738	9,007
Commonwealth Life Insurance Co. ..	103,101	7,343	110,444	9,734	100,710	110,444
Assurance and Thrift Association Ltd. ..	51,077	4,026	55,103	40,725	13,058	53,783
Co-operative Assurance Company(a) ..	78,902	659	79,561	10,480	69,081	79,561
Australian Provincial Assur. Assocn. Ltd.	138,843	36,512	175,355	2,783	157,872	160,655
Equitable Life Assurance Society ..	77,255	190	77,445	152,513	393,922	546,435
Mutual Life Insurance Society of New York	(b)	(b)	(b)	159,159	61,576	220,735
New York Life Insurance Society ..	728,000	30,254	758,254	114,418	41,124	155,542

(a) Including industrial business. As the business of these three societies is mainly ordinary life business they have been included in this table. (b) Not available. (c) Several life offices have a considerable portion of their assets invested outside the Commonwealth (see table on the next page).

(ii) *Industrial Business.* As stated in the footnote to the preceding table, the Australian Mutual Provident Society, the Australasian Temperance and General Mutual Life Assurance Society, and the Co-operative Assurance Company, which transact a certain amount of industrial business, but whose business is mainly ordinary life business, have been included with those societies doing only ordinary life business. On the other hand, the People's Prudential Assurance Company, in whose case industrial business greatly predominates over ordinary life business, has been included in the following table. Incomplete as the table is, it shews that the funds appropriated to industrial business are very insignificant in comparison with those pertaining to ordinary life business. Taking the table in conjunction with the statements of revenue and expenditure, the question may well be asked whether in the case of some of the societies, industrial business is worth catering for at all.

#### INDUSTRIAL LIFE ASSURANCE.—AUSTRALIAN LIABILITIES AND ASSETS, 1918.

Society.	Liabilities.			Assets.		
	Total Funds, including Paid-up Capital.	Other Liabilities.	Total.	Loans on Mortgages and Policies.	Securities, Freehold Property, etc.	Total.
	£ (b)	£ (b)	£ (b)	£	£	£
Mutual Life and Citizens' Assurance Co.				11,601	4,161,653	4,173,254
Australian Metropolitan Life Assurance Company	70,005	13,697	83,702	2,137	81,565	83,702
Colonial Mutual Life Assurance Society	260,276	1,587	261,863	3,502	258,361	261,863
(a) People's Prudential Assurance Co. ..	78,425	225	78,650	55,712	22,938	78,650
Provident Life Assurance Company ..	18,102	..	18,102	756	19,048	19,804

(a) Including ordinary business. (b) Particulars not available.

(iii) *Total Assets.* It has been thought advisable to confine the figures relating to life assurance to business in the Commonwealth. Several of the companies whose head offices are in Australia transact, however, a large amount of business elsewhere, viz., in New Zealand, in South Africa, and in the United Kingdom, while in the case of the foreign companies, the Australian business is insignificant compared with that done elsewhere. Particulars as to this foreign business of both Australian and foreign companies will be found in "Finance Bulletin, No. 11" (published by this Bureau), and a short table only is inserted here, shewing the total assets of the various companies, so that the deficiencies in the Australian assets shewn in the previous tables for those companies doing business elsewhere may not be misunderstood:—

#### TOTAL ASSETS OF ASSURANCE COMPANIES, 1918.

Society.	Assets.	Society.	Assets.
<b>ORDINARY BUSINESS.</b>	£	<b>ORDINARY BUSINESS—continued.</b>	£
(a) Australian Mutual, Provident Soc.	40,500,905	(a) Co-operative Assurance Co. ..	79,561
Mutual Life and Citizens' Assur. Co.	9,837,190	Aust. Provincial Assurance Asscn.	191,318
City Mutual Life Assurance Society ..	1,403,723	Equitable Life Assurance Society ..	126,050,259
Aust. Metropolitan Life Assur. Co. ..	103,346	Mutual Life Ins. Society of New York	138,339,691
Australian Alliance Assurance Co. ..	91,487	New York Life Insurance Society ..	204,544,073
National Mutual Life Association ..	12,379,104		
Victoria Life and General Insur. Co.	86,693	<b>INDUSTRIAL BUSINESS.</b>	
Colonial Mutual Life Assurance Soc.	4,961,265	Mutual Life and Citizens' Assur. Co.	4,842,790
(a) Australasian Temperance and General Mutual Life Assurance Soc.	3,180,377	Australian Metropolitan Life Assurance Company	83,702
Liverpool & London & Globe (Life)	17,417,999	Colonial Mutual Life Assurance Soc.	322,835
Provident Life Assurance Company ..	72,951	(b) People's Prudential Assur. Co.	78,650
Commonwealth Life Insurance Co. ..	110,444	Provident Life Assurance Company	142,004
Assurance and Thrift Asscn. Ltd. ..	56,018		

(a) Including industrial business. (b) Including ordinary business.

### § 6. Fire Insurance.\*

1. *General.*—Returns as to fire insurance are very defective, and only for Sydney and Melbourne and the country districts of Victoria have some figures been given which are worth reproducing. The Royal Commission mentioned above under "Life Assurance"

\* See also Section XXVI., § 5, Fire Brigades.

has reported upon fire insurance matters, and Commonwealth legislation may, therefore, be expected in the future. Legislation concerning fire insurance was, in fact, contained in the bill to which reference has already been made. [§ 5, sub-section 1.]

2. **Sydney.**—Under the Fire Brigades Act 1902 the cost of the Metropolitan Fire Brigade is defrayed by equal payments on the part of the Colonial Treasurer, the municipal councils within the area under the jurisdiction of the Fire Brigades Board, and the insurance companies represented in Sydney. The companies divide their share proportionately to the amount held at risk. Under this arrangement the amount payable by the companies for the year 1909 was £19,100, divided amongst sixty-five companies, of which not more than six had their head office in Sydney. The amounts thus held at risk at the close of the last four years for which returns are available were, in 1905, £78,108,749; in 1906, £81,364,129; in 1907, £86,563,304; and in 1908, £89,071,992. A new Act, which came into force on the 1st January, 1910, was passed in 1909. This Act substituted a Board of Fire Commissioners for New South Wales for the original Metropolitan Fire Brigades Board, and divided the whole State into eight fire districts for the greater facilitation of working.

3. **Melbourne.**—In Melbourne the Metropolitan Fire Brigades Board assesses the amount payable by the insurance companies on the amount of premiums returned. These premiums for the last four years averaged about £560,000 per annum, while the contributions paid by the companies averaged about £28,000, or about £5 for every £100 of premiums. It may be said, therefore, that the companies have to devote about 5 per cent. of their premium income from metropolitan insurances to the maintenance of the fire brigade.

The value of ratable property is about £8,083,000, and the amounts contributed by the municipalities—as in the case of the insurance companies, one-third of the amount required by the Fire Brigades Board, the remaining one-third being contributed by the State Treasurer—are equal to about  $\frac{2}{3}$ d. per £1 of ratable value. In addition to this contribution, insurance companies doing business in Victoria have to take out an annual license at a cost of  $1\frac{1}{2}$  per cent. of the gross premium income, which is probably equal to about  $1\frac{2}{3}$  per cent. on net income.

4. **Country Districts of Victoria.**—The country districts are divided into nine areas for fire insurance purposes, and the contributions to be paid vary in these areas according to the actual requirements of the Country Fire Brigades Board. The value of ratable property for the last year was slightly over £1,814,000. The premium income of the insurance companies from country business in protected areas during the year 1918 was about £223,000, and the contributions of the companies £4,610, equal to rather more than 2 per cent. of the premium income.

5. **Brisbane.**—A similar arrangement holds good in Brisbane, under which the cost of the Fire Brigade Board, amounting to about £20,000 per annum, is paid in equal shares by the Government, the Brisbane City Council, and the insurance companies.

6. **Adelaide.**—The Fire Brigades Board of South Australia is incorporated under "The Fire Brigades Act 1904"; "The Fire Brigades Act Amendment Act 1905"; and "The Fire Brigades Act Further Amendment Act 1910." The cost is distributed as follows:—Three-ninths to the Government; four-ninths to the insurance companies; and two-ninths to the municipalities and districts which come under the operations of the board. The insurance companies are assessed in proportion to that portion of their premium incomes derived from the insurance of property (re-insurance within the State excepted) situated within the limits of the municipalities and districts coming under the operations of the board. The respective contributions for 1918 were as follows:—The Government, £9,317; the companies, £12,423; the municipalities, £6,211.

7. **Perth.**—A District Fire Brigades Bill was reported on by a committee of the Legislative Assembly during 1909, and it was recommended that all brigades should in future be controlled by one board, and that the expense should be met by contributions at the following rate:—By Government, two-eighths; by the municipalities, three-eighths; and by the insurance companies, three-eighths. These provisions were incorporated in an Act, "The District Fire Brigades Act 1909," which was assented to on 21st December, 1909, and came into force on the 1st day of January, 1910. This



Act is now superseded by the Fire Brigades Act 1916 which came into operation on 2nd April 1917. It provides that every municipal or road board district shall be a fire district for the purposes of the Act, under the control of the Western Australian Fire Brigades Board. The income of the Board is derived in the same proportions as provided for in the Act of 1909. The latest valuation of ratable property is £1,583,000, and expenditure £31,550, of which the Government paid £7,888, the municipalities £11,831 and the insurance companies, £11,831.

8. **Australian Fire Insurance Business.**—Returns are available shewing the revenue and expenditure, assets and liabilities, and investments of twenty-seven insurance companies having their head offices either in the Commonwealth or in New Zealand. These companies are :—(a) with head office in Sydney—the Australian Mutual Fire Insurance Company, the City Mutual Fire Insurance Company, the Mercantile Mutual Fire Insurance Company, the Queensland Insurance Company Limited, the United Insurance Company, the Insurance Office of Australia Limited, the Federal Mutual Insurance Company of Australia, The Manufacturers' Mutual and the Farmers and Settlers; (b) with head office in Melbourne—the Australian Alliance Assurance Company, the Colonial Mutual Fire Insurance Company, the Victoria Insurance Company, the Victoria General Insurance and Guarantee Company Limited, the Australasian Mutual Insurance Society, the Chamber of Manufactures, and the Victoria State Accident Office; (c) with head office in Hobart—the Derwent and Tamar Fire and Marine Assurance Company Limited; (d) with head office in Launceston—the Mutual Fire Insurance Company of Tasmania; (e) with head office in Auckland—the New Zealand Insurance Company, and the South British Fire and Marine Insurance Company of New Zealand; (f) with head office in Dunedin—the National Fire and Marine Insurance Company of New Zealand, and the Standard Fire and Marine Insurance Company of New Zealand; (g) with head office in Wellington—the New Zealand State Fire Insurance Office, and the New Zealand Government Accident; (h) with head office in Christchurch—the Farmers' Co-operative Insurance Association of New Zealand; (i) with head office in Perth—the Western Australian Insurance Company; and (j) with head office in Brisbane—the Queensland State Government. As their names imply, many of these companies transact marine insurance, and in some cases guarantee and other business, in addition to the fire insurance business, and the returns relating to the latter cannot be separated from the former.

The accounts given hereunder cover two consecutive years, the second year ending at various dates from 31st December, 1917, to 30th April, 1919. The figures for the first year are in brackets.

The premiums, less reinsurances and returns, amounted to £5,304,850 (£5,301,520); losses were 2,724,112 (£3,013,012). Expenses and commission came to £1,525,833 (£1,317,478), and there was, therefore, a profit on trade operations of £1,054,905 (£971,030). As, however, interest, rent, fees, etc., amounted to £328,520 (£288,570), the total profit was £1,383,425 (£1,259,600). Dividends and bonuses came to £374,689 (£316,516). The ratio to premium income of losses was, therefore, 51.35 per cent. (56.83 per cent.), and of expenses and commissions, 28.76 per cent. (24.85 per cent.). The resulting ratio of trade surplus to premium income was 19.89 per cent. (18.32 per cent.).

The paid-up capital of the twenty-seven companies was £3,108,606 (£2,756,585); reserve and reinsurance funds, £4,191,566 (£3,658,717); undivided profits, £335,868 (£733,189). The total paid-up capital and reserves were, therefore, £7,636,040 (£7,148,491). In addition to these liabilities there were others, viz.:—Unsettled losses, £641,948 (£526,862); sundry creditors, £1,093,269 (£805,235); dividends payable, £285,504 (£238,898); and, in the case of two companies, life assurance funds, £96,043 (£91,214); thus bringing the total liabilities to shareholders and to the general public up to £9,752,804 (£8,810,700).

The corresponding amount of assets is made up of investments, £8,036,021 (£6,951,382), viz.:—Loans on mortgage, £1,203,356 (£1,309,968); Government securities, debentures, shares, etc., £4,167,887 (£3,194,389); landed and other property, including furniture, £1,288,591 (£1,248,657); fixed deposits, £1,199,643 (£1,077,445); in the case

of one company doing a mixed business—loans on its own life policies, etc., £4,503 (£5,269); other investments, £172,041 (£115,654). The balance of assets consisted of cash in bank, on hand, and bills receivable, £805,148 (£574,305); and sundry debtors, etc., £911,635 (£1,285,013).

The financial position of the companies is undoubtedly a strong one, owing to the steady accumulation of reserves, and the high ratio borne by capital and reserves to premium income must be a cause of satisfaction to policy holders.

### § 7. Marine Insurance.

No returns are available in regard to Marine Insurance. It may, however, be stated that the Commonwealth Parliament in 1909 passed an Act (No. 11 of 1909, "An Act relating to Marine Insurance") which was assented to on the 11th November, 1909. This Act materially alters some of the conditions under which marine policies have heretofore been issued.

### § 8. Friendly Societies.

1. **General.**—Friendly societies are an important factor in the social life of the community, as probably one-third of the total population of the Commonwealth comes either directly or indirectly under their influence. Their total membership is about 480,000, but as certain benefits, such as medical attendance and free medicines, and in many cases funeral expenses, are granted to members' families as well as to members themselves, this figure must, even when due allowance is made for young and unmarried members, be multiplied by at least four to arrive at the total number of persons more or less connected with these societies. Legislation has conferred certain privileges on friendly societies, but, on the other hand, it insists on their registration, and it is the duty of the Registrars in the various States, prior to registering a new society, to see that its rules are conformable to the law, and that the scale of contribution is sufficiently high to enable the promised benefits to be conferred on members. Societies are obliged to forward annual returns as to their membership and their finances to the Registrar, and elaborate reports are published in most of the States dealing with the returns thus received.

In the following tables the figures refer to the year 1918.

2. **Number of Societies, Lodges, and Members.**—The total number of societies registered in New South Wales is 62; in Victoria, 46; in Queensland, 19; in South Australia, 17; in Western Australia, 15; and in Tasmania, 19. No total is given of these figures for the Commonwealth, as the societies shewn in one State are in most cases represented in all the other States. The number of different lodges, the total number of benefit members at the end of the year, and their average number during the year are shewn in the following table:—

FRIENDLY SOCIETIES.—LODGES AND MEMBERS, 31st DECEMBER, 1918.

State.	Number of Lodges.	Benefit Members at End of Year.	Average No. of Benefit Members during Year.
New South Wales .. .. .	1,885	166,416	164,393
Victoria .. .. .	1,496	149,558	153,870
Queensland .. .. .	551	53,194	51,065
South Australia .. .. .	599	67,047	66,644
Western Australia .. .. .	281	17,786	17,878
Tasmania .. .. .	197	22,283	22,337
Commonwealth .. .. .	5,009	476,284	476,187

3. **Sickness and Death.**—Sick pay is generally granted for a number of months at full rates, then for a period at half rates, and in some societies is finally reduced to quarter rates. The following table shews the total number of members who received sick pay during the year, the number of weeks for which they received pay in the aggregate, and the average per member sick, and further the number of benefit members who died during the year, together with the proportion of deaths per thousand average members :—

FRIENDLY SOCIETIES.—SICKNESS AND DEATH, 1918.

State.	Number of Members who received Sick Pay.	Total Number of Weeks Sick Pay Granted.	Average Number of Weeks per Member Sick.	Deaths of Benefit Members and Wives.	Proportion of Deaths to 1,000 average Benefit Members.
New South Wales ..	(a)	(a)	(a)	(a)	(a)
Victoria ..	28,326	306,054	10.80	2,998	19.48
Queensland ..	8,162	60,046	7.36	718	14.06
South Australia ..	10,860	114,607	10.55	1,358	20.38
Western Australia ..	2,953	25,246	8.55	331	18.51
Tasmania ..	3,640	29,317	8.05	408	18.27
Commonwealth (b) ..	53,941	535,270	9.92	5,813	18.64

(a) Not available.

(b) Exclusive of New South Wales.

4. **Revenue and Expenditure.**—The financial returns are not prepared in the same way in each State, but an attempt has been made in the subjoined table to group the revenue under the main headings :—

FRIENDLY SOCIETIES.—REVENUE, 1918.

State.	Entrance Fees, Members' Contributions, and Levies.	Interest, Dividends, and Rents.	All other Income.	Total Revenue.
	£	£	£	£
New South Wales ..	543,269	117,941	114,895	776,105
Victoria ..	453,329	135,984	69,122	658,435
Queensland ..	172,248	43,784	..	216,032
South Australia ..	168,647	63,725	40,291	272,663
Western Australia ..	53,849	16,799	28,088	98,736
Tasmania ..	67,445	10,937	24,963	103,345
Commonwealth ..	1,458,787	389,170	277,359	2,125,316

The returns relating to expenditure are more complete than those relating to revenue, and can be shewn in full for every State. The figures shew that the excess of revenue, amounting in the aggregate to £290,791, was divided amongst the six States as follows :—New South Wales, £113,510; Victoria, £55,580; Queensland, £44,249; South Australia, £54,082; Western Australia, £5,552; and Tasmania, £17,818. The revenue exceeded the expenditure by about twelve shillings per average benefit member, a margin which cannot be called very large.

FRIENDLY SOCIETIES.—EXPENDITURE, 1918.

State.	Sick Pay.	Medical Attendance and Medicine.	Sums Paid at Death of Members and Members' Wives.	Administration.	All other Expenditure.	Total Expenditure.
	£	£	£	£	£	£
New South Wales ..	183,735	180,370	84,663	96,939	116,888	662,595
Victoria ..	208,910	175,073	55,038	80,118	83,716	602,855
Queensland ..	44,330	60,844	34,759	31,850	..	171,783
South Australia ..	68,813	37,851	41,282	32,884	37,751	218,581
Western Australia ..	20,237	18,049	8,247	14,091	32,560	93,184
Tasmania ..	19,953	18,602	27,121	12,174	7,677	85,527
Commonwealth ..	545,978	490,789	251,110	268,056	278,592	1,834,525

It appears from the above figures that sick pay averaged about thirteen shillings and sixpence per week, but, as the returns include pay at half and quarter rates, and as the proportion of these to full rates is not stated, the average given must be taken for what it is worth. Medical attendance and medicine came to about one pound per average benefit member.

5. Funds.—The two foregoing tables shew that the surplus of revenue over expenditure in five States amounted to £290,791 for the year, and a small surplus must, of course, result annually in every society which levies adequate contributions to enable it to meet all possible claims. These accumulations of profits are generally invested, and the subjoined table shews for all of the six States the division into invested and uninvested funds :—

FRIENDLY SOCIETIES.—FUNDS, 31st DECEMBER, 1918.

State.	Invested Funds.	Uninvested Funds.	Total Funds.
	£	£	£
New South Wales .. ..	2,208,182	(a)	2,208,182
Victoria .. ..	2,984,433	88,650	3,073,083
Queensland .. ..	944,291	2,240	946,531
South Australia .. ..	1,335,835	41,314	1,377,149
Western Australia .. ..	270,704	8,321	279,025
Tasmania .. ..	244,217	17,822	262,039
Commonwealth .. ..	7,987,662	158,347	8,146,009

(a) Included in Invested Funds.

The total funds amounted, therefore, to about £16 7s. 0d. per member at the close of the year under review.

§ 9. Probates.

1. Number of Probates and Letters of Administration and Value of Estates.—The value of the estates left by deceased persons gives a fair view of the distribution of property among the general population. There occurred in 1918 the deaths of 37,152 adult persons, while the total number of probates and letters of administration granted during the same period was 19,101. It would therefore appear that about one half of

the adults who died during the year were possessed of sufficient property to necessitate the taking out of probate. The details for each State are shewn in the table hereunder :—

### PROBATES AND LETTERS OF ADMINISTRATION, 1918.

State.	Number of Estates.			Net Value of Estates.		
	Probates.	Letters of Administration.	Total.	Probates.	Letters of Administration.	Total.
				£	£	£
New South Wales ..	6,877	(a)	6,877	11,827,552	(a)	11,827,552
Victoria ..	4,390	2,545	6,935	11,009,294	(a)	11,009,294
Queensland ..	801	158	959	2,089,765	246,083	2,335,848
South Australia ..	1,847	474	2,321	4,608,877	151,326	4,760,203
Western Australia ..	1,091	483	1,574	1,071,939	121,902	1,193,841
Tasmania ..	360	75	435	(b)816,484	(b)111,833	928,317
Commonwealth ..	15,366	3,735	19,101	31,423,911	631,144	32,055,055

(a) Included with Probates. (b) Gross values.

The number of intestate estates placed under the control of the Curator during the year, and the amount of unclaimed money paid into Consolidated Revenue in each State during the year 1918 are shewn hereunder :—

### INTESTATE ESTATES, 1918.

Particulars.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	C'with.
Intestate estates placed under control of Curator during 1918—							
Number ..	(a)	1,064	2,183	280	940	164	4,631
Value .. £	(a)	74,560	435,563	(a)	(b)	19,935	(b)
Unclaimed money paid into Consolidated Revenue by Curator during 1918 £	50,506	9,126	5,796	1,515	1,462	..	68,405

(a) Included above. (b) Not available.

On pages 813 and 814 will be found a series of graphs illustrating the progress of Banking and Life Assurance. The graphs on Banking cover a period of about forty years, and include cheque paying Banks and Savings Banks. The graphs dealing with Life Assurance go back to 1906 only, and include ordinary and industrial business.

## SECTION XXII.

## PUBLIC INSTRUCTION.

## § 1. Evolution of Educational Systems in Australia.

1. Educational Systems of the States.—(i) *Place of New South Wales in Australian Education.* The first settlement in Australia being in New South Wales, it is but natural that Australian education should have had its beginning in that State. In the evolution of educational method and system in Australia, New South Wales also has played a leading part, and has had practically a dominating influence. For that reason an account of the evolution of education in this State contains, as it were, the key to the understanding of the Australian attitude to this question. The subject is dealt with in some detail in No. I. and No. II. issues of the Commonwealth Official Year Book, but it is not proposed to repeat it in the present volume. (See also 2 hereunder.)

(ii) *Educational Systems of Commonwealth States.* A more or less detailed account of the origin and development of the primary educational systems of the other States also appears in No. I. and No. II. issues of the Year Book. Later details are given hereunder.

2. Recent Development in State Educational Systems.—(i) *New South Wales.* The year 1913 was an important one in New South Wales educational history, in that it was the first complete year of active operation of the principles laid down in the University Amendment Act and the Bursary Endowment Act of 1912. More extended reference to these Acts will be found later on. It was also remarkable for the reorganisation of technical education on a Trades School basis and of the Superior Schools on a vocational basis. Reference may also be made to the development of the Evening Continuation Schools established in 1911, and to the wide extension of the scheme of school medical inspection. As pointed out in a preceding Official Year Book (see No. VII., page 765), the Education Department instituted a scheme of examinations in 1911 for what were termed respectively the "qualifying," "intermediate," and "leaving" certificate. The first "qualifying" examination was held in March, 1911, the first "intermediate" in November, 1912, and the first "leaving" in November, 1913. The successful students who were awarded exhibitions at the leaving certificate examination took up University studies in the first term of 1914, thus marking the definite linking up of the State School system with the University. Amongst noteworthy features in the year 1914 were the remarkable increase in school population, the establishment of Trade Schools, the expansion of secondary education, and the extension of the scheme of school medical inspection. The travelling hospital and the travelling ophthalmic and dental clinics are rendering splendid service in the remote and sparsely settled districts. During the last few years increasing attention has been devoted to the development of infant schools on the lines of awakening a larger sense of responsibility amongst the young children by giving them a greater measure of freedom. It is recognised by modern educationists that freedom coupled with responsibility lies at the root of all true education.

A school clinic, under the direction of Lecturers in Education from the Training College, was opened in the metropolis during 1918. It is proposed at this institution to examine and to suggest suitable treatment for children reported by their teachers as shewing special disabilities for school work.

During 1917 and 1918 the provisions of the Public Instruction (Amendment) Act of 1916 were found to have exercised a marked influence on school attendance, and in many schools the average now exceeds 90 per cent. of the effective enrolment.

Arrangements were made during the year 1917 for the teaching of Japanese in selected High Schools, and in 1918, classes were begun at North Sydney and Fort-street Boys' High Schools.

It has been found that a large proportion of children leave school at the age of fourteen years or thereabouts. As in other countries, it is realised in New South Wales that this removal from educational guidance at the very time when such formative influences are so necessary is against the best interests of the children and the State, and it is intended to submit proposals to Parliament for continuous training to an extent which will give more adequate preparation for the responsibilities of adult life.

(ii) *Victoria*. Under the Amending Education Act of 1910 it is provided that every child must attend school for the full period of eight years between 6 and 14, unless he be given a certificate of education at 13. The schools are open on an average 225 days in each year, and require attendance on all these days, unless reasonable excuse is forthcoming. Provision is made for the mentally deficient. The primary curriculum divides the school life into eight grades, so that a child entering at six years of age will have completed the full course by the time he reaches his fourteenth year. After completion of the elementary school course, the pupil may go on to the Evening Continuation Schools, Higher Elementary Schools, District High Schools, or the Trade Schools. Special schools for feeble-minded children have been established in the metropolis, and an "open air" school for delicate children is in operation at Blackburn. There is also a special school for epileptics at Clayton. Highly encouraging results have been obtained at all these institutions. A Council of Public Education has been appointed to advise on educational matters generally, and particularly in regard to co-ordination. Examinations are held throughout the State for the certificate of merit and the qualifying certificate. The former is granted to pupils who, under prescribed conditions, reach a satisfactory standard in subjects prescribed for Grade VIII., while the latter is awarded to pupils who reach a satisfactory standard in Grade VI. Possession of this certificate enables the holder to enter upon the work of the Higher Elementary or the District High School. Acting on the advice of the Council of Education, the Melbourne University has established a Schools Board. The function of this body is to consider all questions relating to school studies and the inspection and examination of schools. In addition to University representation, there are also on the Board representatives of the Department of Education, the registered Secondary Schools, and the business interests of the community. Being clothed with such wide powers, this Board must of necessity be the chief guiding factor in the development of education in Victoria. During the year 1915 a considerable amount of attention was devoted to the organisation of the elementary schools, especially in connexion with the question of retardation, and in regard to the teaching of infants. It is hoped that the greater flexibility in organisation and system of promotions, coupled with special methods of dealing with backward pupils, will tend to considerably lower the retardation percentage. The institution of the uniform school year, the greater powers conferred on the head teachers in regard to the promotion of scholars, the making of the inspector an advisory rather than an examining officer, and the better provision for the practical training of the junior teachers have all been fraught with excellent results. During recent years methods of training teachers have been considerably improved. Formerly there was only one course leading to the trained teacher's certificate. At present four courses are provided—primary, secondary, infant, and short course for teachers of rural schools.

(iii) *Queensland*. The Amending Act of 1910 introduced several new features into the educational system of Queensland, chief amongst them being—(a) employment of proceeds of sales of land and other school property for school purposes, instead of paying them into Consolidated Revenue; (b) abolition of local contributions; (c) provision of scheme of school certificates to assist in co-ordination of various branches of the system; (d) establishment of compulsory continuation classes; (e) compulsory medical and dental examination; (f) raising the compulsory age to 14 years instead of 12 years; (g) provision for compulsory attendance on every day on which the school is open. The last-mentioned provision has already produced good results in regard to improved attendance. The organisation of the general scheme of education is being systematically developed. State High Schools were inaugurated in February, 1912, and a more liberal scheme of

scholarships to secondary schools came into force in 1913, while further amendments were made in 1914 and 1915. A Teachers' Training College has been established, and greater attention is being given to the development of technical education. Methods of instruction have been brought into consonance with the latest developments under the new syllabus adopted in 1914. During this year also the medical and dental inspection of State School children were considerably extended.

(iv) *South Australia.* One of the chief events in educational development in South Australia in 1911 was the provision of Evening Continuation Schools, intended to help those who cannot afford to attend the Higher Day Schools. The State has also come into line with the other States in the matter of medical supervision of school children, and a medical officer and two trained nurses have been appointed. The changes introduced at the Teachers' Training College have proved very satisfactory, and the academic teaching at the University is now supplemented by a systematic pedagogic instruction for all classes of teachers. A course of six months' instruction and training for teachers of small schools was introduced in 1913, and has proved of great value. In 1913 the principle was adopted of simultaneous examination of the schools, and granting to teachers the authority to make the promotions of their scholars. An Act to consolidate and amend the law relating to Public Instruction was assented to on the 23rd December, 1915. Under the Amending Act of 1916 all Lutheran Schools were taken over by the State. A Superintendent of Technical Education was appointed in 1916.

(v) *Western Australia.* During 1912 the curriculum of the Primary Schools was remodelled in order to bring it into line with the most up-to-date principles. The work was lightened in directions where experience shewed there was overloading, and efforts were particularly directed toward the removal of the abstract and to the development of the imaginative and constructive throughout all grades. Greater freedom was given for experiment by the teacher, and it is recognised that considerable improvement has resulted. Montessori principles are being increasingly adopted in the teaching of the youngest children. Constructive work is receiving greater attention in all departments, and encouragement is given to original or research work of an elementary character. Four special courses—commercial, industrial, domestic, and professional—have been established at the central schools. These schools are practically day continuation schools designed to carry on the education of boys and girls beyond the primary stage. Continued efforts are being made in the direction of bringing about a closer correlation between primary and secondary education. The Modern School at Perth was opened in 1911. In June, 1914, a Goldfields High School was opened at Kalgoorlie, and it is proposed to establish additional schools at the larger country centres, and in the meantime to grant scholarships at the existing High Schools to country children. Continuation classes were held at twenty centres in 1918, with an enrolment of 3,061. Certificates granted to successful students entitle the holder to advanced tuition at the Technical College. During 1917 a medical officer for schools was appointed under the Public Health Department.

(vi) *Tasmania.* During the last few years educational effort in Tasmania has been directed to the development on modern lines of the primary system, the foundation of secondary schools, and the provision of a satisfactory system of training for teachers. Kindergarten, Montessori Schools, and Model Country Schools have been established as adjuncts to the training system, and the courses have been remodelled with a view to providing trained teachers for secondary as well as for primary work. At the High Schools, secondary, commercial, and industrial courses have been established. School hygiene has received especial attention, doctors and nurses have been appointed, and two dental clinics have been established. During the year 1918, regulations were framed with the object of establishing separate infant departments under a trained mistress. Four have already been established and it is proposed to open four additional schools of this type.

(vii) *Northern Territory.* Although the number of children of school age in the Territory is small, nevertheless ample provision has been made by the Commonwealth Government for their education. State schools are in operation at Darwin, Parap, Pine Creek, Alice Springs, and Eumungalan. There is also a school for aboriginal



and half-caste children at Kahlin Compound, Darwin. A satisfactory standard is maintained at the schools, but progress is somewhat retarded by irregular attendance. Continuation classes are available at Darwin for cadets in Government employment and for others.

(viii) *Present Position of State Education in Australia.* Throughout Australia primary education is compulsory and free of charge, while there exists in most of the States a liberal provision of scholarships and bursaries to the Higher State Schools, to the Secondary Schools, and to the Universities. Provided that the requisite standard is reached, it is, of course, permissible for children to receive home tuition, or to attend so-called private schools. Considerable interest is taken in educational matters by the people of the Commonwealth, and within recent years several of the States have sent qualified representatives to inspect and report on the methods adopted in the chief countries of Europe and America. The reports of these Commissioners, especially those of New South Wales, have been widely studied, and various improvements have been made in accordance with their recommendations. The orientation, lighting, and ventilation of school buildings are being modernised. In all of the States periodical medical inspection of the children is in force. (A detailed statement of the work being done in this direction will be found in the chapter dealing with Public Hygiene.) Methods of training teachers are now better developed, and although the "pupil teacher" system with its effects have not been wholly eliminated, it appears to be gradually vanishing. (The methods adopted in the various States for the selection and training of teachers are described in some detail in § 2, 10, hereinafter.) There has been a wider employment of kindergarten principles in the early stages, and the more or less purely abstract teaching of the older days has been largely replaced by concrete methods. Such subjects as nature study, manual training, music, and drawing have received a general impetus. Greater attention has been given to the scientific classification of children. Moreover, as will be seen from the above, and from § 2, 7, the State Education Departments are increasing their activities in the direction of secondary education. Lastly, the system of inspection has been considerably remodelled. Under the old system, the inspector was little more than an examining officer, but, under the present régime, the primary duty of this officer consists in guiding and directing the teaching in accordance with approved methods. [See also § 6, Technical Education.]

(ix) *Co-ordination of Educational Activities.* As pointed out already, the educational system of New South Wales may now be considered as a more or less homogeneous entity, the various stages succeeding one another by logical gradation from kindergarten to university. In the other States development is proceeding on somewhat similar lines, although in varying degree. [See also § 1, para. 2 *supra*.]

(x) *Educational Conferences.* In May, 1916, the first Conference of Directors of Education in the States of the Commonwealth was held at Adelaide. Amongst important matters discussed thereat may be mentioned:—(a) *Education Reports (Departmental).* In regard to these a decision was arrived at respecting the general principles which should govern the preparation of future reports in order to ensure uniformity so far as the compilation and presentation of statistics relating to enrolment, attendance, and finance are concerned. (b) *Raising School-age Limit.* In view of the circumstance that educational expenditure has, up till now, been largely wasted owing to school attendance ceasing at the age of 14 in the case of so many children, it was resolved that legislation is desirable providing for continuous education up to the age of 16, and that attendance be made compulsory except where special exemption could be granted on the ground of educational fitness. (c) *Schools for Defectives.* At present New South Wales and Victoria have a school each of this type, but it was agreed that such schools ought to be provided where required. (d) *Other Special Schools.* Each State is making experiments in regard to the provision of new types of schools giving industrial and secondary instruction, and arrangements were made for the exchange of detailed information in regard to their working. (e) *Sex Physiology.* The Conference was opposed to the introduction of special teaching on this subject, and it was affirmed that efforts should be directed towards excluding all thought and talk about sex matters from the schools. It was agreed, however, that the Departments should prepare a special leaflet setting forth the duties of parents in this direction. The second Conference was held in Melbourne in June, 1918.

## § 2. State Schools.

1. **Introductory.**—The State Schools, or, as they are sometimes termed, the “public” schools, of the Commonwealth comprise all schools directly under State control, in contradistinction to the so-called “private” schools, the bulk of which, through privately managed, nevertheless cater for all classes of the community. Information regarding Technical Education is given in § 6.

2. **Enrolment and Attendance.**—The following table shews the number of State Schools, together with the teachers employed and the enrolment and “average attendance” in each State during the year 1918 :—

### STATE SCHOOLS, TEACHERS, AND SCHOLARS, 1918.

(COMMONWEALTH.)

State or Territory.	Schools.	Teachers.*	Scholars Enrolled.	Average Attendance.
New South Wales†	3,152	8,890	289,655	225,790
Victoria .. .. .	2,318	6,783	‡225,000	167,653
Queensland .. .. .	1,543	4,134	111,771	91,341
South Australia .. .. .	891	2,227	73,502	59,704
Western Australia .. .. .	650	1,728	49,145	42,839
Tasmania .. .. .	465	1,084	30,329	24,650
Northern Territory .. .. .	4	7	285	197
Commonwealth .. .. .	9,023	24,853	779,687	612,174

\* Exclusive of sewing mistresses. † Including Federal Territory. ‡ Estimated.

Unfortunately, the schemes of enrolment and of the computation of “average attendance” are not identical in each State, so that the comparisons are imperfect.

The enrolment and average attendance at the State Schools in the Commonwealth are given below for the years 1891, 1901, 1911, and for each year of the period 1914 to 1918 :—

### ENROLMENT AND ATTENDANCE AT STATE SCHOOLS, 1891 TO 1918.

(COMMONWEALTH.)

Year.	Total Population*.	Enrolment.	Average Attendance.	Year.	Total Population*.	Enrolment.	Average Attendance.
1891 ..	3,241	561,153	350,773	1915 ..	4,932	732,464	557,962
1901 ..	3,825	638,478	450,246	1916 ..	4,875	751,126	569,306
1911 ..	4,569	638,850	463,799	1917 ..	4,935	764,980	600,089
1914 ..	4,941	713,232	544,230	1918 ..	5,030	779,687	612,174

\* In thousands.

3. **Schools in the Federal Capital Area.**—During the year 1918 thirteen State Schools were in operation in the Federal Territory (Yass-Canberra). The pupils enrolled numbered 387 and the average attendance 279. Cost of upkeep in 1918 amounted to £3,020. By arrangement with the Federal Government these schools are conducted by the New South Wales Education Department on the same lines as the ordinary State Schools, the Department being recouped for expenditure.

**4. Centralisation of Schools.**—The question of centralisation of schools adopted so successfully in America and Canada has received some attention in the Commonwealth, and particularly in New South Wales. It is recognised that a single adequately-staffed and well-equipped central institution can give more efficient teaching than a congeries of small scattered schools in the hands of less highly trained teachers, and the small schools in some districts were therefore closed and the children conveyed to the central institution. The principle was first adopted in New South Wales in 1904, when the conveyance of pupils was authorized in the case of 12 schools, and was later on extended to other States.

**5. Education in Sparsely-settled Districts.**—It has always been the aim of the State to carry the benefits of education into the remotest and most sparsely-settled districts. This is effected in various ways. (i) By the establishment of Provisional Schools, *i.e.*, small schools in which the attendance does not amount to more than about a dozen pupils, these institutions merging into the ordinary public school list when the attendance exceeds the minimum. (ii) When there are not enough children to form a provisional school, what are known as Half-time Schools are formed, the teacher visiting them on alternate days. (iii) In still more sparsely-peopled districts, an itinerant teacher goes from house to house within a certain radius. Thus, in Queensland during 1918 the 14 itinerant teachers covered 451,000 square miles of country and travelled 58,548 miles to visit 1,587 children. In this State also the Education Department has established what are known as Saturday Schools, in which small groups of children in outlying districts are visited by the nearest teacher on Saturdays and receive the benefit of several hours' instruction. These schools, of which there are now ten, have been warmly welcomed in the districts in which they are established, inasmuch as under this system the children "outback" receive a greater amount of instruction than is possible under the system of itinerant teachers. During 1918, the Education Department in Western Australia disbursed £10,422 in "driving grants," *i.e.*, sums of money granted to parents whose homes are over three miles from the nearest schools, and who arrange to have their children driven in. In New South Wales, Victoria, Western Australia and Tasmania parents in the thinly-peopled areas are also allowed to club together and build a school, which receives aid from the Government in the form of a yearly subsidy and grant of school material. During 1918 subsidy was paid to 658 schools in New South Wales. (iv) An experiment on the part of New South Wales, the result of which was awaited with some interest, was the establishment in 1908 of a "Travelling" School. A van was provided in which the teacher travelled, carrying with him a tent for himself and one to be used as a school, together with such books and apparatus as are required in a Primary School. So far very satisfactory results have been attained. Two additional schools of this nature were established in 1914. (v) There are also railway camp schools in operation on the sites of extensive railway works.

Regulations were framed in Tasmania during 1912, providing for the subsidising of private teachers at a rate not exceeding £5 per pupil in districts too remote or sparsely settled to warrant the establishment of an ordinary Provisional School. The schools of this nature operating in 1918 numbered 57, with an enrolment of 672 scholars. During the year the department also paid for the conveyance of 342 children to schools by boat, vehicle, or train.

New South Wales, Victoria, South Australia, Western Australia, and Tasmania provide for education, by correspondence, of children in isolated districts.

**6. Evening Schools.**—Evening Public Schools have been in existence for many years in some of the States, but their progress has been uncertain. In New South Wales the 42 Evening Continuation Schools had an average attendance in 1918 of 2,014. It is pointed out by the Inspector of these schools that future extension depends on the introduction of some form of compulsory attendance. In Victoria there was only one night school in operation for elementary work during the year. It is stated that future developments in evening instruction will be in the direction of continuation classes. Western Australia has evening continuation classes in the chief centres; the enrolment in 1918 numbered 3,000. Evening Continuation Schools have been established under regulation in South Australia, and are intended principally to help the working boy to improve his general education and to add to the store of knowledge most useful in his present work.

7. *Higher State Schools.*—(i) In *New South Wales*, public schools which provided advanced courses of instruction for two years for pupils who have completed the primary course were classed as *Superior Schools*. These were reorganised in 1913 as Day Continuation Schools, and divided into Superior Commercial Schools, Superior Junior Technical Schools, and Superior Domestic Schools for Girls. During 1918 there were 93 schools of this type in operation, of which 24 were in the Commercial group, 24 in the Junior Technical, and 45 in the Domestic group, with an average attendance of 5,168 in the sixth and seventh classes. It is believed, however, that greater efficiency could be produced by reducing the number of these schools and establishing Central "Superior Public Schools" instead. Provision has also been made for the more advanced education of children in country centres by the establishment of 17 District Schools. These schools are specially staffed, and undertake the work of preparing students for admission to the training colleges. There are also 22 *High Schools* in the State. These had an enrolment in 1918 of 6,379, with an average attendance of 5,284. To meet the wishes of representatives of the registered Secondary Schools, the syllabus of the High Schools was amended in 1913, and now offers such a wide range of choice in the selection of subjects that there is no possibility of producing a merely stereotyped uniformity of study. Four "Intermediate" High Schools have been established to meet the growing demand for High School education in the metropolis, and others will be provided during the next few years in the city and in country centres. The average attendance at these schools in 1918 was 720. In accordance with Departmental regulations liberal provision is made for scholarships and bursaries to the higher State Schools. Under the provisions of the University Amendment Act of 1912, 200 exhibitions were awarded in 1918 to successful students at the leaving certificate examinations, and 112 of these were given to pupils attending the State Schools, and 88 to students of registered secondary schools.

The Sydney Grammar School (not a "State" School in the ordinary acceptance of the term), which receives a State endowment of £1,500 a year, had, in 1918, a quarterly enrolment of 641 pupils, and an average attendance of 600.

During 1917 the State School of Aviation at Richmond was transferred to the control of the Education Department. The school served a military purpose during the war, but it is hoped that it will henceforward prove of great commercial value to the State.

(ii) In *Victoria*, action was taken in January, 1912, to give effect to the provisions of the Education Act of 1910, with regard to the decentralisation of the system of secondary education. Twenty-one Higher Elementary and 28 District High Schools have been established, and, to obviate congestion at the High Schools, Higher Elementary Classes are carried on at ten "Central" Schools. The enrolment on the 1st January, 1918, at the Higher Elementary Schools was 1,322, of whom 666 were girls, at the District High Schools 5,686, of whom 2,730 were girls, while 582 boys and 588 girls were receiving secondary teaching in the Central Schools. The qualifications for admission to the High Schools and Higher Elementary Schools are that pupils shall be not less than 12 years of age, shall possess the qualifying certificate or its equivalent, and that their parents shall undertake that the children will remain at school for four years. For the first two years there is a common course for all pupils, thereafter replaced by four special courses:—(1) A preparatory professional course for pupils preparing to proceed to the University, to enter the teaching profession, or to gain a sound general education; (2) an agricultural course to be taken in Agricultural High Schools; (3) a commercial course; and (4) a domestic arts course for girls. Parallel with these courses an industrial course has been developed for pupils who intend to enter upon some form of industrial occupation.

The demand for places in the metropolitan High Schools is in excess of the available accommodation, and a scheme has been outlined to provide additional schools and to vary the conditions at the existing institutions.

Junior Technical Schools have been established apart from the High Schools in Melbourne, Ballarat, Bendigo, and Geelong, and there are schools also at Glenferrie, Collingwood, Sunshine, and Warrnambool.

Scholarships granted by the Department are as follows:—(a) One hundred junior, tenable for four years at a District High School or approved Secondary School, with allowance of £26 per annum for board where required; (b) Forty senior, tenable four to six years, with allowance of £40 towards expense of course at University; (c) Fifty junior

technical, giving free tuition for two years at a Junior Technical or other approved school, and, in certain cases, board allowance of £26 per annum; (d) Fifty-five senior technical, giving free tuition for approved courses at Technical schools, with £30 allowance for day students, and £10 for night students; (e) Sixty teaching, similar in other respects to junior; (f) Twenty nominated courses, giving four to six years' free tuition in agriculture, mining, or veterinary science at the University, with allowance in certain cases of £26 per annum.

(iii) Prior to the year 1912, *Queensland* did not possess any distinctly Secondary Schools under State control, but in February of that year High Schools were opened at Warwick, Gympie, Bundaberg, Mount Morgan, Mackay, and Charters Towers. Tuition at these schools is free, but students must pass a qualifying entrance examination. Three courses of study, General, Commercial, and Domestic, are provided. The General Course will lead up to the University, and students will be able to matriculate from the High Schools. In 1917 a new High School was opened at Gatton. The largest High School in the State is conducted in connexion with the Central Technical College, Brisbane, and it is proposed to open similar schools in Rockhampton and Toowoomba. In smaller centres where an average of not less than 25 qualified pupils can be obtained, secondary tuition is provided at existing State Schools, and this has been arranged for at Brisbane Central (boys), Brisbane Central (girls and infants), Herberton, Childers, Dalby, Pittsworth, Roma, and Southport. The enrolment at High Schools in 1918 was 1,109, and the daily attendance 1,040. There are, moreover, ten Grammar Schools—six for boys and four for girls—each of which is subsidised by the State to the extent of £750 per annum, and in addition receives a payment of £250 per annum for providing five scholarships for State scholars. The enrolment at the Grammar Schools in 1918 was 1,944, and the average attendance 1,684. Since the year 1909 these schools have been regularly examined by the Inspector-General of the Education Department.

Under the amended scheme of scholarships to Secondary Schools which came into force in 1914, all candidates who gained 50 per cent. of marks at the previous December examination were eligible for free scholarships tenable for three years at an approved Secondary School. Provision was made for board allowance of £30 per annum where necessary, and of £12 where the holder lived at home. In 1915 the tenure was altered to two years, with the proviso that, should the holder at the end of that period obtain an approved pass at the University Junior Examination, an extension scholarship of two years was granted, and, in addition, an extension at the end of the fourth year where an approved pass at the Senior University Examination was obtained. The extension scheme came into force in 1917, when 93 boys and 45 girls gained extension for a third and fourth year, the corresponding numbers in 1918 being 150 boys and 74 girls.

As a result of the 1918 examinations, held in April, scholarships (extended to two years and six months) were awarded to 340 boys and 266 girls, while there were 838 holders of scholarships secured in December, 1917.

Prior to the establishment of the Queensland University, three exhibitions per annum to approved Universities were granted. These have been replaced by twenty scholarships to the local University. Each scholarship is tenable for three years, and carries an allowance of £26 per annum if the holder lives at home and attends the University, or £52 per annum board allowance where necessary. In addition to these "open" scholarships, twenty "teacher" scholarships are granted to students who undertake to enter the teaching profession. These carry an allowance of £65 where the students live away from home, and £39 to those who live at home.

(iv) *South Australia*. Including the Adelaide High School, there were altogether twenty-one High Schools open in South Australia in 1918, with an enrolment of 3,360 students, and a staff of 122 teachers. In addition to giving secondary education, these institutions form a valuable source from which the Department can draw a supply of young teachers. Under existing regulations provision is made for the following scholarships:—(i) Eight public exhibitions open to boys and girls who have been bona fide residents of South Australia for two years prior to the competitive examination. The exhibitions are tenable for three years at an approved school or college, carry free tuition and books, and an allowance of £22 per annum when the holder lives away from home. (ii) Forty exhibitions, tenable for three years at an approved school or college

are open to competition by children under 13 years of age in attendance at State Primary Schools. (iii) Eight senior exhibitions, worth £40 per annum, and four of the value of £20, are tenable at the Adelaide High School or other approved Secondary School, and are open to pupils of any Secondary School. (iv) Twelve junior exhibitions, eight of £40 and four of £20, tenable for two years at any approved Secondary School, are reserved for pupils of Secondary Schools within a radius of 10 miles of the General Post Office, Adelaide. (v) Twelve Government bursaries, of which six are reserved for pupils of the High Schools. These are tenable at the University, and the holder receives £20 per annum and free tuition. (vi) The Government provides £180 per annum to assist students who are unable to attend the University during the day. Each studentship is limited to £10 for science students, and £7 for arts students.

(v) *Western Australia.* In 1918, there were two schools providing a course up to the leaving certificate standard—the Perth Modern School and the Eastern Goldfields High School—and four District High Schools, at Northam, Geraldton, Bunbury and Albany, providing a three years' course up to the Junior Certificate standard. In addition, the Central Schools at Perth, Claremont, and Fremantle have professional courses with a curriculum equal to that of the District High Schools. The Perth Modern School and the Eastern Goldfields High School had an enrolment in 1918 of 413 and 196 students respectively. Extension of the opportunity to obtain secondary education in country districts has been greatly appreciated, and the enrolments at the four District High Schools were in all cases over 100, the largest, Bunbury, reaching 150. The Science Courses in these schools are designed to aid in the practical study of agriculture. Entrants to State secondary schools must have passed an examination identical with that for Secondary School scholarships, and boarding allowance up to £30 per annum is provided where necessary. Continuation classes were inaugurated in 1911, and were attended at 20 centres in 1918 by about 3,100 pupils. The classes are intended to provide some measure of higher education to those who leave school as soon as they reach the compulsory age of 14 years. Admission to these classes is free, but pupils must attend regularly three evenings a week. Evening Schools are held in various parts of the State, but the work carried on is mainly primary. Junior and senior exhibitions were abolished in 1914 and provision made for 10 University exhibitions, each tenable for three years at the University of Western Australia, and valued at £40 per annum for students living at home and £60 in the case of those living away from home. Fifty scholarships tenable for three years at approved Secondary Schools are annually offered for boys and girls attending Government or other efficient schools. Ten carry an allowance of £20 per annum, and the remainder entitle the holders to receive a grant for books and travelling expenses. Boarding allowance up to £30 per annum may also be granted where necessary. Thirty-four bursaries of the value of £5 each tenable for two years were also granted in 1918. Scholarships to enable children from country districts to attend at District High Schools or the Narrogin School of Agriculture were inaugurated in 1917. Only those children who must live away from home are eligible, and the tenure may in some cases be extended to five years. The scholarships carry an allowance of £30 per annum. During 1918, 38 District High School scholarships, and 5 tenable at the Narrogin School of Agriculture were awarded.

(vi) *Tasmania.* Up to the year 1912 the Department confined its efforts to the provision of primary education for the school children in Tasmania. In 1911, however, super-primary classes were formed in the larger schools, with an enrolment in 1911 of 200, and in 1912 of 400 pupils. It was recognised, however, that the previously existing scheme of scholarships and exhibitions was inadequate to meet the demands for higher education. High Schools were therefore opened in January, 1913, at Hobart and Launceston, and intermediate High Schools were opened in 1915 at West Devonport and Burnie. These provide for five classes of pupils—(i) Those who desire to become teachers; (ii) University students; (iii) Commercial; (iv) Mechanics; (v) Home duties (girls). The enrolment in 1918 was 1,119. It is proposed to grant a leaving certificate at the end of a four years' course. The Bursaries Act of 1915 provides for 30 junior and 20 senior bursaries tenable for two years at an approved State School or registered Secondary School. They are valued at £2 per annum for a State School and £12 at a Secondary School, in addition to satisfactory boarding and travelling allowance where required. Four-fifths of the bursaries are awarded to country children. The Tasmanian Education Department scholarship is open for competition to High School pupils under the age of

19 years. The scholarship is valued at £20 per annum, with an allowance of £40 if the student lives away from home while attending the approved University course. A Veterinary Science Scholarship was established in 1918, for competition amongst boys under 19 years of age. It is tenable for one year at the University of Tasmania (value £20 or £60), and at either the University of Melbourne or Sydney for the three succeeding years (value £120 per annum).

**8. Agricultural Training in State Schools.**—The question of agricultural training in ordinary schools has received considerable attention in *New South Wales*. In 1905 a teacher of school agriculture was appointed to visit schools and districts for the purpose of giving instruction to teachers and scholars in the subject, the officer selected possessing the qualifications of a thorough acquaintance with agricultural work as well as school methods. The Education Department makes grants of seeds of various kinds to schools having gardens, and in some instances has installed windmill plants to provide an adequate water supply. Under the direction of a capable head master, a college has also been opened at Hurlstone, near Sydney, at which practical lessons are given in elementary agriculture, and the institution also serves as a stepping-stone to the Hawkesbury Agricultural College. Scholarships are available to students of the Hurlstone Agricultural High School as it is now called, and these scholarships entitle the holder to a two years' free course at the Hawkesbury institution, with a grant of £1 10s. per annum for text books. The Department has also organised Rural Camp Schools for the purpose of giving teachers and scholars first hand knowledge of country industries.

The subject of Agricultural Colleges and Experimental Farms is dealt with in the section relating to Agriculture. (See page 405.)

In *Victoria*, what are termed Agricultural High Schools have been established at Ballarat, Colac, Leongatha, Mansfield, Mildura, Sale, Shepparton, Wangaratta, Warragul, and Warrnambool. Pupils must be at least fourteen years of age, and have passed beyond the curriculum of the elementary school, or else be able to afford satisfactory proof that they are qualified to profit by the instruction offered. The schools are practically secondary schools with an agricultural bias, and form a link between the rural school and the agricultural college. They are also used as a preliminary stage in the education of boys and girls who wish to become teachers and eventually graduate in the State Training College and the University. At some of the schools short courses in agriculture have been instituted for farmers' sons who have left school. A local council is appointed for each school, and exercises a general oversight over its operations. The experimental plots at these schools have aroused much interest among the farmers from the surrounding districts. A Supervisor of Agriculture reports and gives advice on the teaching of agriculture in the State Schools. A fair number of teachers have gained diplomas in agriculture, and will be in a position to give practical instruction at the High Schools. Schools of Agriculture are conducted by the Agricultural Department at the State Research Farm, Werribee. Teachers in the wheat-growing districts are also instructed for short periods by the organizing inspector of agriculture at the University, and their services are utilised as leaders or group supervisors in their districts. The elementary principles of agriculture are taught in 755 State Schools. A Horticultural Society has been established in connection with State Schools, and there are 1,200 schools in affiliation, while practical help in school gardening is afforded by the Departmental supervisor. The Society has a nursery and distributing centre for plants and seeds at Oakleigh.

In *Queensland* the Government provides a small grant to encourage the study of agriculture, horticulture, and kindred subjects in the State Schools, while a departmental teacher of agriculture visits the schools and gives assistance in agricultural, horticultural, and nature study work. Some excellent experimental work has been carried out at a few of the schools, while gardens have been established wherever circumstances permitted. Short courses of instruction for teachers have been instituted at the Gatton College. A large number of teachers have gained a practical knowledge of milk and cream testing, and the subject is now added to the programme of instruction in several of the dairying districts. At Nambour, a Rural School, the first of its type, was opened early in 1917. In addition to the ordinary subjects of the curriculum this school provides for instruction in farming, fruit growing, dairying, etc. In view of the success of this institution the question of the provision of similar schools in other centres is under consideration.

In *South Australia*, the Public Schools' Floral and Industrial Society, founded in 1880, holds annual exhibitions of school work from all parts of the State. In addition, it has for some years undertaken the distribution of flower seeds among school children at a very cheap rate, and has thus fostered the love of horticulture with remarkable success. A special instructor has been appointed to give assistance to teachers desirous of making their school gardens aid in nature study work. Aid is given by personal visits as well as by correspondence and the holding of vacation Summer Schools. A seed wheat competition amongst school children inaugurated in 1911 proved very successful, and a second, which was commenced in 1916, will conclude in 1920. Over 650 experiments were arranged and conducted by students at the Nature Study Laboratory in 1918. A considerable amount of apparatus was also made by the students for use in the primary schools.

In *Western Australia* an advisory teacher of nature study visits the schools and gives advice in regard to proper methods in horticulture and experimental agricultural work. The number and usefulness of the gardens and experimental plots attached to State Schools shew marked improvement each year. Early in 1914 a school was opened on the Narrogin State Farm. The students are taken directly from the primary schools, and the course of instruction lasts for two years. On its completion students are qualified to enter on the diploma course at the University.

In *Tasmania* the organising teacher of nature study visits and advises the teachers at the State Schools, and also gives addresses and model lessons at the schools of instruction.

9. Teachers in State Schools.—The distribution of the teaching staff in the State Schools during the year 1918, including teachers of needlework, was as follows :—

#### TEACHING STAFF IN STATE SCHOOLS, 1918.

(COMMONWEALTH.)

State.	Principal Teachers.		Assistants.		Pupil or Junior Teachers.		Sewing Mistresses.	Total.		
	Males.	Fem.	Males.	Fem.	Males.	Fem.		Males.	Fem.	Total.
New South Wales	2,356	1,237	1,312	3,895	9	81	132	3,677	5,345	9,022
Victoria ..	1,649	1,135	457	1,619	302	1,621	421	2,408	4,796	7,204
Queensland ..	830	790	441	1,223	332	518	..	1,603	2,531	4,134
South Australia ..	387	530	115	707	112	376	109	614	1,722	2,336
Western Australia	335	355	116	681	50	191	54	501	1,281	1,782
Tasmania ..	154	331	78	240	47	234	3	279	808	1,087
Northern Territory	2	2	..	2	..	1	..	2	5	7
Commonwealth ..	5,713	4,380	2,519	8,367	852	3,022	719	9,084	16,488	25,572

It will be observed that there is a fairly large number of junior teachers, or pupil teachers, as they are called in some of the States. The pupil teachers will, however, in time disappear, and their places will be filled by young people who have undergone a course of training in schools specially provided for the purpose. Allusion to the methods of training will be found in the next paragraph.

10. Training Colleges.—The development of the training systems of the various States has been alluded to at some length in earlier issues of the Year-Book. The present position is as follows :—

(i) *New South Wales*. During 1918, the total number of students in the Blackfriars Training College was 859, of whom 72 were evening students. Of the day students, 616 were women, while the whole of the evening students were women teachers taking an extension course to qualify for the Infant Teachers' Certificate. Several of the larger metropolitan schools are used as practice schools for giving training college students opportunity to acquire practical skill in teaching. At the college, a complete set of Montessori apparatus has been prepared for demonstration work on the Montessori principles, and one of the College staff was a



few years ago sent to Italy in order to gain first-hand knowledge of the possibilities of the scheme. Opportunities are also afforded to other members of the teaching staff to visit foreign countries on study leave. The Principal of the Training College is also Professor of Education at the Sydney University. A new Teachers' College within the University grounds is in course of erection, and it is hoped that portion of the building will be ready for occupation in 1919. Up to the year 1913 the limits of accommodation at the Teachers' College were responsible for the employment of a number of untrained junior assistants, but it is now provided that no teacher enters the service without at least six months' professional training. Schools of instruction for teachers are held each year, the subjects chosen being military drill, swimming, physical training, first-aid work, manual training work, etc., and lectures are given to teachers in rural districts by members of the Teachers' College staff. Hostels for students in training and for the accommodation of High School pupils have been established at various centres in the State.

(ii) *Victoria.* During recent years the educational and professional attainments of the general body of teachers in Victoria have steadily improved. Prior to the establishment of the High Schools, the pupil or junior teachers were recruited from the ranks of those who had obtained the Merit Certificate in the eighth grade of the elementary schools, and the acquirement of the necessary literary qualifications for promotion was greatly hindered by the circumstance that they were engaged in teaching for the greater portion of the day. Under present conditions, candidates spend three or four years in a High School exclusively in study, and consequently enter on their professional duties with a better mental and physical equipment. On receiving promotion in rural schools as sixth grade teachers, they may join the correspondence classes of the Melbourne High School and receive tuition for the higher examinations. At present about 600 rural teachers are on the correspondence class rolls, while evening and Saturday classes for junior teachers are also held at the school. A number of High School pupils after serving as junior teachers for a year are awarded studentships at the Training College, and competition has been so keen that it has been found possible to exact the standard of the Senior Public Examination for these studentships. The present Training College dates back to 1874, but during the retrenchment period, viz., from 1893 to 1900, it was closed. The institution was reopened in February, 1900, with an enrolment of fifty-seven students. During the year 1918, 284 teachers, some of whom were extra-departmental, were brought into contact with the college work. A Training College Hostel has been established, and a Correspondence class formed for country teachers desirous of qualifying for the Infant Teacher's Certificate. The students at the Hostel receive training in domestic economy. Three city and six country practising schools are attached to the Training College, and four infant rooms with attached kindergartens have been specially equipped for the training of infant teachers. The University High School gives secondary teaching practice to both departmental and private students. A remodelled system of training came into force in 1914, providing, amongst other things, for the alteration of the name "Training College" to "Teachers' College," and for the classification of students into three groups, i.e., those training for secondary teachers' certificate, for sub-primary teachers, and for primary teachers.

Twenty teachers are nominated annually for free attendance at the University lectures for the diploma of education.

The Teachers College conducts a Correspondence class for women teachers in the country studying for the Infant Teacher's Certificate.

(iii) *Queensland.* In connexion with the Teachers' Training College opened in Brisbane in 1914, the following scheme has been evolved :—Twenty-five special Teacher scholarships to the University, each with a currency of two years, are to be awarded annually. Living allowances at the rate of £52 per annum and £26 per annum respectively are provided, the former being paid to students living away from home. The University is to provide an Education group of subjects, including Logic, Psychology, and Education. Ten of the scholarships may be carried on for a third year, and five for a fourth year. Practical training is entrusted to a Training Master appointed by the Department. Those who attend the two years' course will be appointed to the Primary Schools, and the graduates from the three and four years' course will be available for High Schools and Secondary Schools. Short courses

of training have been instituted for teachers to take charge of small schools, and arrangements have been made to allow an approved number of teachers already in charge of such small schools to obtain the benefit of the training. During 1918 there were in training 39 short course students and 29 University students. In the meantime, young people of both sexes are admitted to the service as pupil teachers at the age of fourteen years, and receive training from the principals of the schools to which they are appointed. The schools for infants at Kangaroo Point and Rockhampton have been specially staffed and equipped for training Kindergarten teachers, and Kindergarten methods have been introduced into most of the larger schools. Teachers of small schools are also greatly helped by the inspectors' practical and theoretical instruction in the various districts, while the Central Technical College gives correspondence lessons to small-school teachers desirous of passing the Class III. examination. Schools of instruction for the untrained teachers of small schools are conducted by the inspectors in their respective districts.

(iv) *South Australia.* During the year 1910 the system of training in force in South Australia was remodelled and improved. Prior to that year students had devoted themselves chiefly to academic studies, but in 1910 provision was made for increased attention to the theory and practice of teaching. Distinct courses of training were established to prepare teachers for work in primary and infant schools, and an advanced course was outlined for those who will become High School teachers. Each of these courses extends over a year. Students in the primary course who shew special ability may be granted a second year's training. The special course for Secondary Schools gives students an opportunity of obtaining the Diploma of Education. Provision was also made for a six months' course of training for teachers of provisional schools. There were 88 students in the Training College in 1918. Most of the students have, in the first instance, had a period of one year's practical monitorship in a State school under the guidance of a head master. This is followed by three years' general education in a High School, and a further year of junior teachership in a primary school under the supervision of a head master, prior to entrance to the Training College. At the Adelaide High School there were 400 students training for teachers during 1918. Altogether over 1,000 students received instruction in 1918 at this institution, which claims to be the largest secondary school in Australia. Practice in teaching is gained by the student teachers at the Observation School, which also provides training for teachers qualifying for appointment to provisional schools. A "model" small school has been established for the purpose of illustrating methods of management for one-teacher schools. A director was appointed in 1917 to give instruction in Montessori methods at the school. A considerable amount of help is given to the teachers of small schools at the periodical "Summer" Schools and "refresher" courses.

(v) *Western Australia.* A Training College for teachers was opened at Claremont in 1902. The original building provided accommodation for sixty students, but extensions were opened in 1908, and the number in training in 1918 was 132. Two classes of training are provided for—the full course, lasting two years, and a special course of six months. The latter is intended for teachers of small schools in country districts, and the trainees are drawn partly from those already acting as teachers in these schools and partly from outside applicants who pass the necessary qualifying examination. Special practising schools have been established for the proper training in teaching and managing the smaller country schools. Three classes of students are admitted to the full course—(i) from State or private secondary schools; (ii) monitors from departmental schools; (iii) ordinary teachers from the departmental schools. The standard of education required on entering is the school-leaving or matriculation certificate, but a special examination is held for candidates possessing neither. The course is both academic and practical, the former being co-ordinated with the University. As a help in the practical work, there is an adjunct school attached to the college, and several practising schools, two of which are for infants only. An advisory teacher visits the small country schools to give practical help and advice. At the Claremont Infants' School a room has been set apart for work on Montessori lines. During 1918, in addition to short courses at the Training College, a school of instruction for teachers of small schools was held at Toodyay. Lectures were given by an inspector at the Kalgoorlie and Boulder centres, and a short course of nature-study was conducted by an inspector in the metropolitan area. Schools of instruction in cadet training were also held.

(vi) *Tasmania*. During 1917 the schemes for the training of teachers were recast and grouped in four divisions :—(1) A short course to supply the professional training required for the less important positions in the primary schools and for teachers of the smaller provisional and Sixth Class schools. The course lasts six months. (2) Training of infant teachers. (3) Training for positions in the larger primary schools. (4) Training of high school teachers. Practical training for the various classes is given in well-equipped practising schools and in model small schools. The inspectors also hold schools of instruction for teachers of small schools. The enrolment at the Training College in 1918 numbered 67.

**11. School Savings Banks.**—Returns shew that these institutions are in existence in three States. In New South Wales, there were 826 banks at the end of 1918, the deposits amounting to £48,877, and withdrawals to £48,402. Since the establishment of the banks in 1887, deposits totalled £660,476, and withdrawals £643,965. Of the latter sum £139,614 was placed to the children's accounts in Government Savings Banks. In South Australia, 525 schools had 26,461 depositors, with £24,665 to their credit; and in Western Australia, there were 461 school banks, with 28,230 depositors and £38,566 to their credit.

**12. Expenditure on State Schools.**—The net expenditure on State education during 1901 and for the five years ended 1918 is shewn below. The figures do not include expenditure on buildings, which is shewn separately in a subsequent table.

#### EXPENDITURE ON MAINTENANCE, STATE SCHOOLS, 1901 AND 1914 TO 1918.

(COMMONWEALTH.)

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	Nor. Ter.	C'wealth.
	£	£	£	£	£	£	£	£
1901 ..	623,734	656,907	256,245	152,006	89,694	37,710	..	1,816,296
1914 ..	1,366,955	995,120	458,466	254,485	290,929	105,147	1,830	3,472,932
1915 ..	1,428,873	1,033,292	462,842	260,279	299,505	110,981	1,246	3,597,018
1916 ..	1,534,186	1,032,708	484,500	268,399	305,130	111,140	1,956	3,738,019
1917 ..	1,662,658	1,033,876	562,418	295,261	319,954	115,547	1,594	3,991,308
1918 ..	1,748,221	1,098,060	618,780	308,423	336,852	125,572	1,668	4,237,576

The expenditure per head of average attendance for each of the years given above will be found in the succeeding table :—

#### COST PER HEAD OF AVERAGE ATTENDANCE, STATE SCHOOLS, 1901 AND 1914 TO 1918.

(COMMONWEALTH.)

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	Nor. Ter.	C'wealth.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
1901	4 0 10	4 7 0	3 12 9	3 9 5	5 9 3	2 12 11	..	4 0 8
1914	7 3 9	6 1 11	5 10 1	5 9 11	7 11 1	4 13 2	18 9 8	6 7 7
1915	7 7 1	6 4 0	5 8 9	5 7 4	7 10 0	4 15 4	9 13 2	6 8 11
1916	7 13 0	6 3 1	5 14 0	5 2 4	7 12 8	4 15 5	11 18 6	6 11 4
1917	7 9 10	6 3 5	6 7 5	5 4 0	7 15 11	4 15 1	8 11 5	6 13 0
1918	7 14 10	6 10 10	6 15 6	5 3 4	7 17 3	5 1 11	8 9 4	6 18 5

Expenditure on school buildings in each of the years quoted was as follows:—

**EXPENDITURE ON STATE SCHOOL BUILDINGS, 1901 AND 1914 TO 1918.**

(COMMONWEALTH.)

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	Nor. Ter.	C'wealth.
	£	£	£	£	£	£	£	£
1901 ..	57,863	36,040	33,421	13,656	49,073	7,762	..	197,615
1914 ..	302,566	198,377	107,113	56,840	36,513	20,233	..	721,642
1915 ..	234,281	315,869	83,159	32,163	51,252	20,640	214	737,578
1916 ..	303,001	220,042	96,397	33,472	24,863	28,793	..	706,568
1917 ..	208,733	116,010	78,080	46,948	21,034	21,667	253	492,725
1918 ..	238,434	62,532	94,323	48,006	16,540	8,883	252	468,970

The net total cost and the net cost per scholar in average attendance during the year 1918 were as follows:—

**NET TOTAL COST, STATE SCHOOL EDUCATION, 1918.**

(COMMONWEALTH.)

Item.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	Nor. Ter.	C'wealth.
	£	£	£	£	£	£	£	£
Net cost of education, including buildings ..	1,986,655	1,160,592	713,103	356,429	353,392	134,455	1,920	4,706,546
Per scholar in average attendance	£8/16/0	£6/18/5	£7/16/2	£5/19/5	£8/5/0	£5/9/1	£9/14/11	£7/13/9

The average for the Commonwealth in 1901 was £4 9s. 3d. per scholar in average attendance.

**§ 3. Private Schools.\***

1. **Schools, Teachers, etc., in 1918.**—The following table shews the number of Private Schools, together with the teachers engaged therein, and the enrolment and average attendance in 1918:—

**PRIVATE SCHOOLS, 1918.**

(COMMONWEALTH.)

State.	Schools.	Teachers.	Enrolment.	Average Attendance.
New South Wales .. ..	698	3,806	73,560	59,386
Victoria .. ..	499	† 1,996	57,374	48,000†
Queensland .. ..	160	887	22,328	18,187
South Australia .. ..	168	720	15,161	10,550
Western Australia .. ..	127	501	15,000	10,322
Tasmania .. ..	83	323	7,508	5,088
Northern Territory .. ..	1	2	68	57
Commonwealth .. ..	1,736	8,235	190,999	151,590

\* Private schools include all schools not wholly under State control. The term "private," though popularly applied, is of course a misnomer. † Estimated.

The totals for New South Wales are exclusive of returns from the Sydney Grammar School, which receives a yearly State subsidy of £1,500, and which, in 1918, had an enrolment of 641, and an average attendance of 600.

The figures for Queensland include the returns from Grammar Schools, of which there are ten—six for boys and four for girls, with an enrolment of about 1,200 boys and 700 girls. These schools are governed by boards of trustees, partly nominated by Government, and partly by the subscribers to the funds. The trustees make regulations regarding the fees of scholars, the salaries of teachers, and generally for the management of the schools. Each school is endowed by the Government at the rate of £750 per annum, together with, in some instances, an additional £250 to provide district scholarships. The total Government aid received in 1918 was £9,938. The Grammar Schools are inspected annually by the departmental Inspector-General.

**2. Growth of Private Schools.**—The enrolment and average attendance at Private Schools during 1891, 1901, and in each year of the period 1911 to 1918 are as follows:—

#### ENROLMENT AND ATTENDANCE AT PRIVATE SCHOOLS, 1891 TO 1918.

(COMMONWEALTH.)

Year.	Enrolment.	Average Attendance.	Year.	Enrolment.	Average Attendance.
1891 .. ..	124,485	99,588	1914 .. ..	162,813	135,141
1901 .. ..	148,659	120,742	1915 .. ..	172,957	144,804
1911 .. ..	160,794	132,588	1916 .. ..	177,650	146,380
1912 .. ..	164,085	133,940	1917 .. ..	177,126	144,409
1913 .. ..	161,204	132,679	1918 .. ..	190,999	151,590

The small rate of increase in private school enrolment and attendance is due in a large measure to the development of the State educational systems, especially as regards the provision of secondary education.

**3. Registration of Private Schools.**—Until recent years the various State Governments had comparatively little control over privately conducted schools. With the advance of modern educational thought the position is improving, but still leaves much to be desired. It is evident that without a thorough system of registration there will always be a difficulty in regard to enforcing the compulsory clauses of the various Education Acts. Moreover, advanced educational thought demands complete supervision, not only of curricula, but of all matters pertaining to school hygiene.

In New South Wales, under the provisions of the Bursary Endowment Act of 1912, 51 non-State Schools were inspected by the Departmental Inspector of Secondary Education for registration or renewal thereof. Under the compulsory clauses of the amending Public Instruction Act of 1916 children between the ages of 7 and 14 years must attend schools certified as efficient by the Minister. Provisional registration is granted to applicants pending inspection by Government officers. School proprietors must conform to prescribed conditions in regard to the hygiene, etc., of their buildings.

In Victoria, up to the year 1905, no attempt had been made to bring Private Schools under general administrative control, but the Registration of Teachers and Schools Act of 1906, and the Education Act of 1910, established a registration scheme under a special committee. Improvements were made in the regulation of these institutions by the Amending Act of 1914. At present, the committee consists of nine members of the Council of Education. Section 60 of the Act of 1910 also empowers the Minister of Education to authorise the inspection of any school (other than a State School) in order to ascertain whether the instruction given is satisfactory. The inspector of registered schools has pointed out that the Registration Act has had the effect of improving the school buildings as well as the methods of instruction. Since 1914, the improvement of existing buildings has been enforced where necessary, while full requirements have been insisted on in the case of additions or new buildings.

In Queensland, with the exception of the Grammar Schools, which are now examined annually, there is practically no control over the private schools, beyond the fact that they may submit themselves to inspection if so desired, and there is a similar provision under the Education Act of 1915 in South Australia. [See also Sub-section 4 hereunder.]

In Western Australia, non-Government schools must be declared efficient by the Education Department if attendance at them is to be recognised as fulfilling the requirements of the law, and the school registers must be open to the inspection of the compulsory officers of the Department.

In Tasmania the Education Act requires the teachers of other than State Schools "to furnish during January of each year returns shewing attendances at such schools." Despite the fact that penalties are prescribed for non-compliance with the law, many teachers neglect to return the forms sent out. Provision has been made for registration of private teachers and schools very much on the lines adopted in Victoria. The Act declares that all persons who were employed in a bona fide manner for at least three months before 25th October, 1906, were entitled to be registered as teachers without submitting proof of professional qualifications. No person can be registered as a private teacher since July, 1907, unless the Board is satisfied as to his fitness for the work.

**4. German Schools in Australia.**—The accompanying particulars in regard to German Schools in Australia have been extracted from information supplied by the State Education Departments.

*New South Wales.* In this State there are three private schools conducted by German teachers, and attended entirely by children of German descent. The schools are situated at Jindera, near Albury (29 pupils); Trungley Hall, near Temora (30 pupils); and Gidginbung West, near Temora (16 pupils). The schools are inspected by the Departmental officers, and school work is conducted in English. The use of German as the language of instruction is not permitted in any school. Jindera, Trungley Hall, and Gidginbung West have been gazetted "certified" schools under the provisions of the Public Instruction Amendment Act of 1916.

The scholars attending the following State schools consisted largely of children whose parents were known to be of German descent:—Alma Park, Burrumbuttock East, Gerogery Railway Station and Gerogery West, Glenellen, Hovell, Major's Plains, Jindera, Lavington, Walkyrie, Walla Walla. Many of the scholars at these schools could speak German before they attended school.

*Victoria.* There are ten registered private Lutheran schools in Victoria, with an attendance of 326 pupils. In connexion with these schools it has been laid down by the Government that the German language is not to be employed in teaching, and books, charts, etc., in German are prohibited. Religious instruction in German is not permitted, and the syllabus of instruction must be on lines prescribed by the Education Department, and be such as will promote good citizenship and loyalty to the British Empire. There are no State German schools.

*Queensland.* There are now no German day schools in operation. In districts where German families form a considerable proportion of the population the children attend the State schools, and, in common with other children, are subject to the conditions imposed by the compulsory clauses of the State Education Act now in force.

*South Australia.* In the year 1916 there were 52 Lutheran schools in this State, practically all under the control of the Lutheran Church. In many of these schools the teaching was carried on in the German language, and English was hardly spoken at all. Religion as taught by the Lutheran Church formed an important part of the instruction. The Education Act of 1915 provided that teaching should be through the medium of the English language for at least four hours a day. The Education Amendment Act of 1916, however, provided that the Government should take over and carry on all Lutheran schools not earlier than 30th June, 1917, and not later than 31st December, 1917, and that no language but English should be spoken in the schools. The Act was put into force on the 1st July, 1917. With the exception of the Point Pass and Concordia Secondary Schools there are now no Lutheran schools in South Australia. Forty-nine Lutheran

schools were closed on the 30th June, and 45 of these re-opened, 25 being absorbed into neighbouring public schools, while 20 were carried on in their own buildings with an English teacher. Four schools were not opened, owing to the determination of the parents to defeat the Department by refusing to assist in finding accommodation for the teacher.

*Western Australia and Tasmania.* There are no German schools in either of these States.

#### § 4. Free Kindergartens.

The following information regarding Free Kindergartens in the Commonwealth has been compiled from particulars supplied by the principals of the chief institutions in each State, except in the cases of Victoria and Western Australia, the details for which were furnished by the Education Departments.

##### FREE KINDERGARTENS IN THE COMMONWEALTH, 1919.

State.	No. of Schools.	Average Attendance.	Permanent Instructors.	Student Teachers.	Voluntary Assistants.
New South Wales (Sydney)	10	550	17	80*	8
Victoria (Melbourne) ..	20	1,125	42	20	150
(Ballarat) ..	1	32	2	..	12
Queensland (Brisbane) ..	6	177	8	20	1
South Australia (Adelaide)	7	180	9	18	..
Western Australia (Perth)	3	111	5	15	..
Tasmania (Hobart) ..	2	65	3	5	5
(Launceston) ..	1	49	1	2	7
<b>Total</b> ..	<b>50</b>	<b>2,289</b>	<b>87</b>	<b>160</b>	<b>183</b>

\* Including 16 students of special subjects and 27 Sunday school students.

It must, of course, be distinctly understood that the information given above refers to institutions under private kindergarten unions or associations, and is exclusive of institutions controlled by the Education Departments of the various States.

#### § 5. Universities.

**I. Origin and Development.**—The history of the foundation and progress of the four then existing Australian Universities was traced at some length in Year Books I. and II. In the present volume space will permit of only a very brief reference to the subject.

(i) *University of Sydney.* The Act of Incorporation of the University of Sydney received Royal Assent on the 1st October, 1850, and the first Senate was appointed on the 24th December of that year. The first matriculation examination was held in October, 1852, when 24 candidates passed the required test, and the formal inauguration ceremony took place on the 11th October of the same year. A Royal Charter was granted to the University on the 27th February, 1858. Women students were admitted in 1881. The passing of the University (Amendment) Act of 1912 marks an important epoch in the development of the educational system of New South Wales. The Act aims at placing the University in a more effective position as the culminating point in a thoroughly co-ordinated system of State education, and it is claimed that the passing of this measure makes the educational system—from the Primary Schools through the Secondary Schools to the Technical Colleges or to the University—form a progressive and continuous whole. Under the new Act the Constitution of the Senate was radically changed, and this body now consists of—four Fellows appointed by the Governor, one elected by members of the Legislative Council, one elected by members of the Legislative

Assembly, five representatives of the University teaching staff, ten elected by graduates of the University, and three elected by the aforesaid Fellows. The professorial representatives hold office for two years, and the other Fellows for five years. In addition it was provided that in view of their distinguished services, the late Chancellor, Sir Normand MacLaurin, and the Vice-Chancellor, Judge Backhouse, should each during his life be a Fellow in addition to the ten Fellows elected by the graduates. The second part of the Act contains a feature of outstanding importance, in that it provides for the allotment of exhibitions in the proportion of 1 for every 500 of the population of New South Wales between the ages of 17 and 20, or in such other ratio as may be determined by Parliament. These exhibitions, which carry exemption from all fees, are not restricted to any particular faculty in the University, and are principally allotted in order of merit as shewn by examinations for leaving certificates at the State Schools. Pupils of registered Secondary Private Schools are also eligible for leaving certificates on the same conditions as those of the State Schools. To gain a leaving certificate a candidate must have satisfactorily completed an approved four years' course of study. Five per cent. of the total number of exhibitions allotted in any year are available for successful candidates at the written examination, even though they be ineligible for a leaving certificate. At the inception of the University there were only three professorships. The present staff consists of 26 professors, including the Director of Military Science, 6 assistant professors, and 143 lecturers and demonstrators. There are, in addition, various honorary lecturers and demonstrators, as well as miscellaneous assistants in laboratories, and three curators of museums.

(ii) *University of Melbourne.* This institution was established by Act of Parliament assented to on the 22nd January, 1853, and its first Council was appointed on the 11th April of that year. The foundation stone of the main building was laid on the 3rd July, 1854, and the University was formally inaugurated on the 13th April, 1855. By Royal Letters Patent, issued in 1859, its degrees are, like those of the Sydney institution, declared of equal status with those of any other University in the British Empire. Women students attended lectures for the first time in 1881. The University, which began in 1855 with Schools of Arts and Laws, has now a staff of 18 professors, 77 lecturers and demonstrators, as well as various assistants. The Conservatorium of Music has a staff numbering 38.

(iii) *University of Adelaide.* This University was established by Act of Parliament in 1874. Its origin and progress were largely due to the munificence of the late Sir Walter Watson Hughes and Sir Thomas Elder, G.C.M.G., the total gifts of the latter amounting to over £100,000. The academical work of the institution was commenced in March, 1876, when eight matriculated and fifty-two non-graduating students attended lectures. The foundation stone of the University buildings was laid on the 30th July, 1879, and the buildings were opened in April, 1882. In 1881, by Royal Letters Patent, the degrees granted by the institution were recognised as of equal distinction with those of any University in the British Empire. The Elder Conservatorium of Music was opened in 1898. Power was given by Act of Parliament in 1880 to grant degrees to women. At first there were only four professorships in the University, whereas the present staff consists of twelve professors, forty-six lecturers with the necessary complement of demonstrators, etc., while the staff at the Conservatorium, not included in the foregoing figures, numbers sixteen.

(iv) *University of Tasmania.* The Act to establish the University of Tasmania (Hobart) was assented to on the 5th of December, 1889. At the present time the institution, which is small but efficient, possesses a staff of six professors, eight independent lecturers, and four student assistants. Under Statute dated 13th April, 1905, the Zeehan School of Mines and Metallurgy was affiliated to the University, while the School of Mines and Industries at Mount Lyell was affiliated on the 4th November, 1915. Tutorial classes have been arranged at Hobart and Launceston, and Extension Committees have been formed in various country centres.

(v) *University of Queensland.* The Act to establish the University of Queensland was passed in 1909, and the first Senate was appointed on the 14th April, 1910. The University was opened on the 14th March, 1911, when 60 students were matriculated. Provision has been made for a Correspondence Study department in connexion with the



institution, and at the request of the Brisbane branch of the Workers' Educational Association weekly lectures are given in History and Economics. At the present time there are 8 professors, with 10 independent lecturers, 3 assistant lecturers and demonstrators, and 4 miscellaneous assistants. The Correspondence department is under the control of a director and assistant. University extension lectures are delivered at important country centres.

(vi) *University of Western Australia.* The University of Western Australia was established under an Act which received Royal assent on the 16th February, 1911, and the first Senate was appointed on the 13th February, 1912. There are now professorships in agriculture, biology, chemistry, English, geology, history and economics, mathematics and physics, and mining and engineering, in addition to 19 lecturers and demonstrators and associate lecturers. The Chair of Agriculture was endowed by Sir Winthrop Hackett. Students of the Perth Technical School and the Kalgoorlie School of Mines are admitted to the first year examinations in certain subjects provided they have matriculated. The institution was opened in March, 1913.

2. *Teachers and Students of Universities.*—The following table shews the number of professors and lecturers and the students in attendance at each of the Commonwealth Universities during the year 1918 :—

#### UNIVERSITIES.—TEACHERS AND STUDENTS, 1918.

University.	Professors.	Lecturers.	Students attending Lectures.		
			Matriculated.	Non-matriculated.	Total.
Sydney .. .. .	32	143	1,415	602	2,017
Melbourne .. .. .	18	77	..	..	1,319*
Adelaide .. .. .	12	46	399	283	682†
Tasmania (Hobart) .. .. .	6	8	100	33	133
Queensland (Brisbane) .. .. .	8	13	174	31	205
Western Australia (Perth) .. .. .	8	19	223	47	270

\* Exclusive of 129 music students. † Exclusive of 372 music students.

3. *University Revenues.*—The income of the Universities from all sources during the year 1918 was as follows :—

#### UNIVERSITIES.—REVENUE, 1918.

University.	Government Grants.	Fees.	Other.	Total.
	£	£	£	£
Sydney .. .. .	66,232	15,798	33,819	115,849
Melbourne .. .. .	29,167	43,303	9,923	82,393
Adelaide .. .. .	12,879	11,779	5,634	30,292
Tasmania (Hobart) .. .. .	7,525	1,610	866	10,001
Queensland (Brisbane) .. .. .	17,300	4,151	2,407	23,858
Western Australia (Perth) .. .. .	13,849	1,542	2,172	17,563

The column "Other" includes the receipts from private foundations. The extent to which the Universities have benefited by private munificence will be apparent from the following table :—

**PRINCIPAL PRIVATE BENEFACTIONS TO AUSTRALIAN UNIVERSITIES.**

University of Sydney.		University of Melbourne.		University of Adelaide.	
Donor.	Amount.	Donor.	Amount.	Donor.	Amount.
	£		£		£
J. H. Challis ..	250,750	Sir Samuel Wilson ..	30,000	Sir Thos. Elder	98,760
Sir P. N. Russell ..	100,000	James Stewart ..	25,624	Sir W. Hughes ..	20,000
Thos. Fisher ..	30,000	Hon. Francis Ormond	20,000	Hon. J. H. Angas	10,000
Edwin Dalton ..	8,000	John Hastie ..	19,140	R. Barr Smith ..	10,150
Hugh Dixon ..	8,050	Robert Dixon ..	10,837	Other donations	22,154
Hon. Sir W. Macleay	6,000	John Dixon Wyse-			
Mrs. Hovell ..	6,000	laskie ..	8,400		
Thos. Walker ..	6,200	David Kay ..	5,764		
Other donations ..	57,355	Henry Dwight ..	5,000		
		Wm. Thos. Mollison	5,000		
		Other donations ..	54,244		
<b>Total</b>	<b>£ 472,355</b>	<b>Total</b>	<b>£ 184,009</b>	<b>Total</b>	<b>£ 161,064</b>

In addition to the sum of £6,000 shewn above, the Hon. Sir W. Macleay also presented the Museum of Natural History to the University of Sydney.

The credit balances of some of the above endowments now amount to very considerable sums. For example, on the 31st December, 1918, the Challis Fund amounted to over £317,000, and the Fisher bequest to nearly £44,000. The cash balance at the end of 1918 on account of all private foundations to Sydney University stood at £580,553. In the case of Melbourne University the Stewart fund on the 31st December, 1918, stood at £30,440, the Hastie at £19,266, and the Dixon fund at £14,584.

In addition to the above there were various other bequests to Sydney University—*e.g.*, collection of Egyptian antiquities, etc., by Sir Charles Nicholson, and Natural History collection by Mr. Geo. Masters, while the building for the Natural History Museum was given by Sir W. Macleay. Numerous prizes and scholarships have also been given to the various colleges. In Melbourne, the Hon. Francis Ormond's benefactions to Ormond College amounted to about £108,000. With a view to advancing the course of education in agriculture, forestry and allied subjects, Mr. Peter Waite transferred to the Adelaide University in 1914 the whole of the valuable Urrbrae estate at Glen Osmond. The estate comprises 134 acres of land with a fine mansion. In 1915, he presented the estate of Claremont and part of Netherby, comprising 165 acres, adjoining Urrbrae, while in 1918 he transferred to the University 5,880 shares in a public company, to provide funds to enable the University to utilize the land for the purposes intended. Private benefactions to the University of Tasmania and the University of Queensland amount to £3,280 and about £16,000 respectively. In connexion with the latter, the trustees of the Walter and Eliza Hall Trust have endowed fellowships in engineering, economic biology, and pure and applied chemistry. The trustees also provided a Veterinary Science Research Fellowship at Melbourne University. In Western Australia the chair of Agriculture was founded by an endowment of Sir Winthrop Hackett, first Chancellor of the University, who made available also an annual sum of £900 for the establishment of a Department of Agriculture.

Recently by bequest of the late Sir S. McCaughey a sum estimated at £400,000 accrued to the funds of Sydney University, and about £200,000 to the Queensland University.

**4. University Extension.**—Extension lectures were instituted at Sydney University in 1886, but under a Statute of the Senate, approved of in 1892, a Board was appointed, which was empowered from time to time to recommend to the Senate the names of suitable persons for giving courses of lectures, and to hold examinations in the subjects

of the lectures. The Board receives and considers applications from country centres, and makes provision for engaging lecturers and managing the entire business connected with the various courses. The project has only met with fair success, no lectures having been given in some years, but lately there appears to be an awakening of interest in the matter. The Board also arranges for courses of lectures in other States. In 1918 the average attendance at extension lectures in New South Wales was 126.

University extension lectures in Victoria date from the year 1891, when a Board was appointed by the Melbourne University for the purpose of appointing lecturers and holding classes and examinations at such places and in such subjects as it might think fit. Interest in University extension has varied in Victoria, the attendance at the various centres being estimated at 250 in 1918.

The Adelaide University has also instituted short courses of extension lectures in Arts and Science, to which students are admitted on payment of a nominal fee. Public intimation of these lectures is made from time to time during the session.

The University of Tasmania provides for courses of extension lectures at various centres. Tutorial classes in Economics, History, Philosophy, and Literature are conducted in Hobart, and a class in Economics has been formed at Launceston. Attendance at extension lectures in 1917 numbered 131.

As pointed out previously, a correspondence study department has been inaugurated in connexion with the University of Queensland in order to overcome, as far as possible, the difficulties of students who desire to benefit by University teaching, but who for various reasons are unable to attend the lectures. At present the work of this department is confined to the Arts course.

In Western Australia provision has been made for the giving of courses of extension lectures in Perth and suburbs, and also—by arrangement with local committees—in country centres. The professor of agriculture visits the chief farming districts for the purpose of giving lectures to, and holding conferences with the primary producers. Special short courses for farmers are given at the University. Short courses of popular lectures are also given in the evening by various professors at the University.

**5. Soldiers' Scholarships at British Universities.**—A scheme was evolved under which men on active service with the military and naval forces of the Dominions might benefit by the facilities for special education afforded by British Universities and technological institutions. Funds were made available to allow selected disabled soldiers and sailors to commence work as soon as they were fit to take up their studies. The Earl of Selborne generously provided a number of scholarships, a large subscription was allotted from the Kitchener Memorial Fund, and the Rhodes' Trust set apart several scholarships, some of which have been given to Australians. At present a small number of Australian soldiers are studying at Oxford, Cambridge, and Leeds. The scholarships are of the annual value of £150 to £250, and cover all expenses, including tuition fees and cost of living. They are granted with the proviso that those who hold them will follow up in their future professions and occupations the line of study embraced in the scholarships. The South African Government offered twenty-five additional scholarships for South African soldier students.

**6. Workers' Educational Association.**—Chiefly as the result of a visit to Australia in 1913 by Mr. Mansbridge, Secretary of the Workers' Educational Association of Britain, a movement has been inaugurated having for its object the bringing of the University into closer relationship with the masses of the people, and thereby providing for the higher education of the workers in civic subjects. In New South Wales the Workers' Educational Association was at once formed, and similar branches of the movement have since been established in all the States of the Commonwealth and in New Zealand. The Government of New South Wales granted the University of Sydney the sum of £1,000 to initiate the scheme for tutorial classes. In that State the number of classes and study circles had grown by 1919 to 50, and the number of students to 1,000, while the Government grant increased to £5,650. There are now direct grants from all State Governments except Western Australia, and an additional University grant in New Zealand. The particulars of grants for classes are as follow:—New South Wales, £5,650, 50 classes; Victoria, £1,500, 15 classes; Tasmania, £1,100, 13 classes; South Australia, £1,600, 9 classes; Queensland, £1,000, 13 classes; New Zealand, £3,500, 50 classes. The total number of students throughout Australasia is approximately

4,000, the greater number of whom are taking three-year courses while working at their daily occupations as artisans and clerical workers. The principal subjects chosen in all States are Industrial History, Economics, Political Science, and Sociology, while Psychology, Philosophy, Literature, and Biology are increasingly selected. Each University co-operates with the W.E.A. in the formation of a joint committee for tutorial classes, which elects tutors and generally supervises the work with the assistance of a University officer with the title of Director of Tutorial Classes. In addition to the longer and more serious courses, a great many preparatory classes and study circles are organised by the association, numerous courses of public lectures are delivered, and educational conferences promoted. In New South Wales the association organised an important representative conference on "Trade Unionism in Australia" in 1915, the report of which has been issued in book form. Another conference on the "Teaching of Sex Hygiene" was held in 1916, the report of which has passed through two large editions. A Commonwealth Conference held at Adelaide in 1918 resulted in the formation of a federal organisation now known as "The Workers' Educational Association of Australia." Its central office is in the Education Department, Melbourne. The Federal Council co-ordinates the activities of the W.E.A. in all States, and has inaugurated a series of publications on sociological and economic subjects.

## § 6. Technical Education.

1. **General.**—Although provision has been made in some of the States in respect to many necessary branches of technical education, the total provision made would imply that this branch of education has not been regarded as of great importance. As will be seen later on, the expenditure on technical education for the whole of Australia is comparatively insignificant. The question of apprenticeship is referred to in the sections dealing with "Manufacturing Industries" and "Labour and Industrial Statistics."

2. **New South Wales.**—The present organisation of technical education in this State dates from the year 1883, when a Technical Education Board was appointed as a result of suggestions made at the Technological Conference held in 1879. This Board continued its functions till November, 1889, when it was dissolved, and the work has thenceforward been carried on as a branch of the Public Instruction Department. The chief centre of activity is, of course, in Sydney, where the Technical College and Technological Museum are situated, the college having been opened for the reception of students early in 1892. Colleges were also erected in some of the chief country towns—at Maitland in 1890; Newcastle 1896; Bathurst 1898; Broken Hill 1898; Albury 1899; and Goulburn 1902. In other centres classes were established in various subjects whenever the prospects were sufficiently encouraging. Up to the year 1912 the provision for technical education is stated to have partaken more or less of the nature of successive accretions on the original humble beginnings, rather than to have aimed at development in accordance with a definite plan. With the systematisation of the other branches of education, the necessity for more effective organisation of the technical side became imperative, and in 1913 a rearrangement was effected. Under the new conditions Trade Schools will supersede the branch Technical Colleges, with the exception of that at Newcastle. Entrance to the Trades Schools will be conditional on a student being actively engaged in the trade concerned during the day and possessing a certain degree of preparatory knowledge. The latter qualification is assured by the possession of a certificate from a Commercial Superior Junior Technical School or an Evening Continuation Junior Technical School. It is proposed to build new Trades Schools in several of the suburbs of Sydney, and to establish institutions in the country wherever circumstances demand. The co-operation of both employers and employees has been sought and obtained, and while at first there will be some diminution in the number attending the classes, this will be counterbalanced by increased efficiency. At the beginning of 1913 a conference was held between the education authorities and leading employers and employees with a view to deciding on a scheme of organisation of the system of technical education. Sub-conferences were held for each trade or group of trades. In view of the information received, the Director of Education submitted a scheme to the Minister, and the scheme was approved at the end of November. Under the new plan the instruction will be given in two divisions—(1) Trade Courses; (2) Higher Technical Courses. Instruction in the trade courses

will be really continuation trade instruction, i.e., supplementary to actual workshop practice under an employer. Attempts to train youths to be tradesmen in the College will be abandoned, and only those actually engaged as apprentices or journeymen will be admitted to the college classes. Entrance tests are prescribed so as to ensure that students admitted to the courses will possess sufficient preparatory knowledge to benefit by them, but journeymen desirous of improvement may join at any time. Advisory committees have been appointed for each trade or group of trades. The first two or three years' course of instruction will be given in the Trade Schools, of which there are ten, and the last two or three years' at the Technical Colleges, of which there are three, one at Sydney, one at Newcastle, and one at Broken Hill. The higher courses will embrace instruction in advanced trades work qualifying for the position of manager or foreman, but no attempt will be made to train for the professional standing. It is hoped, however, that the scheme will develop so that part of the graduates may proceed to the University. Admission to the higher courses will eventually be restricted to those who have either graduated in the Trade Schools of the Department, or who evidence possession of a similar standard of knowledge. A liberal scheme of scholarships has been provided for students passing from the day or evening Junior Technical Schools or Domestic Science schools, to the Trades and Science Schools, as well as scholarships to the University at the close of the diploma course.

At the Aviation School, Richmond, a number of students secured pilots' certificates in 1918 and were sent abroad on active service. It is now proposed to use the school for training men who wish to engage in aviation for private or commercial purposes.

The table below gives some idea of the development of technical education in New South Wales during the five years 1914-18 :—

#### TECHNICAL EDUCATION, NEW SOUTH WALES, 1914 TO 1918.

Year.	Number of Classes.	Number of Enrolments.	Average Weekly Attendance.	Number of Lecturers and Teachers.	Fees Received.
					£
1914 .. ..	513	13,687	11,523	289	10,779
1915 .. ..	519	13,000	9,257	298	9,830
1916 .. ..	529	14,188	10,077	321	9,989
1917 .. ..	544	15,065	11,072	354	9,354
1918 .. ..	572	15,986	12,156	369	9,422

At the beginning of 1913 the Sydney Technical High School and the Hurlstone Agricultural High School were removed from the control of the technical branch and placed under the Inspector of Secondary Schools. Reference to the Agricultural Colleges will be found in the section dealing with Agriculture.

3. **Victoria.**—Technical instruction in mining has for many years received considerable attention in Victoria, the Ballarat School of Mines, which was established as far back as 1870, having achieved an Australasian reputation. Fine work was also done at the School of Mines in Bendigo, and later on excellent courses of training were evolved at the Working Men's College in Melbourne. The general scheme of instruction, however, lacked cohesion, and it was not until after the publication of the Report of the Royal Commission on Technical Education, which was appointed in 1899, that many defects were remedied. It is hoped that the Agricultural and District High Schools will serve as an effective connecting link between the ordinary State Schools and the Technical Schools, as also the Junior Technical Schools established in and around Melbourne, and at Ballarat, Bendigo, Geelong, Sunshine, and Warrnambool. At present there are 23 Technical Schools receiving State aid, and of these 7 afford instruction in Science, Art, Commercial and Trade subjects; 8 in Art, Trade, and Science; 2 in Art, Commerce, and Trade; 1 in Science, Commerce, and Art; 1 in Art and Commerce; while 3 confine their teaching to Art. The largest technical institution in Melbourne is the Working Men's College, founded in 1887. The College, in addition to giving instruction in a large number of technical subjects, is also a School of Mines. Six of the Schools, viz., the Working Men's College, and the Schools of Mines at Ballarat, Bendigo, Bairnsdale,

Maryborough, and Stawell are classed as Certified Science Schools, and provide full courses in metallurgy and mining engineering, extending over three or four years. There are at the present time eleven Junior Technical Schools in existence, giving a two years' course of instruction to boys between the ages of 12½ and 15 years.

During the year 1916 a new Art School, costing £17,000, was opened at the Working Men's College, also an Art School at Ballarat at a cost of £8,600, and a Technical School at Brunswick, costing £8,400, while the Footscray Technical School cost £6,650.

The Committee of the Mechanics' Institute at Prahran has erected a building at a cost of £17,000, to a design approved by the Department, and has made it available without rent as a Technical School, the Department undertaking the expenses of equipment and maintenance.

In his report for 1913-14, the Chief Inspector of Technical Schools alludes to the necessity for an Employment Officer, in order to ensure that boys who have had vocational training will be able to find suitable situations when their term has expired.

Over 2,000 returned soldiers have been before the Vocational Training Committee and provision made for training and placing them in employment. The staff and councils of the various Technical Schools have taken a great interest in the work of repatriation.

#### TECHNICAL EDUCATION, VICTORIA, 1914 TO 1918.

Year.				Number of Classes.	Number of Enrolments.	Average Attendance.	Fees Received.
							£
1914	..	..	..	103	10,249	6,487	12,968
1915	..	..	..	110	10,782	6,852	14,992
1916	..	..	..	104	12,049	7,724	16,439
1917	..	..	..	106	12,139	8,736	18,836
1918	..	..	..	110	13,300	9,119	19,044

4. Queensland.—The control of technical education in Queensland was removed from the hands of the local Committee in 1905, and vested in the Education Department. At present the Director is assisted in his administration by a Superintendent, and an Inspector of Technical Colleges. During 1918 there were fifteen colleges in operation—Bowen, Bundaberg, Cairns, Brisbane Central, Charters Towers, Gympie, Ipswich, Mackay, Maryborough, Mount Morgan, Rockhampton, Sandgate, Toowoomba, Townsville, Warwick, and branch classes of these colleges were held in 31 country centres. The progress of technical education since 1914 is shewn in the following table:—

#### TECHNICAL EDUCATION, QUEENSLAND, 1914 TO 1918.

Year.				Number of Classes.	Enrolments.	Average Weekly Attendance.	Number of Teachers.	Fees Received.
								£
1914	..	..	..	355	7,820	6,481	255	11,326
1915	..	..	..	358	7,522	6,258	271	10,761
1916	..	..	..	365	8,644	8,500	283	12,024
1917	..	..	..	388	9,632	7,800	310	15,274
1918	..	..	..	421	9,900	8,500	295	14,851

Greater attention is being devoted to the development of trade classes, and the Technical College authorities have been assisted by the University professors in the preparation of a properly organised system of Trade instruction. Full time Commercial

Day Schools are in operation at Warwick, Ipswich, Brisbane, and Townsville. Preparatory Day Trade Schools have been established in connection with the Central and Ipswich Technical Colleges. Trade Advisory Committees have been inaugurated in connection with several of the subjects of instruction at the Central Technical College. Compulsory attendance at technical classes in various districts has been provided for by industrial awards, the decisions so far—with the exception of Printing—being confined to trades connected with Engineering and Metal Working. The Department now pays about £2,000 per annum to the Technical Colleges for the instruction of selected State School pupils in approved subjects. Tuition by correspondence is given by the Central Technical School. It is believed that the raising of the school age to fourteen years, coupled with the establishment of High Schools, will result in a more effective co-ordination between ordinary and technical education in the State. The Colleges are also assisting in the training of returned soldiers, and at the end of 1918 soldier-students numbered 162. The chief subjects of instruction were sheep and wool, sugar chemistry, engine-driving, and commercial management.

5. **South Australia.**—Prior to the year 1917 the condition of affairs in regard to technical education in Australia was regarded by the Education Department as unsatisfactory. There was a School of Mines and Industries in Adelaide, and in addition Schools of Mines at Moonta, Port Pirie, Kapunda, Mount Gambier, and Gawler. While the Government bore the bulk of the cost of maintenance of these institutions, they were controlled by independent councils, and there was no regular co-ordination in regard to staffs, curriculum, etc. The Education Department has now taken over the administration of Technical Education. A Director of Technical Education was appointed in 1916, and the work of reorganisation of the system was continued in 1917. A suitable area has been acquired for the erection of a Government Technical School in Adelaide to accommodate between 300 and 400 junior students, with provision for evening students. At Port Pirie a Junior and Senior Technical School is to be established, the latter side to specialise in metallurgy. The work of the existing country schools was continued in 1917 and 1918, but new Councils were appointed, and regulations for the conduct of the schools have been prepared. Classes have been established for the training of disabled soldiers.

#### TECHNICAL EDUCATION, SOUTH AUSTRALIA, 1914 TO 1918.

Year.				Number of Classes.	Enrolments.	Average Weekly Attendance.	Number of Teachers.	Fees Received.
								£
1914	..	..	..	229	4,947	3,508	127	3,365
1915	..	..	..	228	5,402	3,645	126	3,272
1916	..	..	..	203	5,335	4,520	119	3,221
1917	..	..	..	195	6,273	5,307	105	3,974
1918	..	..	..	169	5,927	4,760	127	4,393

6. **Western Australia.**—A Technical School was established at Perth in 1900, and since its opening has progressed rapidly. Extensive additions to the buildings were made in 1909, and the remodelled institution was opened in 1910. The school is affiliated to the University. There are branch institutions at Midland Junction, Fremantle, Claremont, Kalgoorlie, Boulder, Geraldton, Bunbury, Coolgardie, and Albany. In addition, Continuation Classes are held at various centres. The schools are all under the control of the Education Department, the officer entrusted with their supervision being styled Director of Technical Education. The Director also supervises the School of Mines at Kalgoorlie, which is controlled by the Mines Department. Advanced work at present is taken only in Perth, Fremantle, Boulder, and in Kalgoorlie by the School of Mines, the other branches dealing almost entirely with preparatory work, chiefly in

Continuation Classes. Until the establishment of the local University, the Perth Technical School was affiliated with Adelaide University. Over 100 railway apprentices regularly attend the special classes held at Midland Junction. Classes for returned soldiers have been formed at Fremantle, chiefly for wool-classing and commercial subjects.

At present pupils leaving the State Schools at the age of 14 to take up employment may by attendance at evening classes qualify for free admission to the Technical Schools. Those with leaving certificates from the eighth standard, and others able to devote their full time to study, may obtain day instruction at the Technical Schools in subjects bearing on their intended occupations, or may qualify for a more extended course, including graduation at the University. Returns for the last five years are embodied in the table hereunder :—

#### TECHNICAL EDUCATION, WESTERN AUSTRALIA, 1914 TO 1918.

Year.				Number of Classes.	Enrolments.	Number of Teachers.	Fees Received.
							£
1914	..	..	..	306	3,353	89	969
1915	..	..	..	313	3,184	96	928
1916	..	..	..	369	3,757	103	1,058
1917	..	..	..	439	5,100	120	1,083
1918	..	..	..	435	5,853	127	920

The average attendance at classes in 1915 was 1,920, in 1916, 2,366, in 1917 2,767, and in 1918, 3,320.

7. **Tasmania.**—In this State provision for technical education dates from the year 1888. At the present time the most important technical institution is the School of Mines and Metallurgy at Zeehan. Courses of instruction are given in metal mining and in metallurgical chemistry and assaying, the diploma in metal mining entitling the holder to the Government certificate of competency as a mine manager. The institution is affiliated to the University of Tasmania. There are also Schools of Mines at Beaconsfield and Queenstown, and Technical Schools at Hobart and Launceston. In the report of the Commission appointed in 1916 to enquire into the condition of technical education in Tasmania, allusion was made to the want of co-ordination between these institutions and the Education Department, and it was recommended that the schools should be taken over by the Government, and a trained technologist appointed as organising inspector. The inspector was appointed in 1917 and a Technical Education Branch was established in 1918. The scheme of technical education includes—(1) The establishment of junior technical schools; (2) Reorganisation of existing technical schools; (3) Establishment of senior classes in technical schools; (4) A domestic school for girls. The co-operation of employers and employees has been obtained and it is proposed eventually to co-ordinate certain of the more advanced courses with the courses given at the University.

#### TECHNICAL EDUCATION, TASMANIA, 1914 TO 1918.

Year.				Number of Classes.	Enrolments.	Average Weekly Attendance.	Number of Teachers.	Fees Received.
								£
1914	..	..	..	78	900	700	40	936
1915	..	..	..	85	955	545	40	874
1916	..	..	..	69	882	433	37	992
1917	..	..	..	68	829	470	38	871
1918	..	..	..	68	836	472	38	878



8. **Attendance at Commonwealth Technical Schools.**—The table hereunder shows the enrolment and attendance at Technical Schools and classes in the Commonwealth during 1918 :—

**ENROLMENT AND ATTENDANCE AT TECHNICAL SCHOOLS, ETC., 1918.**  
(COMMONWEALTH.)

State.					Enrolment.	Average Attendance.
New South Wales	..	..	..	..	15,986	12,156
Victoria	..	..	..	..	13,300	6,852
Queensland	..	..	..	..	9,900	8,500
South Australia	..	..	..	..	5,927	4,760
Western Australia	..	..	..	..	5,853	3,320
Tasmania	..	..	..	..	836	472
Commonwealth					51,802	36,060

9. **Expenditure on Technical Education.**—The expenditure on technical education in each State during the period 1914 to 1918 is shewn below :—

**EXPENDITURE ON TECHNICAL EDUCATION, 1914 TO 1918.**  
(COMMONWEALTH.)

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
	£	£	£	£	£	£	£
1914 ..	72,718	73,654	83,722	15,720	13,552	3,493	262,859
1915 ..	78,129	77,852	69,740	16,173	10,375	3,906	256,175
1916 ..	102,139	94,098	41,083	17,614	10,849	4,438	270,221
1917 ..	110,796	98,661	42,505	20,265	11,544	3,915	287,686
1918 ..	109,926	132,943	51,497	19,121	13,936	4,738	332,161

The figures in the preceding table represent an expenditure of about 1s. 4d. per head of the population of the Commonwealth, as compared with 17s. per head spent on maintenance for primary education, and clearly shew that technical education has not attained its proper place in the educational organisation of Australia. Expenditure on buildings, included in the foregoing totals, comprises £10,651 in New South Wales, £30,656 in Victoria, £9,931 in Queensland, and £492 in Western Australia.

## § 7. Business Colleges and Shorthand Schools.

There has been considerable development in recent years both in the number and scope of privately conducted institutions, which aim at giving instruction in business methods, shorthand, typewriting, the use of calculating machines, etc. Particulars for all States excepting Queensland are given in the following table :—

**BUSINESS COLLEGES, SHORTHAND SCHOOLS, ETC., 1918.**

State.	Schools.	Teachers.	Students Enrolled.		Average Attendances.		Fees Received.
			Males.	Females.	Males.	Females.	
New South Wales ..	15	150	3,052	4,590	847	1,733	£ 36,356
Victoria ..	17	193	4,090	2,906	2,890	2,016	†
Queensland*	..	..	..	..	..	..	..
South Australia ..	5	54	839	1,351	537	828	12,445
Western Australia	14	87	785	1,031	†	†	10,198
Tasmania ..	3	10	89	262	21	127	1,865

\* Included in private schools.

† Not available.

The figures for New South Wales are exclusive of students instructed at home through the medium of correspondence classes.

In Victoria it is explained that the preponderance of male students is due to the larger enrolment of males in the correspondence classes.

### § 8. Diffusion of Education.

1. General Education.—A rough indication of the state of education of the people is obtained at each Census under the three headings, "read and write," "read only," and "cannot read." The grouping of the whole population, exclusive of aborigines, in these three divisions is given for each Census since 1861 :—

#### EDUCATION AT CENSUS PERIODS, 1861 TO 1911.

(COMMONWEALTH.)

State or Territory.	1861.	1871.	1881.	1891.	1901.	1911.
N.S.W.*	Read & write 188,543 Read only.. 46,024 Cannot read 116,293	296,741 56,391 149,866	507,067 49,372 193,386	835,562 43,539 244,853	1,071,935 29,728 253,183	1,379,631 6,442 260,661
Victoria	Read & write 328,362 Read only.. 57,351 Cannot read 152,915	478,464 70,953 180,781	653,346 47,950 160,270	908,490 32,794 198,556	998,010 21,852 181,208	1,136,289 4,630 174,632
Q'land	Read & write 17,152 Read only.. 3,680 Cannot read 9,227	74,940 12,080 33,084	136,436 13,657 63,432	276,381 14,618 102,719	376,294 11,737 110,098	508,703 3,416 93,694
S. Aust.†	Read & write 72,190 Read only.. 18,535 Cannot read 36,105	117,349 21,509 46,768	200,057 15,267 64,541	236,514 9,571 74,346	290,748 8,283 64,126	344,095 1,785 62,678
W. Aust.	Read & write 7,683 Read only.. 1,301 Cannot read 5,853	14,166 2,717 7,902	19,684 2,430 7,594	34,254 2,061 13,467	150,099 3,107 30,918	237,629 917 43,568
Tasm'nia	Read & write 48,282 Read only.. 13,136 Cannot read 28,559	55,941 13,946 29,441	74,966 9,606 31,133	103,138 6,287 37,242	133,579 3,907 34,989	155,295 918 34,998
Northern Ter.‡	Read & write .. Read only.. .. Cannot read ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	2,397 34 879
Federal Ter.§	Read & write .. Read only.. .. Cannot read ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	1,424 14 276
C'wealth	Read & write 662,212 Read only.. 140,027 Cannot read 348,952	1,037,601 177,596 447,842	1,591,556 138,282 520,356	2,394,339 108,870 671,183	3,020,665 78,614 674,522	3,765,463 18,156 671,386

\* Including Federal Territory prior to 1911. † Including Northern Territory prior to 1911.

‡ Included in South Australia prior to 1911. § Included in New South Wales prior to 1911.

The proportion in the Commonwealth of the various classes per 10,000 of the population is shewn below for each Census period :—

#### PROPORTION OF EDUCATED AND ILLITERATE PER 10,000 PERSONS, 1861 TO 1911.

(COMMONWEALTH.)

Division.	1861.	1871.	1881.	1891.	1901.	1911.
Read and write	5,752	6,239	7,073	7,543	8,004	8,452
Read only ..	1,217	1,068	615	343	208	41
Cannot read ..	3,031	2,693	2,312	2,114	1,788	1,507

2. Education of Children.—The figures in the preceding tables refer to the entire population of the Commonwealth, and as the age constitution of those dwelling in the various portions of Australia underwent considerable modifications during the period dealt with, a far more reliable test of the diffusion of education will be obtained by a comparison of the Census returns in regard to children of school age. For comparative purposes this has been taken to include all children in the group over five and under fifteen years of age, and the degree of education of these at each Census will be found below :—

### EDUCATION OF CHILDREN AT CENSUS PERIODS, 1861 TO 1911.

(COMMONWEALTH.)

State or Territory.		1861.	1871.	1881.	1891.	1901.	1911.
N.S.W.*	Read & write	34,040	68,776	121,735	196,240	251,187	291,450
	Read only..	20,345	26,886	25,100	21,375	15,934	993
	Cannot read	25,472	32,924	41,663	48,580	60,734	34,793
Victoria	Read & write	42,268	122,739	170,713	201,199	236,515	237,028
	Read only..	25,518	39,636	25,249	15,656	13,128	410
	Cannot read	19,341	29,490	21,421	27,441	27,765	19,621
Q'land	Read & write	2,156	12,698	33,317	62,402	95,635	117,347
	Read only..	1,534	6,104	7,019	7,580	5,955	616
	Cannot read	1,629	6,015	9,615	16,257	18,827	8,633
S. Aust.†	Read & write	15,485	30,608	46,630	58,291	69,451	69,878
	Read only..	8,748	12,432	7,926	4,618	4,229	248
	Cannot read	6,907	10,074	12,483	17,988	15,480	9,638
W. Aust.	Read & write	1,333	3,218	4,418	6,910	25,326	47,568
	Read only..	226	617	1,260	933	1,815	159
	Cannot read	1,015	1,795	1,593	2,348	5,431	5,234
Tasm'nia	Read & write	11,919	17,335	17,188	24,007	32,890	36,351
	Read only..	2,848	4,143	4,108	2,974	1,795	186
	Cannot read	4,581	6,663	6,606	8,829	8,475	5,575
Northern Ter.‡	Read & write	..	..	..	..	..	195
	Read only..	..	..	..	..	..	..
	Cannot read	..	..	..	..	..	118
Federal Ter.§	Read & write	..	..	..	..	..	322
	Read only..	..	..	..	..	..	2
	Cannot read	..	..	..	..	..	47
C'wealth	Read & write	107,201	255,374	394,001	549,049	711,004	800,139
	Read only..	59,219	89,818	70,662	53,136	42,856	2,614
	Cannot read	58,945	86,961	93,381	121,443	136,712	83,659

\* Including Federal Territory prior to 1911.

† Including Northern Territory prior to 1911.

‡ Included in South Australia prior to 1911.

§ Included in New South Wales prior to 1911.

In the case of Tasmania full details for the years 1861 and 1871 are not available, and the figures for those years are approximate. The variation in degree of education may be more readily seen by reducing the foregoing figures to the basis of proportion per 10,000, and the results so obtained are embodied in the following table, a glance at which is sufficient to demonstrate the remarkable strides that at least the lower branches of education have made since 1861. In that year, only 47 per cent. of the children of school age could read and write, while 26 per cent. were illiterate. The returns for 1911 shew that the proportion of those who could read and write had increased to over 90 per cent., while the totally ignorant had declined by nearly two-thirds.

EDUCATION OF CHILDREN (AGES 5 TO 14) PER 10,000 AT CENSUS PERIODS,  
1861 TO 1911.

(COMMONWEALTH.)

State or Territory.		1861.	1871.	1881.	1891.	1901.	1911.
N.S.W.*	Read & write	4,263	5,349	6,458	7,372	7,662	8,907
	Read only..	2,547	2,091	1,332	803	486	30
	Cannot read	3,190	2,560	2,210	1,825	1,852	1,063
Victoria	Read & write	4,851	6,397	7,853	8,236	8,526	9,221
	Read only..	2,929	2,066	1,162	641	473	16
	Cannot read	2,220	1,537	985	1,123	1,001	763
Q'land	Read & write	4,053	5,116	6,670	7,236	7,942	9,269
	Read only..	2,884	2,460	1,405	879	495	49
	Cannot read	3,063	2,424	1,925	1,885	1,563	682
S. Aust.†	Read & write	4,973	5,763	6,956	7,206	7,790	8,761
	Read only..	2,809	2,341	1,182	571	474	31
	Cannot read	2,218	1,896	1,862	2,223	1,736	1,208
W. Aust.	Read & write	5,179	5,716	6,076	6,780	7,775	8,982
	Read only..	878	1,096	1,733	916	557	30
	Cannot read	3,943	3,188	2,191	2,304	1,668	988
Tasm'nia	Read & write	6,160	6,160	6,160	6,704	7,620	8,632
	Read only..	1,472	1,472	1,472	830	416	44
	Cannot read	2,368	2,368	2,368	2,466	1,964	1,324
Northern Ter.‡	Read & write	..	..	..	..	..	6,230
	Read only..	..	..	..	..	..	..
	Cannot read	..	..	..	..	..	3,770
Federal Ter.§	Read & write	..	..	..	..	..	9,868
	Read only..	..	..	..	..	..	5
	Cannot read	..	..	..	..	..	127
C'wealth	Read & write	4,757	5,910	7,061	7,588	7,984	9,027
	Read only..	2,628	2,078	1,266	734	481	29
	Cannot read	2,615	2,012	1,673	1,678	1,535	944

\* Including Federal Territory prior to 1911.

‡ Included in South Australia prior to 1911.

† Including Northern Territory prior to 1911.

§ Included in New South Wales prior to 1911.

3. Education as shewn by Marriage Registers.—Another common method of testing the spread of education is to compare the number of mark signatures with the total number of persons married during each year of a series. The percentage of males and females signing with a mark to the total persons married in the Census years 1861 to 1901, and during each of the last nine years, was as follows. The figures refer to marriages in the Commonwealth in respect of which information was obtainable.

ILLITERACY SHEWN BY MARRIAGE SIGNATURES, 1861 TO 1918.

(COMMONWEALTH.)

Year.		Proportion Signing with Marks of Total Persons Married.			Year.		Proportion Signing with Marks of Total Persons Married.		
		Males.	Females.	Total.			Males.	Females.	Total.
		Per cent.	Per cent.	Per cent.			Per cent.	Per cent.	Per cent.
1861	..	18.50	30.69	24.60	1911	..	0.56	0.54	0.55
1871	..	10.58	18.40	13.49	1913	..	0.36	0.38	0.37
1881	..	4.34	6.78	5.56	1914	..	0.41	0.38	0.39
1891	..	2.27	2.40	2.34	1915	..	0.27	0.27	0.27
1901	..	1.35	1.29	1.32	1916	..	0.37	0.32	0.35
1909	..	0.65	0.62	0.64	1917	..	0.37	0.31	0.34
1910	..	0.56	0.59	0.58	1918	..	0.33	0.29	0.31

The table shows that there has been a large diminution in illiteracy, and judging from the figures for the last few years the proportion bids fair to practically disappear. Up to 1891 there was a higher proportion of illiteracy amongst females, but during the later years the rates have been very even.

## § 9. Miscellaneous.

1. *Scientific Societies.*—(a) *Royal Societies.* Despite the trials and struggles incidental to the earlier years of the history of Australia, higher education and scientific advancement were not lost sight of. Thus a Society was founded in Sydney as far back as 1821, under the name of the Philosophical Society of Australasia, Sir Thomas Brisbane being its first president. Scientific work was fitfully carried on by means of various Societies until the year 1850, when the Australian Philosophical Society was founded. In 1856 this society merged into the Philosophical Society of New South Wales. This Society is the progenitor of the present Royal Society of New South Wales, the latter title dating from the 12th December, 1866. Some of the papers of the old Philosophical Society were published in 1825 under the title of "Geographical Memoirs of New South Wales" (Barron Field), and contain much that is interesting in regard to the early history of Australia. One volume containing the *Transactions of the Philosophical Society of New South Wales* (1862-65) was published in 1866. The journal of the Society did not begin to bear a serial number, however (vol. 1), until the year 1867. "Transactions of the Royal Society of New South Wales" were issued in 1867, the title of the series being altered to "Journal" in 1878. Up to the end of 1919, 53 volumes had been published. The exchange list comprises the names of 360 kindred societies. At the present time the library contains about 26,000 volumes and pamphlets, valued at about £8,000. Income and expenditure for the year ended 31st March, 1919, were £1,380 and £1,415 respectively, and the Society had on the same date 348 members.

The Royal Society of Victoria dates from 1854, in which year the Victorian Institute for the Advancement of Science and the Philosophical Society of Victoria were founded. These were amalgamated in the following year under the title of the Philosophical Institute of Victoria, whilst the Society received its present title in 1860. The first volume of its publications dates from 1855. The earlier publications dealt largely with Physics, later on Biology became prominent, while at present a large number of papers deal with Geology. Up to 1919, 66 volumes of proceedings had been issued. The Society exchanges with 320 kindred bodies. The constitution of the Society states that it was founded "for the promotion of art, literature, and science," but for many years past science has monopolised its energies. The library contains over 12,000 volumes, valued at £3,200. Income for the year 1919 amounted to £530, and expenditure to £523. There are 190 members on the roll.

The inaugural meeting of the Royal Society of Queensland was held on the 8th January, 1884, under the presidency of the late Sir A. C. Gregory. The Society was formed "for the furtherance of the natural and applied sciences, especially by means of original research." Shortly after its formation it received an addition to its ranks by the amalgamation with it of the Queensland Philosophical Society, which was started at the time when Queensland became a separate colony. At the end of 1919 the members numbered 99; publications issued, 31 volumes; library, 6,000 volumes; societies on exchange list, 161. Income and expenditure in 1919 amounted to £166 and £197 respectively.

The present Royal Society of South Australia grew out of the Adelaide Philosophical Society, which was founded in 1853, its object being the discussion of all subjects connected with science, literature and art. Despite this programme, the tendency of the papers was distinctly scientific, or of a practical or industrial nature. With the advent of the late Professor Tate the society became purely scientific. Permission to assume the title of "Royal" was obtained in 1879, the Society thenceforward being known as "The

Royal Society of South Australia." In 1903 the society was incorporated. In 1919 the number of members was 91. The income for the year 1919 was £451, and expenditure £308. Up to 1919 the Society had issued 43 volumes of proceedings and 8 parts of memoirs, exclusive of several individual papers published in earlier years. The exchange list numbers about 200, while the library contains 3,700 volumes and over 1,700 pamphlets.

Permission to assume the title of Royal Society was granted to the Natural History and Science Society of Western Australia in March, 1914. This Society has grown out of the Mueller Botanic Society, founded in July, 1897. The objects of the society are the study of natural history and pure science, promoted by periodical meetings and field excursions, the maintenance of a library, and issue of reports of proceedings. It numbers at present 108 members, whose subscriptions form its main source of revenue, the income and expenditure in 1919 being respectively £91 and £94. Five volumes of proceedings were issued as Journal of the Natural History and Science Society of Western Australia, and five as of the Royal Society. Its publications are exchanged with 120 institutions at home and abroad. The library contains 200 volumes, besides 350 unbound journals, pamphlets, etc.

The Royal Society of Tasmania (the first Royal Society outside the United Kingdom) was inaugurated by Sir Eardley Wilmot, Lieutenant-Governor of Van Diemen's Land, on the 14th October, 1843. It may be mentioned, however, that a scientific society had been formed as far back as 1838 under the presidency of Sir John Franklin, then Governor of the colony, and in 1841 the number of resident members was 31, and corresponding members, 38. The meetings of this parent society were held at Government House, and three volumes of proceedings were issued. A large portion of the Colonial Gardens, together with a grant of £400, was given to the Society. A library and museum were established in 1848. In 1885 the museum and gardens were given back to the State, the Society being granted room in the museum for its library and meetings. The names of Captains Ross and Crozier, of H.M.S. *Erebus* and *Terror*, appear in the list of the first corresponding members. The society, which, since 1844, has published 59 annual volumes of proceedings, possesses 142 members, 11 corresponding members, exchanges with 223 kindred bodies, and has a library containing 13,000 volumes, in addition to manuscripts, etc., valued at over £4,000. Income for the year 1919 was £228, and expenditure £279.

(b) *Other Scientific Societies.* The Australasian Association for the Advancement of Science, founded in 1888, has its headquarters in Sydney. It meets usually in each State biennially in turn. Its receipts at latest available date were about £14,000, including Government aid to the amount of £4,000. The library contains 4,000 volumes, valued at £400. Up to 1918, 14 volumes of proceedings have been issued. The exchange list numbers 176. The Linnean Society of New South Wales, with headquarters in Sydney, was founded in 1875, and possesses a library of 11,000 volumes, valued at £6,000. Up to date 44 volumes of proceedings have been issued. This Society maintains five investigators engaged in research work, and owes its development almost entirely to the benefactions of Sir William Macleay. The number of ordinary members at the end of 1918 was 159. Income for the year came to £1,334, and expenditure to £1,483. The special revenue for research purposes only was £3,075, and the expenditure £2,185. The British Astronomical Society has a branch in Sydney, and in some of the States the British Medical Association has branches.

The Chemical Society of Western Australia was founded in 1915, for the promotion of the study of Chemistry and the furtherance of the interests of professional chemists. Meetings are held monthly. There is a council consisting of seven members.

In addition to the societies enumerated above, there are various others in each State devoted to branches of scientific investigation, particulars respecting which are not at present available.

2. **Libraries.**—As far as can be ascertained the total number of libraries in the Commonwealth at the latest available date was about 1,800, and the number of books contained therein is estimated, at about five millions. In each of the capital cities there is a well-equipped Public Library, the institutions in Melbourne and Sydney especially comparing very favourably with similar institutions elsewhere. The reading room at the Melbourne Library ranks amongst the finest in the world. It was opened in November, 1913, and has a diameter of 114 feet, with a similar height, and is capable of seating 320 readers at a time, all of whom are under efficient supervision from the centre of the room. The following statement gives the number of volumes in the Public Library of each capital city :—

### METROPOLITAN PUBLIC LIBRARIES.

City.	Number of Volumes in—			Total.
	Reference Branch.	Ordinary Lending Branch.	Country Lending Branch.	
Sydney .. .. .	*301,970	†	16,474	318,444
Melbourne .. .. .	259,531	36,325	..	295,856
Brisbane .. .. .	40,633	..	..	40,633
Adelaide .. .. .	105,929	34,273	..	140,202
Perth .. .. .	108,307	13,820	..	122,127
Hobart .. .. .	21,000	..	..	21,000

\* Including 98,187 volumes in the Mitchell Library.

† The maintenance and control of the lending branch of the Public Library at Sydney were transferred in 1908 to the Municipal Council. At the end of December, 1918, the books numbered 29,757.

The Mitchell Library in Sydney consisted of over 60,000 volumes and pamphlets, and 300 paintings, principally relating to Australasia, valued at £100,000, and bequeathed in 1907 by Mr. D. S. Mitchell, together with an endowment of £70,000. The testator stipulated that the regulations of the British Museum were to be adopted as far as practicable, hence the library is the resort of specialists. There are now 98,000 volumes in the library. During 1917 the Mitchell Library was further enriched by a donation of 3,676 printed volumes, 117 volumes of manuscript, and 235 pamphlets from the working library of the late John Tebbutt, of Windsor, the well-known astronomer. A very fine collection of postage and fiscal stamps, estimated by philatelists to be worth at least £15,000, was presented to the trustees by Mr. H. L. White, of Belltrees, near Scone, in June of the same year. The Fisher Library at the Sydney University contains 100,000 volumes.

For some years past efforts have been made in South Australia to collect original documents likely to be of service in compiling a history of the State, and recently the question of founding a Public Records or Archives Office to house them has been under consideration. So far back as 1914 Professor Henderson, of Adelaide University, under commission from the South Australian Government, visited and reported on the system of keeping archives in England, France, Belgium, Holland, and Ceylon, and obtained valuable information also from the United States and Canada. A department of historical documents has now been created and valuable preliminary work done in connexion with the examination, classification, and permanent preservation of the available papers. It is hoped that a suitable building for housing the documents and the staff will shortly be available.

The library at Launceston, in Tasmania, contains 29,000 volumes.

The number of libraries in receipt of State or municipal aid, together with the estimated number of books contained therein, is given below for each State :—

#### SUBSIDISED LIBRARIES AND BOOKS THEREIN.

Particulars.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	N. Ter.
Number of libraries	*	473	213	210	253	31	3
Estimated number of books ..	1,400,000	1,204,000	366,000	585,000	270,000	108,000	5,000

\* Not available.

The figures in the above table can be taken only as approximations, as in many instances returns were not received from various institutions. The return for New South Wales includes the Public Library, the Mitchell Library, and the Sydney Municipal Library. Amongst other important libraries not included, may be enumerated those at the Sydney University and the Australian Museum, which contain 117,000 and 22,000 volumes respectively, and the Parliamentary Library with over 52,000 volumes. There are also over 2,700 libraries, with an estimated total of 367,000 volumes, attached to State Schools.

3. **Museums.**—The Australian Museum in Sydney, founded in 1836, is the oldest institution of its kind in Australia. In addition to possessing a fine collection of the usual objects to be met with in kindred institutions, the Museum contains a very valuable and complete set of specimens of Australian fauna. The cost of construction of the building was £79,000. The number of visitors to the institution in 1918 was 216,000, and the average attendance on week-days 496, and on Sundays 1,113. The expenditure for 1918 amounted to £11,314. A valuable library containing over 22,000 volumes is attached to the Museum. Representative collections, illustrative of the natural wealth of the country, are to be found in the Agricultural and Forestry Museum, and the Mining and Geological Museum. The latter institution prepares collections of specimens to be used as teaching aids in country schools. The "Nicholson" Museum of Antiquities, the "Macleay" Museum of Natural History, and the Museum of Normal and Morbid Anatomy, connected with the University, and the National Herbarium and Botanical Museum at the Sydney Botanic Gardens, are all accessible to the public. There is a fine Technological Museum in Sydney, with branches in six country centres, the combined institutions containing over 120,000 specimens. Valuable research work has been undertaken by the scientific staff in connection with oil and other products of the eucalyptus. The number of visitors at the Technological Museums during 1918 was about 256,000.

The National Museum at Melbourne, devoted to Natural History, Geology, and Ethnology, is located in the Public Library Building. The National Art Gallery is also situated in the same building. The Industrial and Technological Museum, opened in 1870, contains about 9,000 exhibits. There is a fine Museum of Botany and Plant Products in the Melbourne Botanic Gardens. In addition to the large collection in the geological museum attached to the Mines Department in Melbourne, well-equipped museums of mining and geological specimens are established in connection with the Schools of Mines in the chief mining districts.

The Queensland Museum dates from the year 1871, but the present building was opened in January, 1901. Since its inauguration the Government has expended on the institution a sum of £94,073, of which buildings absorbed £19,693, purchases £28,346, and salaries £46,034. The number of visitors during the year was 74,014, of whom 24,505 visited the institution on Sundays. The Queensland Geological Survey Museum has branches in Townsville, opened in 1886, and in Brisbane, opened in 1892.

Under the Public Library Act of 1884 the South Australian Institute ceased to exist, and the books contained therein were divided amongst the Museum, Public Library, and Art Gallery of South Australia, and the Adelaide Circulating Library. The Museum was attended by 88,000 visitors in 1918.



The latest available returns shew that the Western Australian Museum contains altogether 89,000 specimens, of an estimated value of £79,000. The Museum is housed in the same building as the Art Gallery, and the visitors to the combined institutions during the year reached 84,000. The expenditure for the year 1918-19 was £1,937, and the Government grants for the year amounted to £2,000.

There are two museums in Tasmania—the Tasmanian Museum at Hobart, and the Victoria Museum and Art Gallery at Launceston—both of which contain valuable collections of botanical and mineral products. The Tasmanian Museum received aid from the Government during 1918 to the extent of £700. The Hobart institution cost £9,500 to construct, and that at Launceston £6,000.

**4. Art Galleries.**—Information regarding the State collections of objects of art in the various capitals is in some cases very meagre, while the method of presentation does not admit of any detailed comparisons being made. The National Art Gallery of New South Wales originated in the Academy of Art founded in 1871. Cost of construction is returned at £94,000. The contents, which are valued at £153,000, comprise 449 oil paintings, 422 water colours, 680 black and white, 168 statuary and bronzes, and 446 ceramics, works in metal and miscellaneous. During 1918 the average attendance on week days was 503, and on Sundays 1,460.

The National Gallery at Melbourne at the end of 1918 contained 585 oil paintings, 4,693 objects of statuary, bronzes and ceramics, and 14,131 water-colour drawings, engravings, and photographs. The Gallery is situated in the same building as the Museum and Public Library, the total cost of construction being £325,000. Several munificent bequests have been made to the institution. That of Mr. Alfred Felton, given in 1904, amounts to about £8,000 per annum. In 1913, Mr. John Connell presented his collection of art furniture, silver, pictures, etc., the whole being valued at £10,000. At the end of 1918 the Ballarat Art Gallery contained 222 oil paintings and 170 water colours, etc., while there are some valuable works of art in the smaller galleries at Bendigo, Castlemaine, Geelong, and Warrnambool.

The Queensland National Art Gallery, situated in the Executive Buildings, Brisbane, was founded in 1895, and contains a small, but well chosen, collection of pictures. At latest available date there were on view 95 oil paintings, 23 water colours, 99 black and white, and 30 pieces of statuary, together with various prints, mosaics, and miniatures. Exclusive of exhibits on loan, the contents are valued at about £11,000.

The Art Gallery at Adelaide dates from 1880, when the Government expended £2,000 in the purchase of pictures, which were exhibited in the Public Library building in 1882. The liberality of private citizens caused the Gallery to rapidly outgrow the accommodation provided for it in 1889 at the Exhibition Building, and on the receipt of a bequest of £25,000 from the late Sir T. Elder, the Government erected the present building, which was opened in April, 1900. The Gallery also received bequests of £16,500 in 1903 from the estate of Dr. Morgan Thomas, and of £3,000 in 1907 from Mr. David Murray. At the latest available date there were in the Gallery 239 oil paintings, 68 water colours, and 24 statuary. Building and site are valued at upwards of £31,000. Visitors during the year 1918 numbered 94,000.

The foundation stone of the present Art Gallery at Perth in Western Australia was laid in 1901, the building and site being valued at £67,000. As is the case in Melbourne, the Public Library, Museum, and Art Gallery are all situated in the one structure. The collection comprises 103 oil paintings, 54 water colours, 244 black and white, 264 statuary, and miscellaneous metal works, coins, etc. It is estimated that the collections in the combined institution possess a value of £131,000.

In Tasmania the Art Gallery at Hobart was opened in 1887. Its present contents consist of 60 oil paintings, 82 water colours, 11 black and white, and 172 etchings, engravings, etc. The building is valued at £9,500.

The Art Gallery at Launceston was erected in 1888 at a cost of £5,000, and opened on the 2nd April, 1891. Only a small proportion of the contents belong to the Gallery, the bulk of the pictures being obtained on loan. At latest date there were on view 100 oil paintings and 50 water colours valued at £10,000. The building is valued at £6,000.

5. **State Expenditure on all Forms of Educational Effort.**—The expenditure from the Consolidated Revenue in each State and Territory on all forms of educational and scientific activity during each of the last five financial years was as follows :—

**EXPENDITURE ON EDUCATION, SCIENCE, AND ART, 1914-15 TO 1918-19.**

State or Territory.		1914-15.	1915-16.	1916-17.	1917-18.	1918-19.
New South Wales	Total £	1,651,571	1,717,040	1,870,043	1,968,366	2,139,541
	Per head	17/9	18/4	20/0	21/0	22/2
Victoria	Total £	1,218,459	1,161,335	1,171,757	1,227,629	1,248,994
	Per head	17/0	16/5	16/9	17/6	17/6
Queensland	Total £	807,915	703,664	763,591	827,332	892,992
	Per head	23/10	20/8	22/10	24/4	25/9
South Australia	Total £	342,464	337,307	376,730	397,210	428,519
	Per head	15/6	15/4	17/5	18/5	19/3
Western Australia	Total £	351,516	348,344	368,603	397,661	407,822
	Per head	21/9	21/11	23/10	25/9	26/0
Tasmania	Total £	124,791	127,016	132,590	140,766	158,501
	Per head	12/5	12/7	13/3	14/2	15/2
Northern Territory	Total £	2,073	2,180	2,257	2,479	2,676
	Per head	10/5	9/7	9/6	..	11/2
Commonwealth						
	Total £	4,498,789	4,396,886	4,685,571	4,961,443	5,279,045
	Per head	18/3	17/10	19/1	20/3	21/0

The comparatively heavy increases during the last five years are largely due to the greater cost of building, equipment, and maintenance, and in part also to increases in teachers' salaries and allowances.

## SECTION XXIII.

## PUBLIC JUSTICE.

## § 1. Police.

1. *Introductory.*—In previous issues of the Year Book a résumé was given of the evolution of the police force in Australia up to the passing of the Police Act of 1862 (25 Vic. No. 16) in New South Wales, but considerations of space preclude its inclusion in the present volume.

In general terms the police forces of Australia may be said to be satisfactory both in regard to physique and intelligence, while as regards methods of prevention and detection of crime it is believed that the system in vogue here compares very favourably with those of the older-settled countries of the world.

2. *Strength of Police Force.*—The strength of the police force in each State during the five years ended 1918 was as follows. It may be mentioned that the police forces are entirely under State control, but, by arrangement, the Commonwealth Government utilizes their services in various directions, such as the collection of Commonwealth electoral rolls, etc. :—

## POLICE FORCES IN THE COMMONWEALTH, 1914 TO 1918.

State.	Area of State in Sq. Miles.	1914.	1915.	1916.	1917.	1918.
New South Wales	310,372	2,627	2,613	2,587	2,557	2,481
Victoria ..	87,884	1,739	1,737	1,638	1,650	1,558
Queensland ..	670,500	1,112	1,194	1,176	1,152	1,141
South Australia..	380,070	556	541	567	540	521
Western Australia	975,920	482	495	473	472	465
Tasmania ..	26,215	231	233	232	235	235
Northern Territory	523,620	25	26	27	27	28
Commonwealth	2,974,581	6,772	6,839	6,700	6,633	6,429

The figures for New South Wales for 1918 are exclusive of 40 "black trackers," i.e., natives employed in detection of offenders chiefly in outlying districts. In Queensland there were 90 native trackers. The South Australian returns for 1918 are exclusive of 10 "black trackers" and one female searcher. The Northern Territory had 24 "black trackers" in 1918. There are also 44 "black trackers" in Western Australia not included in the table.

*Average Number of Inhabitants to each Police Officer.* The average number of inhabitants to each officer in each State during the same period is as follows. In considering these figures, allowance must, of course, be made for the unequal area and unequal distribution of the population of the various States.

## INHABITANTS TO EACH POLICE OFFICER, 1914 TO 1918.

(COMMONWEALTH.)

State.	Number of Persons per Sq. Mile, 1911 Census.	Inhabitants to each Police Officer.				
		1914.	1915.	1916.	1917.	1918.
New South Wales	5.31	709	716	719	732	771
Victoria ..	14.97	823	816	855	855	910
Queensland ..	0.90	608	570	569	598	603
South Australia..	0.46	794	810	762	800	845
Western Australia	0.29	670	642	653	656	669
Tasmania ..	7.29	872	863	862	868	867
Northern Territory	..	159	175	179	184	178
Commonwealth	1.50	730	721	728	739	775

The figures in the preceding tables shew a great disparity in the relative numbers of the population protected by each police officer in the various States, and also in the relative area of territory to each officer. Western Australia and South Australia exhibit the largest figures in the latter respect, this, of course, being due to the fact that extensive areas in each State are as yet unpeopled by white settlers.

3. Duties of the Police.—In addition to the ordinary employment attaching to their office, the police are called upon to perform many duties which in other countries are carried out by various functionaries. Thus, in Queensland, according to the Commissioner's report for 1919, no less than sixty-four subsidiary offices are held by the police. As far as the statistician is concerned, it is found that the expert local knowledge possessed by the police renders their services in the collection of such returns as those relating to the agricultural, pastoral, and manufacturing industries, private schools, etc., more than ordinarily valuable. Then, again, the fact that their services are enlisted by such widely different departments as those dealing with mines, stock, agriculture, elections, registrations of births, deaths, and marriages, forestry, fisheries, explosives, old-age pensions, lunacy, public works, labour, etc., greatly enhances their general alertness by widening the range of their experience. Occasionally the objection is heard in some quarters that these special tasks involve some degree of sacrifice of ordinary routine duties, but that the general intelligence of the Australian police is adequate to the obligation to perform these tasks, besides being most creditable, results in a great saving of the public money.

4. Cost of Police Forces.—The expenditure from Consolidated Revenue on the police forces in each State during the five years 1914 to 1918 is shewn in the following table. Cost of buildings has been excluded from the return :—

## COST OF POLICE FORCES IN THE COMMONWEALTH, 1914 TO 1918.

State.	1914.	1915.	1916.	1917.	1918.
	£	£	£	£	£
New South Wales ..	592,694	603,347	649,093	709,649	722,754
Victoria ..	380,724	365,821	356,885	371,413	397,025
Queensland ..	302,633	302,209	322,422	337,259	363,362
South Australia ..	132,445	131,580	127,632	136,158	151,090
Western Australia ..	133,452	131,806	125,446	136,752	136,295
Tasmania ..	45,972	45,952	47,320	49,448	54,960
Northern Territory ..	10,307	10,216	10,260	10,210	10,200
Commonwealth ..	1,598,227	1,590,931	1,639,058	1,750,889	1,835,686

The total for New South Wales includes £72,000 payment to Police Superannuation Fund. Similar payments in Victoria and Queensland amount to £30,000 and £37,000 respectively, while smaller sums are included in the returns for other States. The cost per head of the population in each State for the period 1914 to 1918 was as follows :—

### COST OF POLICE PER INHABITANT, 1914 TO 1918.

(COMMONWEALTH.)

State.	1914.	1915.	1916.	1917.	1918.
	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>
New South Wales .. ..	6 4	6 6	7 0	7 6	7 6
Victoria .. ..	5 4	5 2	5 1	5 3	5 6
Queensland .. ..	9 0	8 11	9 8	9 10	10 6
South Australia .. ..	6 0	6 0	5 11	6 3	6 9
Western Australia .. ..	8 3	8 3	8 1	8 10	8 8
Tasmania .. ..	4 7	4 7	4 9	4 10	5 3
Northern Territory .. ..	52 0	44 9	43 0	41 2	42 8
Commonwealth .. ..	6 6	6 6	6 9	7 2	7 4

The relatively high cost per head in Queensland and Western Australia is due to the fact that there are in those States extensive areas of sparsely settled country, in which mounted patrols have to be maintained.

In view of the small number of its white population and the vast extent of country to be patrolled, the figures for the Northern Territory necessarily shew a very high average. The duties of the police, moreover, chiefly pertain to matters connected with the control of aborigines.

Expenditure in connection with police patrol in Papua during 1918-19 amounted to about £13,200.

## § 2. Lower (Magistrates') Courts.

1. **Introductory.**—In considering the criminal returns of the various States, due allowance must be made on account of several factors, such as the relative powers of the courts, both lower and higher, etc. In the case of lower courts, the actual number of laws in each State, the breach of which renders a person liable to fine or imprisonment, must be taken into account. Again, the attitude of the magistracy and police towards certain classes of offences is a factor, for in the case of liquor laws, or laws connected with vagrancy or gaming, the views of magistrates, and instructions issued to the police, may be responsible for considerable variations in the returns. The strength and distribution of the police forces, and the age constitution and distribution of the State's population, also influence the results. In any consideration of criminal returns, due weight should also be given to the prevalence of undetected crime, but information on this point can only be obtained for the State of Victoria. It may be mentioned that each State has its own separate judicial system, the Commonwealth jurisdiction being confined to the High Court of Australia, which is largely a Court of Appeal intermediate to the Privy Council, although it has also original jurisdiction, and the Commonwealth Court of Arbitration and Conciliation. Full particulars regarding the judicial power of the Commonwealth will be found in Chapter III. of the Commonwealth Constitution (see page 25).

2. **Powers of the Magistrates.**—In New South Wales there is no general limit to the powers of the magistrates in regard to offences punished summarily, their authority depending in each case on the statute which creates the offence and gives them jurisdiction. Except in the case of a very few statutes, and excluding cumulative sentences, the power

of sentence is limited to six months. Imprisonment in default of payment of fine is regulated by a scale limiting the maximum period according to the sum ordered to be paid, but in no case exceeding twelve months. Actions for debt and damage within certain limits also come within magisterial jurisdiction. In cases of debts, liquidated or unliquidated, the amount recoverable is not exceeding £50 before a court constituted of a stipendiary or police magistrate at certain authorised places, and not exceeding £30 at any other place before a court constituted of a stipendiary or police magistrate or two or more justices of the peace. The amount in actions of damage is limited to £10, but may extend to £30 by consent of parties.

In Victoria, the civil jurisdiction of magistrates is restricted to what may be designated ordinary debts, damages for assault, restitution of goods, etc., where the amount in dispute does not exceed £50. No definite limit is fixed to the powers of the magistrates on the criminal side, and for some offences sentences up to two years may be imposed. The proportion of long sentences is, however, comparatively small.

In Queensland, generally speaking, the maximum term of imprisonment which justices can inflict is six months, but in certain exceptional cases, such as offences against sections 233 and 445 of the criminal code (betting-houses and illegally using animals), sentences of twelve months may be imposed. No limit exists as to the extent to which cumulative sentences may be applied, but in practice the term is never very lengthy.

In South Australia, under the Minor Offences Act, magistrates can impose sentences up to six months, and under the Summary Convictions Act, up to three months. The Police Act of 1916 gives power to sentence up to one year, with hard labour, in the case of incorrigible rogues; while under the Quarantine Act of 1877, and the Lottery and Gaming Act of 1875, sentences of two years may be imposed.

Under the Petty Offences Act of 1867, in Tasmania, any person charged with having committed, or with having aided or abetted in the commission of an offence, in regard to property of a value not exceeding £10, may, on conviction, for a first offence, before two or more justices in Petty Sessions, be imprisoned for any term not exceeding one year, and for a term not exceeding two years for a second or subsequent offence.

**3. Persons Charged at Magistrates' Courts.**—The total number of persons who were charged before magistrates in each State is given below for the five years 1914 to 1918:—

**PERSONS CHARGED BEFORE MAGISTRATES IN THE COMMONWEALTH,  
1914 TO 1918.**

State.	1914.	1915.	1916.	1917.	1918.
New South Wales ..	94,766	86,576	82,036	71,666	76,851
Victoria ..	57,977	63,140	59,315	52,175	58,965
Queensland ..	29,635	30,047	25,206	24,243	25,006
South Australia ..	10,693	9,587	8,322	8,627	9,161
Western Australia ..	17,879	14,864	15,454	11,885	11,599
Tasmania ..	6,481	6,306	5,259	5,278	6,583
Northern Territory ..	203	287	313	239	301
Commonwealth ..	217,634	210,807	195,905	174,113	188,466

As the table shews, there was a large decrease in 1917 in charges in New South Wales, Victoria, Queensland, and Western Australia, small increases being recorded in South Australia and Tasmania.

Investigation of the returns shews, moreover, that considerable variations in the total for single States are occasioned by breaches of new Acts, or the more stringent enforcement of the provisions of existing Acts. For example, the increase in the Victorian figures for 1915 was due to the inclusion in the summons returns of over 10,000 cases in

connexion with the Commonwealth Electoral Act. Any deductions drawn from the total returns as to the increase or otherwise of criminality must, therefore, be largely influenced by a careful analysis of the detailed list of offences. (See also § 2, 1, *ante*.)

The figures given in the tabulation above include, of course, a number of people who were wrongly charged, and statistically are not of general importance. The actual number of convictions in connexion with the persons who appeared before the lower courts in each year of the period 1914 to 1918 is, therefore, given hereunder. A separate line is added shewing the committals to higher courts.

### CONVICTIONS AND COMMITTALS AT MAGISTRATES' COURTS, 1914 TO 1918.

(COMMONWEALTH.)

State.		1914.	1915.	1916.	1917.	1918.
New South Wales ..	Convictions	81,217	73,248	68,615	59,999	63,792
	Committals	1,648	1,570	1,656	1,383	1,308
Victoria ..	Convictions	41,033	44,947	40,246	38,757	44,900
	Committals	571	634	552	495	406
Queensland ..	Convictions	27,244	27,625	23,161	21,985	22,818
	Committals	458	411	304	312	207
South Australia ..	Convictions	9,280	8,222	7,145	7,417	7,898
	Committals	135	105	71	82	79
Western Australia ..	Convictions	15,849	13,308	13,595	10,535	10,162
	Committals	147	*116	141	126	96
Tasmania ..	Convictions	5,852	5,492	4,614	4,722	5,854
	Committals	67	35	42	40	37
Northern Territory	Convictions	187	271	288	230	255
	Committals	2	1	3	3	6
Commonwealth	Convictions	180,662	173,113	157,664	143,645	155,679
	Committals	3,028	2,872	2,769	2,441	2,139

\* Exclusive of four extradited.

4. **Convictions for Serious Crime.**—While the figures given in the preceding table refer to the entire body of convictions, the fact must not be lost sight of that they include a large proportion of offences of a technical nature, many of them unwittingly committed, against various Acts of Parliament. Cases of drunkenness and minor breaches of good order, which, if they can be said to come within the category of crime at all, at least do so in a very different sense to some other offences, also help to swell the list. The following table has, therefore, been prepared for the purpose of shewing the convictions at magistrates' courts for what may be regarded as the more serious offences, *i.e.*, against the person and property, either separately or conjointly, and forgery and offences against the currency:—

### CONVICTIONS FOR SERIOUS CRIME AT MAGISTRATES' COURTS, 1914 TO 1918.

(COMMONWEALTH.)

State.		1914.	1915.	1916.	1917.	1918.
New South Wales ..		6,100	5,217	6,271	5,499	6,355
Victoria ..		2,705	2,994	2,736	2,830	3,162
Queensland ..		1,497	1,639	1,487	1,403	1,427
South Australia ..		665	607	522	490	534
Western Australia ..		1,237	1,005	1,014	845	884
Tasmania ..		611	558	441	390	479
Northern Territory ..		28	18	37	50	18
Commonwealth ..		12,843	12,038	12,508	11,507	12,859

Compared with the population the above figures give the following results per 10,000 inhabitants :—

**CONVICTIONS FOR SERIOUS CRIME PER 10,000 INHABITANTS, 1914 TO 1918.**

(COMMONWEALTH.)

State.	1914.	1915.	1916.	1917.	1918.
New South Wales ..	32.9	27.9	33.5	29.4	31.2
Victoria ..	19.0	21.0	19.4	20.0	22.3
Queensland ..	22.2	23.9	21.9	20.6	20.7
South Australia ..	15.1	13.8	12.1	11.3	12.2
Western Australia ..	38.2	31.2	32.2	27.4	28.4
Tasmania ..	30.8	28.0	22.3	19.6	23.5
Northern Territory ..	74.6	40.9	76.3	100.8	36.0
Commonwealth ..	26.1	24.3	25.5	23.5	25.8

5. **Decrease in Crime.**—The figures quoted in the preceding table shew that during the last five years the rate of serious crime has decreased considerably, while if the comparison be carried back to 1881 the position is seen to be still more satisfactory. The rate of convictions at magistrates' courts per 10,000 of the population is given below for each of the years 1881, 1891, 1901, 1914, and 1918. Only the more serious offences, particularised in the preceding sub-section, have been taken into consideration.

**RATE OF CONVICTIONS FOR SERIOUS CRIME IN THE COMMONWEALTH,  
1881 TO 1918.**

Year.						Convictions per 10,000 Persons.
1881 .. .. .	..	..	..	..	..	69.3
1891 .. .. .	..	..	..	..	..	44.8
1901 .. .. .	..	..	..	..	..	29.1
1914 .. .. .	..	..	..	..	..	26.1
1918 .. .. .	..	..	..	..	..	25.8

The figures already quoted refer to total convictions, and in respect of individuals necessarily involve a considerable amount of duplication, especially in minor offences, such as petty larcenies, etc., in which the same offender appears before the court many times in the course of the year.

6. **Causes of Decrease in Crime.**—The statistics given shew that there has been a considerable decrease in crime throughout Australia. The results so far quoted are restricted entirely to the lower or magistrates' courts. There has also been a gratifying decrease in regard to offences tried at the higher courts, as will be seen later.

Attempts have been made to account for this decline: e.g., advance in education, enlightened penological methods, etc. Much depends upon what is meant by education. Many classed in census statistics as "educated" can barely read and write. In this connexion, moreover, it ought not to be forgotten that collaterally with the introduction of ordinary intellectual education certain people have departed from their pristine virtues. In regard to the deterrent effect of punishment, it may be said that in respect of many offences, notably drunkenness, vagrancy, petty larcenies, etc., it appears to be almost negligible. In general, punishment has declined in brutality and severity, and has improved in respect of being based to a greater extent upon a scientific penological system, though in this latter respect there is yet much to be desired. Recent advances in penological methods will be referred to in a subsequent section. Here it will be sufficient to remark that under the old regime, a prisoner on completion of a sentence in gaol was simply turned adrift on society, and in many cases sought his criminal friends, and speedily qualified for readmission to the penitentiary. Frequently he was goaded to this by mistaken zeal on the part of the police, who took pains to inform employers of the fact of a man having served a sentence in gaol. For a long time any assistance to



discharged prisoners was in the hands of private organisations, such as the Salvation Army Prison Gate Brigade, but in some of the States, and notably in New South Wales, the authorities themselves look after the welfare of discharged prisoners in the way of finding work, providing tools, etc. Improvements in the means of communication and identification have been responsible for some of the falling-off noticeable in the criminal returns, the introduction of the Bertillon system having contributed to certainty of identification. In his report for the year 1910 the Inspector-General of Police in New South Wales states that "criminals have a wholesome dread of the finger print system, and I have not the slightest doubt that it is one of the principal causes of the diminution of serious crimes." Part of the improvement may no doubt be referred also to the general amelioration in social conditions that has taken place during the last fifty years.

As will be seen from the following table the restrictions on the consumption of intoxicants during the course of the war has been responsible for a great falling off in convictions for drunkenness.

7. **Drunkenness.**—The number of cases of drunkenness and the convictions recorded in connexion therewith during the period 1914 to 1918 will be found in the following table :—

#### CASES AND CONVICTIONS.—DRUNKENNESS, 1914 TO 1918.

(COMMONWEALTH.)

State.	1914.		1915.		1916.		1917.		1918.	
	Cases.	Convictions.	Cases.	Convictions.	Cases.	Convictions.	Cases.	Convictions.	Cases.	Convictions.
New South Wales	33,393	33,208	26,010	25,863	23,192	23,017	21,063	20,902	20,651	20,511
Victoria	14,437	7,425	13,453	7,086	11,316	6,049	7,575	4,101	5,987	3,049
Queensland	16,510	16,443	16,260	16,196	13,374	13,059	13,562	13,065	12,302	11,518
South Australia	5,282	5,243	4,060	4,027	3,451	3,433	3,097	3,072	3,308	3,298
Western Australia	6,791	6,766	5,675	5,645	5,045	5,009	4,623	4,598	4,058	4,020
Tasmania	685	661	628	612	488	480	415	407	433	426
Northern Territory	64	64	158	158	208	202	210	207	81	81
Commonwealth	77,162	69,810	66,244	59,587	57,074	51,249	50,545	46,352	46,820	42,903

The number of convictions is, as might naturally be expected, almost identical with the number of cases. Victoria, however, is an exception, but in this State it is explained that offenders are generally discharged on a first appearance, and no conviction is recorded, a similar procedure being also adopted in the case of those arrested on Saturday and detained in custody till Monday. The logic of excluding these cases from the list of convictions is certainly open to doubt.

The convictions for drunkenness per 10,000 of the population during each of the years from 1914 to 1918 are given hereunder :—

#### CONVICTIONS FOR DRUNKENNESS PER 10,000 INHABITANTS, 1914 TO 1918.

(COMMONWEALTH.)

State.	1914.	1915.	1916.	1917.	1918.
New South Wales	179.3	138.2	123.1	111.3	107.2
Victoria	52.2	49.7	42.9	29.2	21.5
Queensland	243.6	235.7	192.7	192.0	167.3
South Australia	119.1	91.5	79.3	71.1	74.9
Western Australia	209.2	175.1	159.2	149.0	129.2
Tasmania	33.3	30.7	24.2	20.5	20.9
Northern Territory	170.6	358.8	416.6	417.5	162.2
Commonwealth	141.9	120.4	104.4	94.6	86.1

The convictions for drunkenness taken by themselves are not an altogether satisfactory test of the relative sobriety of the inhabitants of each State, inasmuch as several important factors must be taken into consideration. The age and sex constitution of the people, for example, is by no means identical in each State, Western Australia having by far the largest proportion of adult males. Owing to the smallness of the population the figures for the Northern Territory are, of course, abnormal. The avocations of the people affect the result, since persons engaged in strenuous callings are, on the whole, more likely to indulge in alcoholic stimulants than those employed in less arduous ones. The distribution of the population is also a factor, the likelihood of arrest or summons for drunkenness obviously being greater in the more densely populated regions, and lastly, allowance must be made for the attitude of the magistracy, the police, and the public generally in regard to the offence. Due account also must be taken of the recent legislation dealing with the limitation of hours during which liquor may be sold in hotels.

It is not unusual to supplement statistics of drunkenness by furnishing also the relative consumption of alcoholic beverages. Deductions drawn therefrom will be very misleading if they fail to take into account also the consumption of non-intoxicating beverages such as tea and coffee, and the general habits of the people. Throughout the greater part of Europe, tea and coffee are consumed but sparingly, while Australia, as is well known, is one of the greatest tea-drinking countries of the world.

The following table shews the consumption of spirits, wine, and beer per head of the population in the Commonwealth and in other countries at the latest date for which the information is available:—

CONSUMPTION OF ALCOHOLIC BEVERAGES IN VARIOUS COUNTRIES.

Country.	Consumption per Head of Population.			Country.	Consumption per Head of Population.		
	Spirits.	Wine.	Beer.		Spirits.	Wine.	Beer.
	Imp. Galls.	Imp. Galls.	Imp. Galls.		Imp. Galls.	Imp. Galls.	Imp. Galls.
United Kingdom (1907-11) ..	0.76	0.27	26.94	Canada (1916-17)	0.70	0.06	4.19
Commonwealth (1918-19) ..	0.39	0.50	12.50	German Empire (1912) ..	0.64	0.68	23.32
New Zealand (1918) ..	0.49	0.11	9.21	France (1917) ..	0.41	26.84	4.48
				United States (1918) ..	1.12	0.28	14.59

8. Treatment of Drunkenness as Crime.—Though the problem of the correct method of dealing with dipsomania is by no means an easy one, it seems fairly clear that the present plan of bringing offenders before magistrates, and subjecting them to the penalty of imprisonment or fine, has little deterrent effect, as the same offenders are constantly reappearing before the courts. Further, the casting of an inebriate into prison, and placing him in his weakened mental state in the company of professional malefactors, doubtless tends to swell the ranks of criminals, and certainly tends to lower his self-respect. Examination of the prison records in New South Wales some years ago disclosed the fact that over 40 per cent. of the gaol population had commenced their criminal career with a charge of drunkenness. During the last few years the dangers of moral contamination in this way have been more accurately appreciated, and a system of classification of prisoners has been adopted whereby the petty offender is as far as possible kept from association with the more evilly-disposed. The Comptroller-General of Prisons in Queensland stated in his report for the year 1907 that "the drunken habit in many cases is merely one of many symptoms which jointly indicate the existence of a graver condition than simple habitual drunkenness."

9. Remedial Treatment of Inebriates.—Legislation has been passed in each State providing for the commitment of inebriates to special Government institutions. The laws in the various States are as follows:—New South Wales, Inebriates Act 1912; Victoria, Inebriates Act 1915; Queensland, Inebriate Institutions Act 1896; South Australia, Inebriates Acts 1908 and 1913; Western Australia, Inebriates Acts 1912 and

1919; Tasmania, Inebriates Act 1885, Inebriate Hospitals Act 1892. Curative work was first undertaken by the Government of New South Wales in 1907. In most cases the institutes are connected with the gaols, and, naturally, custodial measures are still a strong feature in their management; nevertheless, the results of remedial measures have been encouraging. In Victoria an institute purporting to be wholly remedial was founded in 1907. It may be mentioned that there are private retreats in various places in the Commonwealth, but these are not officially subsidised or inspected.

**10. Treatment of Habitual Offenders.**—In New South Wales the Habitual Criminal Act of 1905 gives judges the power of declaring a prisoner, after a certain number of sentences, to be an habitual criminal, and as such to be detained until, in the opinion of the authorities, he is fit to be at large. At the end of 1918 there were 30 persons in prison under this Act. Since the passing of the Act 74 males and 1 female have been declared to be habitual criminals. The Indeterminate Sentences Act came into force in Victoria in July, 1908, and up to the end of June, 1919, 384 prisoners had been released on probation or parole. Of this number, 166 were classed as habitual criminals, of whom 44 satisfactorily completed probation and were not again convicted, 65 were convicted and returned to prison, 53 were still on probation or on parole, and 4 died while on probation. Since the passing of the Act 557 persons have been dealt with under its provisions. The provisions of the Habitual Criminals Amendment Act of 1907 were put into force in South Australia in 1909, and 22 criminals had been declared to be habitual offenders up to the end of 1918. Of these, 15 had been released after serving the indeterminate portion of their sentence, 5 were serving the definite portion, and 2 the indefinite portion of their sentence. The Criminal Code Amendment Act of 1914, which makes provision for the detention and control of habitual criminals, was assented to in Queensland on the 3rd December, 1914, but up to the end of 1918 no prisoners had been brought under its provisions. Naturally it will be some time before the full effect of these measures on the prevalence of crime can be estimated. The Comptroller-General of Prisons in New South Wales states, however, that the system has exercised a wholesome deterrent effect on the criminal who is not a prisoner, while the Indeterminate Sentence Board in Victoria states that it has become impressed with the advantages which this form of sentence offers, both from a reformatory and deterrent standpoint, over the ordinary sentence. During the period in which the Habitual Criminals and Offenders Act of 1907 has been in force in Tasmania, 86 men and 2 women have been released under its provisions, and the results, according to the Sheriff, have been satisfactory, only two prisoners having been reconvicted and sentenced to further imprisonment.

**11. Treatment of First Offenders.**—In all the States and in New Zealand statutes dealing with first offenders have been in force for some years, the dates of passing the Acts being as follows:—New South Wales, 1894; Victoria, 1890, 1908, and 1915 (Crimes Act, sec. 340); Queensland, 1887; South Australia, 1887 and 1913; Western Australia, 1892; Tasmania and New Zealand, 1886. The method of procedure is practically the same in all cases, *i.e.*, with regard to most first offenders the magistrate or judge is empowered to allow the offender to go free on recognisances being entered into for his good behaviour for a certain period. In practice, this humane law has been found to work excellently, very few of those to whom its provisions have been extended having been found to relapse into crime.

**12. Children's Courts.**—Special courts for the trial of juvenile offenders have been established in New South Wales, Victoria, Western Australia, Tasmania, and New Zealand within the last few years, while Children's Courts, although not under that name, are practically provided for by the State Children's Acts of 1895 and 1900 in South Australia. The object of these courts is to avoid, as far as possible, the unpleasant surroundings of the ordinary police court.

**13. Committals to Superior Courts.**—In a previous section it has been pointed out that comparisons of criminality based on a consideration of the total returns from magistrates' courts are somewhat inadequate, seeing that the figures include numbers of cases which are merely technical breaches of laws having in some instances a purely local significance. The committals to higher courts give a better basis of comparison, although even in this connexion allowance must be made for the want of uniformity in jurisdiction. The table below gives the number of committals in each year from 1914 to 1918, with the proportion of such committals per 10,000 of the population. The rates are shown on a separate line.

## COMMITTALS TO SUPERIOR COURTS, 1914 TO 1918.

(COMMONWEALTH.)

State.		1914.	1915.	1916.	1917.	1918.
New South Wales	{No.	1,699	1,633	1,707	1,383	1,308
	{Rate	9.2	8.7	9.1	7.4	6.8
Victoria	{No.	571	634	552	495	406
	{Rate	4.0	4.4	3.9	3.5	2.9
Queensland	{No.	458	411	304	312	207
	{Rate	6.8	6.0	4.5	4.6	3.0
South Australia	{No.	135	105	71	82	79
	{Rate	3.1	2.4	1.6	1.9	1.8
Western Australia	{No.	147	116*	141	126	96
	{Rate	4.5	3.6	4.1	3.6	3.1
Tasmania	{No.	67	35	42	40	37
	{Rate	3.4	1.8	2.1	2.0	1.8
Northern Territory	{No.	2	1	3	3	6
	{Rate	5.3	2.3	6.2	6.1	12.0
Commonwealth	{No.	3,079	2,935	2,820	2,441	2,139
	{Rate	6.3	5.9	5.7	5.0	4.3

\* Exclusive of four extradited.

The above figures shew that the rate of committals for serious crime has decreased by 33 per cent. during the last five years, but if the comparison be carried farther back, it will be found that, as compared with the earlier years, there has been a considerable improvement. This will be evident from an examination of the following figures, which shew the rate of committals per 10,000 persons in Australia at various periods since 1861 :—

## RATE OF COMMITTALS IN AUSTRALIA, 1861 TO 1918.

Year	1861.	1871.	1881.	1891.	1901.	1918.
Committals per 10,000 inhabitants	22	14	12	11	8	4

The decline in proportion to population since 1861 has therefore been about 82 per cent.

## § 3. Superior Courts.

1. **Convictions at Superior Courts.**—The total number of convictions at superior courts, together with the rate per 10,000 of the population, is shewn below for each of the years 1914 to 1918 :—

## CONVICTIONS AT SUPERIOR COURTS, 1914 TO 1918.

(COMMONWEALTH.)

State.		1914.	1915.	1916.	1917.	1918.
New South Wales	{No.	810	843	815	661	622
	{Rate	4.4	4.5	4.4	3.5	3.2
Victoria	{No.	372	431	366	303	248
	{Rate	2.6	3.0	2.6	2.2	1.7
Queensland	{No.	382	351	266	226	193
	{Rate	5.7	5.1	3.9	3.3	2.8
South Australia	{No.	93	74	52	59	46
	{Rate	2.1	1.7	1.2	1.4	1.0
Western Australia	{No.	84	66	91	55	55
	{Rate	2.6	2.0	2.9	1.8	1.8
Tasmania	{No.	41	19	30	28	18
	{Rate	2.1	1.0	1.5	1.4	0.9
Northern Territory	{No.	1	1	1	1	..
	{Rate	2.7	2.3	2.1	2.0	..
Commonwealth	{No.	1,783	1,785	1,621	1,333	1,182
	{Rate	3.6	3.6	3.5	2.7	2.4

The rate in 1901 was 4.6 per 10,000, and the decrease to the end of 1918 was, therefore, about 47 per cent.

In considering the above figures allowance must be made for the various factors enumerated in a preceding paragraph. Tasmania, it will be noted, shews the smallest proportion of serious crime, while the figures available shew that the island State is relatively the smallest consumer of alcoholic beverages. That a definite causal relation exists between the figures shewn by the respective tables is not, however, obvious.

**2. Offences for which Convictions were Recorded at Superior Courts.**—In the following table will be found a classification of the principal offences for which persons were convicted at the higher courts during each year of the period 1914 to 1918. Owing to lack of uniformity in the presentation of the returns for the several States the information is confined to the chief offences against the person only. In the case of Victoria the information is incomplete regarding the convictions on summons committals. The figures quoted refer to convictions in the Commonwealth during the period dealt with.

#### CONVICTIONS FOR SERIOUS CRIME, SUPERIOR COURTS, 1914 TO 1918.

(COMMONWEALTH.)

Offences.	1914.	1915.	1916.	1917.	1918.
Murder, and attempts at .. ..	42	25	22	20	16
Manslaughter .. ..	15	15	13	9	6
Rape, and attempts at .. ..	67	90	77	75	14
Other offences against the person ..	300	226	209	259	226
Total .. ..	424	356	321	363	262

While the individual totals shew considerable fluctuations, the returns generally manifest considerable improvement. The general total of convictions for all offences against the person shews a decline since 1901 of nearly 40 per cent., and since 1914 of about 38 per cent.

**3. Capital Punishment.**—The table below gives the number of executions in each State during the period 1914 to 1918 :—

#### EXECUTIONS, 1914 TO 1918.

(COMMONWEALTH.)

State.	1914.	1915.	1916.	1917.	1918.
New South Wales .. ..	..	..	2	2	..
Victoria .. ..	..	..	2	..	2
Queensland .. ..	..	..	..	..	..
South Australia .. ..	..	..	..	..	..
Western Australia .. ..	1	1	..	..	..
Tasmania .. ..	1	..	..	..	..
Commonwealth .. ..	2	1	4	2	2

In the early days of the history of Australia the penalty of death was attached to a large number of offences, many of which at the present time would be dealt with in the lower or magistrates' courts. With the growth of settlement, and the general amelioration in social and moral conditions, the list was, however, considerably curtailed, and the existing tendency is practically to restrict death sentences to cases of murder. It may be remarked that in cases of rape, which is a capital offence in some of the Australian

States, the penalty has been but sparingly inflicted during the last few years. Juries are reputed to be loth to convict on this charge, owing to the uncertainty whether sentence of death will be pronounced.

During the period 1861 to 1880 the annual average number of executions in the Commonwealth was nine, from 1881 to 1900 the average was six, for the period 1901 to 1910 the figure stood at four, while the average for the last quinquennium was two.

#### § 4. Prisons.

1. Prison Accommodation and Prisoners in Gaol.—The table below shews the number of prisons in each State and the accommodation therein at the end of 1918 :—

##### PRISONS AND PRISON ACCOMMODATION, 1918.

(COMMONWEALTH.)

State.	Number of Prisons.	Accommodation in—		Prisoners at End of Year.
		Separate Cells.	Wards.	
New South Wales .. .. .	26	2,284	..	959
Victoria .. .. .	15	1,507	674	588
Queensland .. .. .	12	586	380	268
South Australia .. .. .	13	760	463	233
Western Australia .. .. .	24	644	829	185
Tasmania .. .. .	2	100	..	55
Northern Territory .. .. .	3	3	62	7
Commonwealth .. .. .	95	5,884	2,408	2,295

The figures refer to prisoners under sentence, and are exclusive of aborigines.

The number of prisoners in gaol at the 31st December in each of the years 1914 to 1918, is given below. As stated above, the figures refer to prisoners under sentence, and are exclusive of aborigines. A separate line is added in each instance, shewing the proportion per 10,000 of the population.

##### PRISONERS IN GAOL, 1914 TO 1918.

(COMMONWEALTH.)

State.	1914.	1915.	1916.	1917.	1918.
New South Wales .. { Number..	1,643	1,582	1,451	1,292	959
.. { Proportion	8.9	8.5	7.8	6.9	5.0
Victoria .. .. { Number..	840	825	773	689	588
.. { Proportion	5.9	5.8	5.5	4.9	4.1
Queensland .. .. { Number..	454	397	319	260	268
.. { Proportion	6.7	5.8	4.7	3.9	3.9
South Australia.. { Number..	341	282	237	268	233
.. { Proportion	7.7	6.4	5.5	6.2	5.3
Western Australia { Number..	277	238	207	195	185
.. { Proportion	8.6	7.5	6.6	6.3	5.9
Tasmania .. .. { Number..	70	55	49	46	55
.. { Proportion	3.5	2.8	2.5	2.3	2.7
Northern Territory { Number..	8	12	14	12	7
.. { Proportion	21.3	26.3	28.9	24.2	14.0
Commonwealth .. { Number..	3,633	3,391	3,050	2,762	2,295
.. { Proportion	7.4	6.8	6.2	5.6	4.6

From the preceding table it will be seen that the proportion to population of prisoners in gaol has fallen by 40 per cent. during the last five years, but, if the comparison be carried farther back, the position is seen to be more favourable, the prisoners in gaol in the Commonwealth numbering as much as 16 per 10,000 of the population in 1891.

**2. Improvement of Penological Methods.**—During recent years Australia, in common with most other civilised countries, has introduced considerable modifications and improvements in methods of prison management. Under the old régime punishment partook more or less of the character of reprisal for wrongdoing, and the idea of constituting the prison as a reformatory agency was in the background. But in recent years there has been an earnest attempt at effecting a moral reformation in the unfortunates who lapse into crime. This aspect of prison management has been specially prominent in New South Wales. A short account of the re-organisation of the prison system in this State appears in preceding Year Books (see No. V., p. 922), but considerations of space preclude its repetition here. At the present time it is found that good results have followed the principles of scientific classification and restricted association of prisoners, together with the provision of separate institutions for the treatment of inebriates. Special efforts are put forward to provide reproductive work for prisoners, and no capable able-bodied man is engaged in labour that demeans him, but on the other hand is encouraged to take pride and pleasure in good work. The Parramatta gaol, which dates from 1842, was closed on the 15th September, 1918, and to provide for the prisoners transferred therefrom the gaol at Young was proclaimed as a place of detention for the treatment of habitual criminals in the indeterminate stage. Short sentence prisoners were sent to Tamworth gaol, and longer sentence men were accommodated in Bathurst and Maitland gaols and the State penitentiary at Long Bay. At Long Bay there is a well-designed reformatory institution for females, providing for effective classification, and a penitentiary used as a distributing centre and a place of detention for short-term prisoners from the metropolis. Goulburn gaol is used for first offenders. The first-class minor gaols at Albury, Armidale, Broken Hill, Grafton, and Maitland are convenient centres for the reception of country prisoners, and also for the treatment of special cases. There are also several second-class minor gaols and police gaols where short-sentenced prisoners from the surrounding districts are dealt with. In New South Wales the system of carrying on afforestation by prison labour, somewhat after the manner of that in vogue for several years in New Zealand, has been introduced, and in 1911 a site near Tuncurry, on the Manning River, was selected for the purpose of initiating the scheme. Pine trees of various kinds have been planted, the seedlings set out in 1918 numbering over 363,000, while the total planted to the end of 1918 reached over 1,000,000. So far the scheme appears to be a great success, the prisoners being healthy, cheerful, well-behaved, and industrious. Each prisoner has his own comfortable hut, where he takes his meals and sleeps, and may, if he so desires, write his letters. There are no armed or night guards at the camp. During the year 1914 a property of 107 acres was purchased, near the Emu Plains railway station, for the purpose of establishing a prison farm, and this was opened in April, 1915, with ten prisoners. This institution was disestablished in 1916, when it was taken over by the Department of Agriculture, and beyond selecting the prisoners for work on the farm, the Prisons Department had no further responsibility. The farm was again transferred to the control of the Prisons Department in November, 1917. Accommodation is provided for 42 prisoners, each of whom occupies a roomy, comfortable hut. The inmates consist principally of first offenders under the age of 25 years, and they receive a practical training in general farm work. The daily average in 1918 was 36. That there is some connexion between mental and physical health and crime is proved by the condition in which many persons are received into gaol. In a large number of instances prisoners are found to be suffering from contagious diseases. Under the Prisoners Detention Act, and its amendment of 1918, such persons may be kept in gaol until cured. A further reform, introduced in 1915, was the provision of the Shaftesbury Inebriate Institution for the treatment of non-criminal inebriates. In 1916 accommodation was provided for voluntary paying guests who wish to undergo treatment.

Special attention is drawn by the Comptroller-General to the valuable work performed by the Prisoners' Aid Association in helping prisoners during the period of detention and after discharge.

In 1902 the system of finger-print identification of criminals was introduced, and by the year 1903 bureaux had been established in the various States for the exchange of records. Very successful results have attended the introduction of the system.

Space will not permit of more than a passing reference to the improvements brought about in prison management in the other States. In Victoria there is an excellent system of classification and allocation of prisoners in various grades to different gaols, while at the important penal establishment at Pentridge a careful segregation into several classes is carried out. In common with the other States the latest humane methods of accommodation and prison treatment have for some time been employed. An afforestation camp known as McLeod Settlement, French Island, was opened in 1916, and at the end of 1918 there were 28 inmates. Since the establishment of the Camp 2,170,000 trees have been planted by the prisoners for the Forests Department, the area being 1,689 acres. It is stated that the experiment has resulted in improvement, both in demeanour and physique of prisoners, and it is hoped that in many cases it will be conducive to a return to honest citizenship. A prison farm has also been established about three miles from the prison at Castlemaine, and the inmates are taken to and from daily. The average number in confinement during 1918 was 30. It is proposed to provide accommodation later on for housing a certain number of prisoners on the farm site. The orchard planted in connexion with the farm contains about 1,000 fruit trees. During the year seventy cases under the Venereal Diseases Act were received at the metropolitan prisons. Curative treatment is given during the period of incarceration and if necessary, is continued afterwards outside the prison at places gazetted by the Health Department.

Queensland prisons have been considerably modernised during the last few years. The prison for females at Brisbane has been built on the radiating plan, and embodies the latest ideas in penological methods. Classification of prisoners has been fully carried out in the male and female divisions of Brisbane prison, at Rockhampton prison, and at the Stewart's Creek penal establishment. It is proposed to erect a new prison establishment at St. Helena, embodying the most modern features in design. Amongst recent reforms are the reduction of the period of separate treatment undergone by prisoners sentenced to hard labour or penal servitude, a remodelling of the remission clauses, and allowance of more liberal privileges in the way of correspondence and visits from friends. Electric light has been installed in the Brisbane prison, and prisoners are allowed to read up to 8 o'clock each evening.

Unusual circumstances have combined to keep crime at a low point in South Australia. In the first place there was never any transportation of criminals to the State, while in the earlier years of its history South Australian law breakers were transported elsewhere. The discovery of gold in the neighbouring colonies was also responsible for the drawing away of turbulent spirits who might later on have caused trouble. The present system of gaol administration was drafted mainly on English and European lines by the late W. R. Boothby, C.M.G., and has since been as far as possible adapted to modern penological procedure. At the Yatala Labor Prison the number in confinement on the 31st December, 1918, was 100. The prisoners are graded in three classes—first offenders, second offenders, and old offenders, the various classes being kept apart. The officer in charge of Adelaide Gaol, which had 81 prisoners in confinement at the end of 1918 points to the necessity for better lighting arrangements and an improved library. It is proposed to establish an afforestation camp prison at the Bangham Forest Reserve on similar lines to that at Tuncurry in New South Wales. Excellent work for the benefit and assistance of discharged prisoners is performed by the Prisoners' Aid Association.

A Royal Commission in 1911 recommended the adoption of various reforms in connexion with the prison system of Western Australia. The bulk of these were carried out, and included, amongst other things, an extension of the principle of separate treatment, improvement in prisoners' dietary scale, more satisfactory arrangements in regard to remission of sentences, and improvements in regard to hours of labour, leave of absence, etc., for the staff. The separate system has, however, been abolished. Amongst other improvements recently introduced may be mentioned the grant of an eight hours' day to officers, enlargement and improved hygiene of cells, additional library



facilities, assistance to discharged prisoners by provision of railway passes and monetary aid, appointment of committees to look after the welfare of discharged prisoners, and the remodelled of the "mark" system. The military method of control at Rottneet Island, coupled with considerable privileges to well-conducted prisoners, has proved very successful.

The daily average number of prisoners in confinement in Tasmanian gaols during the year 1918 was about 45. These were confined in the penal establishments at Hobart and Launceston. There were no prisoners in the country gaols.

### § 5. Civil Courts.

1. **Lower Courts.**—The transactions of the lower courts on the civil side during each of the last five years are given in the table hereunder. As pointed out previously, the jurisdiction of the courts is by no means uniform in the various States.

#### LOWER COURTS.—CIVIL CASES, 1914 TO 1918.

(COMMONWEALTH.)

State.		1914.	1915.	1916.	1917.	1918.
New South Wales	{ Cases No.	37,472	39,828	35,724	31,172	32,135
	{ Amount £	107,810	110,229	101,530	88,576	94,026
Victoria	{ Cases No.	41,497	41,055	38,573	32,187	31,870
	{ Amount £	207,863	188,542	170,086	143,469	149,755
Queensland	{ Cases No.	16,015	15,729	14,094	11,867	10,957
	{ Amount £	66,226	68,337	64,502	51,302	53,710
South Australia	{ Cases No.	21,681	17,765	16,505	14,579	13,619
	{ Amount £	74,627	80,918	50,515	42,774	52,847
Western Australia	{ Cases No.	16,974	17,259	15,776	13,798	11,387
	{ Amount £	66,864	61,169	51,050	44,937	40,243
Tasmania	{ Cases No.	5,813	6,081	4,879	4,611	4,489
	{ Amount £	81,610	67,152	30,739	29,080	28,769
Commonwealth	{ Cases No.	139,452	137,717	125,551	108,214	104,457
	{ Amount £	605,000	576,347	468,422	400,138	419,350

The figures just given represent the returns from Petty Sessions Courts in New South Wales and Victoria, the Petty Debts cases in Queensland, the Local Courts of South Australia and Western Australia, and the Court of Requests in Tasmania.

2. **Superior Courts.**—In the next table will be found the transactions on the civil side in the Superior Courts during each of the years 1914 to 1918.

The New South Wales returns refer to the total amounts sued for, and not the sums actually awarded after trial in the District Courts, and are exclusive of judgments signed in the Supreme Court for which the amount is not available. Statistically the chief importance of the table consists in the fact that it shows a decline in litigiousness in Australia.

## SUPERIOR COURTS.—CIVIL CASES, 1914 TO 1918.

(COMMONWEALTH.)

State.		1914.	1915.	1916.	1917.	1918.
New South Wales	{ Causes No.	864	845	902	862	846
	{ Amount £	*328,429	*293,697	*290,642	*274,646	*259,902
Victoria	{ Causes No.	710	713	536	573	583
	{ Amount £	91,903	93,695	104,965	88,177	108,919
Queensland	{ Causes No.	129	129	124	126	184
	{ Amount £	19,156	22,165	20,335	27,169	19,994
South Australia	{ Causes No.	27	21	14	13	18
	{ Amount £	17,358	2,882	2,482	..	4,518
Western Australia	{ Causes No.	578	367	348	108	141
	{ Amount £	37,610	37,581	36,042	14,639	30,100
Tasmania	{ Causes No.	385	282	308	326	329
	{ Amount £	28,159	17,112	17,539	20,481	17,453
Commonwealth	{ Causes No.	2,693	2,357	2,232	2,008	2,101
	{ Amount £	522,615	467,132	472,005	425,112	440,886

\* Exclusive of judgments signed, Supreme Court, the amount not being recorded.

3. Divorces and Judicial Separations.—The number of divorces and judicial separations in each State during the period 1914 to 1918 is shewn below. The figures which have been amended since the previous issue refer in the case of divorces to decrees made absolute in each year.

## DIVORCES AND JUDICIAL SEPARATIONS, 1914 TO 1918.

(COMMONWEALTH.)

State.	1914.		1915.		1916.		1917.		1918.	
	Divorces.	Judicial Separations.	Divorces.	Judicial Separations.	Divorces.	Judicial Separations.	Divorces.	Judicial Separations.	Divorces.	Judicial Separations.
New South Wales	300	6	362	6	359	12	383	13	380	11
Victoria	242	1	218	1	208	1	202	..	233	3
Queensland	32	1	28	..	22	..	16	3	24	2
South Australia	20	..	12	..	15	..	20	1	17	..
Western Australia	46	1	42	2	36	..	51	..	63	..
Tasmania	7	..	7	..	2	..	7	..	4	..
Northern Territory	1	..	1	..	..	..	..	..	..	..
Commonwealth	648	9	670	9	640	13	679	17	721	16

The average annual number of divorces and judicial separations in the Commonwealth at decennial periods from 1871 to 1910 and for the eight years 1911-18 is as follows:—

## DIVORCES AND JUDICIAL SEPARATIONS, 1871 TO 1918.

	1871-1880.	1881-90.	1891-1900.	1901-10.	1911-18.
Commonwealth	29	70	358	401	660

The bulk of the divorces and judicial separations refer, as the table shews, to New South Wales and Victoria, the Acts of 1899 and 1889 in the respective States making the separation of the marriage tie comparatively easy. In some statistical works it is customary to compare the divorces in any year with the marriages in the same year. The comparison is, however, quite valueless, as there is no necessary connexion between the figures.

4. **Probates.**—The number of probates and letters of administration granted, together with the value of the estates concerned, is shewn below for each State for the period 1914 to 1918 :—

### PROBATES AND LETTERS OF ADMINISTRATION, 1914 TO 1918.

(COMMONWEALTH.)

State.		1914.	1915.	1916.	1917.	1918.
New South Wales	{ Number	4,438	5,088	5,336	6,498	6,877
	{ Value £	9,997,615	10,813,889	11,687,910	11,923,328	11,827,552
Victoria	{ Number	4,451	4,449	5,448	5,835	6,935
	{ Value £	8,481,720	8,759,728	8,917,481	9,486,584	11,009,294
Queensland	{ Number	765	896	967	841	959
	{ Value £	2,331,224	2,720,896	3,041,514	2,706,692	2,335,848
South Australia	{ Number	1,418	1,515	1,661	1,946	2,321
	{ Value £	3,050,075	2,894,517	2,031,206	3,188,871	4,760,203
Western Australia	{ Number	577	682	957	1,176	1,574
	{ Value £	1,009,677	936,107	1,699,297	1,119,024	1,193,841
Tasmania	{ Number	386	418	423	513	435
	{ Value £	727,126	793,106	871,950	844,276	928,317
Commonwealth	{ Number	12,035	13,048	14,792	16,809	19,101
	{ Value £	25,597,437	26,918,243	28,249,358	29,358,775	32,055,055

As may naturally be expected, the figures in the above table, giving the value of property left each year, shew considerable variations.

5. **Bankruptcies.**—The returns in bankruptcy during each of the last five years are given in the following table.

For several reasons comparisons drawn from the figures in the following table are of little value. In the first place, the statements of assets and liabilities are notably unsatisfactory, particularly in regard to the former. Then, again, there is wide dissimilarity in regard to the laws in force in the various States and the method of procedure thereunder in connexion with bankruptcy. Further, there are no means of knowing how many persons in each State who were in a bankrupt condition made private arrangements with their creditors either personally or by intervention of a solicitor. The figures quoted in the table exclude the private arrangements in Victoria and South Australia, and the liquidations and compositions in Queensland and Tasmania.

### BANKRUPTCIES, 1914 TO 1918.

(COMMONWEALTH.)

State.		1914.	1915.	1916.	1917.	1918.
New South Wales	{ Number ..	405	405	360	301	264
	{ Liabilities £	323,111	428,700	383,448	227,663	221,928
	{ Assets £	141,068	160,748	303,893	208,093	115,776
Victoria	{ Number ..	450	436	337	222	243
	{ Liabilities £	272,582	414,439	213,959	152,338	131,247
	{ Assets £	171,295	273,805	127,730	94,390	77,089
Queensland	{ Number ..	210	238	181	137	181
	{ Liabilities £	53,947	65,716	42,272	81,148	49,743
	{ Assets £	36,293	35,533	30,785	29,084	21,236
South Australia	{ Number ..	187	135	139	108	91
	{ Liabilities £	184,220	204,089	160,601	122,036	137,469
	{ Assets £	115,621	136,420	151,332	79,810	109,641
Western Australia	{ Number ..	77	53	34	56	23
	{ Liabilities £	46,234	38,008	52,345	46,588	9,559
	{ Assets £	23,456	34,576	52,024	44,829	4,010
Tasmania	{ Number ..	30	40	16	21	10
	{ Liabilities £	13,476	15,548	13,530	27,487	5,925
	{ Assets £	4,251	9,461	7,585	20,438	3,448
Northern Territory	{ Number ..	1	1	1	..	..
	{ Liabilities £	119	106	96	..	..
	{ Assets £	..	39	306	..	..
Commonwealth	{ Number ..	1,360	1,308	1,068	845	812
	{ Liabilities £	893,689	1,166,606	866,281	657,260	555,871
	{ Assets £	491,984	656,582	673,655	476,644	331,200

**6. High Court of Australia.**—Under the provisions of section 71 of the Commonwealth Constitution Act, the judicial power of the Commonwealth is vested in a Federal Supreme Court, called the High Court of Australia, and in such other courts as the Parliament creates or invests with federal jurisdiction. The Federal High Court possesses both original and appellate jurisdiction. The powers of the court are defined in Chapter III. of the Constitution Act and in the Judiciary Acts of 1903–15. At present the Court consists of a Chief Justice and five other judges. Sittings of the Court are held in the capitals of the various States as occasion may require. The following statement shews the transactions of the High Court for the quinquennium 1914–18 :—

### COMMONWEALTH HIGH COURT TRANSACTIONS, 1914 TO 1918.

Items.	1914.	1915.	1916.	1917.	1918.
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#### I. ORIGINAL JURISDICTION.

Number of writs issued .. ..	75	126	141	106	76
Number of causes entered for trial ..	6	12	14	18	8
Verdicts for plaintiffs .. ..	5	6	7	6	4
Verdicts for defendants .. ..	1	6	3	5	1
Otherwise disposed of .. ..	31	40	60	47	10
Amount of judgments .. ..	£5,304	£4,966	£4,479	£6,025	£3,463

#### II. APPELLATE JURISDICTION.

Number of appeals set down for hearing	71	85	67	72	67
Number allowed .. ..	25	23	23	31	33
Number dismissed .. ..	38	39	24	33	27
Otherwise disposed of .. ..	8	23	10	8	7

#### III. AMOUNT OF FEES COLLECTED.

Amount in each year .. ..	£656	£808	£756	£619	£708
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During the year 1918 the Court dealt also with other matters as follows :—

Appeals from Assessments under the Taxation Assessment Acts ..	8
Special cases stated for the opinion of the Full Court .. ..	12
Applications for Prohibition .. ..	3
Applications under the Trading with the Enemy Act .. ..	2

**7. Commonwealth Court of Conciliation and Arbitration.**—A more or less detailed statement regarding the operation of this Court, which was established under the provisions of the Commonwealth Conciliation and Arbitration Act of 1904–15 will be found in Section XXVII.

### § 6. Cost of Administration of Justice.

The table below shews the expenditure from Consolidated Revenue during each of the last five years in connexion with the administration of justice in each of the States. Expenditure on police and prisons has been separately shewn. With regard to the figures quoted for "other" expenditure, a slight allowance has to be made for the fact that some extraneous expenditure has been included which it was found impossible to disentangle from the total, but the amount is in no instance large.

#### EXPENDITURE ON JUSTICE, 1914 TO 1918.

(STATES.)

State.		1914.	1915.	1916.	1917.	1918.
		£	£	£	£	£
New South Wales	Police	592,694	603,347	649,093	709,649	722,751
	Gaols	92,285	92,529	91,913	90,633	87,875
	Other	282,716	286,924	287,419	276,722	277,805
Victoria	Police	380,724	365,821	356,885	371,413	397,025
	Gaols	57,272	57,791	59,614	55,027	54,328
	Other	192,222	169,309	165,789	163,381	166,916
Queensland	Police	302,633	302,209	322,422	337,259	363,362
	Gaols	30,989	32,981	30,803	33,626	41,871
	Other	101,687	136,619	140,643	128,328	135,753
South Australia	Police	132,445	131,580	127,632	136,158	151,090
	Gaols	23,436	22,177	22,052	22,040	23,063
	Other	33,277	33,006	36,854	39,569	41,124
Western Australia	Police	133,452	131,806	125,446	136,752	136,295
	Gaols	22,339	23,265	22,321	22,104	23,939
	Other	79,142	86,790	79,510	75,184	71,787
Tasmania	Police	45,972	45,952	47,320	49,448	54,960
	Gaols	7,071	7,261	7,013	6,619	6,418
	Other	21,763	21,338	22,190	21,223	21,407
Northern Territory	Police	10,307	10,216	10,260	10,210	10,200
	Gaols	2,501	2,128	2,875	2,972	3,048
	Other	1,941	1,453	2,744	1,991	2,186
Commonwealth	Police	1,598,227	1,590,931	1,639,058	1,750,889	1,835,686
	Gaols	235,893	238,132	236,591	233,021	240,542
	Other	712,748	735,439	735,149	706,398	717,018

With the exception of that of the Northern Territory, the expenditure shewn in the foregoing table is that incurred by the State Governments only, and does not include expenditure in connection with the Federal High Court, which is shewn hereunder for the period 1914-15 to 1918-19:—

#### EXPENDITURE ON FEDERAL HIGH COURT, 1914-15 TO 1918-19.

Year.	Amount.	Year.	Amount.
	£		£
1914-15 .. .. .	31,037	1917-18 .. .. .	31,352
1915-16 .. .. .	31,447	1918-19 .. .. .	30,337
1916-17 .. .. .	31,780		

Other items of federal legal expenditure also not included in the table are:—Court of Conciliation and Arbitration £7,092, Crown Solicitor £12,943, and general £19,739. Excluding Patents and Copyrights, the total expenditure by the federal law authorities for the year 1917-18 was £70,111.

For the purposes of comparison the figures in the first table above have been reduced to a population basis, and the results are given in the table following :—

## EXPENDITURE ON JUSTICE PER INHABITANT, 1914 TO 1918.

(STATES.)

State.		1914.	1915.	1916.	1917.	1918.
		s. d.	s. d.	s. d.	s. d.	s. d.
New South Wales	{ Police	6 4	6 6	7 0	7 6	7 6
	{ Gaols	1 0	1 0	1 0	1 0	0 11
	{ Other	3 0	3 2	3 1	2 11	2 11
Victoria	{ Police	5 4	5 2	5 1	5 3	5 7
	{ Gaols	0 10	0 10	0 11	0 9	0 9
	{ Other	2 8	2 5	2 4	2 4	2 4
Queensland	{ Police	9 0	8 11	9 8	9 10	10 6
	{ Gaols	0 11	1 0	0 11	1 0	1 3
	{ Other	3 0	4 0	4 2	3 9	3 11
South Australia	{ Police	6 0	6 0	5 11	6 3	6 10
	{ Gaols	1 1	1 0	1 0	1 0	1 1
	{ Other	1 6	1 6	1 7	1 10	1 11
Western Australia	{ Police	8 3	8 3	8 1	8 10	8 9
	{ Gaols	1 5	1 6	1 5	1 5	1 6
	{ Other	4 11	5 6	5 2	4 10	4 8
Tasmania	{ Police	4 7	4 7	4 9	4 10	5 5
	{ Gaols	0 8	0 9	0 8	0 8	0 8
	{ Other	2 2	2 1	2 3	2 1	2 1
Northern Territory	{ Police	52 0	44 9	43 1	41 2	40 10
	{ Gaols	12 7	9 4	12 1	12 0	12 2
	{ Other	9 9	6 4	11 6	8 0	8 10
Commonwealth	{ Police	6 6	6 6	6 9	7 2	7 4
	{ Gaols	0 11	1 0	1 0	0 11	1 0
	{ Other	3 0	3 0	3 0	2 11	2 11

Owing to the smallness of the white population, large area to be policed, and cost of supplies, transport, etc., the figures for the Northern Territory must necessarily appear somewhat abnormal.

The total expenditure in the Commonwealth in connexion with the administration of justice in the various States has risen from ten shillings per inhabitant in 1901 to eleven shillings and threepence in 1918. Police expenditure has increased by about one shilling and sevenpence per head, the average for gaols is about twopence per head less, while the expenditure on courts and the remaining machinery of justice has decreased by twopence per head during the same period.

## SECTION XXIV.

## PUBLIC BENEVOLENCE.

## § 1. Introductory.

1. **General.**—Charity and charitable effort in Australia may be classified under three headings, viz. :—(a) State; (b) public; (c) private. To the first belong all institutions wholly provided for by the State, such as the principal lunatic asylums in the various States, the Government hospitals in Western Australia, and the Government asylums for the infirm in New South Wales. The second class comprises public institutions of two kinds, viz. :—(i) those partially subsidised by the State or State endowed, but receiving also private aid, and (ii) those wholly dependent upon private aid. To the former division belong such institutions as the principal metropolitan hospitals. In the latter are included institutions established and endowed by individuals for the benefit of the needy generally. All charitable movements of a private character are included in the third group. A more or less accurate statistical account is possible in classes (a) and (b), but in regard to (c) complete tabulation is, for obvious reasons, impossible.

No poor-rate is levied in Australia, and Government aid without return is required only for the aged and disabled. Moreover, although Old-age Pensions, Invalid Pensions, and Maternity Allowances are paid by the Commonwealth, the payments are looked upon rather in the light of a citizen's right than as a charity. Reference to these matters will be found in Section xxxiv., *Miscellaneous*, § 4 and 5.

From time to time relief funds have been organised for famine-stricken territories (e.g., China, India, etc.), or for places where plague, flood, fire, or earthquake has shewn the need of urgent relief. Special funds are also raised for such as are disabled or bereaved through war. Complete statistical information in regard to these forms of charity is not, however, available. It may be mentioned that the daily Press frequently accepts the duty of collectorship in charity appeals. In regard to subscriptions to the various patriotic funds which have been instituted in consequence of the war, the total for Australia, up to 31st December, 1918, has been estimated to exceed £12,300,000 sterling.

## § 2. The Larger Charities of Australia.

1. **Hospitals.**—All of the State capitals have several large and well-equipped hospitals, and there is at least one in every important town. In large centres there are hospitals for consumptives, women, children, infectious diseases, incurables, etc. The number of hospitals in Australia, with the admissions, patients treated, deaths, and expenditure, is shewn in the following table. Only general hospitals are tabulated, since the working of "special" institutions is not properly comparable with those which treat every class of case.

HOSPITALS IN THE COMMONWEALTH, 1914 TO 1918.

Particulars.	1914.	1915.	1916.	1917.	1918.
Number of institutions ..	389	398	391	399	393
Number of beds ..	15,345	16,374	15,811	16,763	17,000
Admissions during year ..	155,531	169,892	166,588	164,889	174,379
Indoor patients treated ..	164,349	179,829	176,279	174,387	184,176
Deaths ..	11,468	12,809	13,128	11,885	12,494
Expenditure ..	£ 1,255,658	1,280,461	1,351,160	1,396,361	1,543,162

In addition to those admitted to the institutions there are large numbers of out-patients. The exact number of these cannot be given, but a rough estimate of distinct cases for 1918 places the total at about 300,000.

Fuller details of hospital statistics are given for 1918 in the tables below, the States and Northern Territory of the Commonwealth being shewn separately:—

**GENERAL HOSPITALS.—NUMBER, STAFFS, AND ACCOMMODATION OF HOSPITALS IN THE COMMONWEALTH, 1918.**

Particulars.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	N. Ter.	C'wealth.
Number of Hospitals—								
Government .. ..	4	..	3	10	22	2	5	46
Other .. ..	153	52	85	19	27	11	..	347
Total .. ..	157	52	88	29	49	13	5	393
Medical Staff—								
Males .. ..	796	76	170	98	43	22	1	1,223
Females .. ..			10	6	1	..	..	
Total .. ..	796	76	180	104	44	22	1	1,223
Nursing Staff and Attendants—								
Males .. ..	84	13	272	77	103	2	3	554
Females .. ..	2,116	753	1,047	506	519	174	7	5,122
Total .. ..	2,200	766	1,319	583	622	176	10	5,676
Accommodation—								
Number of dormitories, etc. .. ..	1,026	434	545	213	210	121	11	2,560
Capacity in cubic feet .. ..	7,753,143	4,804,725	3,926,909	1,603,620	2,424,751	824,389	60,912	21,403,455
Number of beds .. ..	6,526	3,562	3,432	1,218	1,668	572	22	17,000
Cubic feet to each bed .. ..	1,189	1,349	1,144	1,317	1,454	1,441	2,769	1,259

In addition to the accommodation provided in the ordinary wards, a considerable amount of accommodation for certain classes of cases is furnished in out-door or verandah sleeping places. Full particulars are not available.

**GENERAL HOSPITALS.—PATIENTS TREATED IN HOSPITALS IN THE COMMONWEALTH, 1918.**

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	N. Ter.	C'wealth.
Indoor Relief: Distinct Persons Treated—								
Males .. ..	39,291	16,446	25,360	7,515	7,924	3,887	361	100,784
Females .. ..	37,962	13,683	15,333	6,578	5,596	4,070	170	83,392
Total .. ..	77,253	30,129	40,693	14,093	13,520	7,957	531	184,176
Inmates at beginning of Year—								
Males .. ..	2,014	1,114	1,172	405	489	210	15	5,419
Females .. ..	1,974	939	637	304	270	203	1	4,378
Total .. ..	3,988	2,053	1,859	709	759	413	16	9,797
Admissions and Re-admissions during Year—								
Males .. ..	37,277	15,332	24,188	7,110	7,435	3,677	346	95,365
Females .. ..	35,988	12,744	14,646	6,274	5,326	3,867	169	79,014
Total .. ..	73,265	28,076	38,834	13,384	12,761	7,544	515	174,379



**GENERAL HOSPITALS.—PATIENTS TREATED IN HOSPITALS IN THE  
COMMONWEALTH, 1918—continued.**

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	N. Ter.	C'wealth.
<b>Discharges—Recovered :</b>								
Males .. ..	25,378	12,514	22,050	4,685	3,647	3,325	257	71,856
Females .. ..	28,249	10,971	13,513	4,547	3,364	3,603	89	64,336
<b>Total ..</b>	<b>53,627</b>	<b>a23,485</b>	<b>a35,563</b>	<b>9,232</b>	<b>7,011</b>	<b>a6,928</b>	<b>346</b>	<b>136,192</b>
<b>Relieved :</b>								
Males .. ..	7,311	..	..	1,359	2,593	..	30	b
Females .. ..	4,989	..	..	1,017	1,329	..	3	b
<b>Total ..</b>	<b>12,300</b>	<b>b</b>	<b>b</b>	<b>2,376</b>	<b>3,922</b>	<b>b</b>	<b>33</b>	<b>b</b>
<b>Unrelieved :</b>								
Males .. ..	1,277	205	348	368	379	119	1	2,697
Females .. ..	1,011	143	294	312	217	90	..	2,067
<b>Total ..</b>	<b>2,288</b>	<b>348</b>	<b>642</b>	<b>680</b>	<b>596</b>	<b>209</b>	<b>1</b>	<b>4,764</b>
<b>Not stated :</b>								
Males .. ..	..	740	..	83	..	8	22	853
Females .. ..	..	533	..	5	..	8	52	598
<b>Total ..</b>	<b>..</b>	<b>1,273</b>	<b>..</b>	<b>88</b>	<b>..</b>	<b>16</b>	<b>74</b>	<b>1,451</b>
<b>Deaths—</b>								
Males .. ..	3,013	1,776	1,706	609	685	225	15	8,029
Females .. ..	1,805	1,023	761	373	331	169	3	4,465
<b>Total ..</b>	<b>4,818</b>	<b>2,799</b>	<b>2,467</b>	<b>982</b>	<b>1,016</b>	<b>394</b>	<b>18</b>	<b>12,494</b>
<b>Inmates at end of Year—</b>								
Males .. ..	2,312	1,211	1,256	411	620	210	36	6,056
Females .. ..	1,908	1,013	765	324	355	200	23	4,588
<b>Total ..</b>	<b>4,220</b>	<b>2,224</b>	<b>2,021</b>	<b>735</b>	<b>975</b>	<b>410</b>	<b>59</b>	<b>10,644</b>
<b>Average Daily Number Resident—</b>								
Males .. ..	2,412	2,153	2,477	{ 431 385 }	{ 615 381 }	232 226	27 12	11,723
Females .. ..	2,372							
<b>Total ..</b>	<b>4,784</b>	<b>2,153</b>	<b>2,477</b>	<b>816</b>	<b>996</b>	<b>458</b>	<b>39</b>	<b>11,723</b>

a Including relieved.      b Included in recovered.

The revenue and expenditure of the institutions were as follows :—

**GENERAL HOSPITALS.—REVENUE AND EXPENDITURE, 1918.**

Particulars.	N.S.W.	Victoria. a	Q'land.	S. Aust.	W. Aust.	Tasmania.	N. Ter.	C'wealth.
Revenue—	£	£	£	£	£	£	£	£
Fees of patients, etc. ..	97,481	42,648	37,393	16,228	28,245	13,301	579	235,875
Government grants ..	318,291	62,664	169,135	70,390	87,936	32,459	4,156	745,031
Other ..	296,420	149,395	107,256	13,956	25,133	8,103	..	600,263
Total ..	712,192	254,707	313,784	100,574	141,314	53,863	4,735	1,581,169
Expenditure—								
Buildings ..	97,930	18,445	28,311	7,496	145,855	{ 3,260 19,990 18,479 12,334 }	{ 279 1,427 3,028 .. }	1,543,162
Salaries ..	242,668	211,153	{ 112,128b 167,192 10,903 }	{ 37,573 50,175 4,010 }				
Maintenance ..	254,278							
Other ..	61,785							
Total ..	656,661	234,061	318,534	99,254	145,855	54,063	4,734	1,543,162

a Year ended 30th June, 1918.      b Including rents.

2. **Principal Hospitals in each State.**—The tables here given refer to general hospitals. In addition there are hospitals for "specials" (such as women's, children's, and infectious diseases hospitals), and institutions nearly allied to hospitals (such as consumptive sanatoria). Where the institutions carry on general hospital relief, they are included with those establishments.

(i) *New South Wales.* A Government hospital, with a staff of 21 medical officers and accommodation for 595 patients, is established at Little Bay, near Sydney. Altogether, there are four hospitals for women, one for women and children, and three for children in the metropolis. The Royal Prince Alfred Hospital, with a medical staff of 73, and with 518 beds, is the largest metropolitan endowed institution. Amongst other large metropolitan hospitals may be mentioned the Sydney Hospital, with a medical staff of 58 and with 334 beds, St. Vincent's with 48 doctors and 190 beds, and Lewisham with 24 medical attendants and 169 beds. In extra-metropolitan areas the Waterfall Hospital for Consumptives, which is a Government institution, provides accommodation for 388 patients. The Newcastle Hospital has 170 beds and a medical staff of 16. At the Carrington Convalescent Home at Camden, 110 patients may be admitted. The hospital in the Broken Hill district can accommodate 154.

(ii) *Victoria.* There are several large metropolitan hospitals in Victoria. The largest of these, the Melbourne Hospital, has 329 beds; the Austin Hospital for Incurables has 290, the Alfred Hospital 168, St. Vincent's 138, and the Homœopathic 98. Amongst the country institutions, Bendigo has 222 beds, Geelong 205, and Ballarat 150.

(iii) *Queensland.* Of the metropolitan hospitals, the largest is the Brisbane General, which can accommodate 361 patients. The Children's Hospital has 218 beds, the Diamantina 174, and the Mater Misericordiæ 112. Ipswich Hospital, with 146 beds, is the largest of the country institutions, followed by Toowoomba with 130, Rockhampton with 108, Townsville with 105, Charters Towers 92, Bundaberg 83, Mackay 80, and Mt. Morgan 71.

(iv) *South Australia.* Including the Consumptive Home and Infectious Diseases Block, the Adelaide Hospital can accommodate a total of 440 patients. The most important of the country hospitals are at Port Augusta, Port Pirie, and Wallaroo, with 65, 56, and 48 beds respectively.

(v) *Western Australia.* Information regarding the capacity of the Western Australian hospitals is not available, but some idea of their comparative importance may be gained from the figures relating to cases treated. In the metropolis, 4,071 cases were treated at the Perth Hospital in 1918, and 1,608 at the Perth Children's. Of the country hospitals, Kalgoorlie returned 1,288 cases, Fremantle 942, and Wooroloo 549.

(vi) *Tasmania.* There are well-equipped general hospitals in Hobart and Launceston. The former has a medical staff of 4 and can accommodate 185 patients, and the latter has 190 beds and a medical staff of 2. Hospitals for women have been established in both centres, and there is a sanatorium for consumptives at Newtown. Outside the metropolitan area, the Devon Cottage Hospital has a medical staff of 2, and beds for 70 patients; the Lyell District Hospital can accommodate 35 patients, and there are 9 other institutions in important country centres.

(vii) *Northern Territory.* In addition to the hospitals at Darwin and Pine Creek, arrangements have been made for the supply of medicines and first aid to outlying stations.

3. **Benevolent and Destitute Asylums.**—A marked increase has taken place in the amount of aid bestowed upon the aged. Two elements, each of them independent of the growth of population, have influenced this increase. One is, that the general age of the community has advanced—the large flow of immigration of sixty and seventy years ago having been mostly of persons in the prime of life; the other is the increased regard paid in all British communities to the well-being of the helpless. The result in Australia has been that numerous establishments have been founded for the housing and protection of such as are no longer able to care for themselves. The institutions are supported by Government and municipal aid, public subscriptions, charity performances, bequests, etc., and in many cases relatives of indigent and afflicted persons contribute to their maintenance.

The impossibility of an entirely satisfactory statistical tabulation in regard to all forms of charitable aid is especially marked in the case of benevolent institutions, since the conditions under which they have been established in the different centres in the Commonwealth have caused divergence in their development and in the classes of cases treated by them. For example, in Western Australia the Home for Destitute Women includes a maternity ward, for which the statistics are not separately kept. Since the predominating function of the institution is aid to the destitute, it has been included among benevolent asylums. In Victoria, nine of the hospitals are also benevolent asylums, and they are included wholly under the former. In South Australia, the Destitute Asylum includes lying-in and children's departments.

#### BENEVOLENT INSTITUTIONS.—REVENUE AND EXPENDITURE, 1918.

Particulars.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
	£	£	£	£	£	£	£
Revenue—							
Government aid .. ..	102,101	21,028	37,249	33,148	19,090	8,494	221,110
Municipal aid .. ..		844					844
Public subs., legacies, etc. ..	3,215	10,820	1,143	22			15,200
Fees .. ..	11,045	11,259		6,383		2,445	31,132
Other .. ..	9,005	6,295	1,079	261		218	16,858
Total .. ..	125,366	50,246	39,471	39,814	19,090	11,157	285,144
Expenditure—							
Buildings .. ..	3,516	1,457	1,420	1,362		334	8,089
Maintenance .. ..	116,869	46,431	37,726	38,209	19,090	7,290	265,615
Other .. ..	4,524	269	322			3,533	8,648
Total .. ..	124,909	48,157	39,468	39,571	19,090	11,157	282,352

(i) *Government Asylums for the Infirm, New South Wales.* There are five asylums for the infirm maintained by the Government—four for men and one for women. Rookwood, the largest of these, had in 1918 an average number resident of 1,311, Newington 709, and Liverpool 557. At the Cottage Homes, situated at two separate localities in Parramatta, the average number resident was about 320. The State Labour Depot and Refuge at Randwick had 125 inmates during 1918.

(ii) *Benevolent Asylums, Victoria.* Besides the asylums attached to hospitals, there are eight institutions in Victoria. The average daily number of indoor patients was 1,878, and there were 507 distinct cases of outdoor relief.

(iii) *Benevolent Asylums, Queensland.* There are four institutions in Queensland, with 852 beds. The most important of these is at Dunwich (Stradbroke Island) with 734 beds, while there are small institutions at Nundah, Rockhampton, and Toowoomba. At the end of 1918 the inmates of the four institutions numbered 1,042.

(iv) *Destitute Asylum, Adelaide.* Outside of hospitals and lunatic asylums the destitute of South Australia are dealt with and relieved at the Destitute Asylum, Adelaide, and at the Aged Men's Home, Beaumont. The former institution includes lying-in and children's departments. In the asylum the number of inmates at the end of 1918 was 307; in the Beaumont Home it was 66.

(v) *Homes for the Destitute, Western Australia.* There are two of these homes in Western Australia supported by public funds. The Old Men's Home at Claremont had 585 inmates at the end of 1918, and the Women's Home, Fremantle, which receives children also, had 73 adult inmates. The children admitted during the year numbered 24.

(vi) *Charitable Establishments, Tasmania.* There are two principal Government charitable establishments in Tasmania. The New Town Infirmary and Consumptive Home, with 220 beds, had 186 inmates at the end of June, 1919, and the Home for Invalids, Launceston, with 21 beds, had 21 inmates on the same date.

4. **Orphanages, Industrial Schools, etc.**—The organisation of charitable effort varies greatly in regard to orphans and waifs. In many institutions shelter and some form of industrial training are offered to destitute children of all classes, whether orphans or not, while some of those styled orphanages do not confine their relief to orphans strictly so called. The figures in the next table are those for institutions where, it is believed, the principal effort is on behalf of those who are really orphans :—

## ORPHANAGES IN COMMONWEALTH, 1914 TO 1918.

Particulars.	1914.	1915.	1916.	1917.	1918.
Number of Institutions .. ..	50	50	48	47	48
Admissions .. ..	2,340	2,376	2,118	1,400	2,679
Total number of inmates during year ..	4,344	4,503	5,061	5,754	7,451
Deaths .. ..	46	48	35	20	53
Expenditure (a) .. .. £	86,390	93,758	79,526	81,141	114,420

(a) Incomplete. Expenditure is not available for some orphanages.

(i) *New South Wales.* The care of destitute and neglected children is entrusted to the State Children's Relief Board, whose officers are charged with a strict supervision regarding the welfare of the children and the treatment of them by those to whom they are boarded out. Provision is made for instruction in various trades and callings. The number of children under the Board's supervision in 1918-19 was 12,838. The board's expenditure in that year was £211,507, or £16 9s. 6d. per child.

There are also orphanages, farm homes, country homes for children, etc., with upwards of 1,300 children under care.

There are several reformatories and industrial schools maintained by the State. At the Parramatta Industrial School for Girls, to which a Training Home was attached in 1912, there were on 31st December, 1918, 136 inmates. At the Farm Home for boys, Gosford, there were 64 boys at the end of 1918.

(ii) *Victoria.* There are ten orphanages in Victoria, with 1,756 beds. The daily average of the inmates was 1,675 in 1917-18. The expenditure in the same year was £35,464.

At the end of 1918 there were three industrial and six reformatory schools in the State. Of these, one in each class is wholly controlled by the Government, being used merely as a receiving and distributing depot. The children are sent thence to situations, foster homes, or other institutions dealing with State wards. The other schools are under private management, receiving an allowance for State wards. Many of the reformatory children are placed with friends, or licensed out. On 31st December, 1918, the wards of the State numbered 11,347—classed mostly as neglected children. There were also 42 children free from legal control, who, being incapacitated, were maintained by the State. The total expenditure for 1918 was £181,014, of which £171,474 was borne by the Government.

(iii) *Queensland.* There are eleven orphanages in Queensland. The number under care on 31st December, 1918, was 1,120, and the expenditure for the year £21,517.

There are also seven industrial and reformatory schools, with 121 boys and 59 girls under detention at the end of 1918. The total number of children under State control at the end of 1918 was 7,037. The gross cost was £143,008, of which £134,040 was borne by the Government.

(iv) *South Australia.* The State Children's Department exercises a supervision over the probationary and industrial schools and the reformatories. The total number of admissions into these institutions in 1918-19 was 231. The number of inmates on the 30th June, 1919, was 226, in addition to which 1,614 were placed out, or had been adopted

or apprenticed. There were no deaths amongst children in industrial schools and reformatories, and of those placed out and in other institutions three died. The number of children under State control on 30th June, 1919, was 3,870. The expenditure for 1918-19 was £39,684.

There are three orphan asylums. The number under care during 1918 was 365, of whom 261 were inmates on 31st December, 1918. There were no deaths during the year, and the expenditure amounted to £2,900.

(v) *Western Australia.* In Western Australia there were, at the end of 1918, four orphanages, three orphanages and industrial schools, and two industrial schools, containing 440 boys and 381 girls. There were also 10 boys and 10 girls at the Government Receiving Depot. The total number of children in charge of the State Children's Department at the end of 1918 was 1,666, and the net cost £46,920.

(vi) *Tasmania.* There are three industrial schools and one orphanage under benevolent institutions in the State. Admissions in 1918-19 numbered 22, and total inmates during the year 160. No deaths occurred. The expenditure was £3,329.

The New Town Training School for boys had 42 inmates at the end of June, 1919.

Under the boarding-out system upwards of 400 children are placed out. The total number of children under State control at the end of June, 1919, was 407, the net cost to the State of children's relief being £6,148.

(vii) *Neglected Children.* The following table summarises the number of neglected children under State Departments. Included in the figures are children boarded out with their own mothers, the numbers being, New South Wales 8,257, Victoria 5,324 Queensland 4,244, South Australia 315, Western Australia 276, Tasmania 5; the total for the Commonwealth being 18,421.

#### STATE RELIEF OF NEGLECTED CHILDREN.—TRANSACTIONS OF STATE DEPARTMENTS, 1918.

Particulars.	N.S.W.(a)	Vic.	Q'land.	S. Aust. (b)	W. Aust.	Tas.	C'wealth.
Number of Children under State control at end of year—							
Males .. .. .	(c)	5,947	3,697	2,130	873	203	(d)12,850
Females .. .. .	(c)	5,400	3,340	1,740	793	204	(d)11,477
Total .. .. .	12,838	11,347	7,037	3,870	1,666	407	37,165
	£	£	£	£	£	£	£
Gross cost to State of children's relief .. .. .	211,507	181,014	143,008	39,684	50,317	7,216	632,746
Receipts, from parents' contributions, etc. .. .. .	7,670	9,540	8,968	4,954	3,397	1,068	35,597
Net cost .. .. .	203,837	171,474	134,040	34,730	46,920	6,148	597,149

(a) For year ended 5th April following. (b) For the year ended 30th June, 1919.  
(c) Details not available. (d) Exclusive of New South Wales.

5. *Lepers.*—Lazarets for the treatment of lepers have been established in New South Wales (Little Bay); Queensland (Peel Island, near Brisbane, and Dayman Island, Torres Strait); and the Northern Territory (Mud Island). Quarantine and isolation stations have also been used for the segregation of patients. A great deal of information concerning the beginning and progress of leprosy in Australia was collected and published by the late Dr. J. Ashburton Thompson, while Chief Government Medical Officer and President of the Board of Health, New South Wales, from whose reports the following table has

been compiled, up to and including the year 1915, later figures not being available in similar form :—

### CASES OF LEPROSY RECORDED IN THE COMMONWEALTH, 1855 TO 1915.

State.	1855 to 1906.	1907.	1908.	1909.	1910.	1911.	1912.	1913.	1914.	1915.
New South Wales ..	140	4	2	2	5	3	4	2	4	3
Victoria ..	(a) 27	..	..	..	..	..	1	..	1	1
Queensland ..	(b) 186	21	23	8	6	7	4	12	8	10
South Australia ..	37	1	..	..	..	..	..	..	..	..
Western Australia ..	4	..	3	4	3	2	..	..	..	5
Tasmania ..	1	..	..	..	..	..	..	..	..	..
Northern Territory (c)	..	..	..	..	..	..	..	1	..	..
Total ..	(a) (b) 395	26	28	14	14	12	9	15	13	19

(a) In addition, some Chinese. (b) In addition, many Kanakas. (c) As from the year 1911.

6. Hospitals for the Insane.—The method of compiling insanity statistics has been fairly uniform throughout the States, but the various methods of observing the early stages of the development of insanity introduce an element of uncertainty which considerably reduces the value of comparison. In the summary given below, licensed houses (except as regards expenditure) are included in the total for New South Wales and Victoria, but in the latter State the figures are exclusive of reception houses and observation wards in gaols :—

### HOSPITALS FOR INSANE, (a) COMMONWEALTH, 1914 TO 1918.

Particulars.	1914.	1915.	1916.	1917.	1918.
Number of institutions .. ..	35	34	35	34	34
Number of beds .. ..	16,432	16,417	16,673	16,808	17,176
Admissions .. ..	3,339	3,118	3,268	3,054	3,192
Discharged as recovered, relieved, etc. . .	1,574	1,491	1,451	1,456	1,406
Deaths .. ..	1,270	1,341	1,459	1,306	1,383
Expenditure .. ..	£ 755,697	815,200	861,258	875,963	951,439

(a) Exclusive of receiving wards at two general hospitals and including six licensed houses for insane in Victoria.

The proportion of insane, as well as the total number returned as under treatment, has changed very little during recent years. In the next table the number of insane under official care in Australia is given, and in the table following, the proportion of insane to population.

The number of insane persons in institutions in Australia at the end of each of the years 1914–1918 was as follows :—

### INSANE PERSONS IN THE COMMONWEALTH, 1914 TO 1918.

State.	1914.	1915.	1916.	1917.	1918.
New South Wales ..	6,906	7,063	7,240	7,340	7,581
Victoria ..	5,729	5,767	5,793	5,833	5,915
Queensland ..	2,448	2,441	2,517	2,590	2,623
South Australia ..	1,080	1,137	1,158	1,176	1,153
Western Australia ..	981	1,009	1,045	1,066	1,123
Tasmania ..	537	522	545	570	575
Commonwealth ..	17,681	17,939	18,298	18,575	18,970

For the period embraced in the tables Victoria shows the highest rate of insanity, roughly 1 in 250 persons. It is stated that this is chiefly owing to the proportionately greater number of old persons in that State. On the other hand, in South Australia a considerably lower insanity rate has prevailed, averaging about 1 in 380, Tasmania following closely with an average of about 1 in 370.

### PROPORTION OF INSANE PER 1,000 OF THE POPULATION, 1914 TO 1918.

(COMMONWEALTH.)

State.	1914.	1915.	1916.	1917.	1918.
New South Wales ..	3.71	3.78	3.92	3.88	3.92
Victoria ..	4.00	4.04	4.15	4.13	4.13
Queensland ..	3.62	3.55	3.70	3.83	3.78
South Australia ..	2.42	2.58	2.67	2.70	2.59
Western Australia ..	3.04	3.13	3.38	3.44	3.58
Tasmania ..	2.67	2.62	2.72	2.80	2.75
Commonwealth ..	3.58	3.62	3.75	3.76	3.78

Consequent upon the development of a more rational attitude towards the treatment of mental cases, a greater willingness is being shewn to submit afflicted persons to treatment at an earlier stage than formerly. Hence an increase in the number of recorded cases does not necessarily imply an actual increase in insanity. It is important to bear this in mind, because the small progressive increase in the numbers in the first of the immediately preceding tables is probably to be attributed largely, if not solely, to this circumstance.

The leading features in regard to institutions for the care of the insane are given below for 1918 :—

### HOSPITALS FOR THE INSANE.—NUMBER, STAFFS, ACCOMMODATION, 1918.

(COMMONWEALTH.)

Particulars.	N.S.W.	Vic.(a)	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
Number of Institutions—							
Government .. ..	9	9	3	1	2	1	25
Private .. ..	3	(b) 5	..	..	1	..	(b) 9
Total .. ..	12	14	3	1	3	1	34
Medical Staff—							
Males .. ..	20	20	7	2	3	2	54
Females .. ..	1	..	1	..	..	..	2
Total .. ..	21	20	8	2	3	2	56
Nursing Staff and Attendants—							
Males .. ..	612	557	233	91	127	86	1,706
Females .. ..	499	533	185	61	56	64	1,398
Total .. ..	1,111	1,090	418	152	183	150	3,104
Accommodation—							
Number of dormitories ..	(c) 353	1,427	584	(f)	41	369	(f)
Capacity in cubic feet ..	c3,582,976	3,727,818	1,883,342	(f)	699,664	897,447	(f)
Number of beds .. ..	(c) 6,298	5,186	2,641	1,222	1,161	668	17,176
Cubic feet to each bed ..	{ (d) 800 } (e) 1,000	{ 719 }	713	(f)	603	1,343	(f)

(a) Exclusive of Receiving House, Royal Park, and of the Receiving Wards at Bendigo and Geelong Hospitals. (b) There are five private licensed houses in Victoria, in which there were 90 cases at end of 1917. Other figures for these private asylums are not available. (c) Government hospitals only. (d) Ordinary dormitory. (e) Hospital dormitory. (f) Information not available.

## HOSPITALS FOR THE INSANE.—PATIENTS TREATED, 1918.

Particulars.	N.S.W.	Vic. (a)	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth
Admissions and re-admissions during year—							
Males .. .. .	820	346	263	145	123	38	1,735
Females .. .. .	638	416	176	101	86	40	1,457
Total .. .. .	1,458	762	439	246	209	78	3,192
Discharges—Recovered—							
Males .. .. .	296	75	101	40	14	12	538
Females .. .. .	241	80	103	36	20	15	495
Total .. .. .	537	155	204	76	34	27	1,033
Relieved and unrelieved—							
Males .. .. .	74	65	19	38	10	7	213
Females .. .. .	51	70	6	23	7	3	160
Total .. .. .	125	135	25	61	17	10	373
Absconders not retaken—							
Males .. .. .	4	..	..	1	7	..	12
Females .. .. .	..	..	..	..	..	..	..
Total .. .. .	4	..	..	1	7	..	12
Deaths—							
Males .. .. .	369	218	112	73	60	24	856
Females .. .. .	182	172	65	58	38	12	527
Total .. .. .	551	390	177	131	98	36	1,383
Number of patients on books at end of year—							
Males .. .. .	4,394	2,889	1,676	640	788	277	10,664
Females .. .. .	3,187	3,026	947	513	335	298	8,306
Total .. .. .	7,581	5,915	2,623	1,153	1,123	575	18,970
Average daily number resident—							
Males .. .. .	4,183	2,612	1,684	642	767	282	10,170
Females .. .. .	2,877	2,577	953	520	323	287	7,537
Total .. .. .	7,060	5,189	2,637	1,162	1,090	569	17,707
Number of patients on books at end of year per 1,000 of population—							
Males .. .. .	4.58	4.22	4.75	3.11	4.88	2.63	4.31
Females .. .. .	3.27	4.06	2.77	2.14	2.20	2.88	3.25
Persons .. .. .	3.92	4.13	3.78	2.59	3.58	2.75	3.77
Average number of patients resident in hospitals for insane per 1,000 of mean population—							
Males .. .. .	4.41	3.87	4.80	3.16	4.81	2.75	4.16
Females .. .. .	2.98	3.47	2.82	2.19	2.13	2.83	2.97
Persons .. .. .	3.69	3.66	3.83	2.64	3.50	2.79	3.56

(a) Exclusive of inmates of the Receiving House, Royal Park, and of Receiving Wards attached to the hospitals at Bendigo and Geelong, and of five private licensed houses.

In some of the States it is the practice to allow persons well advanced towards recovery to leave the institutions and reside with their relatives or friends, but they are nevertheless under supervision of the asylum authorities and are kept on the books. The figures for admission, etc., include absconders captured and readmitted. Very few escapees succeed in avoiding capture.



The revenue of Government asylums is small in comparison with their cost, and consists chiefly of patients' fees. The proportion of expenditure borne by the State amounts to about 87 per cent.

### HOSPITALS FOR THE INSANE (GOVERNMENT ONLY), REVENUE AND EXPENDITURE, 1918.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
Revenue (exclusive of Government Grants)—							
Fees of patients.. ..	50,409	26,663	10,935	10,137	5,790	5,367	109,301
Other .. ..	2,804	9,112	1,544	697	1,550	1,046	16,753
Total .. ..	53,213	35,775	12,479	10,834	7,340	6,413	126,054
Expenditure—							
Salaries .. ..	182,799	121,567	75,563	19,497	32,867	15,853	448,146
Maintenance .. ..	170,209	139,277	64,767	30,845	30,191	24,227	159,606
Buildings .. ..		12,633	..	824	3,114	1,848	18,419
Other .. ..	19,667	4,331	614	511	..	145	25,268
Total .. ..	372,765	277,808	140,944	51,677	66,172	42,073	951,439

(i) *New South Wales.* The latest return available shews that the average length of residence in the hospitals of persons who died was 4 years 8 months for males and 5 years 9 months for females; and that of persons who were discharged was 1 year 2 months for males and 1 year 7 months for females.

There are also two State reception houses, where suspected persons are confined for observation, being subsequently either discharged or transferred to lunatic asylums. In two of the gaols observation wards have been instituted, with similar functions.

(ii) *Victoria.* The average residence in the hospitals of those who died was 8 years 3 months for males and 12 years 11 months for females; that of those discharged, 1 year 3 months for males and 1 year 9 months for females.

There are lunacy wards in two of the general hospitals; also a State receiving house where persons are placed for observation, and subsequently discharged or transferred to asylums.

(iii) *Queensland.* The average residence in the institutions of those who died was 7 years 9 months for males and 8 years for females; and of those who were discharged, 19 months for both males and females.

There are also three reception houses for insane, which act as depots to which patients are sent with a view to determining whether their mental illness is of a merely temporary character, easily relieved, or is of such a nature as to need further treatment at the State asylums.

(iv) *South Australia.* The average residence of those who died was 6 years and 8 months for males and 9 years 3 months for females; of those discharged, 9 months for males and 2 years for females.

(v) *Western Australia.* The period of residence of those who died during the year averaged 5 years 7 months for males and 3 years 5 months for females; of those who were discharged, 3 years for males and 1 year 3 months for females.

(vi) *Tasmania.* The period of residence of those who died was 12 years 9 months for males and 4 years 3 months for females; that of those discharged, 1 year 5 months for males and 10 months for females.

(vii) *Causes of Insanity.* The proportion of causes of insanity to the total of ascertained causes in Australia in the five years 1914-18 shews that hereditary influences have been the chief factor, more than one-fifth of the total ascertained causes coming under this head. Domestic troubles, adverse circumstances, &c., have also been a fruitful source. Cases due to intemperance in drink range from one in eight to one in ten.

**PROPORTION OF ASCERTAINED CAUSES, ETC., OF INSANITY, COMMONWEALTH,  
1914 TO 1918.**

Causes, Previous History, etc.	1914.	1915.	1915.	1917.	1918.
	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.
Domestic trouble, adverse circumstances, mental anxiety ..	10.1	10.6	9.6	9.7	9.9
Intemperance in drink ..	12.9	11.6	10.3	10.5	10.2
Hereditary influence, ascertained ; congenital defect, ascertained ..	16.6	22.9	22.4	21.8	22.1
Pregnancy, lactation, parturition and puerperal state, uterine and ovarian disorders, puberty, change of life ..	4.9	7.1	5.1	6.0	4.9
Previous attacks ..	10.8	13.0	14.9	14.1	14.6
Accident, including sunstroke ..	2.2	1.7	1.8	1.9	1.5
Old age ..	8.4	8.2	10.0	9.8	9.4
Other causes ascertained ..	34.1	24.9	25.9	26.2	27.4
<b>All ascertained causes ..</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>

**7. Treatment of Inebriates.**—The treatment of inebriates is referred to in the section dealing with Public Justice hereinbefore. (See page 881.)

**8. Protection of Aborigines.**—For the protection of the aboriginal Australian race there are institutions, under the supervision of Aborigines Boards, where the blacks are housed and encouraged to work, the children receiving elementary education. The work is usually carried on at mission stations, but many of the natives are nomadic in habit of life, and receive food and clothing when they call, whilst others but rarely come under the notice of the Boards. The native race is extinct in Tasmania. The estimated average annual expenditure on maintenance, &c., for the last five years was—New South Wales, £23,000; Victoria, £4,000; Queensland, £21,000; South Australia, £20,000; Western Australia, £25,500; Northern Territory, £3,000; total for Commonwealth, £96,500. In New South Wales the average number receiving monthly aid in 1918 was 2,123, of whom 910 were adults; in Victoria there were 307 under the care of the Aborigines Protection Board on the 30th June, 1918; in Queensland, at the end of 1918, there were 2,863 aborigines at the mission stations; in South Australia, there were 739 inmates at mission stations, while in Western Australia the aborigines and half-castes in the native institutions numbered 450. At the mission stations in the Northern Territory about 300 were in residence, but casual assistance and medical attendance are given to large numbers of natives every year.

**9. Royal Life Saving Society.**—In each of the State capitals, "centres" of the Royal Life Saving Society have been established. Life preservation is the object of the Society, and its immediate objects are (a) educative and (b) remedial. By stimulating the acquirement of the art of swimming in schools, colleges, clubs, etc., it is desired to bring about a widespread and thorough knowledge of natation and life-saving; while life-belts, reels, lines, and other first-aid appliances are provided on ocean beaches and at places where they are likely to be in demand. Upwards of 3,000 certificates of proficiency in various grades are annually issued after examination.

**10. Royal Humane Society.**—The Royal Humane Society of Australasia has for its objects (a) to grant awards for skill, promptness, and perseverance in life saving; (b) to provide assistance in cases of danger and apparent death; (c) to restore the apparently drowned; (d) to collect and circulate the latest information regarding approved methods and apparatus for life saving. Awards of medals and certificates are made numbering nearly 100 annually. Upwards of 350 lifebuoys have been provided at various places on the coasts, rivers, lakes, and reservoirs in the various States. Swimming is encouraged amongst school children, and awards are made for proficiency.

11. **Other Charitable Institutions.**—Owing to variety of name and function of other charitable institutions it has been found impracticable to give detailed results. The aid given in kind—food, clothing, tools of trade, etc.—is considerable, whilst the shelter and treatment afforded range from a bed for a night for casual callers in establishments ministering minor charity, to indoor treatment over long periods in those that exist for the relief of the aged and infirm. The institutions not so particularised include asylums for the deaf, dumb, and blind, maternity institutions and infant homes, homes for the destitute and aged poor, industrial colonies, night shelters, crèches, homes of hope, rescue homes, free kindergarten and ragged schools, auxiliary medical charities, free dispensaries, benevolent societies and nursing systems, ambulance and health societies, boys' brigades, humane and animals' protection societies, prisoners' aid associations, shipwreck relief societies, bush fires and mining accident relief funds, etc.

12. **State Expenditure on Charities.**—The table below gives the amount expended by Government on charities in each of the last five years, the figures for the various States being compiled, as far as possible, on the same basis :—

STATE EXPENDITURE ON CHARITIES, 1913 TO 1918.

State or Territory.	1914.	1915.	1916.	1917.	1918.
	£	£	£	£	£
New South Wales ..	711,453	779,303	876,767	863,713	962,901
Victoria .. ..	485,018	541,668	525,682	543,225	541,817
Queensland .. ..	321,597	307,899	324,143	372,342	417,743
South Australia ..	129,281	167,272	162,849	191,748	166,250
Western Australia ..	222,417	228,064	247,589	178,477	249,361
Tasmania .. ..	70,387	78,092	79,494	88,445	95,867
Northern Territory ..	5,301	4,864	5,649	4,488	4,156
Commonwealth ..	1,945,454	2,107,162	2,222,173	2,242,438	2,438,095

13. **Total Charitable Expenditure.**—The expenditure in the Commonwealth in money on hospitals, charities, and all forms of relief publicly given, comprising the amounts furnished by Government and those raised by public subscription, etc., but excluding old-age pensions, exceeds £4,000,000 annually.

## SECTION XXV.

## GENERAL GOVERNMENT.

## § 1. Scheme of Parliamentary Government.

1. **General.**—The legislative power of the Commonwealth is vested in the Federal Parliament, which consists of the Sovereign, the Senate, and the House of Representatives. The Sovereign is represented throughout the Commonwealth by the Governor-General, who, subject to the Constitution of the Commonwealth, has such powers and functions as the Sovereign is pleased to assign to him. In each State there is a State Governor, who is the representative of the Sovereign for the State, and who exercises such powers within the State as are conferred upon him by the Letters Patent which constitute his office, and by the instructions, which inform him in detail of the manner in which his duties are to be fulfilled. The Legislature in each State is also bi-cameral, and consists of (a) a Legislative Council and (b) a Legislative Assembly, or House of Assembly, the legislative powers of these chambers being delimited by the Commonwealth and the State Constitutions. The latter chamber, which is the larger, is always elective; the qualification for the franchise varies in character. The former chamber is, in the case of New South Wales and Queensland, nominated by the Governor-in-Council, but in the other States it is elective, the constituencies being differently arranged and some property qualification for the electorate being required. In the Federal Parliament, however, the qualifications for the franchise are identical for both Houses. A brief account of the constitutional history of each of the States was given in previous issues of this book (see especially Year Book No. 4, pp. 27 to 32).

2. **Number of Members of the Legislatures.**—The following table shows the number of members in each of the legislative chambers in the Commonwealth and in each State at 1st August, 1920 :—

MEMBERS OF PARLIAMENT OF AUSTRALIA, 1920.

Members in—	C'wealth.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Total.
Upper House ..	36	68	34	64	20	30	18	270
Lower House ..	75	90	65	72	46	50	30	428
Total .. ..	111	158	99	136	66	80	48	698

The use of the expressions "Upper House" and "Lower House" in the above statement, though not justified constitutionally, is convenient, inasmuch as the legislative chambers are known by different names in the Commonwealth and in some of the States.

In the Commonwealth Parliament the Upper House is known as the Senate, and in the State Parliaments as the Legislative Council. The Lower House is known as follows:—In the Commonwealth Parliament as the House of Representatives, in the State Parliaments of New South Wales, Victoria, Queensland, and Western Australia as the Legislative Assembly, and in the State Parliaments of South Australia and Tasmania as the House of Assembly.

**3. The Cabinet and Executive Government.**—The Sections of the Commonwealth Constitution Act dealing with the Executive Government will be found on page 24 hereinbefore. In both the Commonwealth and the State Legislatures the forms of government have been founded on their prototype, the Imperial Government, and the relations established between the Ministry and the representatives of the people are in accordance with those prevailing in Great Britain. The executive powers in the Commonwealth and in the State Governments are vested in the Governor-in-Council. The Executive Council in the Commonwealth and in the majority of the States is practically co-extensive with a group of departmental chiefs, who are usually spoken of as the Cabinet, and who change with the rise and fall of party majorities. In the Commonwealth Government, however, as well as in the States of Victoria and Tasmania, the Cabinet on leaving office remain members of the Executive Council, though they no longer attend its meetings, and it is in fact an essential feature of the Cabinet system of Government that they should not do so, except to assist the Governor in transacting purely formal business, or to advise on non-political questions.

(i) *The Executive Council.* This body is composed of the Governor and the Ministers of State holding office for the time being. The latter are sworn both as Executive Councillors and as Ministers controlling the different administrative departments. It should be observed that all persons living who have held Ministerial office under former Governments are also technically members of the Executive Council, and are thus liable to be specially summoned for attendance at meetings of that body. The meetings are official in character; they are presided over by the Governor-General (or Governor) and are attended by the clerk, who keeps a formal record of the proceedings. At these meetings the decisions of the Cabinet are put into official form and made effective, appointments are confirmed, resignations accepted, proceedings ordered, and notices and regulations published.

The official members of the Executive Council in August, 1920, have been previously specified (see page 37). In addition, all living members of past Ministries (see following pages) are technically liable to be officially summoned to attend meetings of the Executive Council.

Particulars of previous Commonwealth Ministries are given on pages 33 to 36 hereinbefore.

(ii) *The Cabinet.* The meetings of this body are private and deliberative. No one is admitted but the actual Ministry of the day, no records of the meetings transpire, and no official notice is taken of the proceedings. The members of the Cabinet, being the leaders of the party in power in Parliament, control the bent of legislation, and must retain the confidence of the people and also of the Governor-General (or Governor), to whom they act as an advising body. They also in effect wield, by virtue of their seats on the Executive Council, the whole executive force of the community. In summoning, proroguing, or dissolving Parliament, the Governor-General (or Governor) is usually guided by the advice tendered him by the Cabinet, though legally in no way bound to accept such advice. The following statement gives the names of the Ministers of State for the Commonwealth who have held office since the inauguration of the Commonwealth Government:—

# MINISTERS OF STATE FOR THE COMMONWEALTH OF AUSTRALIA FROM 1st JANUARY, 1901, to AUGUST, 1920.

## HOME AND TERRITORIES. (Previous to 14/11/16 known as External Affairs).

Name.	From—	To—
Rt. Hon. E. BARTON, P.C., K.C. (a) (b) ..	1/1/01	23/9/03
Hon. A. DEAKIN (a) ..	23/9/03	26/4/04
Hon. W. M. HUGHES (k) ..	26/4/04	17/8/04
Rt. Hon. G. H. REID, P.C., K.C. (a) (g) ..	17/8/04	4/7/05
Hon. A. DEAKIN (a) ..	4/7/05	12/11/08
Hon. E. L. BATCHELOR ..	12/11/08	2/6/09
Hon. L. E. GROOM ..	2/6/09	29/4/10
Hon. E. L. BATCHELOR ..	29/4/10	f 8/10/11
Hon. J. THOMAS ..	14/10/11	24/6/13
Hon. P. McM. GLYNN, K.C. ..	24/6/13	17/9/14
Hon. J. A. ARTHUR ..	17/9/14	f 9/12/14
Hon. HUGH MAHON ..	14/12/14	14/11/16
Hon. F. W. BAMFORD ..	14/11/16	17/2/17
Hon. P. McM. GLYNN, K.C. ..	17/2/17	3/2/20
Hon. A. POYNTON ..	4/2/20	(e)

## ATTORNEY-GENERAL.

Name.	From—	To—
Hon. A. DEAKIN ..	1/1/01	23/9/03
Hon. J. G. DRAKE ..	23/9/03	26/4/04
Hon. H. B. HIGGINS, K.C. ..	26/4/04	17/8/04
Hon. Sir J. H. SYMON, K.C.M.G., K.C. ..	17/8/04	4/7/05
Hon. I. A. ISAACS ..	4/7/05	11/10/06
Hon. L. E. GROOM ..	11/10/06	12/11/08
Hon. W. M. HUGHES (k) ..	12/11/08	2/6/09
Hon. P. M. GLYNN ..	2/6/09	29/4/10
Hon. W. M. HUGHES (k) ..	29/4/10	24/6/13
Hon. W. H. IRVINE, K.C. (j) ..	24/6/13	17/9/14
Hon. W. M. HUGHES (a) (k) ..	17/9/14	(e)

## WORKS AND RAILWAYS. (Previous to 14/11/16 known as Home Affairs).

Name.	From—	To—
Hon. Sir W. J. LYNE, K.C.M.G. ..	1/1/01	7/8/03
Rt. Hon. Sir J. FORREST, P.C., G.C.M.G. (l) ..	7/8/03	26/4/04
Hon. E. L. BATCHELOR ..	26/4/04	17/8/04
Hon. D. THOMSON ..	17/8/04	4/7/05
Hon. L. E. GROOM ..	4/7/05	11/10/06
Hon. T. T. EWING (c) ..	11/10/06	23/1/07
Hon. J. KEATING ..	23/1/07	12/11/08
Hon. H. MAHON ..	12/11/08	2/6/09
Hon. G. W. FULLER ..	2/6/09	29/4/10
Hon. K. O'MALLEY ..	29/4/10	24/6/13
Hon. JOSEPH COOK (a) (i) ..	24/6/13	17/9/14
Hon. W. O. ARCHIBALD ..	17/9/14	27/10/15
Hon. K. O'MALLEY ..	27/10/15	14/11/16
Hon. P. J. LYNCH ..	14/11/16	17/2/17
Hon. W. A. WATT (n) ..	17/2/17	27/3/18
Hon. L. E. GROOM ..	27/3/18	(e)

## TRADE AND CUSTOMS.

Name.	From—	To—
Rt. Hon. C. C. KINGSTON, P.C., K.C. ..	1/1/01	24/7/03
Hon. Sir W. J. LYNE, K.C.M.G. ..	7/8/03	26/4/04
Hon. A. FISHER (h) ..	26/4/04	17/8/04
Hon. A. MCLEAN ..	17/8/04	4/7/05
Hon. Sir W. J. LYNE, K.C.M.G. ..	4/7/05	29/7/07
Hon. A. CHAPMAN ..	29/7/07	12/11/08
Hon. F. G. TUDOR ..	12/11/08	2/6/09
Hon. Sir R. W. BEST, K.C.M.G. ..	2/6/09	29/4/10
Hon. F. G. TUDOR ..	29/4/10	24/6/13
Hon. L. E. GROOM ..	24/6/13	17/9/14
Hon. F. G. TUDOR ..	17/9/14	14/11/16
Rt. Hon. W. M. HUGHES, P.C. ..	29/9/16	14/11/16
Hon. W. O. ARCHIBALD ..	14/11/16	17/2/17
Hon. J. A. JENSEN ..	17/2/17	13/12/18
Hon. W. A. WATT (n) ..	13/12/18	17/1/19
Hon. W. M. GREENE ..	17/1/19	(e)

## TREASURER.

Name.	From—	To—
Rt. Hon. Sir. G. TURNER, P.C., K.C.M.G. ..	1/1/01	26/4/04
Hon. J. C. WATSON (a) ..	26/4/04	17/8/04
Rt. Hon. Sir G. TURNER, P.C., K.C.M.G. ..	17/8/04	4/7/05
Rt. Hon. Sir J. FORREST, P.C., G.C.M.G. (l) ..	4/7/05	29/7/07
Hon. Sir W. J. LYNE, K.C.M.G. ..	29/7/07	12/11/08
Hon. A. FISHER (a) (h) ..	12/11/08	2/6/09
Rt. Hon. Sir J. FORREST, P.C., G.C.M.G. (l) ..	2/6/09	29/4/10
Rt. Hon. A. FISHER, P.C. (a) ..	29/4/10	24/6/13
Rt. Hon. Sir J. FORREST, P.C., G.C.M.G. (l) ..	24/6/13	17/9/14
Rt. Hon. A. FISHER, P.C. (a) ..	17/9/14	27/10/15
Hon. W. G. HIGGS ..	27/10/15	27/10/16
Hon. A. POYNTON ..	24/11/16	17/2/17
Rt. Hon. Sir J. FORREST, P.C., G.C.M.G. (l) ..	17/2/17	27/3/18
Hon. W. A. WATT (n) ..	27/3/18	15/6/20
Rt. Hon. Sir JOSEPH COOK, P.C., G.C.M.G. ..	28/7/20	(e)

## DEFENCE.

Name.	From—	To—
Hon. Sir J. R. DICKSON, K.C.M.G. ..	1/1/01	f 10/1/01
Rt. Hon. Sir J. FORREST, P.C., G.C.M.G. (l) ..	17/1/01	7/8/03
Hon. J. G. DRAKE ..	7/8/03	23/9/03
Hon. A. CHAPMAN ..	23/9/03	26/4/04
Hon. A. DAWSON ..	26/4/04	17/8/04
Hon. J. W. McCAY (m) ..	17/8/04	4/7/05
Hon. T. PLAYFORD ..	4/7/05	23/1/07
Hon. Sir T. T. EWING, K.C.M.G. ..	23/1/07	12/11/08
Hon. G. F. PEARCE ..	12/11/08	2/6/09
Hon. J. COOK (c) ..	2/6/09	29/4/10
Hon. G. F. PEARCE ..	29/4/10	24/6/13
Hon. E. D. MILLEN ..	24/6/13	17/9/14
Hon. G. F. PEARCE ..	17/9/14	(e)

(a) Prime Minister. (b) Afterwards the Rt. Hon. Sir E. Barton, P.C., G.C.M.G., etc. (c) Afterwards the Hon. Sir T. T. Ewing, K.C.M.G. (d) Afterwards the Hon. Sir N. E. Lewis, K.C.M.G. (e) Still in office. (f) Died while holding office. (g) Afterwards the Rt. Hon. Sir G. H. Reid, P.C., G.C.M.G. (h) Afterwards the Rt. Hon. A. Fisher, P.C. (i) Afterwards the Rt. Hon. Sir J. Cook, P.C., G.C.M.G. (j) Afterwards the Hon. Sir W. H. Irvine, K.C.M.G., K.C. (k) Afterwards the Rt. Hon. W. M. Hughes, P.C. (l) Afterwards Lord Forrest of Bunbury. (m) Afterwards the Hon. Sir J. W. McCay, K.C.M.G. (n) Afterwards the Rt. Hon. W. A. Watt, P.C.

**MINISTERS OF STATE FOR THE COMMONWEALTH OF AUSTRALIA FROM  
1ST JANUARY, 1901, TO AUGUST, 1920—continued.**

POSTMASTER-GENERAL.			VICE-PRESIDENT OF THE EXECUTIVE COUNCIL.		
Name.	From—	To—	Name.	From—	To—
Rt. Hon. Sir JOHN FORREST,			Hon. R. E. O'CONNOR,		
P.C., G.C.M.G. (i) ..	1/1/01	17/1/01	K.C. ..	1/1/01	23/9/03
Hon. J. G. DRAKE ..	5/2/01	7/8/03	Hon. T. PLAYFORD ..	23/9/03	26/4/04
Hon. Sir P. O. FYSH,			Hon. G. MCGREGOR ..	26/4/04	17/8/04
K.C.M.G. ..	7/8/03	26/4/04	Hon. J. G. DRAKE ..	17/8/04	4/7/05
Hon. H. MAHON ..	26/4/04	17/8/04	Hon. T. T. EWING (c) ..	4/7/05	11/10/06
Hon. S. SMITH ..	17/8/04	4/7/05	Hon. J. H. KEATING ..	11/10/06	19/2/07
Hon. A. CHAPMAN ..	4/7/05	29/7/07	Hon. Sir R. W. BEST,		
Hon. S. MAUGER ..	29/7/07	12/11/08	K.C.M.G. ..	19/2/07	12/11/08
Hon. J. THOMAS ..	12/11/08	2/6/09	Hon. G. MCGREGOR ..	12/11/08	2/6/09
Hon. Sir J. QUICK ..	2/6/09	29/4/10	Hon. E. D. MILLEN ..	2/6/09	29/4/10
Hon. J. THOMAS ..	29/4/10	14/10/11	Hon. G. MCGREGOR ..	29/4/10	24/6/13
Hon. C. E. FRAZER ..	14/10/11	24/6/13	Hon. J. H. MCCOLL ..	24/6/13	17/9/14
Hon. AGAR WYNNE ..	24/6/13	17/9/14	Hon. A. GARDINER ..	17/9/14	27/11/16
Hon. W. G. SPENCE ..	17/9/14	27/10/15	Hon. W. G. SPENCE ..	27/11/16	17/2/17
Hon. W. WEBSTER ..	27/10/15	3/2/20	Hon. E. D. MILLEN ..	17/2/17	16/11/17
Hon. G. H. WISE ..	4/2/20	(e)	Hon. L. E. GROOM ..	16/11/17	27/3/18
			Hon. E. J. RUSSELL ..	27/3/18	(e)
THE NAVY.			REPATRIATION.		
Name.	From—	To—	Name.	From—	To—
Hon. J. A. JENSEN ..	12/7/15	17/2/17	Hon. E. D. MILLEN ..	28/9/17	(e)
Rt. Hon. J. COOK, P.C. (i)	17/2/17	28/7/20			
Hon. W. H. LAIRD SMITH	28/7/20	(e)			
WITHOUT PORTFOLIO.					
Name.	From—	To—	Name.	From—	To—
Hon. N. E. LEWIS (d) ..	1/1/01	23/4/01	Hon. W. H. KELLY ..	24/6/13	17/9/14
Hon. Sir P. O. FYSH,			Hon. H. MAHON ..	17/9/14	14/12/14
K.C.M.G. ..	23/4/01	7/8/03	Hon. J. A. JENSEN ..	17/9/14	12/7/15
Hon. J. H. KEATING ..	5/7/05	11/10/06	Hon. E. J. RUSSELL ..	17/9/14	27/3/18
Hon. S. MAUGER ..	11/10/06	29/7/07	Hon. W. H. LAIRD SMITH	14/11/16	17/2/17
Hon. J. H. COOK ..	28/1/08	12/11/08	Hon. L. E. GROOM ..	17/2/17	16/11/17
Hon. J. HUTCHISON ..	12/11/08	2/6/09	Hon. A. POYNTON ..	26/3/18	4/2/20
Hon. A. DEAKIN (a) ..	2/6/09	29/4/10	Hon. G. H. WISE ..	26/3/18	4/2/20
Col. Hon. J. F. G. FOXTON,			Hon. W. M. GREENE ..	26/3/18	17/1/19
C.M.G. ..	2/6/09	29/4/10	Hon. R. B. ORCHARD ..	26/3/18	31/1/19
Hon. E. FINDLEY ..	29/4/10	24/6/13	Hon. Sir G. de L. RYRIE,		
Hon. C. E. FRAZER ..	29/4/10	14/10/11	K.C.M.G., C.B. ..	4/2/20	(e)
Hon. E. A. ROBERTS ..	23/10/11	24/6/13	Hon. W. H. LAIRD SMITH	4/2/20	28/7/20
Hon. J. S. CLEMONS ..	24/6/13	17/9/14	Hon. A. S. RODGERS ..	28/7/20	(e)

See notes on previous page.

(iii) *Constitution of Ministries.* The subjoined table shows the constitution of the Ministries in the Commonwealth and the State Governments at 1st August, 1920:—

**CONSTITUTION OF MINISTRIES, 1920.**

Ministers with Seats in—	C'wealth.	N.S.W.	Vict.	Q'land.	S. Aust.	W. Aust.	Tas.	Total.
The Upper House ..	3	2	4	1	2	2	2	16
The Lower House ..	9	11	8	8	4	6	5	51
Total ..	12	13	12	9	6	8	7	67

The names of the members of the Ministries in each State in August, 1920, are shewn in the following statement :—

## MEMBERS OF STATE GOVERNMENT MINISTRIES, 1920.

## NEW SOUTH WALES.—MINISTRY.

<i>Premier—</i>	<i>Minister for Public Instruction and Local Government—</i>
HON. JOHN STOREY.	HON. T. D. MUTCH.
<i>Colonial Secretary and Minister for Housing—</i>	<i>Secretary for Lands and Minister for Forests—</i>
HON. JAMES DOOLEY.	HON. P. F. LOUGHLIN.
<i>Minister for Agriculture—</i>	<i>Treasurer—</i>
HON. W. F. DUNN.	HON. J. T. LANG.
<i>Attorney-General and Minister of Justice—</i>	<i>Minister for Public Health and Motherhood—</i>
HON. E. A. McTIERNAN.	HON. J. J. G. MCGIRR.
<i>Secretary for Public Works and Minister for Railways—</i>	<i>Assistant Minister for Justice—</i>
HON. J. ESTELL.	HON. W. J. MCKELL.
<i>Secretary for Mines and Minister for Labour and Industry—</i>	<i>Solicitor-General—</i>
HON. G. CANN.	HON. R. SPROULE, M.L.C.
	<i>Vice-President of the Executive Council—</i>
	HON. E. J. KAVANAGH, M.L.C.

## VICTORIA.—MINISTRY.

<i>Premier and Commissioner of Crown Lands and Survey—</i>	<i>Commissioner of Public Works and Minister of Water Supply—</i>
HON. H. S. W. LAWSON.	HON. F. G. CLARKE, M.L.C.
<i>Chief Secretary, Minister of Labour, and Minister of Public Health—</i>	<i>Minister of Railways and Mines—</i>
MAJOR THE HON. M. BAIRD.	HON. S. BARNES.
<i>Treasurer—</i>	<i>Minister of Agriculture—</i>
HON. W. M. McPHERSON.	HON. D. S. OMAN.
<i>Attorney-General and Solicitor-General—</i>	<i>Ministers without Portfolio—</i>
HON. A. ROBINSON, M.L.C.	HON. J. MCWHAE, M.L.C.
<i>Minister of Public Instruction and Forests—</i>	HON. H. J. M. CAMPBELL.
HON. W. HUTCHINSON.	HON. D. MACKINNON.
	HON. A. HICKS, M.L.C.

## QUEENSLAND.—MINISTRY.

<i>Premier and Chief Secretary—</i>	<i>Secretary for Railways—</i>
HON. E. G. THEODORE.	HON. J. LARCOMBE.
<i>Treasurer, Secretary for Public Works, and Attorney-General—</i>	<i>Secretary for Public Instruction—</i>
HON. J. A. FIBELLY.	HON. J. HUXHAM.
<i>Home Secretary—</i>	<i>Secretary for Mines—</i>
HON. W. McCORMACK.	HON. A. J. JONES, M.L.C.
<i>Secretary for Public Lands—</i>	<i>Secretary for Agriculture and Stock—</i>
HON. J. H. COYNE.	HON. W. N. GILLIES.
	<i>Minister without Portfolio—</i>
	HON. J. MULLAN.



**SOUTH AUSTRALIA.—MINISTRY.***Premier and Attorney-General—*

HON. H. N. BARWELL.

*Treasurer and Minister for Education—*

HON. G. RITCHIE.

*Chief Secretary and Minister of Marine—*

HON. J. G. BICE, M.L.C.

*Commissioner of Public Works and Minister of Railways and of Industry—*

HON. W. HAGUE.

*Commissioner of Crown Lands and Immigration and Minister of Repatriation—*

HON. G. R. LAFFER.

*Minister of Agriculture, Irrigation, and Mines—*

HON. T. PASCOE, M.L.C.

**WESTERN AUSTRALIA.—MINISTRY.***Premier, Colonial Treasurer, and Minister for Lands and Repatriation—*

HON. JAMES MITCHELL, C.M.G.

*Colonial Secretary—*

HON. F. T. BROWN.

*Minister for Health, Education, and the North-West—*

HON. H. P. COLEBATCH, M.L.C.

*Minister for Mines, Railways, Industries, and Woods and Forests—*

HON. J. SCADDAN.

*Attorney-General—*

HON. T. P. DRAPER, K.C., C.B.E.

*Minister for Works, Trading Concerns, and for Water Supply—*

HON. W. J. GEORGE.

*Ministers without Portfolio—*

HON. F. E. S. WILLMOTT.

HON. C. F. BAXTER, M.L.C.

**TASMANIA.—MINISTRY.***Premier and Chief Secretary and Minister for Education—*

HON. W. H. LEE, Kt.

*Attorney-General and Minister for Railways—*

HON. W. B. PROBSTING, C.M.G., M.L.C.

*Treasurer and Minister for Mines—*

HON. SIR N. E. LEWIS, K.C.M.G.

*Minister for Works—*

HON. J. B. HAYES.

*Minister for Lands—*

HON. A. HEAN, C.M.G.

*Ministers without Portfolio—*

HON. T. SHIELDS, M.L.C.

HON. H. HAYS.

4. **The Appointment of Ministers and of Executive Councillors.**(a)—Although it is technically possible for the Governor to make and unmake cabinets at his pleasure, under all ordinary circumstances his apparent liberty in choosing his Executive Council is virtually restricted by the operation of constitutional machinery. When a Ministry is defeated in Parliament or at the polls, the procedure both in the Commonwealth and the State Parliaments generally, though not invariably, follows that prevailing in the Imperial Parliament. The customary procedure in connexion with the resignation or acceptance of office by a Ministry is described fully in previous issues of the Year Book. (See No. 6, page 942.)

5. **Enactments of the Parliament.**—In the Commonwealth, all laws are enacted in the name of the Sovereign, the Senate, and the House of Representatives. The subjects with respect to which the Commonwealth Parliament is empowered to make laws are enumerated in the Constitution Act (see pp. 21–24 hereinbefore). In the States, laws are enacted in the name of the Sovereign by and with the consent of the Legislative Council and Legislative Assembly or House of Assembly. The Governor-General or the State Governor acts as Viceroy as regards giving the Royal Assent to or vetoing Bills passed by the Legislatures, or reserving them for the special consideration of the Sovereign. In the States, the Councils and Assemblies are empowered generally, subject to the Commonwealth Constitution, to make laws in and for their respective States, in all cases whatsoever. Subject to certain limitations, they may alter, repeal, or vary their Constitution. Where a law of a State is inconsistent with a law of the Commonwealth the latter prevails, and the former is, to the extent of the inconsistency, invalid.

(a) See Jenks' "Government of Victoria," pp. 269 *et seq.*

6. Powers and Functions of the Governor-General and of the Governors.—The Governor-General and the State Governors act under the authority of the Commissions by which they are appointed and the Letters Patent under the Great Seal of the United Kingdom, and according to instructions issued by the Colonial Office and passed under the Royal Sign Manual and Signet.

The office of Governor-General and Commander-in-Chief of the Commonwealth was constituted by Letters Patent issued on the 29th October, 1900, in pursuance of the provisions of the Commonwealth Constitution Act (see page 15 hereinbefore). The powers and duties of the Governor-General were further defined by Royal instructions issued on the same date. The principal and most important of his functions, legislative as well as executive, are expressly conferred upon him by the terms of the Constitution itself. He is the custodian of the Great Seal of the Commonwealth, and has the appointment of political officers to administer Departments of State of the Commonwealth.

His legislative functions are exercised with respect to proposed laws as finally passed by the Federal Houses of Parliament. Such Bills are presented to the Governor-General for his assent in the King's name, on receiving which they become law throughout the Commonwealth. The Governor-General may, however, withhold his assent, or may reserve any Bill for the King's pleasure. He may return to the House in which it originated any proposed law with suggested amendments. The King may disallow any law within one year from the date on which it was assented to by the Governor-General.

The Governor-General's executive functions are, under ordinary circumstances, exercised on the advice of his responsible Ministers. Various specific powers are vested in him by the Constitution; he may summon or prorogue Parliament and may dissolve the House of Representatives. He is the Commander-in-Chief of the military and naval forces of the Commonwealth, and is invested by the Crown with the prerogative of mercy in cases of offences committed against the laws of the Commonwealth.

The Governor-General is also invested with authority in certain matters of Imperial interest, such as the control of the naval and military forces of the Commonwealth; the observance of the relations of foreign States to Great Britain, so far as they may be affected by the indirect relations of such States to the Commonwealth; and the treatment of neutral and belligerent ships in Commonwealth waters in time of war.

The Governor-General may not leave the Commonwealth without having first obtained leave from the Imperial Government, to whom alone he is responsible for his official acts.

The powers and functions of the State Governors are, within their respective States, very similar to those exercised by the Governor-General for the Commonwealth, and are defined by the terms of their Commissions and by the Royal instructions accompanying the same. A State Governor is the official head of the State Legislature, and assents in the name of the Crown to all Bills passed by the Parliament, except those reserved for the Royal Assent. The latter include certain classes of Bills, which are regulated by the Constitution Acts and by the instructions issued by the Imperial Government. The Governors are, under ordinary circumstances, guided by their Executive Councils, the chief matters in which the exercise of discretion is required being the granting or withholding of a dissolution of Parliament when requested by a Premier; the appointment of a new Ministry; or the assenting to, vetoing, or reserving of Bills passed by the legislative chambers. The Governors are authorised, under certain restrictions, to administer the prerogative of mercy by the reprieve or pardon of criminal offenders within their jurisdiction, and to remit fines and penalties due to the Crown. All moneys to be expended for the public service are issued from the Treasury under the Governor's warrant.

In a recent work\* in which the above matters are exhaustively discussed, it is indicated that there are important functions in the hands of a Governor, and that his influence may extend beyond what is anticipated by those who are unfamiliar with the activities of actual government. This is, however, essentially a matter of individual character. A Governor is entitled to the fullest confidence of his Ministers, to be informed at once of any important decisions taken by his Cabinet, and to discuss them with the utmost freedom. He can point out objections, give advice, deprecate measures, and

\* "Responsible Government in the Dominions," A. B. Keith, Oxford, Clarendon Press, 1912, Vol. I.

urge alterations, subject, however, to his remaining always behind the scenes. It should be remembered, moreover, that the State Executive Councils owe their existence to the Royal Letters Patent constituting the office of Governor and that, in law, the Governor is never bound to accept the advice of his Ministers. He cannot indeed do many things without their advice, for it is provided by law (either in the Constitution or Interpretation Acts, or by authoritative usage) that a Governor-in-Council must act on the advice of the Council. He cannot therefore perform any act in Council without a majority, though he can always refuse to act, and thus force his Ministers either to give way on the point at issue or to resign their posts. Even in the case of a ministerial act he can forbid a Minister to take any action on pain of dismissal. Nominally a Governor will, of course, be justified in accepting the advice of his Ministers as being a correct statement of the facts and law, but he is not bound to be so satisfied, and in matters of law he must exercise his own judgment if he be in doubt. A Governor is not, however, entitled to refuse to act on the advice of his Ministers because he personally does not approve of their action or policy; his duty is not to his own conscience, but to the people of the State which he governs, and he should execute that duty independently of every other consideration.

Although the above furnishes a brief résumé of the powers of a Governor from a legal point of view, in practice the exercise of his powers is generally limited by his ability to persuade his Ministers as to the desirability of any particular course of action. Disagreement with Ministers is only justifiable in extreme cases, and even then it involves the responsibility of finding other Ministers, who must either shew that they have as much support as any other party, or be prepared to administer during a dissolution, pending an appeal to the people. It may be remarked that a Governor who cannot work with Ministers possessing the support of the people must be recalled, unless he has acted on Imperial grounds, and the dispute is not one between him and Ministers, but between the Imperial and State Governments.

It may also be pointed out that a Governor, besides acting according to law, has, within the range of what is lawful, to act according to the instructions of the Secretary of State. He is called upon to do so by the instruments which create his office and appoint him Governor, and he obeys the Secretary of State as the mouthpiece of the Crown. Historically, there have been many cases in which these instructions have placed Governors in opposition to their Ministers.

The present Governor-General is the Right Honourable LORD HENRY WILLIAM FORSTER OF LEPE, P.C., G.C.M.G. He assumed office on the 6th October, 1920. Particulars of previous Governors-General are given on p. 33 hereinbefore.

The following is a list of the Governors of the various States of the Commonwealth :—

New South Wales ..	SIR WALTER EDWARD DAVIDSON, K.C.M.G.
Victoria .. ..	Colonel GEORGE EDWARD JOHN MOWBRAY ROUS, EARL OF STRADBROKE, C.B., C.V.O., C.B.E.
Queensland ..	Lieutenant-Colonel the Rt. Hon. SIR MATTHEW NATHAN, P.C., G.C.M.G.
South Australia ..	Lieutenant-Colonel SIR WILLIAM ERNEST GEORGE ARCHIBALD WEIGALL, K.C.M.G.
Western Australia ..	SIR FRANCIS ALEXANDER NEWDIGATE NEWDEGATE, K.C.M.G.
Tasmania ..	SIR WILLIAM LEONARD ALLARDYCE, K.C.M.G.

**7. Cost of Parliamentary Government.**—The following statement shews the cost of parliamentary government in the Commonwealth and in each State, as well as the cost per head of population, for the year ended the 30th June, 1919. In order to avoid any incorrect conclusions as to the cost of the Governor-General's or Governor's establishment it may be pointed out that a very large part of the expenditure (with the exception of item "Governor's salary") under the head of Governor-General or Governor represents official services entirely outside the Governor's personal interests, and carried out at the request of the Government.

## COST OF PARLIAMENTARY GOVERNMENT, 1918-19.

Particulars.	C'with.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	Total.
	£	£	£	£	£	£	£	£
<b>1. Governor-General or Governor—</b>								
Governor's salary ..	10,000	5,000	5,000	3,000	4,000	4,000	2,750	33,750
Official Secretary's salary ..	650	400		300		350		
Governor's establishments ..	3,611	255	4,290	838		1,548	450	22,566
Repairs and maintenance of Governor's residences ..	4,390	1,019		1,662	1,153	1,265	385	
Miscellaneous ..	5,224	2,374	(e) 321	1,475	136	10	397	9,937
<b>Total ..</b>	<b>23,875</b>	<b>9,048</b>	<b>9,611</b>	<b>7,275</b>	<b>5,289</b>	<b>7,173</b>	<b>3,982</b>	<b>66,253</b>
<b>2. Executive Council—</b>								
Salaries of Officers ..	172	100	640	20		350		1,282
Other expenses ..	5	12	20	61		9		107
<b>Total ..</b>	<b>177</b>	<b>112</b>	<b>660</b>	<b>81</b>		<b>359</b>		<b>1,389</b>
<b>3. Ministry—</b>								
Salaries of Ministers ..	15,300	11,040	8,400	3,300	5,000	6,133	3,200	57,373
Other expenses ..	148	843	(d)			2,751	496	4,238
Visits of Commonwealth Ministers to London ..	10,300							10,300
<b>Total ..</b>	<b>25,748</b>	<b>11,883</b>	<b>8,400</b>	<b>8,300</b>	<b>5,000</b>	<b>8,884</b>	<b>3,696</b>	<b>71,911</b>
<b>4. Parliament—</b>								
<b>A. The Upper House :</b>								
Allowances to members ..	20,760			1,500	3,600	9,600	3,000	38,460
Railway passes ..	(a) 8,913	8,849	(e) 5,000	(f)	800	(f)	750	24,312
Other expenses of members ..	364				142	72	5	583
<b>B. The Lower House :</b>								
Allowances to members ..	42,261	40,743	17,400	32,028	8,017	15,674	5,100	162,123
Railway passes ..	(b)	11,705	(e)	(f)	1,840	(f)	1,250	14,795
Other expenses of members ..	(b)	1,777		1,536	398	223	62	3,996
<b>C. Miscellaneous :</b>								
Salaries of officers and staff ..	5,613	21,927	12,856	4,167	5,186	3,354	2,898	66,001
Printing ..	19,836	10,452	1,865	3,131	4,296	649	2,601	42,830
Hansard ..	15,833	7,162	7,751	8,358	4,087	3,882		47,073
Library ..	4,385	767	933	1,299	656	400		
Refreshment rooms ..	1,264	(c)	1,818	1,000	1,443	1,406		
Water, power, light, and heat ..	797	508	550	479	640		853	35,827
Postage, stores, and stationery ..	2,071	686	449	382	327			
Miscellaneous ..	7,289	2,109	821	670	354			
<b>Total ..</b>	<b>139,386</b>	<b>106,685</b>	<b>49,443</b>	<b>55,450</b>	<b>31,826</b>	<b>36,091</b>	<b>16,519</b>	<b>436,000</b>
<b>5. Electoral Office—</b>								
Salaries of officers and staff ..	41,821	1,301	828	2,481	4,120	2,188		
Other expenses ..	42,798	(i)	18,211	11,644	1,853	595	5,207	133,047
<b>Total ..</b>	<b>84,619</b>	<b>1,301</b>	<b>19,039</b>	<b>14,125</b>	<b>5,973</b>	<b>2,783</b>	<b>5,207</b>	<b>133,047</b>
<b>6. Cost of Elections ..</b>	<b>2,459</b>	<b>8,534</b>	<b>1,858</b>		<b>23</b>	<b>12</b>	<b>(g)</b>	<b>12,886</b>
<b>7. Royal Commissions and Select Committees ..</b>	<b>10,737</b>	<b>10,466</b>	<b>2,706</b>	<b>4,395</b>	<b>4,385</b>	<b>652</b>	<b>915</b>	<b>34,256</b>
<b>GRAND TOTAL ..</b>	<b>287,001</b>	<b>148,029</b>	<b>91,717</b>	<b>89,626</b>	<b>52,496</b>	<b>56,554</b>	<b>30,319</b>	<b>755,742</b>
<b>Cost per head of population ..</b>	<b>1s. 1.7d.</b>	<b>1s. 6.4d.</b>	<b>1s. 3.4d.</b>	<b>2s. 7.0d.</b>	<b>2s. 4.3d.</b>	<b>3s. 7.3d.</b>	<b>2s. 10.8d.</b>	<b>3s. 0.1d.</b>

\* See preceding paragraph. (a) Including Lower House. (b) Included in Upper House. (c) Included in Miscellaneous. (d) See note (e). Ministers are allowed £1 per day when travelling. (e) £5,000 is paid to the Railway Department to cover issue of passes to State Governor and Staff, members of Parliament of Victoria and other States, and Executive Councillors. (f) Not available. Each member of both Houses has a pass for the whole of the State Railways. (g) Included in Electoral Office. (h) Exclusive of travelling expenses of members, free passes, special trains, etc. (i) Included in cost of elections.

## § 2. Parliaments and Elections.

1. **Qualifications for Membership and for Franchise.**—The conspectus in § 4 of this section gives particulars as to the legislative chambers in the Commonwealth and State Parliaments, and shews concisely the qualifications necessary for membership and for the franchise in each House. Disqualification of persons otherwise eligible, either as members or voters, are generally on the usual grounds of being of unsound mind or attainted of treason, being convicted of certain offences, and, as regards membership, on the grounds of holding a place of profit under the Crown, being pecuniarily interested in a Government contract, or being an undischarged bankrupt.

2. **The Federal Parliament.**—The Senate consists of 36 members, six being returned by each of the original federating States. Members of this chamber are elected for a term of six years, but by a provision in the Constitution a certain number retire at the end of every third year, although they are eligible for re-election. In accordance with the Constitution the total number of members of the House of Representatives must be as nearly as possible double that of the Senate. In the House of Representatives the States are represented on a population basis, and the numbers stand at present as follows :—New South Wales, 27; Victoria, 21; Queensland, 10; South Australia, 7; Western Australia, 5; Tasmania, 5—total, 75. The Constitution provides for a minimum of five members for each original State. Members of the House of Representatives are elected for the duration of the Parliament, which is limited to three years. In elections for Senators, each State is counted as a single electorate, but an elaborate scheme of subdivision had to be undertaken in order to provide workable electorates in each State for members of the House of Representatives. Members of both Houses are paid at the rate of £1,000 per annum. Further information regarding the Senate and the House of Representatives is given on pages 16 to 20 hereinbefore.

*Particulars of Elections.* There have been six complete Parliaments since the inauguration of Federation. The dates of the opening and dissolution of these Parliaments are given on page 32. The fifth Parliament, which was opened on the 9th July, 1913, was dissolved on the 27th June, 1914, in somewhat unusual circumstances. Under Section 27 of the Constitution, it is provided that, should the Senate fail to pass, or pass with amendments, any proposed law previously passed by the House of Representatives, and should the latter House, after a specified interval, again pass the proposed law, with or without the amendments of the Senate, and the Senate for a second time reject it or pass it with amendments to which the lower House will not agree, then the Governor-General may dissolve the two Houses simultaneously. For the first time in the history of the Commonwealth this deadlock between the Senate and the House of Representatives occurred in the second session of the fifth Parliament, and, in accordance with the section of the Constitution referred to above, both Houses were dissolved by the Governor-General. The first session of the eighth Parliament opened on the 26th February, 1920. Particulars regarding Commonwealth elections may be found in the tables given hereunder :—

### FEDERAL ELECTION, MARCH, 1901.

State.	Number of Electors.		Electors who Voted.		Percentage of Electors who Voted.	
	Total.	In contested Districts for the House of Representatives.	Senate.	House of Representatives.	Senate.	House of Representatives.
New South Wales ..	331,765	317,902	218,456	211,035	65.81	66.38
Victoria ..	280,661	233,051	149,012	130,610	53.09	56.04
Queensland ..	103,806	103,806	51,336	62,656	49.45	60.35
South Australia ..	154,281	154,281	62,952	62,892	40.80	40.76
Western Australia ..	87,920	70,230	28,733	25,945	32.68	36.95
Tasmania ..	39,528	39,528	18,822	18,572	47.62	46.99
Commonwealth ..	997,961	918,798	529,311	511,710	53.04	55.69

FEDERAL ELECTIONS OF 16th DECEMBER, 1903, 12th DECEMBER, 1906, 13th APRIL, 1910, 31st MAY, 1913, 5th SEPTEMBER, 1914, 5th MAY, 1917, AND 19th DECEMBER, 1919.

State.	Electors Enrolled.			Electors to whom Ballot Papers were Issued.			Percentage of Voters to Electors Enrolled.			
	Males.	Fem.	Total.	Males.	Fem.	Total.	Males.	Fem.	Total.	
THE SENATE.										
New South Wales	1903	360,285	326,764	687,049	189,877	134,487	324,364	52.70	41.16	47.21
	1906	392,077	345,522	737,599	229,654	151,682	381,336	58.57	43.90	51.70
	1910	444,269	390,393	834,662	301,167	211,635	512,802	67.79	54.21	61.44
	1913	554,028	482,159	1,036,187	405,152	312,703	717,855	73.13	64.85	69.28
	1914	576,809	506,820	1,083,629	407,464	294,939	702,403	70.70	58.19	64.85
	1917	566,345	528,489	1,094,834	430,514	343,143	773,657	76.02	64.93	70.66
	1919	550,363	529,076	1,079,439	400,477	317,088	717,565	72.77	59.93	66.48
Victoria	1903	302,069	310,403	612,472	171,839	141,648	313,487	56.89	45.63	51.18
	1906	335,886	336,168	672,054	209,252	171,933	381,185	62.30	51.14	56.72
	1910	346,050	357,649	703,699	245,666	222,869	468,535	70.99	62.32	66.58
	1913	407,852	422,539	830,391	326,856	300,005	626,861	80.14	71.00	75.49
	1914	401,055	413,685	814,740	335,057	309,841	644,898	83.54	74.90	79.15
	1917	393,794	425,913	819,707	345,804	342,131	687,935	87.81	80.33	83.92
	1919	403,650	433,758	837,408	323,187	314,911	638,098	80.07	72.60	76.20
Queensland	1903	127,914	99,106	227,020	79,938	44,569	124,507	62.49	44.94	54.83
	1906	150,037	121,072	271,109	79,567	44,972	124,539	53.03	37.14	45.94
	1910	158,436	120,595	279,031	104,570	66,064	170,634	66.00	54.78	61.15
	1913	209,727	156,355	366,082	163,380	117,145	280,525	79.03	74.92	77.26
	1914	207,587	160,620	368,207	163,709	112,695	276,404	78.86	70.16	75.07
	1917	204,280	174,016	378,296	183,486	153,265	336,751	89.82	88.08	89.02
	1919	209,437	179,763	389,200	176,489	153,742	330,231	84.27	85.52	84.85
South Australia	1903	85,947	81,828	167,775	35,736	19,049	54,785	44.45	23.28	32.65
	1906	97,454	95,664	193,118	43,318	27,199	70,517	44.45	28.43	36.51
	1910	105,301	102,354	207,655	63,384	47,119	110,503	60.19	46.03	53.22
	1913	124,222	119,804	244,026	103,739	91,724	195,463	83.51	76.56	80.10
	1914	131,758	125,595	257,353	110,049	96,195	206,244	83.52	76.59	80.14
	1917	132,260	133,519	265,779	103,707	87,471	191,178	78.41	65.51	71.93
	1919	132,541	135,694	268,235	97,284	80,808	178,092	73.40	59.55	66.40
Western Australia	1903	74,754	42,188	116,942	26,878	6,270	33,148	35.96	14.86	28.35
	1906	91,427	54,046	145,473	37,180	15,532	52,712	40.67	28.74	36.23
	1910	80,996	53,983	134,979	53,704	30,189	83,893	66.30	55.92	62.15
	1913	106,264	73,520	179,784	80,011	52,138	132,149	75.29	70.92	73.50
	1914	107,005	75,102	182,107	79,150	50,984	130,134	73.97	67.89	71.46
	1917	93,049	74,981	168,030	76,518	54,154	130,672	82.23	72.22	77.77
	1919	87,921	75,623	163,544	60,731	42,504	103,235	69.07	56.21	63.12
Tasmania	1903	43,515	38,753	82,268	23,729	13,292	37,021	54.53	34.30	45.00
	1906	47,306	42,903	90,209	29,164	19,715	48,879	61.65	45.95	54.18
	1910	51,731	46,725	98,456	33,539	24,070	57,609	64.83	51.51	58.51
	1913	54,856	51,890	106,746	43,539	36,589	80,398	79.37	71.03	75.32
	1914	54,754	51,225	105,979	44,504	37,749	82,253	81.28	73.69	77.61
	1917	54,405	54,276	108,681	44,634	37,974	82,608	82.04	69.96	76.01
	1919	55,906	56,130	112,036	36,366	29,350	65,716	65.05	52.29	58.66
Commonwealth	1903	994,484	899,102	1,893,586	527,997	359,315	887,312	53.09	39.96	46.86
	1906	1,114,187	995,375	2,109,562	628,135	431,033	1,059,168	56.38	43.30	50.21
	1910	1,186,783	1,071,699	2,258,482	802,030	601,946	1,403,976	67.58	56.17	62.16
	1913	1,453,949	1,306,267	2,760,216	1,122,677	910,574	2,033,251	77.22	69.71	73.66
	1914	1,478,463	1,333,047	2,811,515	1,139,933	902,403	2,042,336	77.10	67.69	72.64
	1917	1,444,133	1,391,194	2,835,327	1,184,663	1,018,138	2,202,801	82.03	73.18	77.69
	1919	1,439,818	1,410,044	2,849,862	1,094,534	938,403	2,032,937	76.02	65.55	71.33

THE HOUSE OF REPRESENTATIVES. (a)

New South Wales	1903	303,254	274,763	578,017	164,133	118,381	282,514	54.12	43.08	48.88
	1906	363,723	314,777	678,500	216,150	141,227	357,377	59.43	44.87	52.67
	1910	431,702	379,927	811,629	294,049	207,868	501,917	68.11	54.71	61.84
	1913	554,028	482,159	1,036,187	405,152	312,703	717,855	73.13	64.85	69.28
	1914	491,086	420,906	912,992	351,172	257,581	608,753	71.51	59.92	66.10
	1917	484,854	447,437	932,291	370,618	292,925	663,543	76.44	65.47	71.17
	1919	527,779	508,129	1,035,908	385,614	308,183	693,797	73.06	60.65	66.97
Victoria	1903	241,134	247,089	488,223	142,460	120,329	262,789	59.08	48.70	53.83
	1906	335,886	336,168	672,054	209,266	171,999	381,265	62.30	51.16	56.73
	1910	346,050	357,649	703,699	245,663	222,869	468,535	70.99	62.32	66.58
	1913	407,852	422,539	830,391	326,856	300,005	626,861	80.14	71.00	75.49
	1914	321,655	336,781	658,436	272,622	256,757	529,379	84.76	76.24	80.10
	1917	340,025	366,135	706,160	299,173	295,404	594,577	87.99	80.68	84.20
	1919	381,581	412,129	793,710	306,547	300,229	606,776	80.34	72.85	76.45
Queensland	1903	114,550	88,375	202,925	74,042	41,689	115,731	64.64	47.17	57.03
	1906	150,037	121,072	271,109	79,540	44,942	124,482	53.01	37.12	45.92
	1910	158,436	120,595	279,031	104,570	66,064	170,634	66.00	54.78	61.15
	1913	206,727	156,355	363,082	163,380	117,145	280,525	79.03	71.92	77.26
	1914	163,836	138,534	302,370	132,782	98,074	230,856	81.05	70.79	76.35
	1917	204,280	174,016	378,296	183,486	153,265	336,750	89.82	88.08	89.02
	1919	209,437	179,763	389,200	176,487	153,742	330,229	84.27	85.52	84.85

(a) For the House of Representatives the number of electors enrolled in contested divisions only is given.

FEDERAL ELECTIONS OF 16TH DECEMBER, 1903, 12TH DECEMBER, 1906,  
13TH APRIL, 1910, 31ST MAY, 1913, 5TH SEPTEMBER, 1914, 5TH MAY, 1917,  
AND 19TH DECEMBER, 1919—*continued.*

State.	Electors Enrolled.			Electors to whom Ballot Papers were Issued.			Percentage of Voters to Electors Enrolled.		
	Males.	Fem.	Total.	Males.	Fem.	Total.	Males.	Fem.	Total.

THE HOUSE OF REPRESENTATIVES—*continued.*

South Australia ..	1903	23,856	25,789	49,645	12,394	7,728	20,122	51.95	29.97	40.53
	1906	42,065	38,578	80,643	19,850	12,669	32,519	47.19	32.84	40.32
	1910	59,581	61,594	121,175	37,189	29,852	67,041	62.42	48.47	55.33
	1913	90,009	85,304	175,313	74,316	65,704	140,020	82.57	77.02	79.87
	1914	116,594	111,372	227,966	97,182	84,956	182,138	83.35	76.28	79.90
	1917	116,568	114,749	231,317	91,642	75,450	167,092	78.61	65.75	72.23
	1919	132,541	135,694	268,235	97,284	80,808	178,092	73.40	59.55	66.40
Western Australia	1903	41,500	28,324	69,824	16,824	4,409	21,233	40.54	15.57	30.41
	1906	91,427	54,046	145,473	36,976	15,740	52,716	40.44	29.12	36.24
	1910	80,996	53,983	134,979	53,704	30,189	83,893	66.30	55.92	62.15
	1913	87,570	62,088	149,658	65,754	44,310	110,064	75.09	71.37	73.93
	1914	89,824	64,736	154,560	66,221	44,456	110,677	73.72	68.67	71.61
	1917	74,370	61,940	136,310	61,531	45,112	106,643	82.74	72.83	78.24
	1919	87,921	75,623	163,544	60,731	42,504	103,235	69.07	56.21	63.12
Tasmania ..	1903	43,515	38,753	82,268	23,729	13,284	37,013	54.53	34.28	44.99
	1906	37,779	34,839	72,618	23,753	16,441	40,194	62.87	47.19	55.35
	1910	51,731	46,725	98,456	33,539	24,070	57,609	64.83	51.51	58.51
	1913	54,856	51,890	106,746	43,539	36,859	80,398	79.37	71.03	75.32
	1914	42,995	41,122	84,117	34,789	30,314	65,103	80.91	73.72	77.40
	1917	42,430	43,661	86,091	35,103	30,770	65,873	82.73	70.47	76.52
	1919	55,906	56,130	112,036	36,366	29,350	65,716	65.05	52.29	58.66
Commonwealth	1903	767,809	703,098	1,470,902	432,582	305,820	739,402	56.47	43.50	50.27
	1906	1,020,917	899,480	1,920,397	585,535	403,018	988,553	57.35	44.81	51.48
	1910	1,128,496	1,020,473	2,148,969	768,714	580,912	1,349,626	68.12	56.93	62.50
	1913	1,401,042	1,260,335	2,661,377	1,078,997	876,726	1,955,723	77.01	69.56	73.49
	1914	1,225,990	1,122,451	2,348,441	954,768	772,138	1,726,906	77.88	68.79	73.53
	1917	1,262,527	1,207,938	2,470,465	1,041,552	892,926	1,934,478	82.50	73.92	78.30
	1919	1,395,165	1,367,468	2,762,633	1,063,029	914,816	1,977,845	76.19	66.90	71.59

In the Senate the figures for the year 1906 shew that ballot-papers were issued to 50.21 per cent. of the electors, and are a slight improvement on those for the year 1903, when only about 47 per cent. of the electors visited the polls. There was, however, a substantial increase in the number of electors who voted at the 1910 elections, 62.16 per cent. of the persons on the rolls exercising the franchise. The elections of 1913 shewed a gratifying increase over those of 1910, no less than 73.66 per cent. of the persons on the rolls exercising their right to vote, while in 1914, the percentage was almost as high, viz., 72.64 per cent. It will be seen from the foregoing table that the electors of the Commonwealth are setting a higher value on the privilege of the franchise. The percentage of female voters in 1914, while still considerably below that of the males, shews a marked increase on that of female voters in the earlier years of Federation. At the elections in 1917, the proportion of voters of both sexes was the highest yet recorded. In 1919 the proportion is lower, approximating to the results of the 1913 and 1917 elections.

3. Commonwealth Referenda, 26th April, 1911.—Two proposed laws for the alteration of the Constitution were submitted to the people for acceptance or rejection on the 26th April, 1911. They were (a) The Constitution Alteration (Legislative Powers) 1910, and (b) the Constitution Alteration (Monopolies) 1910. If, in a majority of the States, a majority of the electors voting approve the proposed laws, and if a majority of all the electors voting also approve them, they are presented to the Governor-General for the King's assent. Particulars of the alterations proposed have already been given (see page 21).

Results of the Referenda of 1911 are given in the following table, which shews the number of electors enrolled, electors to whom ballot papers were issued, and the number of votes in favour of, and against, each of the proposed laws. As will be seen, neither of the proposed laws was approved by the people.

**COMMONWEALTH REFERENDA (LEGISLATIVE POWERS AND MONOPOLIES),  
TAKEN ON 26th APRIL, 1911.**

State.	Electors Enrolled.			Electors to whom Ballot Papers were Issued.			Legislative Powers.		Monopolies.	
	Males.	Females.	Total.	Males.	Fe- males.	Total.	Total Number of Votes given in Favour of the Prop'd Law.	Total Number of Votes given Not in Favour of the Prop'd Law.	Total Number of Votes given in Favour of the Prop'd Law.	Total Number of Votes given Not in Favour of the Prop'd Law.
N.S.W. . .	461,196	406,998	868,194	233,668	150,520	384,188	135,968	240,605	138,237	238,177
Victoria . .	355,381	367,996	723,377	236,194	212,372	448,566	170,238	270,390	171,453	268,743
Q'land . . .	167,725	125,278	293,003	101,245	60,890	162,135	69,552	89,420	70,259	88,472
S. Aust. . .	110,217	105,810	216,027	72,761	61,041	133,802	50,358	81,904	50,835	81,479
W. Aust. . .	83,850	54,847	138,697	42,598	18,884	61,482	33,043	27,185	33,592	26,561
Tasmania . .	54,008	48,318	102,326	33,103	24,950	58,053	24,147	33,200	24,292	32,960
Totals for C'wealth	1,232,377	1,109,247	2,341,624	719,569	528,657	1,248,226	483,356	742,704	488,668	736,392

4. **Commonwealth Referenda, 31st May, 1913.**—At the general elections that took place on 31st May, 1913, the question of altering the Constitution so as to extend the powers of the Commonwealth was again submitted to the people. The particulars of the proposed laws have been given on page 21 hereinbefore. The results of the Referenda of 1913 are given below, and, as will be seen, none of the proposed laws was approved by the electors.

**COMMONWEALTH REFERENDA (LEGISLATIVE POWERS) TAKEN ON 31st MAY, 1913.**

State.	Electors Enrolled.			Electors to whom Ballot Papers were Issued.			Percentage of Voters to Electors Enrolled.		
	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.
N.S.W. . .	554,028	482,159	1,036,187	405,152	312,703	717,855	73.13	64.85	69.28
Victoria . .	407,852	422,539	830,391	326,856	300,005	626,861	80.14	71.00	75.49
Queensland . .	206,727	156,355	363,082	163,380	117,145	280,525	79.03	74.92	77.26
South Aust. . .	124,222	119,804	244,026	103,739	91,724	195,463	83.51	76.56	80.10
Western Aust.	106,264	73,520	179,784	80,011	52,138	132,149	75.29	70.92	73.50
Tasmania . .	54,856	51,890	106,746	43,539	36,859	80,398	79.37	71.03	75.32
Totals for Com- monwealth	1,453,949	1,306,267	2,760,216	1,122,677	910,574	2,033,251	77.22	69.71	73.66

The following table shows the number of votes cast for and against each of the proposed laws in each of the States :—

**COMMONWEALTH REFERENDA, 31st MAY, 1913.—RESULTS OF THE VOTING ON EACH  
PROPOSED LAW.**

State.	Trade and Commerce.		Corporations.		Industrial Matters.		Railway Disputes.		Trusts.		Nationalisation of Monopolies.	
	Votes In Favour of Pro- posed Law.	Votes Not In Favour of Pro- posed Law.	Votes In Favour of Pro- posed Law.	Votes Not In Favour of Pro- posed Law.	Votes In Favour of Pro- posed Law.	Votes Not In Favour of Pro- posed Law.	Votes In Favour of Pro- posed Law.	Votes Not In Favour of Pro- posed Law.	Votes In Favour of Pro- posed Law.	Votes Not In Favour of Pro- posed Law.	Votes In Favour of Pro- posed Law.	Votes Not In Favour of Pro- posed Law.
N.S.W. . .	317,848	359,418	317,668	361,255	318,622	361,044	316,928	361,743	319,150	358,155	301,192	341,724
Victoria . .	297,290	307,975	298,479	308,915	297,892	309,804	296,255	310,921	301,729	305,268	287,379	298,323
Q'land . . .	146,187	122,813	146,936	123,632	147,171	123,554	146,521	123,859	147,871	122,088	139,019	117,609
S. Aust. . .	96,085	91,144	96,309	91,273	96,626	91,361	96,072	91,262	96,400	90,185	91,411	86,915
W. Aust. . .	66,349	59,181	66,595	59,445	66,451	59,612	65,957	59,965	67,342	58,312	64,988	57,184
Tasmania . .	34,660	42,084	34,724	42,304	34,839	42,236	34,625	42,296	34,839	41,935	33,176	40,189
Totals	958,419	982,615	960,711	986,824	961,601	987,611	956,358	990,046	967,331	975,943	917,165	941,947



5. **Commonwealth Referendum, 28th October, 1916.**—A special referendum was held on the 28th October, 1916, when the following question with regard to military service was submitted to the people:—"Are you in favour of the Government having, in this grave emergency, the same compulsory powers over citizens in regard to requiring their military service, for the term of this War, outside the Commonwealth, as it now has in regard to military service within the Commonwealth?" In New South Wales, Queensland and South Australia the majority of voters were not in favour of the prescribed question; and in Victoria, Western Australia and Tasmania the majority of votes were cast in its favour, the net result being a majority of 72,476 votes not in favour.

**COMMONWEALTH REFERENDUM (MILITARY SERVICE), TAKEN ON  
28th OCTOBER, 1916.**

State.	Electors Enrolled.			Electors to whom Ballot Papers were Issued.			Percentage of Voters to Electors Enrolled.		
	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.
N.S.W. ..	556,187	499,799	1,055,986	475,669	382,730	858,399	85.52	76.58	81.29
Victoria ..	398,975	425,997	824,972	354,067	342,617	696,684	88.74	80.43	84.45
Queensland ..	199,602	166,440	366,042	173,448	136,473	309,921	86.90	81.99	84.67
South Australia	131,636	131,145	262,781	113,461	97,791	211,252	86.19	74.57	80.39
Western Aust.	94,456	73,146	167,602	82,067	58,581	140,648	86.88	80.09	83.92
Tasmania ..	54,758	53,117	107,875	47,020	41,211	88,231	85.87	77.59	81.79
Federal Territories ..	3,296	1,276	4,572	2,576	892	3,468	78.16	69.91	75.85
Total ..	1,438,910	1,350,920	2,789,830	1,248,308	1,060,295	2,308,603	86.75	78.49	82.75

The following table shows the number of votes cast in each State in favour and not in favour of the prescribed question:—

**COMMONWEALTH REFERENDUM, 28th OCTOBER, 1916.—RESULTS OF VOTING  
ON THE PRESCRIBED QUESTION.**

State.	Votes given in Favour of the Prescribed Question.	Votes given Not in Favour of the Prescribed Question.	Percentage of Votes recorded in Favour of the Prescribed Question.	
			To Formal Votes.	To Electors Enrolled.
New South Wales ..	356,805	474,544	42.92	33.79
Victoria ..	353,930	328,216	51.88	42.90
Queensland ..	144,200	158,051	47.71	39.39
South Australia ..	87,924	119,236	42.44	33.46
Western Australia ..	94,069	40,884	69.71	56.13
Tasmania ..	48,493	37,833	56.17	44.95
Federal Territories ..	2,136	1,269	62.73	46.72
Total ..	1,087,557	1,160,033	48.39	38.98

6. **Commonwealth Referendum, 20th December, 1917.**—A further referendum was held on 20th December, 1917, the question being, "Are you in favour of the proposal of the Commonwealth Government for reinforcing the Australian Imperial Force overseas?" The proposal was that, while voluntary enlistment was to continue, compulsory reinforcements should be called up by ballot to make the total reinforcements up to 7,000 per month. In New South Wales, Victoria, Queensland and South Australia the majority of voters were not in favour of the prescribed question; and in Western Australia, Tasmania and the Federal Territories, the majority of votes were cast in its favour, the net result being a majority of 166,588 votes not in favour.

**COMMONWEALTH REFERENDUM (MILITARY SERVICE), TAKEN ON  
20th DECEMBER, 1917.**

State.	Electors Enrolled.			Electors to whom Ballot Papers were Issued.			Percentage of Voters to Electors Enrolled.		
	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.
N.S.W. ..	540,713	515,170	1,055,883	473,693	380,201	853,894	87.61	73.80	80.87
Victoria ..	383,511	423,820	807,331	348,211	330,585	678,806	90.80	78.00	84.08
Queensland ..	202,656	175,722	378,378	175,959	134,205	310,164	86.83	76.37	81.97
South Aust. ..	129,249	132,412	261,661	107,116	90,854	197,970	82.88	68.61	75.66
Western Aust. ..	88,126	74,221	162,347	81,365	54,223	135,593	92.33	73.06	83.52
Tasmania ..	53,030	53,773	106,803	43,981	34,811	78,792	82.94	64.74	73.77
Federal Territories ..	2,855	1,182	4,037	2,254	748	3,002	78.95	63.28	74.36
Total ..	1,400,140	1,376,300	2,776,440	1,232,579	1,025,642	2,258,221	88.03	74.52	81.34

The votes cast in each State were as follows :—

**COMMONWEALTH REFERENDUM, 20th DECEMBER, 1917.—RESULTS OF  
VOTING ON THE PRESCRIBED QUESTION.**

State.	Votes given in Favour of the Prescribed Question.	Votes given Not in Favour of the Prescribed Question.	Percentage of Votes recorded in Favour of the Prescribed Question.	
			To Formal Votes.	To Electors Enrolled.
New South Wales ..	341,256	487,774	41.16	32.32
Victoria ..	329,772	332,490	49.79	40.85
Queensland ..	132,771	168,875	44.02	35.09
South Australia ..	86,663	106,364	44.90	33.12
Western Australia ..	84,116	46,522	64.39	51.81
Tasmania ..	38,881	38,502	50.24	36.40
Federal Territories ..	1,700	1,220	58.22	42.11
Total ..	1,015,159	1,181,747	46.21	36.56

**7. Commonwealth Referenda, 19th December, 1919.**—Referenda were taken on 19th December, 1919, regarding a constitutional extension of Commonwealth powers in legislation and the nationalization of monopolies. In each case the majority of votes was not in favour of the proposed extension.

**COMMONWEALTH REFERENDA (LEGISLATIVE POWERS AND  
NATIONALIZATION OF MONOPOLIES), 19th DECEMBER, 1919.**

State.	Electors Enrolled.			Electors to whom Ballot Papers were Issued.			Percentage of Electors to whom Ballot Papers were Issued to Electors Enrolled.		
	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.
N.S.W. ..	550,363	529,076	1,079,439	400,477	317,088	717,565	72.77	59.93	66.48
Victoria ..	403,650	433,758	837,408	323,187	314,911	638,098	80.07	72.60	76.20
Queensland ..	209,437	179,763	389,200	176,489	153,742	330,231	84.27	85.52	84.85
South Aust. ..	132,541	135,694	268,235	97,284	80,808	178,092	73.40	59.55	66.40
Western Aust. ..	87,921	75,623	163,544	60,731	42,504	103,235	69.07	56.21	63.12
Tasmania ..	55,066	56,130	111,036	36,366	29,350	65,716	65.05	52.29	58.66
Total ..	1,439,818	1,410,044	2,849,862	1,094,534	938,403	2,032,937	76.02	65.55	71.33

The votes cast in each State for each of the questions were as follows :—

**COMMONWEALTH REFERENDA, 19th DECEMBER, 1919.—RESULTS OF VOTING  
ON THE PRESCRIBED QUESTIONS.**

State.	Proposed Law.	Votes given in Favour of Proposed Law.	Votes given Not in Favour of Proposed Law.	Percentage of Votes recorded in Favour of Proposed Law.	
				To Formal Votes.	To Electors Enrolled.
New South Wales	Constitution Alteration (Legislative Powers) 1919 .. ..	259,751	390,450	39·95	24·06
	Constitution Alteration (Nationalization of Monopolies) 1919 ..	227,156	365,847	38·31	21·04
Victoria	Constitution Alteration (Legislative Powers) 1919 .. ..	369,210	201,869	64·65	44·09
	Constitution Alteration (Nationalization of Monopolies) 1919 ..	324,343	188,129	63·29	38·73
Queensland	Constitution Alteration (Legislative Powers) 1919 .. ..	175,225	130,299	57·35	45·02
	Constitution Alteration (Nationalization of Monopolies) 1919 ..	162,062	122,650	56·92	41·64
South Australia	Constitution Alteration (Legislative Powers) 1919 .. ..	40,520	119,789	25·28	15·11
	Constitution Alteration (Nationalization of Monopolies) 1919 ..	38,503	112,259	25·54	14·35
Western Australia	Constitution Alteration (Legislative Powers) 1919 .. ..	48,142	44,892	51·75	29·44
	Constitution Alteration (Nationalization of Monopolies) 1919 ..	45,285	38,584	53·99	27·70
Tasmania	Constitution Alteration (Legislative Powers) 1919 .. ..	18,509	36,861	33·43	16·52
	Constitution Alteration (Nationalization of Monopolies) 1919 ..	16,531	31,982	34·08	14·76
Total ..	Constitution Alteration (Legislative Powers) 1919 .. ..	911,357	924,160	49·65	31·98
	Constitution Alteration (Nationalization of Monopolies) 1919 ..	813,880	859,451	48·64	28·56

8. **The Parliament of New South Wales.**—The Legislative Council in this State is a nominee chamber, the Legislative Assembly being an elective body. Theoretically the Legislative Council may contain an unlimited number of members, but in practice the number is restricted to about sixty, the members at the latest available date being sixty-eight. The tenure of the seat is for life; four-fifths of the members must be persons not holding any paid office under the Crown, but this is held not to include officers of His Majesty's sea or land forces on full or half-pay, or retired officers on pensions. The

Legislative Assembly consists of ninety members, who hold their seats during the existence of the Parliament to which they are elected. Nine electorates return five members each, and fifteen return three members each. The duration of Parliament is limited to three years.

*Particulars of Elections.* Since the introduction of responsible government in New South Wales there have been twenty-four complete Parliaments, the first of which opened on the 22nd May, 1856, and was dissolved on the 19th December, 1857, while the twenty-third opened on the 23rd December, 1913, and closed on the 21st February, 1917. The average duration of the Parliaments was two years and five months. The twenty-fourth Parliament was opened on the 17th April, 1917, and it was dissolved on the 18th February, 1920. The next Parliament was elected on the 20th March, 1920, under the proportional representation system. Complete details of the voting are not yet available. Particulars of voting at elections from 1894 to 1917 are given below :—

LEGISLATIVE ASSEMBLY ELECTIONS, NEW SOUTH WALES, 1894 TO 1917.

Date of Opening of Parliament.	Electors upon the Roll.	Members Returned.	Members Unopposed.	Contested Electorates.			
				Electors upon the Roll.	Votes Recorded.	Percentage of Votes Recorded	Percentage of Informal Votes.
7th August, 1894.. ..	298,817	125	1	254,105	204,246	80.38	1.62
13th August, 1895 ..	267,458	125	8	238,233	153,034	64.24	0.88
16th August, 1898 ..	324,339	125	3	294,481	178,717	60.69	0.92
23rd July, 1901 .. ..	346,184	125	13	270,861	195,359	72.13	0.79
23rd August, 1904 { Males	363,062	90	2	304,396	226,057	74.26	0.59
{ Females	326,428			262,433	174,538	66.51	
2nd October, 1907 { Males	392,845	90	5	370,715	267,301	72.10	2.87
{ Females	353,055			336,680	204,650	60.78	
15th Nov., 1910.. { Males	458,626	90	3	444,242	322,199	72.53	1.78
{ Females	409,069			400,139	262,154	65.52	
23rd Dec., 1913 .. { Males	553,633	90	3	534,379	385,838	72.20	2.10
{ Females	484,366			468,437	302,389	64.55	
17th April, 1917 { Males	574,308	90	8	525,681	328,030	62.40	0.94
{ Females	535,522			487,585	295,354	60.57	

The franchise was extended to women (*Women's Franchise Act*) in 1902, and was exercised for the first time at a State election in 1904.

9. *The Parliament of Victoria.*—Both of the Victorian legislative chambers are elective bodies, but there is a considerable difference in the number of members of each House, as well as in the qualifications necessary for members and electors. The number of members in the Upper House in March, 1920, was 34, and in the Lower House, 65. In the Legislative Council the tenure of the seat is for six years, but one member for each province retires every third year, except in the case of a dissolution, when one half of the newly elected members hold their seats for three years only. Members of the Legislative Assembly are elected for the duration of Parliament, which is limited to three years. The franchise was extended to women by the *Adult Suffrage Act 1908*. An elector for the Legislative Assembly may only vote once, plurality of voting having been abolished in 1899; an elector, however, qualified in more than one district, may select that for which he desires to record his vote. A preferential system of voting (see Year Book No. 6, page 1182) was for the first time adopted in Victoria at the election held in November, 1911.

*Particulars of Elections.* Since the introduction of responsible government in Victoria there have been twenty-four complete Parliaments, the first of which opened on the 21st November, 1856, and closed on the 9th August, 1859, while the twenty-fourth closed on the 23rd October, 1917. The first session of the twenty-fifth Parliament

opened on the 27th November, 1917, and closed on the 9th April, 1918: the second session was opened on the 9th July, 1918, and closed on the 7th January, 1919; the third session was opened on 8th July, 1919, and closed on 7th January, 1920.

### PARTICULARS OF VICTORIAN ELECTIONS, 1902 TO 1919.

Year.	Legislative Council.				Legislative Assembly.			
	Electors on Roll.	Electors in Contested Districts.	Voters in Contested Districts.	Per-centage.	Electors on Roll.	Electors in Contested Districts.	Voters in Contested Districts.	Per-centage.
1902..	134,087	(a)	(a)	(a)	290,241	216,063	141,471	65.47
1904..	172,526	104,865	66,182	63.11	264,709	223,600	149,192	66.72
1907..	180,738	78,512	27,152	34.58	261,088	191,131	117,098	61.26
1908..	185,234	(a)	(a)	(a)	263,876	164,919	88,461	53.64
1910..	240,520	136,479	40,053	35.21	487,661	(a)	(a)	(a)
1911..	249,481	(a)	(a)	(a)	701,451	619,644	394,189	63.61
1913..	270,175	99,646	47,719	47.89	670,775	(a)	(a)	(a)
1914..	284,089	(a)	(a)	(a)	810,026	593,334	319,950	53.92
1916..	300,321	92,421	34,853	37.71	767,378	(a)	(a)	(a)
1917..	308,339	(a)	(a)	(a)	828,230	658,488	356,999	54.21
1918..	310,987	(a)	(a)	(a)	816,172	(a)	(a)	(a)
1919..	317,593	133,058	40,393	30.35	805,703	(a)	(a)	(a)

(a) Not contested.

As the table shews, the number of voters for the Legislative Council is considerably less than that for the Legislative Assembly.

10. **The Parliament of Queensland.**—No limit is set by the Constitution Act to the number of members of the Legislative Council of Queensland, the total at the latest available date being sixty-four. Members are appointed by the State Governor, and it is provided that not less than four-fifths of the members must consist of persons not holding any office under the Crown, except officers of His Majesty's sea or land forces on full or half-pay, or retired officers on pensions. The members are nominated for life. The Legislative Assembly is composed of seventy-two members, and the State is divided into that number of electoral districts. A modified system of optional preferential voting is in operation in Queensland. (See Year Book No. 6, page 1183.)

*Particulars of Elections.* Since the establishment of responsible government in Queensland there have been nineteen complete Parliaments, the first of which opened on the 29th May, 1860, and dissolved on the 20th May, 1863, while the first session of the twentieth Parliament opened on the 12th July, 1915. At the elections held in May, 1915, the principle of compulsory voting was introduced for the first time in Australia. It will be seen that of the total number of electors enrolled, 88.14 per cent. went to the polls. Statistics regarding the last eight elections are given below:—

### ELECTIONS FOR QUEENSLAND LEGISLATIVE ASSEMBLY, 1902 TO 1918.

Year.	Number of Seats.	Number of Candidates Nominated.	Candidates sent to the Poll.	Electors Enrolled.			Electors who Voted.			Percentage of Electors Voting in Contested Electorates.		
				Males.	Fe-males.	Total.	Males.	Fe-males.	Total.	Males.	Fe-males.	Total.
1902	72	159	154	108,548	..	108,548	80,076	..	80,076	78.88	..	78.88
1904	72	140	117	103,943	..	103,943	60,265	..	60,265	74.16	..	74.16
1907	72	185	179	125,140	95,049	220,189	(a)	(a)	152,049	73.42	68.64	71.61
1908	72	137	125	117,385	88,507	205,892	77,632	61,115	138,747	66.13	69.05	67.39
1909	72	145	133	135,841	106,913	242,754	89,609	66,809	156,418	75.34	69.36	72.67
1912	72	144	139	173,801	135,789	309,590	122,844	95,795	218,639	75.92	75.02	75.52
1915	72	148	138	184,627	150,668	335,195	140,396	125,844	266,240	86.46	90.09	88.14
1918	72	(b)	149	233,342	191,074	424,416	176,768	163,901	340,669	75.75	85.78	80.27

(a) Incomplete; percentages based on available returns.

(b) Not available.

The election of 1907 was the first State election in Queensland at which women voted, the privilege being conferred under the *Elections Acts Amendment Act 1905*. Some of the returns did not separate the sexes in the figures respecting the number of electors who voted, and the percentage of males and females was therefore calculated on the total returns where the subdivision was made.

11. **The Parliament of South Australia.**—In this State there is a Legislative Council composed of twenty members and a House of Assembly with forty-six members, both chambers being elective. The State is divided into five districts, which return four members each to the Legislative Council. For the House of Assembly, eight districts return three members each, and eleven districts two members each.

*Particulars of Elections.* Since the inauguration of responsible government in South Australia there have been twenty-two complete Parliaments, the first of which was opened on the 22nd April, 1857, and dissolved on the 1st September, 1859, while the twenty-second was opened on the 8th July, 1915, and terminated on the 28th February, 1918. The first session of the new Parliament was opened on the 25th July, 1918. Particulars of voting at the different elections from the year 1900 are given below :—

PARLIAMENTARY ELECTIONS IN SOUTH AUSTRALIA, 1900 TO 1918.

Year.	Electors on Rolls.			(a) Electors who Voted.			(a) Percentage of Electors Voting.	
	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.

LEGISLATIVE COUNCIL.

1900	..	38,688	9,854	48,542	21,403	3,907	25,310	55.32	39.65
1902	..	38,413	13,496	51,909	29,978	7,940	37,918	78.04	58.83
1905	..	39,011	13,873	52,884	28,820	8,328	37,148	73.88	60.03
1910	..	48,145	16,157	64,302	32,540	9,356	41,896	81.84	65.89
1912	..	59,228	19,985	79,213	40,709	13,016	53,725	80.91	72.56
1915	..	66,614	21,635	88,249	11,436	4,808	16,244	75.69	71.25
1918	..	71,510	23,461	94,971	42,987	11,800	54,787	60.11	50.30

HOUSE OF ASSEMBLY.

1902	..	77,147	72,030	149,177	53,471	36,545	90,016	39.31	50.73
1905	..	95,396	92,249	187,645	64,330	50,246	114,576	67.43	54.47
1906	..	96,724	93,438	190,162	60,109	45,997	106,106	62.14	49.22
1910	..	94,656	88,762	183,418	73,464	56,830	130,294	77.61	64.03
1912	..	117,440	106,971	224,411	87,530	73,732	161,262	74.53	68.93
1915	..	128,594	124,797	253,391	70,898	65,157	136,055	77.22	72.64
1918	..	126,669	132,043	258,712	71,501	62,742	134,243	56.45	47.52

(a) In contested districts.

It is interesting to note that South Australia was the first of the States to grant women's suffrage (under the *Constitution Amendment Act 1894*), the franchise being exercised for the first time at the Legislative Assembly election on the 25th April, 1896.

12. **The Parliament of Western Australia.**—In this State both chambers are elective. For the Legislative Council there are thirty members, each of the ten provinces returning three members, while the Legislative Assembly is composed of fifty members, one member being returned by each of the fifty electoral districts. At the expiration of two years from the date of election to a seat in the Legislative Council, and every two years thereafter, the senior member for the time being for each province retires. Seniority is determined (a) by date of election, (b) if two or more members are elected on the same day, then the senior is the one who polled the least number of votes, (c) if the election be uncontested, or in case of an equality of votes, then the seniority is determined by the alphabetical precedence of surnames and, if necessary, Christian names. Members of the Legislative Assembly are elected for three years.

*Particulars of Elections.* Since the establishment of responsible government in Western Australia there have been nine complete Parliaments, the first of which was opened on the 30th December, 1890, while the first session of the tenth Parliament commenced on the 20th November, 1917. Women's suffrage was granted by the *Electoral Act* of 1899. The preferential system of voting in use in Western Australia is described in Year Book No. 6, page 1184. Particulars relating to the last seven Assembly and six Council elections are given in the tables below :—

#### PARLIAMENTARY ELECTIONS, WESTERN AUSTRALIA, 1901 TO 1918.

Year.	Electors on the Roll.			In Contested Districts.			Votes Recorded.			Percentage of Electors Voting.		
	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.
1901 ..	74,874	16,648	91,522	67,967	14,775	82,742	29,832	8,255	38,087	44	56	46
1904 ..	108,861	54,965	163,826	88,524	49,791	138,315	43,285	23,500	66,785	49	47	48
1905 ..	79,025	42,697	121,722	65,296	36,706	102,002	33,482	19,435	52,917	51	53	52
1908 ..	83,060	52,919	135,979	69,277	44,804	114,081	46,411	29,412	75,823	67	66	66
1911 ..	91,814	60,831	152,645	71,675	50,700	122,375	53,355	38,281	91,636	74	75	75
1914 ..	126,558	88,143	214,741	96,503	72,043	168,546	54,612	41,993	96,605	57	58	57
1917 ..	93,106	73,845	166,951	76,445	61,310	137,755	45,453	40,167	85,620	59	65	62

#### LEGISLATIVE ASSEMBLY.

1901 ..	74,874	16,648	91,522	67,967	14,775	82,742	29,832	8,255	38,087	44	56	46
1904 ..	108,861	54,965	163,826	88,524	49,791	138,315	43,285	23,500	66,785	49	47	48
1905 ..	79,025	42,697	121,722	65,296	36,706	102,002	33,482	19,435	52,917	51	53	52
1908 ..	83,060	52,919	135,979	69,277	44,804	114,081	46,411	29,412	75,823	67	66	66
1911 ..	91,814	60,831	152,645	71,675	50,700	122,375	53,355	38,281	91,636	74	75	75
1914 ..	126,558	88,143	214,741	96,503	72,043	168,546	54,612	41,993	96,605	57	58	57
1917 ..	93,106	73,845	166,951	76,445	61,310	137,755	45,453	40,167	85,620	59	65	62

#### LEGISLATIVE COUNCIL.

1908 ..	29,255	6,543	35,798	19,233	4,508	23,741	10,210	2,283	12,493	53	51	52
1910 ..	31,983	7,553	39,536	31,290	7,405	38,785	12,020	2,461	14,481	38	33	35
1912 ..	36,716	10,437	47,153	33,490	9,818	43,308	20,733	5,552	26,285	62	57	59
1914 ..	43,299	12,423	55,722	36,793	9,822	46,615	22,963	5,556	28,519	62	57	61
1916 ..	45,325	13,683	59,008	19,950	4,877	24,827	10,672	2,464	13,136	53	51	53
1918 ..	46,272	14,700	60,972	35,962	12,348	48,310	14,043	3,930	17,973	39	31	37

13. **The Parliament of Tasmania.**—In Tasmania there are two legislative chambers—the Legislative Council and the House of Assembly, both bodies being elective. The Council consists of eighteen members, returned from fifteen districts, Hobart returning three, Launceston two, and the remaining thirteen districts sending one member each. There are five House of Assembly districts corresponding to the Commonwealth electoral districts, each returning six members, who are elected under a system of proportional representation which first came into force at the 1909 elections. (See Year Book No. 6, page 1185.) Women's suffrage was first granted in this State under the *Constitution Amendment Act 1903*.

*Particulars of Elections.* The first Tasmanian Parliament opened on 2nd December, 1856, and closed on 8th May, 1861. There have been nineteen complete Parliaments since the inauguration of responsible government. The first session of the twentieth Parliament opened on 22nd July, 1919. Particulars of the voting at the last eight elections are given hereunder:—

### ELECTIONS, HOUSE OF ASSEMBLY, TASMANIA, 1900 TO 1919.

Year.	Electors on Roll.		Electors in Contested Districts.		Votes Recorded.		Percentage of Electors Voting.		Percentage of Informal Votes on Votes Recorded
	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	
1900	39,002	..	29,022	..	18,872	..	65·02	..	..
(a) 1903	43,999	..	40,267	..	23,766	..	59·87	..	1·48
1906	47,400	41,629	37,120	33,415	23,128	17,194	62·30	51·46	1·21
(b) 1909	50,221	45,563	50,221	45,563	30,509	19,893	60·74	43·67	2·66
1912	52,853	50,660	52,853	50,660	40,713	35,337	77·03	69·73	2·85
1913	53,372	51,920	53,372	51,920	38,700	32,102	72·51	61·83	2·87
1916	54,466	52,855	54,466	52,855	41,427	37,557	76·06	71·05	5·66
1919	53,205	54,336	53,205	54,336	37,037	34,027	69·61	62·62	3·96

(a) Manhood suffrage, Act 64 Vic., No. 5. Universal adult suffrage, Act 3 Edward VII., No. 17, has been prescribed in all subsequent elections. (b) First election with six-member districts and simple transferable vote.

During the same period, the percentages of informalities in Senate elections in Tasmania were 4.05, 4.48, 3.29, 6.15, and 3.72.

### § 3. Administrative Government.

In previous issues of the Official Year Book a conspectus was given in tabular form of the various departments in each State, together with a list of the principal Acts administered by them and the matters dealt with by them or under their control. See Official Year Book No. 12, pp. 924 *et seq.*

### § 4. Conspectus of Acts relating to the Constitutions of the Commonwealth and the Australian States.

The following pages contain in summarized form the principal provisions of the Acts at present in force relating to the Constitution of the Commonwealth and the six States:—



## CONSPECTUS OF ACTS RELATING TO THE CONSTITUTIONS

Particulars.	Commonwealth.	New South Wales.	Victoria.
A.—THE			
(i) <i>Dates of Acts authorizing—</i>			
(a) Nominated Council	..	1823 .. .. .	..
(b) Partly Elective Council	..	1842 .. .. .	1850 .. .. .
(c) Responsible Government	1900 .. .. .	1853 (assented to in 1855)	1855 .. .. .
(ii) <i>Boundaries of States</i>	..	All that portion of Australia lying between the 129th and 154th degrees of East longitude, and northward of the 40th degree of South latitude, including all the islands in the Pacific within such limits, and Lord Howe Island, excepting the territories comprised within the boundaries of South Australia, Victoria, Queensland, Norfolk Island, and the Federal Capital area	A straight line from Cape Howe to the nearest source of the River Murray, thence along the course of that river to the eastern boundary of South Australia along that boundary to the sea
(iii) <i>The Legislature—</i>			
(a) Name	The Parliament, or The Parliament of the Commonwealth	..	The Parliament of Victoria
(b) Constitution	Senate and House of Representatives	Legislative Council and Legislative Assembly	Legislative Council and Legislative Assembly
(c) How summoned	Governor-General may appoint such times for holding sessions of Parliament as he thinks fit. Parliament to be summoned not later than 30 days after the day appointed for return of writs at a general election	Governor may fix time and place for holding sessions, and may vary such time and place	Governor may by proclamation summon Council and Assembly not less than six days from the date of such proclamation
(d) How prorogued and dissolved	Governor-General may by proclamation or otherwise prorogue Parliament, and may in like manner dissolve the House of Representatives	Governor may prorogue the Legislative Council and Assembly and dissolve the Assembly whenever he deems it expedient	Governor may prorogue and dissolve Parliament
(e) Sessions of Parliament	There must be a session of the Parliament once at least in every year, so that twelve months do not intervene between the last sitting in one session and the first sitting in the next session	There must be a session of both Houses at least once a year so that a period of twelve months does not intervene between the last sitting in one session and the first sitting in the next	Same as New South Wales
(f) Privileges of Parliament	Such as are declared by Parliament, and until declared those of the Commons House of Parliament of the United Kingdom at the establishment of the Commonwealth	..	Both Houses enjoy and exercise the like privileges, immunities, and powers as those of the Commons House of Parliament of Great Britain and Ireland at the time of passing the Constitution Act

## OF THE COMMONWEALTH AND THE AUSTRALIAN STATES.

Queensland.	South Australia.	Western Australia.	Tasmania.
LEGISLATURE.			
..	1842.. ..	1842.. ..	1828
1859 (Letters Patent) ..	1850.. ..	1869.. ..	1850
1859 .. ..	1856.. ..	1889.. ..	1854
Northward of a line commencing on the sea coast at Point Danger in latitude about 28° 8' South, and following the range thence which divides the waters of the Tweed, Richmond, and Clarence Rivers from those of the Logan and Brisbane rivers, westerly to the great dividing range between the waters falling to the east coast and those of the River Murray, following the great dividing range southerly to the range dividing the waters of Tenterfield Creek from those of the main head of the Dumaresq River, and following that river downward to its confluence with the Macintyre River, thence following that river to the 29th parallel of South latitude, and following that parallel westerly to the 141st meridian of East longitude, thence northerly along that meridian to the sea, together with adjacent islands in the Pacific Ocean	Between the meridians of the 129th and 141st degrees of East longitude and between the Southern Ocean and the 26th degree of South latitude	Not given in Act ..	Not given in Act
..	The Parliament of South Australia	..	The Parliament of Tasmania
Legislative Council and Legislative Assembly Same as New South Wales	Legislative Council and House of Assembly Same as New South Wales	Legislative Council and Legislative Assembly Same as New South Wales	Legislative Council and House of Assembly Same as New South Wales
Same as New South Wales	Governor may prorogue Parliament, and dissolve the House of Assembly whenever he deems expedient, but not the Legislative Council, except in case of a deadlock Same as New South Wales	Governor may prorogue the Council and Assembly, and dissolve the Assembly whenever he thinks fit	Same as South Australia
Same as New South Wales	Same as New South Wales	Same as New South Wales	Same as New South Wales
Each House may order or summon persons to attend and produce any required documents	Both Houses hold the same privileges, immunities, and powers as those held by the Commons House of Parliament at the time of the passing of the Constitution Act with the limitations set forth in Act 430 of 1888, but such privileges, &c., must not exceed those held by the latter at that date. Both Houses may summon persons to attend	Both Houses enjoy and hold the same privileges, immunities, and powers as the Commons House of Parliament Both Houses have power to order any person to attend and produce documents as required	Same as Queensland

## CONSPECTUS OF ACTS RELATING TO THE CONSTITUTIONS

Particulars.	Commonwealth.	New South Wales.	Victoria.
A.—THE			
(iii) <i>The Legislature—continued.</i>			
(g) Settlement of deadlocks between the two Houses	<p>If the House of Representatives passes any law and the Senate rejects it, or fails to pass it, or passes it with amendments to which the House of Representatives will not agree, and if, after three months, the former House passes it again and the latter rejects it again, the Governor-General may dissolve both Houses simultaneously, but such dissolution may not take place within six months before the date of the expiry of the House of Representatives by effluxion of time.</p> <p>If after such dissolution the House of Representatives again passes the law and the Senate again rejects it, the Governor-General may convene a joint sitting of the members of both Houses at which, if the law is affirmed by an absolute majority of the total number of members of both Houses, it is presented to the Governor-General for Royal Assent.</p>		<p>If the Assembly passes a Bill and the Council rejects it, or fails to pass it, or passes it with amendments to which the Assembly will not agree, and if not later than six months before the date of the expiry of the former by effluxion of time the Assembly is dissolved on account of the disagreement, the Assembly again passes the Bill and the Council again rejects it, or fails to pass it, or passes it with amendments to which the Assembly will not agree, the Governor may, not less than nine months nor more than twelve months after such dissolution, dissolve both Houses simultaneously.</p>
(h) Money Bills	<p>Proposed laws appropriating revenue or moneys or imposing taxation may not originate in the Senate. The Senate may not amend such laws, but may request the omission or amendment of any provisions therein, which the House of Representatives may accept if it sees fit. Such laws must be recommended in the same session by message of the Governor-General.</p>	<p>All Bills for appropriating any part of the public revenue or for imposing any rate, tax, or impost must originate in the Assembly.</p> <p>A Money Bill must be recommended by the Governor during the session in which it is passed.</p>	<p>All Bills for appropriating any part of the revenue or for imposing any duty, rate, tax, rent or impost must originate in the Assembly, and may be rejected but not altered by the Council, which may suggest certain amendments.</p> <p>A Money Bill must be recommended by the Governor during the session in which it is passed.</p>
(i) Power to alter the Constitution	<p>Any law for the alteration of the Constitution must be passed by an absolute majority of each House, and not less than two nor more than six months thereafter be submitted to a referendum of the electors. In the event of a deadlock, such law may be submitted directly to a referendum. A majority of the electors in a majority of the States and a majority of all electors is necessary for passing a law submitted to a referendum.</p>	<p>The Legislature may alter the laws concerning the Legislative Council and may provide for the nomination or election of another Council. A Bill for such a purpose must be reserved and laid before both Houses of the Imperial Parliament for 30 days at least before His Majesty's pleasure is signified thereon.</p>	<p>The Legislature has full power to repeal or alter any of the provisions of the Constitution Act provided that any Bill for the alteration of the Constitution of the Legislative Council or Assembly or of the Civil List must have had its second and third readings passed by an absolute majority of the whole number of the members of both Houses, and be reserved for His Majesty's pleasure thereon.</p>
(j) Power to alter the system of representation	<p>Subject to the Constitution, Parliament may make laws for increasing or diminishing the number of members of the House of Representatives. No alteration diminishing the proportionate representation of any State in either House nor the minimum number of representatives of a State in the House of Representatives, or altering the limits of a State, may become law unless a majority of electors in the State approve.</p>	<p>The Legislature may alter the number and extent of electoral districts, the apportionment of representatives and the number of representatives, and may alter and regulate the appointment of Returning Officers, and make new provisions for the issue and return of writs and the time and place of holding elections.</p>	<p>The Legislature may alter the qualifications of electors and members of both Houses, establish new or alter electoral provinces or districts, increase or decrease the number of members in each electorate, increase the whole number of members, regulate the appointment of Returning Officers, and make provision for the return of writs and the time and place of holding elections.</p>

OF THE COMMONWEALTH AND THE AUSTRALIAN STATES—*continued.*

Queensland.	South Australia.	Western Australia.	Tasmania
LEGISLATURE— <i>continued.</i>			
<p><i>First Rejection.</i>—When a Bill is passed by the Assembly not less than one month before the close of the session, and rejected by the Council</p> <p><i>Second Rejection.</i>—When not less than three months from its first rejection it is in the next session again passed by the Assembly, and not less than one week before the close of the session rejected by the Council</p> <p><i>Referendum.</i>—When a Bill has thus been twice rejected by the Council, the Governor may direct that a referendum of the electors be held, and if it results in its favour, the Bill becomes law on receiving the assent of the Governor</p>	<p>Whenever any Bill has been passed by the Assembly and failed to pass the Council, and the same or a similar Bill has also been passed by the Assembly during the next Parliament, a general election having taken place between such two Parliaments, and the second and third readings have been passed in the second instance by an absolute majority of all the members, and such second Bill has also failed to pass the Council, the Governor may, but it is not obligatory, within six months, either dissolve both Houses, or issue writs for nine more members of the Council. In the latter case no further members are to be elected to the Council until the numbers are as before</p>	<p>Same as Queensland</p>	<p>All Bills for appropriating any part of the revenue or for imposing any tax, rate, duty or impost must originate in the Assembly and be first recommended by the Governor during the session in which they are passed</p>
<p>All Bills for appropriating any part of the public revenue or for imposing any new rate, tax or impost must originate in the Assembly</p> <p>A Money Bill must be recommended by the Governor during the session in which it is passed</p>	<p>All Bills for appropriating any part of the revenue or other public money or dealing with taxation, or guaranteeing any loan, or for providing for the repayment of any loan, must originate in the Assembly</p> <p>A Money Bill must be recommended by the Governor during the session in which it is passed</p>	<p>The Legislature has full power to repeal or alter any provisions of the Constitution Act provided that a Bill for changing the Constitution of the Council or Assembly may not be presented for Royal Assent unless the second and third readings are passed by an absolute majority of all members of both Houses. Any Bill altering the Civil List must be reserved for Royal Assent</p>	<p>..</p>
<p>The Legislature has full power to alter the laws concerning the Legislative Council, and to provide for the nomination and election of another Council</p>	<p>Parliament has full power to repeal, alter, or vary the provisions of the Constitution Act, provided that a Bill for altering the Constitution of the Council or Assembly must be passed in its second and third readings by an absolute majority of all the members of such House, and be reserved for His Majesty's pleasure thereon</p>	<p>(Included in (i) above)</p>	<p>(Included in (i) above)</p>
<p>The Legislature may alter the divisions represented in the Assembly, establish new divisions, alter the apportionment or representatives, alter the number of representatives, and regulate the appointment of Returning Officers, the issue of writs, and the time and place of holding elections.</p>	<p>(Included in (i) above)</p>	<p>(Included in (i) above)</p>	<p>..</p>

## CONSPICUOUS OF ACTS RELATING TO THE CONSTITUTIONS

Particulars.	Commonwealth.	New South Wales.	Victoria.
A.—THE			
(iii) <i>The Legislature—continued.</i> (k) Bills to be reserved for Royal Assent (Imperial Act applying to all States)	..	<p>A Bill altering the Constitution of either House.</p> <p>A Bill affecting the salary of the Governor.</p> <p>Any Bill which under any Act of Legislature of the State itself is required to be reserved.</p> <p>A Bill need not be reserved which (i) creates, alters or affects any district which returns one or more members to either House; or (ii) fixes or alters the number of members to be elected for a district; or (iii) increases or decreases the total number of elective members; or (iv) concerns the election of elective members or the qualifications of electors or elective members.</p>	

## B.—THE

(i) Name .. ..	The Senate .. ..	The Legislative Council ..	The Legislative Council ..
(ii) <i>Members—</i> (a) Nominated or elected	Elected, except in case of a casual vacancy, when one is chosen by the Houses of Parliament of the State sitting and voting together, or, if the Houses are not in session, by the Governor-in-Council, until the expiration of the term or until a successor is elected	Nominated .. ..	Elected .. ..
(b) Number of members	Thirty-six (six for each State)	(No limit) .. ..	Thirty-four .. ..
(c) Term of office ..	Six years .. ..	Term of natural life ..	Six years from date of taking poll at general or periodical election. After general election half the members sit for three years only
(d) Qualifications ..	Any person who (i) is of the full age of 21 years, an elector entitled to vote or qualified to become an elector and for three years a resident in the Commonwealth; and (ii) is a natural-born subject or for at least five years is naturalized under a law of the United Kingdom, or of a State, or of the Commonwealth	Any person who is of the full age of 21 years and a natural-born subject of His Majesty, or naturalized in Great Britain or in New South Wales	Any male person who (i) is of the full age of 30 years; and (ii) is a natural-born subject of His Majesty, or has been naturalized and has resided in Victoria for ten years prior to election; and (iii) has for one year previous to election been seized of a freehold estate of the clear annual value of £50
(e) Persons not qualified for nomination or election	Any person who (i) is a member of the other House of Parliament; or (ii) is under any acknowledgment of allegiance to or is a subject of a foreign power; or (iii) is attainted of treason or has been convicted or is under sentence for any offence punishable under the law of the Commonwealth or of a State by imprisonment for one year or longer; or (iv) is an undischarged bankrupt or insolvent; or (v) holds any office of profit or pension under the Crown, except as a Minister of State or in receipt of naval or military pay or pension and not wholly employed by the Commonwealth; or (vi) has any pecuniary interest in any agreement with the Public Service except as a member of an incorporated company consisting of more than 25 persons	Any person who directly or indirectly holds any contract or agreement on account of the Public Service, during the time he holds such contract or agreement. This does not apply to a contract with an incorporated or trading company of over twenty persons	<p>(i) A Member of either House of the Commonwealth Parliament or of the Legislative Assembly</p> <p>(ii) A Judge of any Court in Victoria</p> <p>(iii) A Minister of Religion</p> <p>(iv) A person who has been attainted of any treason, or convicted of any felony or infamous offence within any part of His Majesty's dominions</p> <p>(v) A person who is an uncertificated bankrupt or insolvent</p> <p>(vi) A person directly or indirectly concerned in a contract with His Majesty, except in a contract with a company, partnership or association of more than twenty persons, or for a lease, sale or purchase of land, or for a loan</p>

OF THE COMMONWEALTH AND THE AUSTRALIAN STATES—*continued.*

Queensland.	South Australia.	Western Australia.	Tasmania.
LEGISLATURE— <i>continued.</i>			

A Bill altering the Constitution of either House.

A Bill affecting the salary of the Governor.

Any Bill which under any Act of Legislature of the State itself is required to be reserved.

A Bill need not be reserved which (i) creates, alters or affects any district which returns one or more members to either House; or (ii) fixes or alters the number of members to be elected for a district; or (iii) increases or decreases the total number of elective members; or (iv) concerns the election of elective members or the qualifications of electors or elective members.

## UPPER HOUSE.

The Legislative Council	The Legislative Council	The Legislative Council	The Legislative Council
Nominated .. ..	Elected .. ..	Elected .. ..	Elected .. ..
(No limit) .. ..	Twenty .. ..	Thirty .. ..	Eighteen .. ..
Term of natural life ..	Six years (except when filling the unexpired term of a vacated seat)	Six years .. ..	Six years .. ..
Any person who is of the full age of 21 years and is a natural-born subject of His Majesty, or naturalized by an Act of the Imperial Parliament or by an Act of the Legislature of New South Wales before separation, or by Act of this Colony	Any person of the full age of 30 years, a natural-born subject of His Majesty or legally made a denizen of the State, who has resided within the State for three years Any alien who has received a certificate of naturalization and has resided five years in the State, unless it is expressly stated on such certificate that he is not eligible	Any man of the full age of 30 years who is not subject to any legal incapacity and is a natural-born or naturalized subject of the King. If a naturalized subject, he must have been naturalized for five years previous to election and have resided in Western Australia during that period	Any person who (i) is 30 years of age; and (ii) is entitled to vote at an election, or qualified to become an elector; and (iii) has been resident in Tasmania continuously for five years at any one time and for at least two years immediately preceding election; and (iv) is a subject of the King, who is natural-born or has been naturalized for five years
Same as New South Wales	(i) A Member of the Commonwealth Parliament (ii) A contractor, while engaged in a contract, who (a) takes part in a contract for the Government; or (b) furnishes in pursuance of such contract money to be transmitted abroad; or (c) furnishes any wares to be used in the service of the public; or (d) holds any position in a company formed for the construction of any public work, the payment or interest on the cost of which is guaranteed by Government. This does not extend to contributions to loans, to incorporated or trading companies with over twenty members, or to the sale or occupation of Crown lands (iii) A Judge of any Court (iv) A clergyman or officiating minister of religion	(i) A Member of the Commonwealth Parliament (ii) A member of the Legislative Assembly (iii) A Judge of the Supreme Court (iv) A sheriff of Western Australia (v) A clergyman or minister of religion (vi) An undischarged bankrupt or debtor against whom there is a subsisting order in bankruptcy (vii) A person who has been in any part of His Majesty's dominions attainted or convicted of treason or felony (viii) A person who holds a contract for the Public Service, or knowingly furnishes in pursuance of such contract money to be remitted abroad or goods to be used in the service of the public, or is a member of a company formed for the construction of a public work the cost or interest on the cost of which is guaranteed by the Government. This does not apply to a member of an incorporated company of over twenty members nor to persons contributing to a loan	(i) A Member of the Commonwealth Parliament (ii) A Judge of the Supreme Court (iii) A person holding any office of profit or emolument by the appointment of the Governor, except the office of a Minister of the Crown (iv) A person of unsound mind or in receipt of aid from a public charitable institution except as a hospital patient (v) A person who has been attainted or convicted of treason, felony, or other infamous offence in any part of His Majesty's dominions unless he has received a pardon or undergone his sentence (vi) A person who directly or indirectly holds a contract on account of the Public Service while holding such contract. This does not apply to a member of an incorporated or trading company of over six persons, nor to the lease, sale or purchase of lands from the Crown

## CONSPECTUS OF ACTS RELATING TO THE CONSTITUTIONS

Particulars.	Commonwealth.	New South Wales.	Victoria.
B.—THE UPPER			
(ii) <i>Members</i> — continued. (f) Number of members allowed to hold an office of profit under the Crown		Not less than four-fifths of the members must consist of persons not holding any office of emolument under the Crown. Officers in the Navy or Army on full or half pay or retired on pensions are not deemed to hold such an office	President, Chairman of Committees, and two Ministers of the Crown
(g) Reasons for which seats are declared vacant	(i) Failing to attend for two consecutive months of any session without permission of the House (ii) Becoming subject to any of the disabilities mentioned in (e) (iii) Taking the benefit of any law relating to bankrupt or insolvent debtors (iv) Taking any fee for services rendered to the Commonwealth or in the Parliament to any person or State	(i) Failing for two consecutive sessions to attend unless excused by His Majesty or the Governor (ii) Taking any oath or declaration of allegiance to a foreign prince or power (iii) Doing any act whereby becoming a subject or citizen of a foreign power (iv) Becoming bankrupt or taking the benefit of any law relating to insolvent debtors (v) Becoming a public contractor or defaulter (vi) Being attainted of treason or convicted of felony or infamous crime	(i) Being elected a Member of the Commonwealth Parliament (ii) Failing to attend for one entire session without Council's permission (iii) Taking any oath or acknowledgment of allegiance to a foreign power (iv) Adopting any act whereby becoming a subject or citizen of a foreign power (v) Becoming a bankrupt or insolvent debtor (vi) Being convicted of felony or any infamous crime (vii) Becoming <i>non compos mentis</i> (viii) Becoming a public defaulter (ix) Participating in a contract on behalf of His Majesty (x) Accepting an office of profit under the Crown, except as President, Chairman of Committee, or Minister (xi) Selling his property qualification
(h) Penalty for sitting or voting when disqualified	£100 per diem .. ..	£500 .. .. .	£200 for each day he sits or votes Penalty for accepting office of profit while member or within six months of ceasing to be so, £50 per week
iii) <i>Sessions of the Council</i> — (a) When Council may meet for the despatch of business	The Senate may proceed to business, notwithstanding the failure of any State to provide for its representation.	..	No omission or failure to elect a member prevents Council from meeting so long as there is a quorum present
(b) Quorum ..	One-third of the whole number of Senators	One-fourth of the members, exclusive of the President. Where the whole number of members is not exactly divisible by four, the quorum consists of such number as is next greater than one fourth of the members	One-third of the members, exclusive of the President, or such integral number as is next greater than one-third if the total number of members is not exactly divisible by three
(c) Voting on questions	Questions determined by a majority of votes. President is entitled to a vote. When votes are equal, the question passes in the negative	Questions decided by majority of votes of members present. President has only casting vote when the votes of other members are equal	Same as New South Wales

OF THE COMMONWEALTH AND THE AUSTRALIAN STATES—*continued.*

Queensland.	South Australia.	Western Australia.	Tasmania.
<b>HOUSE—<i>continued.</i></b>			
Same as New South Wales	President, Chairman of Committees, and Ministers of the Crown	Same as South Australia	Same as South Australia
<p>(i) Failing to attend for two successive sessions without permission of His Majesty or of the Governor</p> <p>(ii) Taking an oath or declaration of allegiance to a foreign prince or power</p> <p>(iii) Adopting any act whereby becoming a subject or citizen of a foreign power</p> <p>(iv) Becoming bankrupt or taking the benefit of any law relating to insolvent debtors</p> <p>(v) Becoming a public contractor or defaulter</p> <p>(vi) Being attainted of treason or convicted of felony or any infamous crime</p> <p>(vii) Continuing to hold his seat after having entered into a contract on account of the Public Service</p>	<p>(i) Being elected a member of the Commonwealth Parliament</p> <p>(ii) Failing for one month to attend without permission of the Council</p> <p>(iii) Taking an oath or acknowledgment of allegiance to a foreign prince or power</p> <p>(iv) Adopting any act whereby becoming a subject or citizen of a foreign power</p> <p>(v) Becoming bankrupt or taking benefit of any law relating to insolvent debtors</p> <p>(vi) Becoming a public defaulter</p> <p>(vii) Being attainted of treason or convicted of felony or any infamous crime</p> <p>(viii) Becoming of unsound mind</p> <p>(ix) Accepting an office of profit or pension from the Crown except as in paragraph (f)</p> <p>(x) Becoming a contractor in the same way as in paragraph (e)</p>	<p>(i) Being elected a Member of the Commonwealth Parliament</p> <p>(ii) Failing for two consecutive months to attend without the Council's permission</p> <p>(iii) Taking an oath or acknowledgment of allegiance to a foreign prince or power</p> <p>(iv) Adopting any act whereby becoming a subject or citizen of a foreign power</p> <p>(v) Ceasing to be qualified to be a member</p> <p>(vi) Becoming of unsound mind</p> <p>(vii) Accepting a pension or office of profit from the Crown other than as a naval or military officer on full, half, or retired pay, or an executive Minister</p>	<p>(i) Being elected a Member of the Commonwealth Parliament</p> <p>(ii) Failing for one entire session to attend without Council's permission</p> <p>(iii) Taking an oath of allegiance to a foreign prince or power</p> <p>(iv) Adopting any act whereby becoming a subject or citizen of a foreign power</p> <p>(v) Becoming bankrupt or taking benefit of any law relating to insolvent debtors</p> <p>(vi) Becoming a public defaulter</p> <p>(vii) Being attainted of treason or convicted of felony or infamous crime</p> <p>(viii) Becoming of unsound mind</p> <p>(ix) Accepting a pension from the Crown or an office of profit by the appointment of the Governor, except that of Minister of the Crown</p> <p>(x) Entering into a contract with the Government</p>
£500 .. ..	£500.. ..	£500 .. ..	£500
.. ..	.. ..	<p>Council may meet notwithstanding that any of the writs of election not exceeding two have not been returned, or that in any electorate the electors have failed to elect a member</p>	..
Same as Victoria ..	Ten members, including the President or his substitute	One-third of the members, exclusive of the President	Nine members, including the President
Same as New South Wales	Same as New South Wales	Same as New South Wales	Same as New South Wales



## CONSPECTUS OF ACTS RELATING TO THE CONSTITUTIONS

Particulars.	Commonwealth.	New South Wales.	Victoria.
B.—THE UPPER			
(iv) <i>President of the Council—</i> (a) How appointed	One Senator chosen by the Senate before proceeding to the despatch of any other business	One member appointed by the Governor under the Great Seal	One member elected by the Council at the first meeting and before proceeding to the despatch of any other business. Governor may disallow Council's election
(b) Salary of President	Not fixed by Act. £800 per annum allowed in addition to the emoluments of his office	Not fixed by Act	Not fixed by Act .. ..
(c) Salary of Chairman of Committees	Not fixed by Act. £800 per annum allowed in addition to the emoluments of his office	Not fixed by Act	Not fixed by Act .. ..
(v) <i>Payment of Members—</i> (a) Amount ..	£1,000 per annum from the day of election; except in the case of a Senator chosen to fill a place vacant by rotation, from 1st July Leader of the Opposition £200 additional	Nil .. ..	Nil .. (Members were .. paid .. £300 .. per annum from 1870-1880)
(b) Members not entitled to allowance	.. ..	.. ..	.. ..
(c) When payment of members first introduced	1901 .. ..	.. ..	.. ..
(vi) <i>Electoral Districts—</i> (a) Number of districts	Six. Each State is an Electoral District	.. ..	Seventeen Provinces .. ..
(b) Number of members elected in each district	Six .. ..	.. ..	Two .. ..
(vii) <i>Electors—</i> (a) Qualifications ..	Any person not under 21 years of age who— (i) has lived in Australia for six months continuously, and (ii) is a natural-born or naturalized subject of the King Also, during a period of three years after the War, any person (including nurses) who has served outside Australia or on a ship of war in the Commonwealth Naval or Military Forces, and any worker who has served outside Australia under agreement with the Government, provided that he has lived in Australia for six months continuously and is a natural-born or naturalized subject of the King No adult person who has a right to vote at elections for the more numerous House of Parliament of a State may be prevented from voting for either House of Parliament of the Commonwealth Enrolment compulsory	.. ..	(a) Every person of the age of 21 years not subject to any legal incapacity, provided that he— (i) owns land or tenements or is mortgagor or mortgagee or the <i>custui que trust</i> of lands or tenements in actual possession, or in receipt of rents and profits if in one province and rated at £10 per annum; or (ii) is entitled as lessee or assignee for the balance of an original term of five years of property rated at £15 per year; or (iii) occupies property rated at £15 per annum (b) A resident in Victoria who— (i) is a graduate of any university in the British Dominions; or (ii) is a barrister or solicitor; or (iii) is a legally qualified medical practitioner; or (iv) is a duly appointed minister of any church or religious denomination; or (v) is a person possessing a certificate of fitness to teach; or (vi) is an officer or retired naval or military officer; or (vii) is a person who has matriculated at the University of Melbourne

OF THE COMMONWEALTH AND THE AUSTRALIAN STATES—*continued.*

Queensland.	South Australia.	Western Australia.	Tasmania.
<i>HOUSE—continued.</i>			
Governor appoints one member under Great Seal, and may remove him	One member elected by Council at the first meeting and before the despatch of any other business. Election to be notified to the Governor by a deputation of the Council	One member elected by the Council forthwith upon their first assembly after a vacancy in the office	One member elected by the Council at the first meeting and before proceeding to the despatch of any other business
£1,000 per annum	Not fixed by Act but must be at least equal to that of the Speaker of the Assembly	£700 per annum, inclusive of parliamentary allowance	£500 per annum, inclusive of parliamentary allowance
£700	Not fixed by Act, but must be at least equal to that of Chairman of Committees of the Assembly	£500 per annum, inclusive of parliamentary allowance	£350 per annum, inclusive of parliamentary allowance
Nil	£200 per annum	£400 per annum—(i) in case of a seat vacant by rotation, from day on which it became so; (ii) in case of casual vacancy, from day of election	£300 per annum from day of election until ceasing to be a member
	Member in receipt of official salary, unless such salary is less than the above allowance—when the difference is paid 1887..	President and Chairman of Committees, and Ministers, except Honorary Ministers 1900..	President and Chairman of Committees 1890
	Five Electoral Districts	Ten Electoral Provinces	Fifteen Electoral Districts
	Four	Three	Hobart, three; Launceston, two; others, one each
	Any person of the age of 21 years who is a British subject and an inhabitant of the State and has resided therein for six months prior to registration, if he— (i) owns a freehold estate of the clear value of at least £50; or (ii) has a leasehold of the clear annual value of £20, provided that it is registered and was granted for three years or contains an option of purchase clause; or (iii) is a registered lessee of Crown lands upon which are improvements to the value of £50; or (iv) is an inhabitant occupier as owner or tenant of any dwelling-house Any person under 21 years who has not resided for six months in the State prior to registration and who has served abroad in the Navy or Army and has received an honourable discharge	Any person of the age of 21 years who is a natural-born or naturalized subject, is not subject to any legal incapacity, and has lived for six months in Western Australia, provided that within the province for which he is registered, he— (i) has a freehold estate of the value of £50, and has held it for twelve months next before making his claim; (ii) is a householder occupying a dwelling-house of the annual value of £17, and has occupied the same for a similar period; (iii) has a leasehold of the annual value of £17 held on a lease with at least eighteen months to run; (iv) has a similar leasehold which he has held for eighteen months; (v) has held for a similar period a lease or licence from the Crown at a rental of £10 per annum to depasture, occupy, cultivate or mine upon	Any person of the age of 21 years, not subject to any legal incapacity, who is a natural-born or naturalized subject, or has received letters of denization or a certificate of naturalization, and has been resident in Tasmania for twelve months, if he is owner of a freehold estate of the annual value of £10, or occupier of any property within the district of the annual value of £30 A similar person who is resident in Tasmania, provided that he is— (i) a graduate of any university in the British dominions, or an Associate of Arts of Tasmania; or (ii) a legal practitioner on the Roll of the Supreme Court of Tasmania; or (iii) a legally qualified medical practitioner; or (iv) an officiating minister of religion; or (v) a naval or military officer or retired officer, not on actual service, or a retired officer of the Volunteer Force of Tasmania

## CONSPECTUS OF ACTS RELATING TO THE CONSTITUTIONS

Particulars.	Commonwealth.	New South Wales.	Victoria.
<b>B.—THE UPPER</b>			
(vii) <i>Electors</i> — continued. (b) Joint owners or occupiers	..	..	If the yearly value divided by the amount declared to be a qualification gives a quotient of two or more, so many owners, lessees, or tenants may vote as are equal in number to such quotient
(c) Persons not entitled to be electors	Any person who— (i) is of unsound mind ; or (ii) has been attainted of treason or convicted or is under sentence for any offence punishable under the law of any part of the King's dominions by imprisonment for one year or longer ; or (iii) is an aboriginal native of Australia, Asia, Africa, or the islands of the Pacific (except New Zealand)	..	No person who is not a natural-born subject is qualified unless— (i) he is a naturalized subject ; and (ii) has resided in Victoria for twelve months previous to the 1st day of January or July in any year ; and (iii) has been naturalized at least three years next preceding that day
(d) Restrictions on voting	..	..	No person may vote unless— (i) his name is on the roll of ratepaying electors for his division of the province ; or (ii) he is the holder of an elector's right for his division of the province and his name is on the ordinary electoral roll
(e) Number of votes allowed to each elector	One .. .. .	..	Not more than one vote for any one and the same province
(f) Female voting introduced	1901 .. .. .	..	1908 (Royal Assent proclaimed 1909)
(viii) <i>Elections</i> — (a) Issue of writs ..	Governor of any State may cause writs to be issued for the election of Senators for the State In case of dissolution of the Senate, writs must be issued within ten days of the proclamation of dissolution	..	(i) General Election, by Governor ; (ii) Other vacancies, by President
(b) Day of nomination	Not less than seven nor more than 21 days after the date of the writ	..	Not less than five nor more than nine clear days after the day of issue of writ
(c) Polling day ..	Not less than seven nor more than 30 days after the date of nomination Must be held on a Saturday	..	Not less than five nor more than nine clear days after the day of nomination
(d) Writs returnable	Within 90 days after the issue of writ	..	Within fourteen days after polling day
(e) Method of voting	Preferential .. ..	..	Ordinary balloting ..

OF THE COMMONWEALTH AND THE AUSTRALIAN STATES—*continued.*

Queensland.	South Australia.	Western Australia.	Tasmania.
<i>HOUSE—continued.</i>			
..	A joint occupier cannot vote as such	Each joint owner or occupier has a vote provided that the value of his individual interest entitles him to one	Same as Western Australia
..	No person may vote who has been attainted or convicted of treason or felony or other infamous offence in any part of His Majesty's dominions, unless he has received a free pardon or undergone his sentence	No person may vote who— (i) is of unsound mind; or (ii) has been attainted of treason or convicted and is under sentence, or subject to be sentenced, for any offence punishable under the law of any part of the King's dominions by imprisonment for one year or longer; or (iii) is an aboriginal native of Australia, Asia, Africa, or the islands of the Pacific, or a person of the half blood	No person may vote who at the time of the election— (i) is of unsound mind; or (ii) is in receipt of aid from any charitable institution except as a patient in a hospital; or (iii) is in prison under any conviction or has been convicted or attainted of treason, felony, or other infamous offence in any part of His Majesty's dominions, and has not received a free pardon or served his sentence
..	No person may vote unless he is registered at the time of the election, and has been registered for one month before the day of issue of the writ		
..	One for each seat to be filled in the district for which he is enrolled	Same as Victoria	Same as South Australia
..	1894 .. ..	1899 .. ..	1903
..	All issued by Governor except that, if there is a casual vacancy, the President if within the State may issue writ after two days' notice to Governor	(i) General Election.—Governor by warrant directs Clerk of Writs. Fourteen days' notice of warrant to be published in <i>Gazette</i> (ii) Other vacancy.—President directs Clerk of Writs to issue writ	By Governor If vacancy occurs within four months of periodical election, it need not be filled until such election, otherwise writ must be issued within ten days of vacancy
..	Not less than seven nor more than twenty-one days after the date of the writ	Not less than seven nor more than 30 days from the date of writ	Not less than seven nor more than 21 days after the date of writ. Governor may extend time
..	Not less than two nor more than 30 days after the date of nomination	Not less than seven nor more than 30 days after the date of nomination	Not less than seven nor more than 30 days after the date of nomination
..	Within 50 days after the occurrence of the period or dissolution necessitating the election No time limit for a casual vacancy	Within 60 days after the issue of the writ	Within 60 days after the issue of the writ. Governor may extend time
..	Ordinary balloting ..	Preferential .. ..	Contingent voting compulsory when there are more than two candidates

## CONSPECTUS OF ACTS RELATING TO THE CONSTITUTIONS

Particulars.	Commonwealth.	New South Wales.	Victoria.
B.—THE UPPER			
(viii) <i>Elections</i> — continued. (f) Absent voters ..	An elector may vote by post who— (i) will not during the hours of polling be within the State for which he is enrolled; or (ii) will not during the hours of polling be within 10 miles of any polling booth in the State for which he is enrolled; or (iii) will during the hours of polling be travelling under conditions which will preclude him from voting; or (iv) is seriously ill or infirm and therefore, or in case of a woman by approaching maternity, precluded from attending at any polling booth	..	An elector may vote by post who satisfies the Returning Officer that— (i) he resides at least 5 miles, or in a mountainous district 3 miles, from the nearest polling booth; or (ii) he has reason to believe that on polling day he will not be within 5 miles of the nearest polling booth; or (iii) on account of infirmity or ill-health he will be prevented from voting personally
(ix) <i>Election Tribunal</i>	Court of Disputed Returns. High Court has jurisdiction either to try an election petition or to refer it for trial to the Supreme Court of the State in which the election was held. The jurisdiction of either Court may be exercised by a single Justice or Judge	Questions concerning vacancies are heard and determined by the Council, with right of appeal to the Privy Council	Committee of Elections and Qualifications, consisting of seven members appointed by the President

## C.—THE

(i) <i>Name</i> .. ..	The House of Representatives	The Legislative Assembly	The Legislative Assembly
(ii) <i>Duration</i> ..	Three years .. ..	Three years from the day of return of writs, subject to be sooner prorogued or dissolved by the Governor	Three years from the day of the first meeting, subject to be sooner dissolved by the Governor
(iii) <i>Members</i> — (a) Number of members	As nearly as possible twice the number of Senators. The number of members in the several States in proportion to the number of inhabitants with a minimum of five for each State. At present 75	Ninety .. ..	Sixty-five .. ..
(b) Persons qualified to be elected	Same as Senate ..	Every person qualified to vote at an election for any district	Any natural-born subject or any alien naturalized by law for five years and resident in Victoria for two years, of the full age of 21 years, provided that he is not subject to any of the disabilities created by the Constitution or any other Act

OF THE COMMONWEALTH AND THE AUSTRALIAN STATES—*continued.*

Queensland.	South Australia.	Western Australia.	Tasmania.
HOUSE— <i>continued.</i>			
	An elector may after the issue of the writ vote by post, who has reason to believe that— (i) he will not on polling day be within 15 miles of the polling place for which he is registered; or (ii) he will on polling day be in quarantine within the State; or (iii) being a female she will, on polling day, on account of ill-health be unable to attend at a polling place	An elector may vote by post, who— (i) has reason to believe that he will on polling day be more than 7 miles from any polling place at which he is entitled to vote; or (ii) being a woman, believes that she will, on account of ill-health, be unable to attend a polling place; or (iii) will be prevented by serious illness or infirmity from attending a polling place on polling day	An elector may vote by post who— (i) has reason to believe that he will not on polling day be within 7 miles by the nearest road of the polling place for which he is enrolled; or (ii) will be prevented by illness or infirmity from attending the polling place on polling day
Same as New South Wales	Junior Puisne Judge of the Supreme Court or sole Judge of the Supreme Court for the time being acting as such, and four members of the Council elected by the Council after each periodical or general election	Court of Disputed Returns, consisting of a Judge of the Supreme Court sitting in open Court	Judge of the Supreme Court sitting in open Court within the district to which the election relates

## LOWER HOUSE.

The Legislative Assembly	The House of Assembly	The Legislative Assembly	The House of Assembly
Three years from the day appointed for the return of writs, subject to be sooner dissolved by the Governor	Three years from the day on which the House first meets, subject to be sooner dissolved by the Governor	Three years from the first day of meeting, unless sooner prorogued or dissolved by the Governor	Three years from the day of return of writs
Seventy-two ..	Forty-six .. ..	Fifty ..	Thirty
Any person, whether male or female, who is qualified to be enrolled for any electoral district	Any person who is qualified and entitled to be registered as a voter	Any man who has resided in Western Australia for twelve months, if of the full age of 21 years and not subject to any legal incapacity and is a natural-born subject, or has been, if not natural-born, naturalized for five years and resided in Western Australia for two years prior to election	Any man who— (i) is entitled or qualified to vote at an election of a member of the Assembly; and (ii) has been resident in Tasmania continuously for a period of five years at any one time or for a period of at least two years immediately preceding the election; and (iii) is a natural-born subject or has been naturalized for five years

## CONSPECTUS OF ACTS RELATING TO THE CONSTITUTIONS

Particulars.	Commonwealth.	New South Wales.	Victoria.
C.—THE LOWER			
(iii) <i>Members</i> — continued.			
(c) Persons not qualified to be elected	Same as Senate	<p>(i) A Member of the Legislative Council</p> <p>(ii) A person holding an office of profit or pension from the Crown, except executive Ministers and naval and military officers in receipt of pay, half-pay, or pension</p> <p>(iii) A person holding a contract on account of the Public Service, except as a member of an incorporated or trading company of over twenty persons</p>	<p>(i) A Member of either House of the Commonwealth Parliament or of the Legislative Council</p> <p>(ii) A Judge of any Court in Victoria appointed during good behaviour</p> <p>(iii) A minister of any religious denomination</p> <p>(iv) A person who has been attainted of any treason or convicted of felony or infamous crime in any part of His Majesty's dominions</p> <p>(v) An uncertificated bankrupt or insolvent</p> <p>(vi) A person, except a responsible Minister of the Crown, who holds an office or place of profit under the Crown or is employed in the Public Service of Victoria</p> <p>(vii) A person who is concerned in any bargain or contract on behalf of His Majesty, except as member of a company, partnership, or association of over twenty persons, or as to any lease, sale, or purchase of land, loan of money or security for payment of money only</p>
(d) Reasons for which seats are declared vacant	Same as Senate	<p>(i) Failing to attend for one whole session, unless excused by the Assembly</p> <p>(ii) Taking an oath or declaration of allegiance to a foreign prince or power</p> <p>(iii) Doing any act whereby becoming a subject or citizen of a foreign power</p> <p>(iv) Becoming bankrupt or taking the benefit of any law relating to insolvent debtors</p> <p>(v) Becoming a public defaulter</p> <p>(vi) Being attainted of treason or convicted of felony or infamous crime</p> <p>(vii) Accepting an office of profit or pension under the Crown, except as Minister or naval or military officer</p> <p>(viii) Entering into a contract on account of the Public Service except as member of an incorporated or trading company of over twenty members</p>	Same as Legislative Council
(e) Penalty for sitting or voting when disqualified	Same as Senate	£500 .. .. .	£200 for each day he sits or votes
(f) Are women eligible for election ?	Yes .. .. .	Yes .. .. .	No .. .. .

OF THE COMMONWEALTH AND THE AUSTRALIAN STATES—*continued.*

Queensland	South Australia.	Western Australia.	Tasmania.
<i>HOUSE—continued.</i>			
<p>(i) A minister of the Church of England, or a minister, priest, or ecclesiastic of any kind or denomination</p> <p>(ii) A person holding an office of profit under the Crown or having a pension from the Crown, except a Minister of the Crown and a person in receipt of pay, half-pay, or pension as naval or military officer</p> <p>(iii) A member of the Legislative Council</p> <p>(iv) An uncertificated insolvent</p> <p>(v) A person while holding a contract on behalf of the Public Service, except as a member of an incorporated or trading company with over twenty members</p>	<p>(i) A member of the Commonwealth Parliament</p> <p>(ii) A person who—</p> <p>(a) undertakes any contract or commission for the Government; or</p> <p>(b) furnishes, in pursuance of such contract money to be transmitted abroad; or</p> <p>(c) furnishes any wares to be used in the service of the State; or</p> <p>(d) holds any office or position in a company formed for the construction of any public works the payment for which or the interest on the cost of which has been guaranteed by the Parliament</p>	Same as Legislative Council	Same as Legislative Council
Same as New South Wales	<p>(i) Being elected a member of the Commonwealth Parliament</p> <p>(ii) Failing for one month to attend without permission of the House</p> <p>(iii) Taking an oath or acknowledgment of allegiance to a foreign prince or power</p> <p>(iv) Adopting any act whereby becoming a subject or citizen of a foreign power</p> <p>(v) Becoming bankrupt or taking benefit of any law relating to insolvent debtors</p> <p>(vi) Becoming a public defaulter</p> <p>(vii) Being attainted of treason or convicted of felony or any infamous crime</p> <p>(viii) Becoming of unsound mind</p> <p>(ix) Accepting an office of profit or pension from the Crown</p> <p>(x) Becoming a contractor in the same way as in paragraph (e), Upper House</p>	Same as Legislative Council	Same as Legislative Council
£500 .. ..	£500 .. ..	£500 .. ..	£500
Yes .. ..	No .. ..	No .. ..	No



## CONSPECTUS OF ACTS RELATING TO THE CONSTITUTIONS

Particulars.	Commonweath.	New South Wales.	Victoria.
<b>C.—THE LOWER</b>			
(iv) <i>Sessions of the Assembly—</i> (a) When the Assembly may meet for the despatch of business after a General Election	..	Assembly may proceed to business, notwithstanding that writs, not exceeding five, have not been returned, or that in any electoral district the electors have failed to elect a member	No omission or failure to elect a member prevents the Assembly from meeting so long as there is a quorum present
(b) Quorum ..	One-third of the whole number of members	Twenty members, exclusive of the Speaker	Twenty members, exclusive of the Speaker
(c) Voting on questions	Questions determined by a majority of votes other than that of the Speaker. Speaker has only casting vote when votes are equal	Questions decided by majority of votes of members present. Speaker has only casting vote when the votes of other members are equal	Same as New South Wales
(v) <i>Speaker—</i> (a) Election ..	One member elected by the House of Representatives before proceeding to the despatch of any other business	Elected by the members from among themselves upon the first assembling after a general election	Elected from among the members by the Assembly at its first meeting after every general election, and before proceeding to the despatch of any other business
(b) Salary ..	Not fixed by Act. £800 per annum allowed in addition to the emoluments of his office	Not fixed by Act ..	Not fixed by Act ..
(c) Salary of Chairman of Committees	Not fixed by Act. £800 per annum allowed in addition to the emoluments of his office	Not fixed by Act ..	Not fixed by Act ..
(vi) <i>Payment of Members—</i> (a) Amount ..	£1,000 per annum ..	£500 per annum from the day of election until resignation, vacation of seat, or dissolution or expiry by effluxion of time of Parliament	£300 per annum from the day appointed for taking the poll to resignation or retirement by effluxion of time, or dissolution of Parliament
(b) Members not entitled to payment	..	(i) Holder of an office of profit as Executive Councillor (ii) Holder of any other office of profit which would render his seat vacant (iii) Speaker or Chairman of Committees in receipt of official salaries	A member in receipt of any official salary or annual payment (to the amount of such salary or payment)
(c) Leader of the Opposition	£400 per annum additional	£250 per annum additional	Additional allowance as fixed by Parliament (at present £200 per annum
(d) When payment of members introduced	1901 .. .. .	1889 .. .. .	1870 .. .. .
(vii) <i>Electoral Districts—</i> (a) Number of districts	Each State is distributed into as many Electoral Divisions as there are members to be chosen for the State. Total 75	Twenty-four .. ..	Sixty-five .. ..
(b) Number of members elected in each district	One for each Electoral Division	Metropolitan and adjacent districts and City of Newcastle, five each; others, three each	One each .. ..

OF THE COMMONWEALTH AND THE AUSTRALIAN STATES—*continued.*

Queensland.	South Australia.	Western Australia.	Tasmania.
<i>HOUSE—continued.</i>			
<p>Assembly may meet notwithstanding that any of the writs, not exceeding five, have not been returned, or that in any district the electors have failed to elect a member</p> <p>Sixteen members, exclusive of the Speaker</p> <p>Same as New South Wales</p>	<p>..</p> <p>Fifteen members, including the Speaker or his substitute</p> <p>Same as New South Wales</p>	<p>Assembly may proceed to business notwithstanding that any of the writs (not exceeding five) have not been returned, or that in any district the electors have failed to elect a member</p> <p>One-third of the members exclusive of the Speaker</p> <p>Same as New South Wales</p>	<p>..</p> <p>Twelve members, including the Speaker or his deputy</p> <p>Same as New South Wales</p>
<p>Same as New South Wales</p>	<p>Elected forthwith from among the members upon first assembling after general election. Election to be notified to the Governor by deputation</p>	<p>Elected forthwith from among the members upon assembling after general election</p>	<p>Same as Victoria</p>
<p>£1,000 .. ..</p> <p>£700 .. ..</p>	<p>Not fixed by Act; at present £600 per annum</p> <p>Not fixed by Act; at present £400 per annum</p>	<p>£700, inclusive of Parliamentary allowance</p> <p>£500, inclusive of Parliamentary allowance</p>	<p>£500, inclusive of Parliamentary allowance</p> <p>£400, inclusive of Parliamentary allowance</p>
<p>£500 per annum from the day of polling until the day appointed in the writ for taking the poll for the election of a successor. Also travelling expenses (one journey in any one session) between place of nomination and place where Parliament is appointed to sit, except when adjournment extends over 30 days, in which case expenses are again payable</p> <p>£700 per annum ..</p> <p>1886 .. ..</p>	<p>£200 per annum ..</p> <p>A member while in receipt of any official salary, unless his salary is less, when the difference is paid</p> <p>£100 per annum additional</p> <p>1887 .. ..</p>	<p>£400 per annum from the day of election until the next following election</p> <p>A member in receipt of any official salary except in as far as such payment may exceed the amount of official salary</p> <p>£200 per annum ..</p> <p>1900 .. ..</p>	<p>£300 per annum from the day of election until ceasing to be member. In case of dissolution or expiry by effluxion of time of Parliament until polling day of next General Election</p> <p>Speaker and Chairmen of Committees</p> <p>£100 per annum additional</p> <p>1890</p>
<p>Seventy-two .. ..</p> <p>One each .. ..</p>	<p>Nineteen .. ..</p> <p>Eight districts, three each, eleven districts, two each</p>	<p>Fifty .. ..</p> <p>One each .. ..</p>	<p>Five</p> <p>Six each</p>

## CONSPICUOUS OF ACTS RELATING TO THE CONSTITUTIONS

Particulars.	Commonwealth.	New South Wales.	Victoria.
C.—THE LOWER			
(viii) <i>Electors—</i>			
(a) Persons qualified to be electors	Same as Senate	<p>Every person, of the age of 21 years, absolutely free, a natural-born or naturalized subject, who has resided or had his principal place of abode within the Commonwealth for six months and within New South Wales for three months, both periods after naturalization (if any), and for one month in the electoral district prior to the day on which he applies to be registered, unless disqualified or incapacitated</p>	<p>Any person of the full age of 21 years, who—</p> <ul style="list-style-type: none"> <li>(i) is not subject to any legal incapacity; and</li> <li>(ii) is a natural-born or naturalized subject; and</li> <li>(iii) has resided in Victoria for six months and in the district for one month prior to the date of any electoral canvass or claim for enrolment</li> </ul> <p>Any similar person whose name is enrolled in respect to residence and who—</p> <ul style="list-style-type: none"> <li>(i) has a freehold estate in another district and whose name appears on the citizen or Burgess roll or separate list for the City of Melbourne or City of Geelong, or a separate voters' list for any municipality; or</li> <li>(ii) is lessee under an unexpired lease of one year and similarly enrolled on a municipal list</li> </ul>
(b) Persons not qualified to vote	Same as Senate	<p>Any person who, at the time of holding the election—</p> <ul style="list-style-type: none"> <li>(i) is of unsound mind; or</li> <li>(ii) is in receipt of aid from any charitable institution, except as a hospital patient; or</li> <li>(iii) is in prison; or</li> <li>(iv) has been convicted of any crime or offence, punishable in New South Wales by death or penal servitude, and has not received a free pardon or served his sentence; or</li> <li>(v) during the six months preceding the election has been imprisoned for three months without the option of a fine; or</li> <li>(vi) within one year prior to the election has been convicted of an election offence; or</li> <li>(vii) within the same period has been convicted of being an habitual drunkard, an idle and disorderly person or an incorrigible rogue, or a rogue and vagabond; or</li> <li>(viii) has against him an unsatisfied maintenance order; or</li> <li>(ix) within one year of the election has been convicted of having committed an aggravated assault upon his wife</li> </ul>	<p>Any person who—</p> <ul style="list-style-type: none"> <li>(i) at the date of the electoral canvass or claim or election is receiving relief as inmate of any charitable institution other than a hospital; or</li> <li>(ii) during the preceding three years has been imprisoned for three months without the option of a fine; or</li> <li>(iii) during the preceding three years has been convicted of any offence under sections 310 to 315, 321 to 323 of <i>The Constitution Act Amendment Act 1915</i> or sections 150 to 152 of the <i>Local Government Act 1915</i>; or</li> <li>(iv) during the preceding year has been convicted of having been a habitual drunkard, or an idle and disorderly person or an incorrigible rogue, or a rogue and vagabond; or</li> <li>(v) has been convicted of an aggravated assault upon a woman or child; or</li> <li>(vi) has an unsatisfied order against him for the maintenance of his wife or children or for confinement expenses</li> </ul>

OF THE COMMONWEALTH AND THE AUSTRALIAN STATES—*continued.*

Queensland.	South Australia.	Western Australia.	Tasmania.
<p><i>House—continued.</i></p> <p>Any person of the age of 21 years, if not disqualified, who—</p> <p>(i) being a natural-born or naturalized subject has lived within the Commonwealth for a continuous period of six months and in Queensland for a continuous period of three months, both periods after naturalization (if any); and</p> <p>(ii) has lived in an electoral district for one month preceding the day on which he makes a claim to be enrolled; and</p> <p>(iii) has his name enrolled on the electoral roll for such district</p> <p>(i) A person of unsound mind; or</p> <p>(ii) A person who has been attainted of treason or convicted and is under sentence or subject to be sentenced for any offence punishable under the law of any part of the King's Dominions by imprisonment; or</p> <p>(iii) An aboriginal native of Australia, Asia, Africa or the islands of the Pacific</p>	<p>Any person, if not disqualified, who—</p> <p>(i) is of the age of 21 years; and</p> <p>(ii) is a British subject; and</p> <p>(iii) is an inhabitant of the State and has resided therein for at least six months prior to registration</p> <p>Any person who—</p> <p>(i) is of unsound mind; or</p> <p>(ii) has been attainted of treason or convicted and is under sentence or subject to be sentenced for any offence punishable under the law of any part of the King's dominions by imprisonment for one year or longer</p>	<p>Every person, not under 21 years of age, who—</p> <p>(i) is a natural-born or naturalized subject; and</p> <p>(ii) has lived in Western Australia for six months continuously; and</p> <p>(iii) has lived in the district for which he claims to be enrolled for a continuous period of one month immediately preceding the date of his claim</p> <p>Any person who—</p> <p>(i) is of unsound mind; or</p> <p>(ii) is wholly dependent upon relief from the State or from any charitable institution subsidized by the State, except as a hospital patient; or</p> <p>(iii) has been attainted of treason or convicted and is under sentence or subject to be sentenced for any offence punishable under the law of any part of the King's dominions by imprisonment for one year or longer; or</p> <p>(iv) is an aboriginal native of Australia, Asia, Africa, or the islands of the Pacific, or a person of the half blood</p>	<p>Every person of the age of 21 years not subject to any legal incapacity who is a natural-born or naturalized subject and has been resident in Tasmania continuously for twelve months and whose name is on the electoral roll of any Assembly district</p> <p>Same as Legislative Council</p>

## CONSPICUOUS OF ACTS RELATING TO THE CONSTITUTIONS

Particulars.	Commonwealth.	New South Wales.	Victoria.
C.—THE LOWER			
(viii) <i>Electors</i> — continued.			
(c) Restrictions on voting	..	No person may vote unless he— (i) is enrolled for the district; and (ii) retains the qualifications and fulfils the conditions and requirements in respect of voting	..
(d) Number of votes to which each elector is entitled	One .. .. .	One .. .. .	One residential and one property if in another district; but no person may vote more than once at any election
(e) When female voting introduced	1901 .. .. .	1902 .. .. .	1908 .. .. .
(ix) <i>Elections</i> —			
(a) Issue of writs ..	(i) General Election. Issued by Governor-General in Council within ten days of the expiry of the House of Parliament or the proclamation of the dissolution thereof (ii) Vacancy. Speaker issues writ	(i) General Election. Issued by Governor within four days of the publication of the proclamation dissolving Parliament (ii) Vacancy. Speaker issues writ	(i) General Election. Issued by Governor within seven days of dissolution (ii) Vacancy. Speaker issues writ within one month
(b) Day of nomination	Not less than seven nor more than 21 days after the date of writ	Stated on writ .. ..	Not less than five nor more than nine days after the day of issue of writ
(c) Polling day ..	Not less than seven nor more than 30 days after date of nomination. Must be a Saturday	Twenty-eighth day from the date of issue of the writ	Not less than five nor more than nine days after nomination day
(d) Return of writs	Within 90 days after the issue of writ	Not later than the sixtieth day after the issue of the writ, or on such later day as Governor may direct	Within 21 days after the day of polling
(e) Method of voting	Preferential .. ..	Proportional representation. Governor makes regulations prescribing the method of voting and counting votes	Preferential voting ..
(f) Is voting compulsory?	No .. .. .	No .. .. .	No .. .. .
(g) Absent voters ..	Same as Senate ..	An elector may vote by post, who— (i) will on polling day not be within 15 miles by the nearest route of any polling booth; or (ii) will on polling day be travelling under conditions which will preclude him from attending at any polling booth; or (iii) is seriously ill or infirm, or in the case of a woman will by approaching maternity, be precluded from attending at any polling booth	Same as Legislative Council

OF THE COMMONWEALTH AND THE AUSTRALIAN STATES—*continued.*

Queensland.	South Australia.	Western Australia.	Tasmania.
<b>HOUSE—<i>continued.</i></b>			
..	An elector must be registered at the time of the election and have been so for one month before the day of issue of the writ	..	..
One .. .. .	One for each seat to be filled in the district in which enrolled	One .. .. .	One
1905 .. .. .	1894.. .. .	1899.. .. .	1903
General Election. Writs sent to the Minister directed to the proper returning officers respectively By-election. Writ sent by the Speaker direct to the proper returning officer	All writs issued by Governor except that in case of a casual vacancy, if Speaker is within the State, he may issue writ after giving two days' notice to Governor	(i) General Election. Governor by warrant directs Clerk of Writs to issue writs not later than 21 days after dissolution or expiry of Parliament; fourteen days' notice of warrant to be published in <i>Gazette</i> (ii) Casual vacancy. Speaker may direct Clerk of Writs to issue writ Not less than seven nor more than 30 days from the date of writ	Issued by Governor within ten days of cessation or dissolution of Parliament or vacancy. In case of casual vacancy, in which vacating member does not become candidate, the candidate who received the next largest number of preferential votes at preceding general election may be elected Not less than seven nor more than 21 days after the date of the writ. The Governor may extend the time Not less than seven nor more than 30 days after the date of nomination
Named on writ ..	Not less than seven nor more than 21 days after the date of writ	Not less than seven nor more than 30 days after the date of nomination	Not later than 60 days after the issue of the writ. Governor may extend time
Named on writ ..	Not less than two nor more than 30 days after nomination day	Not later than 60 days after the issue of the writ	Contingent voting compulsory for at least three candidates, where one member is to be elected and where there are more than two candidates Where there is more than one candidate to be elected, an elector must vote for at least three candidates in order of preference No
Named on writ ..	Within 50 days after the occurrence of the period or dissolution necessitating the election. No time limit for a casual vacancy	Electors may record contingent votes, but it is optional	
Electors may record contingent votes, but it is not compulsory	Ordinary balloting ..		
Yes .. .. .	No .. .. .	No .. .. .	
An elector who, on polling day, is absent from his district, may vote at any other polling place. An elector who has reason to believe that he will not on polling day be within any district may vote at any time after the issue of writ and before polling day An elector who by reason of ill-health will be unable on polling day to attend at a polling place may vote by post, provided that he is able to write his name	Same as Legislative Council	Same as Legislative Council	Same as Legislative Council

## CONSPECTUS OF ACTS RELATING TO THE CONSTITUTIONS

Particulars.	Commonwealth.	New South Wales.	Victoria.
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## C.—THE LOWER

(x) <i>Election Tribunal</i>	Same as Senate ..	In first session, within seven days after election of Speaker and in other sessions within seven days of commencement, Speaker appoints nine members to be "The Committee of Elections and Qualifications"	The Speaker appoints seven members to be "The Committee of Elections and Qualifications"
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## D.—THE

(i) <i>The Executive Council—</i>			
(a) Number of Members	Not to exceed nine ..	Executive Council to consist of persons who were members prior to Letters Patent, or of such other persons as the Governor shall, from time to time, appoint under the Public Seal of the State (Letters Patent constituting an Executive Council)	Not to exceed eight. Four must be Members of Council or Assembly: not more than two to be Members of Council or six of Assembly. No Minister to hold office for more than three months without becoming a Member of the Council or Assembly
(b) Salaries of Members	£15,300 in all, with £800 per annum to each Minister of State in addition to the emoluments of his office	Premier, in addition to salary as Minister, £500 Six Ministers each £1,370 Attorney-General, £1,520 Solicitor-General, £1,000 Vice-President of the Executive Council, £800	£8,400 in all .. ..

OF THE COMMONWEALTH AND THE AUSTRALIAN STATES—*continued.*

Queensland.	South Australia.	Western Australia.	Tasmania.
<b>HOUSE—<i>continued.</i></b>			
Judge of the Supreme Court sitting in the Court House at the place of nomination, or in such other place there as he may appoint	Junior Puisne Judge, Judge of the Supreme Court, or Sole Judge of the Supreme Court for the time being acting as such, and four Members of the Assembly elected by the Assembly after each general election	Court of Disputed Returns, consisting of a Judge of the Supreme Court sitting in open Court	Judge of the Supreme Court sitting in open Court within the district to which the election relates

**EXECUTIVE COUNCIL.**

<p>Not exceeding eight. Not more than seven to be Members of the Assembly</p> <p>£1,000 each One member designated by the Governor an additional £300</p>	<p>Not exceeding six, of whom one must be honorary. Not more than four may be Members of the Assembly</p> <p>Not to exceed £5,000 in all</p>	<p>Six principal officers of State drawing ministerial salaries and Honorary Ministers. No limit to number of Honorary Ministers. One salaried Minister must be a Member of the Legislative Council</p> <p>£6,200 in all .. ..</p>	<p>£700 each in addition to allowance as member Premier, additional £200</p>
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## SECTION XXVI.

## LOCAL GOVERNMENT.

## § 1. Introduction.

1. **Early History and Systems of Local Government.**—A description of the systems of Local Government and their development in the several States of the Commonwealth was published in 1919 by the Commonwealth Bureau of Census and Statistics in a separate work entitled "Local Government in Australia." The early history of Local Government in Australia was also dealt with. In addition, descriptions were given of the various systems of water supply and sewerage, fire brigades, harbour trusts and marine boards, together with the bodies controlling the same.

Limits of space preclude the incorporation of information regarding the constitution etc., of municipal and other bodies contained in the publication referred to except in cases where fresh Acts have been passed or more recent works have been carried out.

## § 2. Local Government Systems.

1. **New South Wales.**—(i) *Present System of Local Government.* The law relating to local government in New South Wales is now contained in Act No. 41 of 1919; this Act, however, does not affect the special Acts applying to the City of Sydney. Practically the whole of the State, with the exception of the Western Division, has been brought under the operation of this Act, the total area incorporated at the end of 1918 being 183,530 square miles, of which 180,658 square miles are comprised within shires and 2,872 within municipalities. The areas incorporated comprise the whole of the eastern and central divisions of the State, with the exception of Lord Howe Island, the islands in Port Jackson, and the quarantine station at Port Jackson.

The Act No. 41 of 1919, which consolidated all previous Acts, came into operation on the 1st January, 1920; it provides for the continuation of existing shires and municipalities, for the creation of new ones, and for their reconstitution by uniting, dividing, altering, or converting areas.

(ii) *Municipalities.* Including the City of Sydney there were 184 municipalities in New South Wales at the end of 1918; of these, forty were in the suburbs of Sydney and eleven in the district of Newcastle and suburbs.

(a) *Capital Value, Area, Population, and Rates Levied.* The following table shows the improved capital value, the area, population, number of buildings, and amount of rates levied in municipalities for the years 1901 and 1914 to 1918:—

**NEW SOUTH WALES.—MUNICIPALITIES, IMPROVED CAPITAL VALUE, AREA, POPULATION, NUMBER OF BUILDINGS, AND TOTAL RATES LEVIED, 1901 AND 1914 TO 1918.**

Year ended 31st Dec. (a)	Sydney and Suburbs.					Country.				
	Improved Capital Value.	Area.	Popu- lation.	Number of Dwel- lings.	Total Rates Levied.	Improved Capital Value.	Area.	Popu- lation.	Number of Dwel- lings.	Total Rates Levied.
	£	Acres.	No.	No.	£	£	Acres.	No.	No.	£
1901	88,116,600	91,220	(b) 487,900	94,907	277,457	36,429,600	1,732,302	371,330	73,862	127,564
1914	158,764,693	95,259	739,210	(c)	1,038,224	55,682,063	1,769,155	457,150	(c)	450,140
1915	169,778,544	95,259	748,940	(c)	1,076,885	57,949,558	1,769,155	456,000	(c)	464,511
1916	176,659,505	95,259	750,200	(c)	1,153,987	59,422,910	1,742,275	446,800	(c)	485,104
1917	183,469,822	95,259	762,480	(c)	1,124,590	62,065,080	1,742,275	453,800	(c)	516,816
1918	188,674,508	95,259	777,140	(c)	1,165,839	63,368,253	1,710,675	463,500	(c)	542,183

(a) Prior to 1908 the municipal year ended on the first Monday in February, since when the municipal year closes on 31st December. (b) Census, March, 1901. (c) Not available.

The following table gives a comparison of the unimproved and improved values for the years 1914 to 1918 inclusive :—

**NEW SOUTH WALES.—MUNICIPALITIES, UNIMPROVED AND IMPROVED CAPITAL VALUES, 1914 TO 1918.**

Year.	Sydney.	Suburbs.	Metropolis.	Country.	Total.
<b>UNIMPROVED VALUE.</b>					
	£	£	£	£	£
1914 .. ..	27,395,826	31,979,353	59,375,179	22,573,671	81,948,850
1915 .. ..	27,226,283	33,403,223	60,629,506	22,843,195	83,472,701
1916 .. ..	31,168,904	34,719,417	65,888,321	23,378,626	89,266,947
1917 .. ..	31,130,368	36,808,755	67,939,123	24,350,474	92,289,597
1918 .. ..	31,880,295	38,176,261	70,056,556	24,629,668	94,686,224
<b>IMPROVED VALUE.</b>					
	£	£	£	£	£
1914 .. ..	75,786,580	82,978,113	158,764,693	55,682,063	214,446,756
1915 .. ..	78,580,300	91,198,244	169,778,544	57,949,558	227,728,102
1916 .. ..	80,264,720	96,394,785	176,659,505	59,422,910	236,082,415
1917 .. ..	81,976,260	101,493,562	183,469,822	62,055,080	245,524,902
1918 .. ..	82,027,200	106,647,308	188,674,508	63,368,253	252,042,761

(b) *Revenue.* The following table gives particulars of the revenue of municipalities for the year ending 31st December, 1918 :—

**NEW SOUTH WALES.—MUNICIPALITIES, REVENUE, 1918.**

Particulars.	Sydney.	Suburbs.	Country.	Total.
	£	£	£	£
General fund .. ..	1,263,170 (b)	789,773	517,959	1,307,732 (c)
Trading accounts .. ..		..	190,568	190,568 (c)
Special and local funds .. ..		61,536	333,984	395,520 (c)
Loan funds .. ..		79,918	65,712	145,630 (c)
Reserve and Renewals Account		3,881	33,572	37,453 (c)
Gross revenue .. ..	1,263,170 (b)	935,108	1,141,795	3,340,073
Deduct transfers (a) .. ..	..	49,615	43,972	93,587
Net revenue .. ..	1,263,170 (b)	885,493	1,097,823	3,246,486

(a) Transfers from various funds to loan funds for principal, interest, and capital expenditure.  
 (b) Items of revenue and expenditure for the City of Sydney cannot be allocated to the different headings shown for municipalities. (c) Exclusive of Sydney.

(c) *Expenditure.* The following table gives particulars of expenditure of municipalities for the year ending 31st December, 1918 :—

**NEW SOUTH WALES.—MUNICIPALITIES, EXPENDITURE, 1918.**

Particulars.	Sydney.	Suburbs.	Country.	Total.
	£	£	£	£
General fund .. ..	1,246,130 (b)	809,400	518,010	1,327,410 (c)
Trading accounts .. ..		..	147,806	147,806 (c)
Special and local funds .. ..		56,027	319,734	375,761 (c)
Loan funds .. ..		45,967	45,407	91,374 (c)
Reserve and renewals account		872	12,676	13,548 (c)
Gross expenditure .. ..	1,246,130 (b)	912,266	1,043,633	3,202,029
Deduct transfers (a) .. ..	..	49,615	43,972	93,587
Net expenditure .. ..	1,246,130 (b)	862,651	999,661	3,108,442

(a) Transfers from various funds for principal and interest on loans. (b) See note (b) to preceding table.  
 (c) See note (c) to preceding table.

(d) *Assets and Liabilities.* The financial position of the municipalities as at the 31st December, 1918, is shewn by the following statement of assets and liabilities of the various funds :—

NEW SOUTH WALES.—MUNICIPALITIES, ASSETS AND LIABILITIES, 1918.

Particulars.	Sydney.	Suburbs.	Country.	Total.
<i>Assets—</i>	£	£	£	£
General fund .. ..	11,120,974 (a)	433,676	546,097	979,773 (b)
Trading accounts .. ..		..	226,400	226,400 (b)
Special and local funds .. ..		46,935	1,801,104	1,848,039 (b)
Loan funds .. ..		165,368	612,080	777,448 (b)
Reserves and renewals account		3,142	26,067	29,209 (b)
Total .. .	11,120,974 (a)	649,121	3,211,748	14,981,843
<i>Liabilities—</i>				
General fund .. ..	10,664,813 (a)	226,130	115,038	341,168 (b)
Trading accounts .. ..		..	97,144	97,144 (b)
Special and local funds .. ..		12,429	1,602,986	1,615,415 (b)
Loan funds .. ..		809,708	587,087	1,396,795 (b)
Reserves and renewals account		3,142	26,067	29,209 (b)
Total .. .	10,664,813 (a)	1,051,409	2,428,322	14,144,544

(a) See note (b) to last table on preceding page.

(b) See note (c) to last table on preceding page.

(iii) *Shires.* The total area of the 136 shires constituted under the new system is 180,658 square miles, and the population on the 31st December, 1918, was 673,860.

The shires vary in area from 36 square miles in the case of Ku-ring-gai, immediately north of the metropolis, to 5,730 square miles in the case of Lachlan in the Condobolin district.

(a) *Valuation and Rates Levied.* The unimproved capital value of the shires in 1918 was £109,133,215, as against £107,695,315 in the preceding year. 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, and in many cases do not make them. The total amount of all rates levied was £729,966.

(b) *Revenue.* The principal heads of revenue for the last five years are shewn in the following table :—

NEW SOUTH WALES.—INCOME OF SHIRES, 1914 TO 1918.

Particulars.(a)	1914.	1915.	1916.	1917.	1918.
<i>General Fund—</i>	£	£	£	£	£
General rates (including interest) .. ..	608,009	612,612	633,973	672,473	710,983
Government endowment .. ..	146,077	163,211	143,259	151,446	162,188
Public works .. ..	197,754	192,319	205,277	167,696	157,737
Health administration .. ..	4,889	4,620	4,087	3,987	3,865
Public services .. ..	10,069	9,711	11,162	10,682	11,487
Shire property .. ..	13,738	12,512	12,449	14,343	14,258
Miscellaneous .. ..	6,742	5,843	7,507	7,303	7,427
<i>Special, Local, and Loan Funds</i>	57,714	65,293	75,309	84,374	93,101
Total revenue .. .	1,044,992	1,066,121	1,093,023	1,112,304	1,161,046

(a) The receipts for Public Works, Health Administration, Public Service, etc., include Government grants during 1918 amounting to £137,717.

(c) *Expenditure.* The following statement shows the expenditure of shires during the years 1914 to 1918 inclusive :—

## NEW SOUTH WALES.—EXPENDITURE OF SHIRES, 1913 TO 1918.

Particulars.	1914.	1915.	1916.	1917.	1918.
<i>General Fund—</i>	£	£	£	£	£
Administrative expenses ..	95,760	87,527	100,224	100,649	99,391
Public works ..	801,542	813,400	843,803	901,730	916,351
Health administration ..	8,064	8,049	8,513	9,149	9,292
Public services ..	14,757	17,935	15,229	18,256	19,370
Shire property ..	15,277	14,644	14,969	16,211	16,884
Miscellaneous ..	9,275	10,290	17,510	15,912	15,526
<i>Special, Local, and Loan Funds</i>	51,796	67,025	78,649	78,819	86,905
Total expenditure ..	996,471	1,018,870	1,078,897	1,140,726	1,163,719

(d) *Assets and Liabilities.* The financial position of the shires at the end of the year 1918 shewed that there was an excess of assets of £403,336. The following table gives particulars of assets and liabilities as at the 31st December, 1918 :—

## NEW SOUTH WALES.—ASSETS AND LIABILITIES OF SHIRES, 1918.

Assets.		Liabilities.	
<i>General Fund—</i>	£	<i>General Fund—</i>	£
Outstanding rates ..	54,880	Temporary loans ..	73,319
Stores and materials ..	19,147	Sundry creditors ..	47,236
Bank balance ..	109,324	Due on contracts ..	2,120
Sundry debtors ..	19,965	Due to trust fund ..	227
Land ..	22,127	Other ..	900
Buildings ..	100,227	<i>Special, Local, and Loan Funds</i>	53,903
Plant and property (a) ..	163,749		
Furniture ..	15,415	Total ..	(b) 177,705
Other ..	257		
<i>Special, Local, and Loan Funds</i> ..	75,950	Excess of assets ..	403,336
Total ..	581,041	Total ..	581,041

(a) Including saleyards, pounds, baths, public watering-places, ferries, wharves, etc.

(b) Includes £26,138 for outstanding loans, in addition to temporary loans.

2. *Victoria.*—(i) *Present System of Local Government.* Local government is now administered under the Act of 1915 throughout the whole of the State, with the exception of French Island, and is divided into cities, towns, boroughs, and shires. Melbourne and Geelong, having been incorporated under special statutes prior to the establishment of a general system of local government, are not subject to the provisions of the Local Government Act except in a few comparatively unimportant details.

In addition to the endowment of £50,000, the municipalities received from the Government during the financial year 1918–19 a sum of £69,321 out of the Licensing Act Fund as the equivalent for (a) fees for licenses, (b) fees for the registration of brewers and spirit merchants, and (c) fines, penalties, and forfeitures incurred under the Licensing Act 1915.

(ii) *Boroughs and Shires.—Number, Population, and Value of Ratable Property.* The following table shews the number of cities, towns, boroughs, and shires, their estimated population, the number of ratepayers and dwellings, and the value of ratable property for the years 1901 and 1915 to 1919 inclusive:—

**VICTORIA.—PARTICULARS OF MUNICIPALITIES, 1901 AND 1915 TO 1919.**

Year ending 30th September.	Number of Municipa- lities.	Estimated Population.	Number of Ratepayers (both sexes).	Estimated Number of Dwellings.	Estimated Value of Ratable Property.	
					Total.	Annual.
CITIES, TOWNS, AND BOROUGH.						
					£	£
1901 .. ..	58	627,237	153,783	130,358	67,302,423	4,765,632
1915 .. ..	61	825,078	209,276	185,330	147,205,224	8,218,040
1916 .. ..	52	824,170	208,759	186,740	149,235,137	8,335,553
1917 .. ..	51	829,368	213,520	188,528	154,105,571	8,587,302
1918 .. ..	52	844,970	219,076	193,398	158,777,843	8,912,303
1919 .. ..	52	859,470	224,757	197,689	164,306,704	9,227,807

**SHIRES.**

					£	£
1901 .. ..	150	571,683	159,128	122,645	106,839,331	5,771,865
1915 .. ..	147	608,828	181,480	138,462	167,405,523	8,517,938
1916 .. ..	141	617,587	184,374	141,893	169,724,979	8,606,509
1917 .. ..	139	618,896	187,894	142,511	172,309,539	8,732,116
1918 .. ..	139	613,380	186,551	141,313	172,558,872	8,735,794
1919 .. ..	138	622,260	188,032	141,951	176,297,529	8,922,859

(iii) *Municipal Assets and Liabilities.* The assets of municipalities may be classified under three heads—(a) the municipal fund, (b) the loan fund, and (c) property; the liabilities under two heads—(a) the municipal fund, and (b) the loan fund. The following table shews the amount of municipal assets and liabilities for the years 1901 and 1914 to 1918:—

**VICTORIA.—MUNICIPAL ASSETS AND LIABILITIES, 1901 AND 1914 TO 1918.**

Items.	1901.	1914.	1915.	1916.	1917.	1918.
<b>ASSETS.</b>						
	£	£	£	£	£	£
<b>MUNICIPAL FUND—</b>						
Uncollected rates .. ..	187,205	120,200	147,886	146,491	138,617	132,217
Other assets .. ..	122,581	652,530	760,685	392,876	442,388	427,046
<b>LOAN FUND—</b>						
(a) Sinking funds—						
Amount at credit .. ..	675,310	878,322	839,951	792,445	745,784	596,550
Arrears due .. ..	1,391	1,327	1,326	834	1,732	5,054
(b) Unexpended balances .. ..	394,136	351,923	378,278	209,363	286,206	238,906
<b>PROPERTY—</b>						
Buildings, markets, etc. .. ..	2,507,441	3,799,038	3,863,556	3,750,947	3,848,320	3,871,232
Waterworks .. ..	197,075	180,485	175,267	177,050	252,069	268,815
Gasworks .. ..	63,732	103,435	99,107	105,124	109,215	110,319
<b>Total .. ..</b>	<b>4,149,471</b>	<b>6,087,260</b>	<b>6,266,056</b>	<b>5,575,130</b>	<b>5,824,331</b>	<b>5,650,639</b>

VICTORIA.—MUNICIPAL ASSETS AND LIABILITIES, 1901 AND 1914 TO 1918  
—continued.

Items.	1901.	1914.	1915.	1916.	1917.	1918.
<b>LIABILITIES.</b>						
	£	£	£	£	£	£
<b>MUNICIPAL FUND—</b>						
Arrears due sinking funds ..	1,021	1,327	1,326	834	1,732	5,054
Overdue interest ..	9,413	19,771	13,776	14,456	24,425	6,920
Bank overdrafts ..	157,046	206,694	213,330	252,130	233,160	317,410
Other liabilities ..	112,297	356,884	410,576	221,183	233,189	269,947
<b>LOAN FUNDS—</b>						
Loans outstanding ..	4,253,304	5,617,056	5,739,084	5,869,260	6,030,343	5,764,050
Due on loan contracts ..	52,826	69,181	237,765	15,888	42,428	47,145
Due on current contracts ..	51,134	74,451	71,729	73,005	98,538	78,115
<b>Total ..</b>	<b>4,637,041</b>	<b>6,345,364</b>	<b>6,687,586</b>	<b>6,446,756</b>	<b>6,663,815</b>	<b>6,488,641</b>

(iv) *Revenue and Expenditure of Municipalities.* The following table shows the revenue from various sources, and the expenditure under various heads, exclusive of loan revenue and expenditure, of municipalities during the years 1901 and 1914 to 1918 :—

VICTORIA.—REVENUE AND EXPENDITURE OF MUNICIPALITIES,  
1901 AND 1914 TO 1918.

Items.	1901.	1914.	1915.	1916.	1917.	1918.
<b>REVENUE.</b>						
	£	£	£	£	£	£
<b>Taxation</b> { Rates ..	722,346	1,251,649	1,277,063	1,346,439	1,395,723	1,462,640
{ Licenses ..	104,499	108,106	104,634	105,772	108,651	109,916
{ Dog fees ..	14,965	21,807	20,158	20,528	20,883	21,481
{ Market and weigh- bridge dues ..	49,623	70,620	63,646	63,812	67,726	71,737
<b>Government endowments and grants ..</b>	<b>175,972</b>	<b>144,374</b>	<b>140,545</b>	<b>74,372</b>	<b>68,364</b>	<b>62,460</b>
<b>Contributions for streets, etc. ..</b>	<b>24,999</b>	<b>63,260</b>	<b>52,472</b>	<b>52,045</b>	<b>54,620</b>	<b>63,910</b>
<b>Sanitary charges ..</b>	<b>48,253</b>	<b>83,982</b>	<b>85,971</b>	<b>91,125</b>	<b>96,484</b>	<b>101,791</b>
<b>Rents ..</b>	<b>54,117</b>	<b>76,803</b>	<b>72,133</b>	<b>59,006</b>	<b>62,953</b>	<b>65,821</b>
<b>Other sources ..</b>	<b>89,210</b>	<b>354,427</b>	<b>388,850</b>	<b>441,128</b>	<b>487,962</b>	<b>566,788</b>
<b>Total ..</b>	<b>1,283,984</b>	<b>2,175,028</b>	<b>2,205,472</b>	<b>2,254,227</b>	<b>2,363,366</b>	<b>2,526,544</b>

<b>EXPENDITURE.</b>						
	£	£	£	£	£	£
<b>Salaries, etc. ..</b>	<b>139,270</b>	<b>192,066</b>	<b>199,872</b>	<b>206,353</b>	<b>210,034</b>	<b>214,797</b>
<b>Sanitary work, street cleaning, etc. ..</b>	<b>132,542</b>	<b>206,271</b>	<b>225,919</b>	<b>236,766</b>	<b>243,774</b>	<b>244,984</b>
<b>Lighting ..</b>	<b>86,059</b>	<b>89,928</b>	<b>93,381</b>	<b>95,420</b>	<b>97,685</b>	<b>98,511</b>
<b>Fire brigades' contributions ..</b>	<b>16,769</b>	<b>28,361</b>	<b>30,277</b>	<b>32,086</b>	<b>33,939</b>	<b>32,786</b>
<b>Public works { Construction ..</b>	<b>244,315</b>	<b>315,480</b>	<b>274,593</b>	<b>238,773</b>	<b>200,151</b>	<b>232,977</b>
{ Maintenance ..	<b>345,334</b>	<b>814,459</b>	<b>811,608</b>	<b>847,505</b>	<b>897,136</b>	<b>1,046,474</b>
<b>Formation of private streets, etc. ..</b>	<b>23,350</b>	<b>70,465</b>	<b>62,012</b>	<b>68,024</b>	<b>63,499</b>	<b>75,474</b>
<b>Redemption of loans ..</b>	<b>27,745</b>	<b>80,576</b>	<b>92,738</b>	<b>101,461</b>	<b>112,020</b>	<b>124,797</b>
<b>Interest on loans ..</b>	<b>197,810</b>	<b>239,737</b>	<b>252,912</b>	<b>262,760</b>	<b>274,113</b>	<b>277,435</b>
<b>Charities ..</b>	<b>13,407</b>	<b>18,026</b>	<b>19,406</b>	<b>18,801</b>	<b>20,350</b>	<b>19,977</b>
<b>Other expenditure ..</b>	<b>103,403</b>	<b>151,613</b>	<b>174,945</b>	<b>180,018</b>	<b>186,310</b>	<b>178,043</b>
<b>Total ..</b>	<b>1,330,004</b>	<b>2,206,980</b>	<b>2,237,663</b>	<b>2,287,967</b>	<b>2,339,011</b>	<b>2,546,255</b>

3. *Queensland.*—(i) *Present System of Local Government.* The existing scheme of local government in the State of Queensland is regulated by the provisions of the Local Authorities Act 1902, with its amendments in 1903, 1905, 1910, 1912, 1913, and 1917, the State being divided into cities and towns and shires.

(ii) *Area, Population, Number of Dwellings, Rates, Assets and Liabilities of Cities, Towns and Shires.* The following table gives particulars of the area, population, number of inhabited tenements, assets and liabilities of cities and towns, and of shires, for each year from 1914 to 1918 :—

**QUEENSLAND.—PARTICULARS OF CITIES AND TOWNS AND SHIRES  
1914 TO 1918.**

Year.	Municipality.	Area.	Popu- lation.	Number of In- habited Dwel- lings.	Capital Value.	Assets.	Liabilities.		
							Government Loans.	Other.	Total.
		Square Miles.	No.	No.	£	£	£	£	£
1914	Cities and Towns	418	279,794	59,398	16,075,729	1,635,685	240,319	1,047,739	1,288,058
	Shires ..	669,473	411,093	87,144	44,596,193	455,476	159,359	97,454	256,813
	Total ..	669,894	690,887	146,542	60,671,922	2,091,161	399,678	1,145,193	1,544,871
1915	Cities and Towns	400	289,441	61,140	16,401,175	1,691,800	249,675	1,132,546	1,382,221
	Shires ..	669,494	428,007	89,919	45,622,388	499,390	178,634	127,618	306,252
	Total ..	669,894	717,448	151,059	62,023,563	2,191,190	428,309	1,260,164	1,688,473
1916	Cities and Towns	395	295,495	58,223	16,361,028	1,741,355	258,225	1,170,038	1,428,263
	Shires ..	669,499	420,377	91,297	45,919,033	552,750	190,752	133,352	324,104
	Total ..	669,894	715,872	149,520	62,280,061	2,294,105	448,977	1,303,390	1,752,367
1917	Cities and Towns	406	320,450	62,839	16,771,990	1,829,543	261,385	1,217,593	1,478,978
	Shires ..	669,483	409,845	88,437	45,276,512	567,438	181,862	124,432	306,294
	Total ..	669,894	730,295	151,276	62,048,502	2,396,981	443,247	1,342,025	1,785,272
1918	Cities and Towns	507	330,272	65,588	17,436,371	1,988,957	270,820	1,328,205	1,599,025
	Shires ..	669,387	411,278	88,384	45,553,989	594,823	173,024	179,795	352,819
	Total ..	669,894	741,550	153,972	62,990,360	2,583,785	443,844	1,508,000	1,951,844

(iii) *Receipts and Expenditure of Cities, Towns, and Shires.* The following table shews the receipts and expenditure (including loan moneys) of cities and towns and of shires, as well as the total receipts and expenditure of all municipalities, for each year from 1914 to 1918 :—

**QUEENSLAND.—REVENUE AND EXPENDITURE OF CITIES AND TOWNS  
AND SHIRES, 1914 TO 1918.**

Year.	Municipality.	Receipts.				Expenditure.				
		From Govern- ment.	From Rates.	From other Sources.	Total.	On Public Works.	Loan Redem- ption.	Office Ex- penses and Salaries.	Other Expenses. (a)	Total.
		£	£	£	£	£	£	£	£	£
1914	Cities and Towns	31,725	421,329	92,203	545,257	495,067	21,210	38,766	89,707	644,750
	Shires ..	41,413	394,373	64,760	500,546	387,021	16,496	64,789	48,877	518,183
	Total ..	73,138	815,702	156,963	1,045,803	882,088	37,706	103,555	138,584	1,162,933
1915	Cities and Towns	27,439	433,139	97,245	557,823	493,900	18,635	39,553	87,623	639,711
	Shires ..	36,736	415,371	62,665	514,772	390,701	15,088	67,485	60,706	533,980
	Total ..	64,175	848,510	159,910	1,072,595	884,601	33,723	107,038	148,329	1,173,691
1916	Cities and Towns	29,541	460,252	86,139	575,932	478,962	20,221	50,358	87,970	637,541
	Shires ..	23,680	443,843	63,361	530,884	366,007	13,587	82,240	71,902	533,736
	Total ..	53,221	904,095	149,500	1,106,816	844,969	33,808	132,628	159,872	1,171,277
1917	Cities and Towns	30,012	495,510	96,959	622,481	475,689	24,062	56,179	92,298	648,228
	Shires ..	16,138	485,375	71,175	572,688	395,687	12,250	86,112	61,215	555,264
	Total ..	46,150	980,885	168,134	1,195,169	871,376	36,312	142,291	153,513	1,203,492
1918	Cities and Towns	16,937	535,124	103,477	655,538	455,824	21,916	61,731	141,366	680,837
	Shires ..	23,448	506,447	69,147	599,042	502,390	13,864	89,387	61,252	666,893
	Total ..	40,385	1,041,571	172,624	1,254,580	958,214	35,780	151,118	202,618	1,347,730

(a) Including interest on loans.

4. South Australia.—(i) *Present System of Local Government.* The more settled portion is under the jurisdiction of municipal corporations under the Act of 1890 and its amendments, and of district councils under the Act of 1914, as amended in 1918. Subsidies of 25 per cent. on current rates collected are paid to corporations and to district councils. Votes are annually provided by Parliament of about £180,000, for payment to corporations and district councils as a contribution towards the cost of main roads throughout the State and other roads in newly-settled areas.

(ii) *Finances of Corporations and District Councils.* The subjoined tables shew the amounts of assessments and the revenue and expenditure of corporations and of district councils for the financial years 1901 and 1914 to 1918; the figures given are exclusive of the Main Roads Funds, particulars as to which may be found in the section of this book on "Roads and Bridges."

**SOUTH AUSTRALIA.—ASSESSMENT, REVENUE AND EXPENDITURE OF LOCAL AUTHORITIES, 1901 AND 1914 TO 1918 (EXCLUSIVE OF MAIN ROADS FUNDS).**

Year. (a)	Amount of Assessment (Annual Value).	Revenue.				Expenditure.	
		From Rates.	From Subsidies.	Other Sources.	Total.	On Public Works.	Total.

**CORPORATIONS.**

	£	£	£	£	£	£	£
1901 ..	1,177,850	87,289	9,733	49,342	146,364	55,533	146,091
1914 ..	1,896,273	168,041	23,821	63,026	254,888	176,952	266,202
1915 ..	1,918,256	173,941	22,669	66,887	263,497	169,926	288,629
1916 ..	2,006,802	176,870	23,448	67,136	267,454	160,516	270,929
1917 ..	2,037,649	189,594	24,084	77,517	291,195	199,532	289,235
1918 ..	2,103,195	194,497	26,821	76,589	297,907	206,122	296,590

**DISTRICT COUNCILS.**

1901 ..	1,412,507	63,321	15,225	51,919	130,465	65,406	128,499
1914 ..	2,435,655	132,277	38,397	32,878	203,552	145,282	196,408
1915 ..	2,601,298	128,859	34,999	27,574	191,432	152,951	204,358
1916 ..	2,662,066	148,895	34,487	27,135	210,517	136,380	189,582
1917 ..	2,704,374	155,677	36,674	30,143	222,494	161,886	205,079
1918 ..	2,767,309	162,718	38,298	32,091	233,107	194,734	250,610

(a) Up to and including the year 1903, the financial year for corporations ended on the 31st December, but after that date ends on the 30th November. The financial year for district councils ends on the 30th June.

5. Western Australia.—(i) *Present System of Local Government.* In this State there are three forms of local authorities, namely—(i) Municipalities, (ii) Road Districts, and (iii) Local Boards of Health, the two former covering the whole of the State.

(ii) *Area, Population, etc., of Municipalities.* Returns regarding the area, population, and valuation of municipalities are defective. They are shewn in the table hereunder :—

**WESTERN AUSTRALIA.—NUMBER, AREA, POPULATION, NUMBER OF DWELLINGS, AND VALUATION OF MUNICIPALITIES, 1901 AND 1914 TO 1918.**

Year ended the 31st October.	Number of Municipalities.	Area.	Population.	Dwellings.			Amount Payable in respect of Rates.
				Occupied.	Unoccupied.	Total.	
	No.	Acres.	No.	No.	No.	No.	£
1901 ..	42	71,721	(a) 96,807 (b) 20,989	(b) 967	(b) 21,956	(c)	(c)
1914 ..	33	67,290	158,664	32,864	1,033	33,897	163,597
1915 ..	31	67,290	155,334	(c)	(c)	33,542	172,720
1916 ..	30	60,160	152,671	(c)	(c)	33,763	168,148
1917 ..	28	59,560	150,562	(c)	(c)	33,733	171,239
1918 ..	25	58,070	148,431	33,550	239	33,789	173,828

(a) Census figures, 1901.

(b) Returns for thirty-nine municipalities only.

(c) Not available.



Complete particulars of improved or unimproved capital values are not available. In the year 1914 the capital value of ratable property in municipalities was £24,382,980; in 1915, £24,921,422; in 1916, £26,817,864; in 1917, £24,933,426; and in 1918, £26,077,875.

(iii) *Revenue and Expenditure of Municipalities.* The following table gives particulars as to the revenue and expenditure of municipalities during the years 1901 and 1914 to 1918 :—

**WESTERN AUSTRALIA.—REVENUE AND EXPENDITURE OF MUNICIPALITIES.  
1901 AND 1914 TO 1918.**

Year ended the 31st October—	Revenue.				Expenditure.			
	From Rates.	From Govt. Grants.	From other Sources.	Total.	Works and Improvements.	Disbursements in respect of Loans.	Other Expenses.	Total.
	£	£	£	£	£	£	£	£
1901 ..	78,022	66,860	82,246	227,128	111,241	23,809	79,365	214,415
1914 ..	153,686	13,142	479,797	646,625	223,098	115,924	304,823	643,845
1915 ..	170,675	10,309	465,810	646,794	190,739	129,103	382,784	702,626
1916 ..	166,617	9,462	437,258	613,337	120,411	127,559	370,390	618,360
1917 ..	167,997	7,813	375,541	551,351	73,991	133,954	334,002	541,947
1918 ..	171,315	1,870	374,992	548,177	75,086	135,617	327,784	538,487

(iv) *Assets and Liabilities of Municipalities.* The following table gives particulars respecting the assets and liabilities of municipalities at the end of each financial year 1901 and 1914 to 1918 :—

**WESTERN AUSTRALIA.—ASSETS AND LIABILITIES OF MUNICIPALITIES.  
1901 AND 1914 TO 1918.**

Year ended the 31st October—	Assets.					Liabilities.		
	Balance in Hand. (a)	Value of Property owned by Municipalities.	Accrued Sinking Funds for Redemption of Loans.	Other Assets.	Total.	Outstanding Debts and Bonds.	Other Liabilities.	Total.
	£	£	£	£	£	£	£	£
1901 ..	37,250	214,984	42,311	13,432	307,986	321,000	19,762	340,762
1914 ..	78,790	1,221,891	283,855	90,768	1,675,304	1,606,966	76,647	1,683,613
1915 ..	16,732	1,280,912	268,911	103,409	1,669,964	1,690,074	74,392	1,764,466
1916 ..	17,233	1,438,246	286,485	86,158	1,828,122	1,813,426	68,897	1,882,323
1917 ..	27,259	1,445,877	298,421	85,039	1,856,596	1,789,168	67,754	1,856,922
1918 ..	35,016	1,440,479	335,459	96,318	1,907,272	1,753,316	71,740	1,825,056

(a) Including bank balance, cash in hand, and fixed deposit.

(v) *Road Districts.* Returns regarding Road Districts are as under :—

**WESTERN AUSTRALIA.—REVENUE AND EXPENDITURE, ASSETS AND LIABILITIES,  
OF ROAD DISTRICTS, 1901 AND 1914 TO 1918.**

Year ended 30th June.	No. of Districts.	Area.	Estimated Annual Value.	Revenue.				Expenditure.				Assets.	Liabilities.
				Rates.	From Government.	Other.	Total.	Admin-istration.	Works.	Other.	Total.		
	No.	Acres.	£	£	£	£	£	£	£	£	£	£	£
1901 (a)	93	975,808	(b)	8,293	36,011	6,580	50,884	6,833	45,303	3,935	56,071	18,339	2,441
1914 ..	112	974,476	1,758,279	93,700	63,668	46,031	203,399	24,120	139,859	23,821	187,800	207,415	60,693
1915 ..	112	974,476	1,756,314	88,569	27,753	47,571	163,893	26,025	139,542	27,466	193,033	206,806	98,285
1916 ..	113	975,827	1,802,847	104,345	24,397	38,820	167,562	24,903	114,343	27,094	166,340	226,335	114,841
1917 ..	117	975,828	1,793,463	113,686	30,226	55,383	199,295	26,335	126,316	36,526	189,177	256,245	137,994
1918 ..	116	975,830	(b)	116,245	32,594	46,187	195,026	27,969	139,514	38,682	206,165	265,033	149,127

(a) Year ended 31st December.

(b) Not available.

(vi) *Boards of Health.* On the 31st October, 1918, there were twenty-six Local Boards of Health within municipalities, and on the 30th June, 1918, sixty-one under control of Road Boards, and twenty-eight extra-municipal Boards. In and after 1911, the financial year of Municipal Local Health Boards ended 31st October, and that of extra-municipal Boards, 30th June.

The following table shows particulars of the receipts and expenditure of the various Boards—both municipal and extra-municipal—during the years 1901 and 1914 to 1918 :—

**WESTERN AUSTRALIA.—RECEIPTS AND EXPENDITURE OF LOCAL HEALTH BOARDS, 1901 AND 1914 TO 1918.**

Year ended the 31st October—	Revenue.			Expenditure.		
	From Public Health Rate.	From other Sources.	Total.	On Sanitary Services.	Other Expenses.	Total.
	£	£	£	£	£	£
1901 ..	15,251	17,456	32,707	18,789	15,555	34,344
1914 (a) ..	(f) 53,472	(g) 61,800	115,272	62,831	47,484	110,315
1915 (b) ..	(f) 42,904	(g) 61,393	104,297	70,963	36,890	107,853
1916 (c) ..	(f) 43,942	(g) 59,441	103,383	68,749	29,971	98,720
1917 (d) ..	(f) 42,967	(g) 56,488	99,455	67,830	31,056	98,886
1918 (e) ..	(f) 41,358	(g) 56,383	97,741	66,652	32,588	99,240

(a) Exclusive of 12 inactive boards. (b) Exclusive of 13 inactive boards. (c) Exclusive of 8 inactive boards. (d) Exclusive of 10 inactive boards. (e) Exclusive of 8 inactive boards. (f) Including sanitary rates. (g) Including sanitary fees and charges.

6. *Tasmania.*—(i) *Systems of Local Government.* The whole State, with the exception of the cities of Hobart and Launceston, which were incorporated under separate Acts, was divided by the Local Government Act of 1906 into municipal districts. Amendments to that Act were made in 1908 and 1911.

(ii) *Annual Value, Revenue, and Expenditure of Municipalities.* The following table shows the annual value, total receipts, and expenditure of municipalities for the years 1914 to 1918 inclusive :—

**TASMANIA.—ANNUAL VALUE, REVENUE AND EXPENDITURE OF MUNICIPALITIES, 1914 TO 1918.**

Year.	Number of Municipalities.	Annual Value of Ratable Property.	Revenue.				Expenditure. (b)
			From Rates.	From Govt.	From other Sources. (a)	Total.	
		£	£	£	£	£	£
1914 ..	51	1,776,099	185,954	14,416	169,825	370,195	349,186
1915 ..	50	1,654,654	190,491	14,651	172,006	377,148	394,374
1916 ..	50	1,717,878	188,939	12,753	216,880	418,572	510,977
1917 ..	50	1,769,443	202,119	18,527	249,756	470,402	487,615
1918 ..	50	1,787,234	216,232	22,266	318,511	557,009	558,939

(a) Including sums derived from loans. (b) Including repayments of loans.

According to the latest estimate made by the Commissioner of Taxes the capital value of ratable property in 1918 was £36,232,654.

(iii) *Total Revenue and Expenditure of Local Bodies.* Particulars as to Road Boards and Road Trusts are given in the chapter of this book on "Roads and Bridges." In addition to the local authorities already mentioned, seven Marine Boards and three Harbour Trusts have been established at ports in Tasmania for the purposes of constructing and maintaining wharves and jetties and of controlling all matters relating to shipping in the respective ports. Of the Water Trusts, seven maintain

independent existence, and the remaining twenty-five are incorporated in the Municipalities. There are twenty-four independent Cemetery Trusts. The subjoined statement shews the total revenue and expenditure for all local bodies, exclusive of all amounts contributed by the general Government, during each year from 1914 to 1918, inclusive:—

**TASMANIA.—REVENUE AND EXPENDITURE OF ALL LOCAL BODIES, EXCLUSIVE OF AMOUNTS CONTRIBUTED BY THE GENERAL GOVERNMENT, 1914 TO 1918.**

Particulars.	1914.	1915.	1916.	1917.	1918.
(a) REVENUE.					
	£	£	£	£	£
Marine Boards and Lighthouses(c)	77,732	93,488	(c)67,579	100,364	79,633
Municipalities .. ..	355,779	362,497	405,819	451,875	534,743
Cemetery Trusts .. ..	1,391	1,320	1,275	1,143	1,507
Water Trusts .. ..	2,508	2,364	2,365	2,865	2,669
Total .. ..	437,410	459,669	477,038	556,247	618,552
(b) EXPENDITURE.					
	£	£	£	£	£
Marine Boards and Lighthouses (c)	103,202	144,805	87,960	99,308	89,722
Municipalities .. ..	334,770	379,723	498,224	469,088	536,673
Cemetery Trusts .. ..	1,032	1,499	1,425	1,379	1,593
Water Trusts .. ..	2,228	1,966	1,813	1,753	2,246
Total .. ..	441,232	527,993	589,422	571,528	630,234

(a) Exclusive of amounts contributed by the general Government. (b) Exclusive of expenditure from Government contributions. (c) In 1915 the chief lighthouses were taken over by the Commonwealth.

### § 3. Water Supply, Sewerage and Drainage.

1. New South Wales.—(i) *Metropolitan Waterworks.* The following tables give particulars as to (a) the revenue, expenditure, and capital cost of the metropolitan waterworks, and (b) the number of gallons of water, number of houses and population supplied in 1901 and from 1915 to 1919:—

**SYDNEY WATERWORKS.—REVENUE, EXPENDITURE, AND CAPITAL COST, 1901 AND 1915 TO 1919.**

Year ended 30th June.	Revenue. (a)	Working Expenses.	Capital Cost, exclusive of Items on which Interest is not charged.	Percentage of Working Expenses to Revenue.	Percentage of Revenue to Capital Cost.	Interest Payable on Capital Cost.	Net Profit after Paying Working Expenses and Interest.
	£	£	£	%	%	£	£
1901 ..	203,348	49,270	4,300,552	24.22	4.72	152,333	1,745
1915 ..	441,966	159,687	6,644,289	36.13	6.65	235,949	46,330
1916 ..	470,744	165,210	7,192,472	35.09	6.54	261,335	44,199
1917 ..	468,537	177,977	7,769,200	37.98	6.03	306,198	—15,638b
1918 ..	523,979	195,448	8,472,700	37.30	6.18	343,716	—15,185b
1919 ..	627,288	219,322	8,900,391	34.96	7.04	377,885	30,079

(a) Rate increased from 6½d. to 7½d. in the £ of the assessed annual value from 1st July, 1918.

(b) — Signifies loss.

**SYDNEY WATERWORKS.—NUMBER OF GALLONS, HOUSES, AND POPULATION SUPPLIED, 1901 AND 1915 TO 1919.**

Year ended 30th June.	Number of Houses Supplied.	Estimated Population Supplied.	Average Daily Supply.	Total Supply for the Year.	Average Daily Supply.		Mains Laid.
					Per House.	Per Head of Estimated Population.	
	No.	No.	1,000 Gallons.	1,000 Gallons.	Gallons.	Gallons.	Miles.
1901 ..	98,298	491,000	21,583	7,877,677	219	43.95	40
1915 ..	175,758	878,790	37,548	13,705,061	210	42.72	183
1916 ..	183,598	917,990	39,380	14,374,000	214	42.89	183
1917 ..	193,643	968,215	39,637	14,467,000	204	40.94	104
1918 ..	196,685	993,425	41,358	15,096,030	206	41.63	98
1919 ..	204,308	1,021,540	45,557	16,628,342	223	44.59	106

(ii) *Metropolitan Sewerage Systems.* The following tables shew (a) the revenue, expenditure, and capital cost of the metropolitan sewerage systems, and (b) the number of houses drained, the population served, and the length of sewers in 1901 and from 1915 to 1919:—

**SYDNEY SEWERAGE SYSTEMS.—REVENUE, EXPENDITURE, AND CAPITAL COST, 1901 AND 1915 TO 1919.**

Year ended the 30th June.	Revenue.	Working Expenses.	Capital Cost, exclusive of Items on which Interest is not charged.	Percentage of Expen- diture to Revenue.	Percentage of Revenue on Capital Cost.	Interest Payable on Capital Cost.	Profit or Loss after Payment of Working Expenses and Interest.
	£	£	£	%	%	£	£
1901 ..	125,290	45,395	3,066,147	36.23	4.05	106,475	- 26,580
1915 ..	344,489	111,809	5,775,094	32.45	5.96	205,928	26,752
1916 ..	363,799	120,244	6,114,072	33.05	5.95	224,551	19,004
1917 ..	387,333	138,416	6,722,313	35.73	5.76	269,723	- 20,806
1918 ..	429,669	147,444	6,870,927	34.31	6.25	263,661	- 1,436
1919 ..	497,406	151,951	6,963,573	30.54	7.14	291,345	54,108

NOTE.—The minus sign (—) represents a loss.

**SYDNEY SEWERAGE SYSTEMS.—NUMBER OF HOUSES DRAINED, POPULATION SERVED, AND LENGTH OF SEWERS, 1901 AND 1915 TO 1919.**

Year ended the 30th June.	Number of Houses Drained.	Estimated Population Served.	Total Length of Sewers.	Total Length of Storm- water Drains.	Ventilating Shafts Erected.	Sewers Ventilated.
	No.	No.	Miles.	Miles.	Feet.	Miles.
1901 ..	75,416	370,000	515.62	25.91	194,667	450
1915 ..	124,759	623,795	972.14	53.65	427,552	915
1916 ..	129,650	648,250	1,022.15	54.08	443,134	953
1917 ..	136,409	682,045	1,085.45	59.55	475,474	1,030
1918 ..	139,777	698,885	1,113.34	60.07	479,464	1,039
1919 ..	141,798	708,990	1,131.72	60.11	484,798	1,052

(iii) *The Hunter District Water Supply and Sewerage.* (a) *Water Supply.* The number of service reservoirs has been increased to seventeen, with a capacity of 14,849,260 gallons. Of these twelve are supplied by gravitation from the summit reservoir, four by repumping, and one by direct pumping. The total length of water mains has risen to 438 miles.

The capital debt of the Board to the Government at 30th June, 1919, in respect of water supply was £878,599.

In the subjoined table particulars are given as to the revenue and expenditure, and also as to the number of houses and population supplied in 1901 and 1915 to 1919 :—

**PARTICULARS OF HUNTER DISTRICT WATER SUPPLY, 1901 AND 1915 TO 1919.**

Year ended 30th June.	Revenue.	Working Expenses (including Interest).	Houses Supplied.	Estimated Population Served.	Supply.	
					Daily Average.	Total.
	£	£	No.	No.	1,000 gallons.	1,000 gallons.
1901 .. ..	27,405	30,948	9,086	45,400	1,005	366,889
1915 .. ..	68,611	55,382	20,709	103,545	2,859	1,043,546
1916 .. ..	79,507	58,436	22,056	110,280	3,507	1,283,754
1917 .. ..	78,040	65,338	22,604	113,377	3,435	1,253,897
1918 .. ..	80,607	73,949	23,257	116,285	3,442	1,256,628
1919 .. ..	91,204	76,297 <sup>a</sup>	24,079	120,395	4,065	1,483,806

<sup>a</sup> Including £29,805, interest on capital debt, and £10,195, instalment to sinking fund for reconstruction of renewable works.

The average daily consumption of water for all purposes per inhabitant was 33.76 gallons during the year 1919, as against 29.60 gallons during the previous year.

(b) *Sewerage Works.* Considerable progress has been made by the Department of Public Works with the construction of the sewerage works for Newcastle and suburbs. Up to the 30th June, 1919, about 123 miles of sewers, connecting with 10,365 separate properties, were under the control of the Board. For the financial year 1918–19 the revenue was £26,721 and the expenditure £34,990, the latter amount including a £4,823 instalment to the sinking fund for the reconstruction of renewable works. The capital debt of the Board to the Government at 30th June, 1919, in respect of sewerage was £503,572.

(iv) *Water Supply and Sewerage in Country Towns.* The Country Towns Water Supply and Sewerage Act of 1880 and its amending Acts which, *inter alia*, extended its operation to shires, has been repealed by the Local Government Act 1919, which in Part XIV. incorporates similar provisions to those contained in the repealed Acts, and amplifies those provisions to include electricity works as well as water supply, sewerage, and drainage works. The operation of this part of the Act was postponed until 1st September, 1919, and until that date the Country Towns Acts remained in operation.

(a) *Waterworks.* Up to the 30th June, 1918, 58 country municipalities had availed themselves of the privileges of the Acts as regards waterworks, all of which at that date had been completed and handed over by the Government. The capital debt of these works was £1,336,820, and the total of the sums payable annually for various periods ranging up to 100 years was £51,457, including interest ranging from 3½ per cent. to 4 per cent., the first repayments having become due at various dates, starting from the

end of the year 1893. In the calculation of these repayments the interest during construction on the sums actually expended has been added, and any payments by the councils, as well as sums remitted under the authority of the Act, have been deducted. It has recently been found necessary to increase the rate of interest from 4 to 5 per cent. Other schemes of water supply and extensions of existing works are in course of construction. A few other municipalities have constructed works out of their own resources, and the water supply of Broken Hill with a capital debt of £473,869 was constructed under a special Act and administered by the Minister for Public Works. The Junee Water Supply has been placed under special administration and the Grafton Water Supply serving both Grafton and South Grafton is vested in a board composed of three members of each council.

(b) *Sewerage Works.* Only eighteen municipal councils have taken advantage of the Act providing for the construction of sewerage and storm water drainage works in country towns. On the 30th June, 1919, the capital debt of these systems was £389,878, the amount payable annually to the Government being £16,434. Other sewerage systems, as well as extensions to existing systems, are in course of construction.

2. *Victoria.*—(i) *The Melbourne and Metropolitan Board of Works.* No alteration has been made in the constitution of the Board, but, owing to the fact that three towns have been raised to the status of cities, the sewerage area over which the Board exercises control now consists of eighteen cities, two towns, one shire, and parts of five other municipalities, or twenty-six municipalities in all, comprising a total area of 90,821 acres. Control for water supply purposes is also exercised by consent of the Governor-in-Council over 3,929 acres in four municipalities. The Board further supplies water to the metropolitan farm at Werribee, and the Outfall Sewer area. Various other shires also arrange for bulk supplies of water. The total estimated population served on the 31st December, 1919, was 771,871. The liability on Government loans on the 30th June, 1919, was £1,559,786, and for loans raised by the Board was £10,979,760. The Board is still empowered to borrow £600,388 before reaching the limit of its borrowing powers.

(a) *Total Cost of Water Supply and Sewerage.* The subjoined table shews the total cost of construction and maintenance of water supply and sewerage from 1853 to 1919:—

**MELBOURNE AND METROPOLITAN BOARD OF WORKS.—TOTAL COST OF CONSTRUCTION AND MAINTENANCE OF WATER SUPPLY AND SEWERAGE, 1853 TO 1919.**

Period ending 30th June.	Water Supply.			Sewerage.			Grand Total.
	Capital Cost.	Working Expenses.	Interest.	Capital Cost.	Working Expenses.	Interest.	
	£	£	£	£	£	£	£
1853 to 1891	3,378,246	420,833	1,021,676	..	..	..	4,820,755
1891 to 1901	336,957	367,506	1,021,181	3,307,764	114,268	919,017	6,066,693
1901 to 1911	299,303	384,871	1,026,362	2,981,666	461,706	2,333,348	7,487,256
1911 to 1914	600,222	159,903	354,665	614,401	199,214	902,310	2,830,715
1914 to 1915	129,007	60,547	130,268	245,548	72,030	316,788	954,188
1915 to 1916	91,893	54,580	134,915	166,201	70,783	321,640	840,012
1916 to 1917	31,979	54,566	137,544	108,583	72,658	329,176	734,506
1917 to 1918	21,214	60,714	139,458	155,911	85,327	345,521	808,145
1918 to 1919	32,245	59,394	153,573	138,884	87,954	372,235	844,285
Total ..	4,921,066	1,622,914	4,119,642	7,718,958	1,163,940	5,840,035	25,386,555

(b) *Revenue and Expenditure of Melbourne and Metropolitan Board of Works.*  
The following table shows the actual receipts and expenditure, and also the loan receipts and expenditure of the Board during 1901-2 and 1914-15 to 1918-19:—

**MELBOURNE AND METROPOLITAN BOARD OF WORKS.—REVENUE AND EXPENDITURE DURING EACH YEAR, 1901-2 AND 1914-15 TO 1918-19.**

Particulars.	1901-2.	1914-15.	1915-16.	1916-17.	1917-18.	1918-19.
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**ORDINARY RECEIPTS.**

	£	£	£	£	£	£
Water supply .. ..	171,956	356,155	344,053	333,747	335,674	353,466
Sewerage, etc. .. ..	124,696	344,768	311,408	293,250	308,904	364,025
Live stock—Metropolitan farm ..	19,929	87,135	103,669	86,225	58,124	57,201
Interest { Water supply .. ..	..	1,576	1,718	1,593	1,053	826
{ Sewerage .. ..	17,448	8,296	8,694	11,131	8,514	7,525
Sinking Fund proceeds .. ..	..	..	..	..	30,275	..
<b>Total .. ..</b>	<b>334,029</b>	<b>797,930</b>	<b>769,542</b>	<b>725,946</b>	<b>742,544</b>	<b>783,043</b>

**ORDINARY EXPENDITURE.**

General management .. ..	33,621	45,032	45,776	49,409	50,094	49,700
Live stock, etc.—Metropolitan farm ..	16,702	49,704	87,325	67,206	85,195	63,595
Maintenance { Water supply .. ..	22,205	41,521	41,457	38,452	39,024	39,580
{ Sewerage .. ..	24,396	53,465	54,748	45,208	61,332	56,221
Interest { Water supply .. ..	102,670	131,845	136,633	139,138	140,906	145,458
{ Sewerage .. ..	192,952	325,167	330,568	340,589	354,211	361,898
War expenditure: Safeguarding works, etc. .. ..	..	..	1,000	7,431	6,458	3,535
Patriotic and Belgian Relief Funds ..	..	2,000	10,721	..	..	713
Victorian Red Cross .. ..	..	..	30,900	100	..	..
Sinking fund investment .. ..	..	..	..	..	..	30,000
<b>Total .. ..</b>	<b>392,546</b>	<b>648,734</b>	<b>738,228</b>	<b>687,533</b>	<b>737,220</b>	<b>750,700</b>

**LOAN RECEIPTS.**

Water supply .. ..	1,636	10,138	18,500	8,062	3,482	2,720
Sewerage .. ..	88,425	42,950	53,326	44,926	42,673	47,339
Proceeds of loans .. ..	396,238	223,500	190,512	567,878	77,025	176,125
Miscellaneous .. ..	..	10,735	7,947	2,648	4,431	4,857
<b>Total .. ..</b>	<b>486,299</b>	<b>287,323</b>	<b>270,285</b>	<b>623,514</b>	<b>127,611</b>	<b>231,041</b>

**LOAN EXPENDITURE.**

Water supply construction .. ..	17,058	140,102	109,440	39,764	23,569	35,237
Sewerage construction .. ..	410,760	288,582	235,458	154,743	182,431	191,012
Expenses in floating and redemption of loans .. ..	5,200	114	51,559	379,362	26,429	27,151
Miscellaneous .. ..	(a) 4,293	25,882	30,311	7,156	1,273	9,263
<b>Total .. ..</b>	<b>428,725</b>	<b>454,680</b>	<b>426,768</b>	<b>581,025</b>	<b>233,702</b>	<b>262,663</b>

(a) Credit by excess of stock distribution (£7,020) over purchases (£2,727).

(ii) *Melbourne Metropolitan Water Supply. (a) Development of System.* The following statement shews the development which has taken place in the water supply system of Melbourne during the 62 years since its inception :—

**MELBOURNE WATER SUPPLY SYSTEM, 1857 TO 1919.**

Year.	Estimated Population Supplied. (a)	Capital cost. (b)	Charge per 1,000 Gallons.	Rate in £.	Reticulation, Mains, etc., Mileage. (b)	Daily average of annual consumption of water.(a)
1857 (Dec. 31)	95,442	£ 748,974	10/- and 6/-	1/-	104	3,250,000
1919 (June 30)	771,871	4,921,066	1/-	6d.	1,708½	42,455,225

(a) 31st December.

(b) 30th June.

On the O'Shanassy scheme up to 30th June, 1919, the sum of £459,901 has been expended.

(b) *Quantity of Water, Number of Houses, and Population Supplied.* The following table gives various particulars for the years 1901 and 1915 to 1919, shewing the increase in the supply of water in Melbourne and suburbs :—

**MELBOURNE WATERWORKS.—NUMBER OF HOUSES, POPULATION, AND WATER SUPPLIED, 1901 AND 1915 TO 1919.**

Year. Ended 30th June.	Number of Houses Served.	Estimated Population Supplied.	Average Daily Supply.	Total Supply for the Year ended 30th June.	Average Daily Supply.		Rate Levied.	Assessments of Houses Served by Metropolitan Water Supply.
					Per House.	Per Head of Estimated Population.		
	No.	No.	,000 Gallons.	,000 Gallons.	Gallons.	Gallons.		£
1901 ..	104,548	491,780	28,732	10,487,007	274.8	58.4	6d. in the £	3,479,721
1915 ..	150,825	662,500	36,989	13,501,051	245.2	55.8	7d. in the £	6,577,338
1916 ..	155,208	693,978	37,069	13,567,184	238.8	53.4	} 6d. in the £	6,905,842
1917 ..	158,086	720,577	37,653	13,743,439	238.2	52.3		7,113,740
1918 ..	161,743	733,496	39,133	14,283,490	241.9	53.3		7,270,091
1919 ..	165,046	749,709	41,222	15,045,938	249.8	55.0		7,507,396

(c) *Total Cost of Construction, Revenue, Expenditure and Net Profits, 1853 to 1919.* The following table shews the total cost of construction, the revenue, expenditure, and net profits for various periods up to 30th June, 1919 :—

**MELBOURNE WATERWORKS.—CONSTRUCTION COST, REVENUE, EXPENDITURE, AND NET PROFITS, 1853 TO 1919.**

Period.	Capital Cost. (a)	Revenue. (b)	Working Expenses.(c)	Percentage of Working Expenses to Revenue.	Interest. (d)	Surplus.
	£	£	£	%	£	£
Total to 1890-1 ..	3,378,246	3,150,055	420,833	..	1,021,676	1,707,546
1891-2 to 1900-1 ..	336,957	1,686,025	367,506	21.80	1,021,181	297,338
1901-2 to 1910-11(e)	299,303	2,054,355	384,871	18.73	1,026,362	643,122
1911-12 to 1913-14 ..	600,222	897,577	159,903	17.81	354,665	383,009
1914-15 ..	129,007	350,549	60,547	17.27	130,268	159,734
1915-16 ..	91,893	(f) 334,181	(g) 54,580	16.33	134,915	144,686
1916-17 ..	31,979	319,614	(h) 54,566	17.07	137,544	127,504
1917-18 ..	21,214	331,955	(i) 60,714	18.29	139,458	131,783
1918-19 ..	32,245	372,180	(j) 59,394	15.96	153,573	159,213
Total ..	4,921,066	9,496,491	1,622,914	..	4,119,642	3,753,935

(a) Works commenced in 1853. (b) Revenue commenced in 1854. (c) Returns for expenditure commenced in 1850. (d) First interest paid in 1856. (e) 1906-07. Water rates increased from 6d. to 7d. in the £. (f) Rate reduced from 7d. to 6d. in the £. (g) Not including renewals (£7,349) and special War expenditure (£7,728). (h) Not including renewals (£4,545) and special War expenditure (£4,689). (i) Not including renewals (£3,893) and special War expenditure (£3,632). (j) Not including renewals (£4,183) and special War expenditure (£1,888).



(iii) *Melbourne Sewerage.* The movable pan system has been displaced by the water carriage system throughout the greater portion of the metropolis, and in other parts the work of reticulation is now proceeding.

(a) *Metropolitan Sewage Farm.* The farm originally contained 8,847 acres, situated on the western side of the Werribee River. Since 1911, 2,842 acres have been purchased, making the total area of the farm 11,689 acres at 30th June, 1919, its total cost to that date being £570,040. About 35,518,498 gallons of sewage had to be disposed of every 24 hours during the year 1918-19 in irrigating the fields. During the financial year 1918-19, 10,699 sheep were sold, the profit for the year being £1,410. Cattle to the number of 2,564 were sold, the profit for the year on cattle being £22,665.

(b) *Number of Houses Connected, Capital Cost, Revenue and Expenditure.* The following table gives particulars as to the number of houses connected to the sewerage system, the total capital cost, and the receipts and disbursements during 1901-2 and 1914-15 to 1918-19 :—

**MELBOURNE SEWERAGE WORKS.—TENEMENTS CONNECTED, CAPITAL COST, REVENUE, MAINTENANCE, AND WORKING EXPENSES, 1901-2 AND 1914-15 TO 1918-19.**

Year.	Number of Houses Connected.	Capital Cost.	Revenue.			Maintenance, Repairs and Renewals.
			From Rates.	From other Sources.	Total.	
	No.	£	£	£	£	£
1901-2 ..	47,172	3,610,225	126,725	10,968	137,693	24,336
1914-15 ..	138,108	7,149,379	342,312	40,146	382,458	54,558
1915-16 ..	143,737	7,135,580	307,625 (a)	50,487	358,112	52,402 (b)
1916-17 ..	148,395	7,424,163	289,512 (c)	25,586	315,098	53,099 (d)
1917-18 ..	151,622	7,580,074	298,053 (e)	29,346	327,399	65,534
1918-19 ..	155,238	7,718,958	341,053 (f)	38,847	379,900	69,777 (g)

(a) Rate reduced from 1s. 1d. to 11d. in the £. (b) Not including renewals (£3,424) and special War expenditure (£2,925). (c) Rate reduced from 11d. to 10d. in the £. (d) Not including renewals (£3,790) and special War expenditure (£2,635). (e) Not including renewals (£3,402) and special War expenditure (£2,609). (f) Rate increased from 10d. to 11d. (g) Not including Renewals (£3,383) and Special War Expenditure (£1,564).

(iv) *Water Supply in Country Towns and Districts.* Most of the country waterworks are controlled by the State Rivers and Water Supply Commission. Further information with regard to this Commission and to the works and districts under its control are given in the section in this book dealing with Water Conservation and Irrigation. There are, however, a number of other waterworks which are controlled by Waterworks Trusts or by municipal corporations.

The following table gives particulars as to the waterworks under the control of Trusts and municipal corporations for the years 1901 and 1915 to 1919 :—

**VICTORIA.—COUNTRY WATERWORKS UNDER TRUSTS AND MUNICIPAL CORPORATIONS, 1901 AND 1915 TO 1919.**

Year.	Waterworks Trusts.				Municipal Corporations.			
	Number of Trusts.	Capital Cost.	Capital Indebtedness.	Interest Outstanding.	Number of Corporations.	Capital Cost.	Capital Indebtedness.	Interest Outstanding.
	No.	£	£	£	No.	£	£	£
1901 ..	76	823,418	748,089	(a)	24	(a)	470,041	(a)
1915 ..	94	1,173,365	911,786	14,071	28	693,258	447,347	2,005
1916 ..	97	1,206,938	929,561	13,128	28	700,832	450,518	2,050
1917 ..	98	1,224,211	937,810	13,358	28	718,089	464,114	1,871
1918 ..	98	1,196,335	904,229	12,632	29	773,998	514,115	10,379
1919 ..	100	1,210,097	907,087	13,898	29	779,834	515,240	9,658

(a) Not available.

(v) *Geelong Waterworks and Sewerage Trust.* The cost of the works (water and sewerage) under the control of the Geelong Waterworks and Sewerage Trust to 30th June, 1919, was £787,000, the estimated population served 37,000, and the number of assessments 11,700. The revenue for the year amounted to £47,511.

3. *Queensland.*—(i) *The Metropolitan Water and Sewerage Board.* (a) *General.* Since the publication of Year Book No. 12, the filtration works on Holt's Hill have been put into operation and the whole of the water supply in the Brisbane area is now filtered.

The second reservoir has been completed on Bartley's Hill, bringing the capacity of the service reservoirs to six and a half million gallons. A new reservoir is being constructed on Tarragindi Hill, a suburb of Brisbane, to contain approximately 14,000,000 gallons. It is anticipated that this reservoir will be completed during the year 1921.

(b) *Brisbane Waterworks: Cost, Revenue, Expenditure, and Interest.* The subjoined table gives particulars as to the total capital cost, the revenue and expenditure, and amount of interest and loan redemption during 1901 and each of the years 1914 to 1918 :—

**BRISBANE WATERWORKS.—COST, REVENUE, EXPENDITURE, INTEREST, AND REDEMPTION OF LOANS, 1901 AND 1914 TO 1918.**

Year.	Capital Cost.	Revenue from Rates and Sales of Water.	Working Expenses.	New Work Construction.	Interest and Redemption of Loans.
	£	£	£	£	£
1901 .. ..	694,973	60,120	17,462	7,535	42,426
1914 .. ..	1,489,720	97,366	44,549	233,822	39,194
1915 .. ..	1,852,622	103,530	50,078	361,765	52,704
1916 .. ..	2,136,699	111,066	53,879	284,078	53,995
1917 .. ..	2,422,857	121,514	59,199	286,158	60,388
1918 .. ..	2,683,846	134,121	65,653	259,132	64,039

(c) *Brisbane Waterworks: Length of Mains, Tenements and Population Served, and Water Consumption.* The following table shews the length of mains, the number of tenements connected, the population supplied, the total quantity of water supplied, the average daily supply, and the average daily supply per head of population during 1901 and each year from 1914 to 1919 :—

**BRISBANE WATERWORKS.—PARTICULARS, 1901 AND 1914 TO 1919.**

Year.	Length of Reticulation Mains.	Number of Tenements Connected.	Estimated Population Supplied.	Quantity Supplied.	Average Daily Supply.	Average Daily Supply per Head of Estimated Population.
	Miles.	No.	No.	,000 Gallons.	Gallons.	Gallons.
1901 .. ..	198	15,652	78,260	1,536,260	4,208,931	53.78
1914 .. ..	389	29,612	148,060	2,293,920	6,284,712	42.44
1915 .. ..	405	31,442	157,210	2,655,440	7,275,178	46.28
1916 .. ..	414	31,770	158,030	2,629,108	7,183,354	45.46
1917 .. ..	429½	33,082	165,410	2,827,836	7,747,498	46.83
1918 .. ..	451½	34,450	172,250	3,159,105	8,655,082	50.24
1919 .. ..	477½	36,998	178,620	3,628,478	9,941,036	55.65

The total length of the trunk mains is 102½ miles.

(d) *Sewerage Scheme.* Sewerage works are under construction, by which the sewage will be treated by the activated sludge method. The survey work is being carried on, 20,180 houses having now been surveyed, and 63,878 lineal feet of main sewers, including a tunnel under the Brisbane River, have been constructed, while 30,679 lineal feet are under construction.

(ii) *Country Towns' Water Supply.* In addition to the city of Brisbane there were at the end of the year 1918 thirty towns in Queensland provided with water supply systems. The subjoined statement gives particulars of all the water supply systems—exclusive of Brisbane—for the year 1918 :—

**QUEENSLAND.—PARTICULARS OF COUNTRY WATER SUPPLY SYSTEMS, 1918.**

		£			£
Cost of construction to 31/12/18	..	989,459	Expenditure	Office and salaries	.. 14,504
Receipts	Rates and sales of water	99,508		Construction	.. 25,569
	Other	(a)13,619		Maintenance	.. 34,672
				Interest & redemption	.. 28,684
	Total receipts	.. 113,127		Other expenses	.. 21,915
Assets	.. ..	794,888	Liabilities	.. ..	584,066
				Total	.. 125,344

(a) Including £6,419 from Government loans.

4. *South Australia.*—(i) *Adelaide Water Supply System.* The water supply system of Adelaide is under the control of the Public Works Department. The total capital cost up to the 30th June, 1919, was £2,079,957, the total revenue being £3,405,982, and the area served approximately 106,465 acres.

The following table gives various particulars relating to the water supply of Adelaide for the years 1915 to 1919 inclusive :—

**ADELAIDE WATER SUPPLY.—LENGTH OF MAINS, REVENUE, EXPENDITURE, AND CONSUMPTION OF WATER, 1915 TO 1919.**

Year ended 30th June.	Length of Mains.	Gross Revenue.	Working Expenses.	Net Revenue.	Percentage of Net Revenue on Capital Cost.	Total Consumption of Water. (a)
	Miles.	£	£	£	%	Million of Gallons.
1915 .. ..	859	112,082	36,029	76,053	3.85	3,467
1916 .. ..	873	103,947	35,412	68,535	3.42	3,223
1917 .. ..	882	118,951	32,974	85,977	4.26	4,113
1918 .. ..	901	118,985	34,298	84,687	4.15	4,266
1919 .. ..	914	126,111	36,142	89,968	4.33	5,292

(a) In the Adelaide Water District there are no governing meters. The quantities shown above are as recorded by gaugings taken at the reservoirs, and include evaporation and absorption.

(ii) *Adelaide Sewerage System.* In connexion with the sewerage system of Adelaide, which is also under the control of the Public Works Department, about 358 miles of sewers had been laid in the city and suburbs up to the 30th June, 1919.

The following table gives particulars relating to the Adelaide sewerage system for the years 1915 to 1919 inclusive :—

### ADELAIDE SEWERAGE SYSTEM.—REVENUE AND EXPENDITURE, 1915 TO 1919.

Year ended the 30th June.	Revenue.			Expenditure.			Net Revenue.	
	Rates and Interest.	Sewage Farm. Sales of Produce, etc.	Total.	Maintenance.	Sewage Farm. Working Expenses.	Total.	Total.	Percentage on Capital Cost.
	£	£	£	£	£	£	£	%
1915 ..	52,348	10,040	62,388	9,688	6,948	16,636	45,752	5.74
1916 ..	56,606	21,207	77,813	11,410	14,432	25,842	51,971	6.39
1917 ..	57,488	13,664	71,152	11,350	10,794	22,144	49,008	5.96
1918 ..	59,345	19,060	78,405	12,054	11,945	23,999	54,406	6.55
1919 ..	60,808	14,697	75,505	13,226	10,409	23,635	51,870	6.12

The seaside town of Glenelg is served by separate sewage disposal works, including a pumping station, septic tank, lucerne plots, and filter beds. The net revenue for the year ended 30th June, 1919, was £1,634, being 3.57 per cent. on the capital cost. Up to the same date 15½ miles of sewers had been laid.

(iii) *Water Supply in Country Towns.* In South Australia there is a number of country water works under the control of the Public Works Department, but there are no fresh additions to be made to the particulars supplied in Year Book No. 12 (page 965).

5. *Western Australia.*—(i) *Water Supply, Sewerage and Drainage Department.* This Department has the management of the undermentioned water supplies :—(a) The Metropolitan Water Supply, Sewerage and Drainage Undertaking. (b) The Goldfields Water Supply Undertaking. (c) Mines Water Supplies, boring and well-sinking in mining districts, formerly a branch of the Mines Department. (d) Water supplies, sewerage and drainage, well-sinking, boring, etc., in agricultural districts, etc., formerly a branch of the Public Works Department. The total capital expenditure on works controlled by the Department was, at 30th June, 1917, £7,375,104.

(ii) *The Metropolitan Water Supply, Sewerage and Drainage Undertaking.*—(a) *Water Supply.* For the year ending 30th June, 1919, the total consumption of water was 2,174 million gallons, exclusive of water supplied to railways from Walters Brook, Victoria Reservoir, and Narrogin Brook—an increase of 329 millions over the previous year. The number of services at that date was 33,301, and the length of mains was 623 miles.

(b) *Financial Operations of Water Supply Branch.* The following table gives particulars of the financial operations of the Metropolitan Water Supply Branch for each year ending the 30th June from 1915 to 1919 inclusive :—

### METROPOLITAN WATER SUPPLY BRANCH.(a)—PARTICULARS OF FINANCIAL OPERATIONS, 1915 TO 1919.

Year ended the 30th June.	Capital Cost of Works.	Depreciation.	Net Capital Cost.	Gross Revenue.	Cost of Maintenance and Management.	Ratio of Working Expenses to Revenue.
	£	£	£	£	£	%
1915 ..	964,670	183,910	780,760	99,953	33,580	33.52
1916 ..	997,650	201,834	795,816	103,668	37,987	36.60
1917 ..	1,019,388	220,750	798,638	95,451	36,075	37.79
1918 ..	1,057,444	240,650	816,794	91,380	34,670	37.94
1919 ..	1,080,876	261,520	819,355	89,215	35,881	40.22

(a) Perth, Fremantle, and Claremont combined.

(c) *Consumption of Water.* The following table shews the total annual supply, the average daily supply, and the average daily supply per house and per head of population during each financial year from 1915 to 1919 inclusive:—

**METROPOLITAN WATER SUPPLY BRANCH.—CONSUMPTION OF WATER,  
1915 TO 1919.**

Year.	Average Daily Supply in ,000 Gallons.			Water Supply for Years in ,000 Gallons.			Number of Houses Supplied.	Esti- mated Popu- lation Supplied.	Average Daily Supply.	
	From Reser- voirs.	From Bores.	Total.	From Reser- voirs.	From Bores.	Total.			Per House.	Per Head of Popu- lation.

**CENTRAL DISTRICT (INCLUDES PERTH, FREMANTLE, CLAREMONT, GUILDFORD, AND  
MIDLAND JUNCTION).**

							No.	No.	Gals.	Gals.
1915	1,060	3,721	4,781	387,074	1,358,200	1,745,274	29,721	127,000	161	37.6
1916	2,443	2,609	5,052	894,057	955,075	1,849,132	30,782	129,300	164	39.1
1917	1,929	3,179	5,108	704,251	1,160,464	1,864,715	31,698	133,130	161	38.4
1918	2,659	2,444	5,103	970,671	892,054	1,862,725	32,396	136,000	157	37.5
1919	2,463	3,496	5,959	899,194	1,276,122	2,175,316	33,196	152,700	179	38.9

**ARMADALE DISTRICT.**

1915	28	..	28	(a) 10,220	..	(a) 10,220	82	300	(a) 341	(a) 93.3
1916	23	..	23	8,300	..	8,300	83	300	277	78.6
1917	29	..	29	(a) 10,663	..	(a) 10,663	98	410	(a) 296	(a) 70.7
1918	30	..	30	10,954	..	10,954	102	428	294	70.1
1919	32	..	32	(a) 11,495	(b) 176	11,671	105	483	304	66.2

(a) Includes water supplies to Railways. (b) From well.

(d) *Sewerage and Drainage in Perth and Fremantle.* The work of providing a sewerage system for Perth and Fremantle is still proceeding. Up to 30th June, 1919, 13,756 houses had been connected with the sewers. The revenue of the Sewerage and Drainage undertaking for 1918-19 was £54,457, as against £53,258 for the preceding year. The maintenance expenditure for the year amounted to £15,455, and interest and sinking fund charges to £48,871.

(iii) *Goldfields Water Supply Undertaking.* During the financial year 1918-19, the amount of water drawn for the Helena reservoir was 1,336,000,000 gallons, an increase on the previous year of 127,000,000 gallons. The gross revenue was £203,742, and the working expenses £83,310, leaving a surplus available towards interest and sinking fund of £120,432. The outlay for interest and sinking fund charges in respect of supplementary capital absorbed £33,536, leaving £86,896, payable to the State Treasury. During the financial year the State Treasury paid £168,813 interest and sinking fund on State loans in respect to these works, and the operations of the undertaking shewed a net deficiency of £81,917. Reticulation figures are as follows:—Towns reticulation, 238 miles; supply mains to towns, 80 miles; supply mains to mining centres, 72 miles; agricultural extensions, 481 miles; total mains, including main conduit, 1,221.

(iv) *Water Supplies for Towns.* Under the Water Boards Act 1904, the following water undertakings are administered by the Department:—Bridgetown, Brookton, Collie, Cue-Day Dawn, Geraldton, Leonora, Meekatharra, Menzies, Ora Banda, and

Pingelly. Water supplies for Albany, Broome, Bunbury, Busselton, Carnarvon, Derby, Katanning, Port Hedland, Roeburne, Sandstone, Wagin, and Wyndham are administered by local boards under the supervision of the Department.

(v) *Mines Water Supplies.* At the present time the water stations under the control of the Engineer for Goldfields Areas number about 1,400, and are spread over an area of nearly 500,000 square miles. The principal works carried out by the Branch are as follows:—(a) Domestic supplies for mining towns and the supply of water for battery and general mining purposes. (b) Opening up the very remote portions of the State by means of tracks, of which there are about 4,000 miles. (c) The sinking of wells and bore-wells, also testing the country by means of boring to locate water, and thus enabling the mineral resources of the State to be systematically prospected. (d) Diamond drilling has also been carried out for the purpose of testing the country for minerals at depths unattainable with the ordinary boring plants. (e) Over 3,000 miles of stock routes have been opened up, and wells have been sunk at easy stages, capable of watering mobs of 400 head of cattle. Tanks, dams, and reservoirs have been made on the goldfields for the conservation of surface water, their total storage capacity being over 200,000,000 gallons, and their cost over £400,000.

A very important adjunct of the branch is the camel farm established at Coolgardie, where the breeding of camels is undertaken, the number at present being about 300. These camels are used by parties from the Water Supply Branch in the arid regions of the interior, where water is scarce, and the stages are long.

(vi) *Water Supplies in Agricultural Areas.* Owing to the rapid development in agricultural districts in what a few years ago was practically unexplored country, and the consequent necessity for providing water for settlers, a large number of tanks were excavated, and wells sunk where suitable water had been proved by boring. Of 2,517 shallow bores put down, fresh water was obtained in 428, and stock water in 219, the others being salt or dry. The number of tanks excavated to 30th June, 1919, was 351, with an approximate capacity of 126,100,000 gallons, and the number of wells sunk 298. The capital expenditure for the financial year ending June, 1919, was £5,843.

(vii) *Land Drainage.* Under the Land Drainage Act 1900 the drainage undertaking for the Torbay-Grassmere District, Wonnerup, and portion of Harvey and Waroona are administered by the Department. Undertakings controlled by Boards under the same Act are East Jandakot, Lennox, Harvey, Njookenbooroo, Stirling, Saidie, Wungong, Bengel, and Wagerup.

6. *Tasmania.*—(i) *Hobart Water Supply.* The total capital cost to 30th June, 1920, was £376,267, but a considerable amount of reticulation work has been done out of revenue and not charged to capital account. The outstanding loans at 30th June, 1920, amounted to £317,805. At the same date the number of tenements supplied in the city and suburbs was 9,250, the population 40,000, and the length of reticulation mains 96 miles. The revenue and expenditure for the years 1915 to 1920 were as follows:—

#### HOBART WATERWORKS.—REVENUE AND EXPENDITURE, 1915 TO 1920.

Particulars.	1915.	1916.	1917.	1918.	1919.	1920.
	£	£	£	£	£	£
Revenue .. ..	23,382	24,801	21,677	24,160	26,832	28,287
Expenditure .. ..	26,471	27,676	28,794	26,490	27,468	30,696

(ii) *Hobart Sewerage System.* Up to 30th June, 1920, 74 miles of sewers had been laid at a cost of about £194,282, and 7,261 tenements had been connected. The revenue for the year was £19,901. The suburb of New Town was amalgamated with the city on the 1st January, 1920, and the survey and plans for sewerage this area are now being proceeded with.

#### § 4. Harbour Trusts.

1. *Introduction.*—In the chief ports and harbours of the Commonwealth, administrative bodies have been created, in whom is vested the control and management of the port with respect to dredging, wharf and harbour accommodation, pilotage, harbour dues, etc.

Of these Trusts or Boards some are purely departmental, some are nominated by Government, while others are comprised of members appointed by the municipal and other associations connected with the port. In the latter case, the Government is usually represented on the Board by one or more nominated members. The Boards and Trusts mentioned hereunder are the only ones for which information is at present available.

2. *Sydney Harbour Trust.*—(i) *Revenue, Expenditure, and Capital Cost.* The subjoined table gives particulars of the revenue and expenditure of the Trust, and also shews the total capital debt for properties, etc., vested in the Commissioners, the amount of interest payable on the debt, and the balance of revenue after deducting expenditure, interest, and the amount of the Commissioners' salaries :—

#### SYDNEY HARBOUR TRUST.—REVENUE, EXPENDITURE, CAPITAL DEBT, INTEREST, AND BALANCE, 1901 AND 1915 TO 1919.

Year ended the 30th June.	Revenue.				Expenditure.	Total Capital Debt.	Interest.(b)	Balance.
	Wharfage and Harbour Rates.	Tonnage Rates and Berthing Charges.	From Other Sources.	Total.				
	£	£	£	£	£	£	£	£
1901(a)	42,784	3,208	12,324	58,316	11,275	4,692,782	55,554	— 8,513
1915..	255,217	15,046	194,418	464,681	161,358(c)	7,367,922	263,478	39,845
1916..	274,551	17,630	197,540	489,721	171,951(c)	7,948,756	289,256	28,484
1917..	252,044	29,095	230,841	511,980	165,586(c)	8,598,939	330,954	15,441
1918..	280,476	26,862	269,121	576,459	170,854(c)	8,796,521	348,023	57,582
1919..	323,253	31,347	264,300	618,900	179,899	8,691,972	336,823	102,178

(a) For the period from 11th February to the 30th June, 1901. (b) The rate of interest charged each year is the average rate on the total capital debt of the State, which varies. (c) Including expenditure for the renewal, replacement, or reconstruction of wharves or buildings.

NOTE.—The minus sign (—) represents a loss.

(ii) *Dredging and Towing.* The subjoined statement gives particulars of the dredging and towing done by the dredges and tug-boats owned by the Trust :—

**SYDNEY HARBOUR TRUST.—PARTICULARS OF DREDGING AND TOWING, 1901 AND 1915 TO 1919.**

Year.	Dredging.			Towing Dredged Material.		
	Tons Dredged.	Total Expenditure.	Expenditure per Ton.	Miles run Towing.	Total Expenditure in Towing.	Expenditure per Mile Towing.
	Tons.	£	Pence.	Miles.	£	Pence.
1901 ..	317,500	3,696	2.79	29,277	2,849	23.35
1915 ..	1,561,500	27,937	4.29	48,982	9,949	48.06
1916 ..	2,092,918	28,253	3.24	46,581	11,268	58.05
1917 ..	1,938,130	31,697	3.93	43,847	11,950	65.41
1918 ..	1,319,455	26,780	4.87	36,577	16,367	107.39
1919 ..	1,848,993	26,981	3.50	45,711	19,263	101.14

3. *The Melbourne Harbour Trust.*—(i) *Works in the River.* Since the publication of Year Book No. 12, the middle swinging basin has been increased in size from 550 feet by 800 feet to 700 feet by 1,000 feet, and a commencement has been made in widening the river for a distance of 4,500 feet below this basin by 100 feet, making it 400 feet wide. On the south side of the river new wharves, 1,930 feet long, are in course of construction. A wharf 400 feet long has been constructed at Spotswood. The total length of wharves is now 18,368 feet, covering an area of 936,698 square feet.

(ii) *Works in Victoria Dock.* There are now 11,760 feet of wharfage, including the new central pier, and the total cost including wharves, sheds, approaches, and new pier was to 31st December, 1919, £729,932. The total length of sheds is now 7,792 feet, and their area 438,866 square feet. Two additional cargo sheds, each 480 feet by 60 feet, have been completed on the central pier. The expenditure on this pier to the 31st December, 1919, amounted to £197,268. The whole of the sheds on the south and south-east side of the dock are being widened from 53 feet to 80 feet, and when completed will give an additional shed accommodation of 99,900 square feet.

(iii) *Dredging.* The total quantity of material raised by the dredging and excavation done in the improvement of the river and bay amounts to 66,500,000 cubic yards.

During the ten years ending 31st December, 1919, the average cost of dredging per cubic yard was 2.09 pence, and the cost of towing and depositing 4.09 pence, irrespective of depreciation of plant. The Trust has expended £334,774 in reclaiming land within its jurisdiction. The amount of material raised annually is about 2,594,000 cubic yards.

(iv) *Financial Operations.* The following table gives particulars of the revenue and expenditure of the Trust from 1915 to 1919 inclusive :—

**MELBOURNE HARBOUR TRUST.—REVENUE AND EXPENDITURE, 1915 TO 1919.**

Particulars.	1915.	1916.	1917.	1918.	1919.
REVENUE.					
Rates, rents, etc. .. ..	£ 306,034	£ 311,395	£ 312,654	£ 314,777	£ 323,253
Interest .. ..	1,293	170	31	123	193
Other receipts .. ..	7,957	11,109	7,610	10,691	10,851
Total .. ..	315,284	322,674	320,295	325,591	334,297



MELBOURNE HARBOUR TRUST.—REVENUE AND EXPENDITURE,  
1915 TO 1919—*continued.*

Particulars.	1915.	1916.	1917.	1918.	1919.
<b>EXPENDITURE.</b>					
Management and general expenses ..	£ 46,257	£ 56,265	£ 49,205	£ 45,373	£ 45,570
Interest .. .. .	86,567	88,372	93,996	95,980	104,245
Total .. .. .	132,824	144,637	143,201	141,353	149,815
Less standing charges added to works ..	23,823	21,135	19,632	23,595	23,495
Total .. .. .	109,001	123,502	123,569	117,758	126,320
Wharfage and other refunds ..	1,620	1,140	1,378	2,382	1,677
Charges remitted on troopships ..	3,166	..	..	..	..
Consolidated revenue of Victoria ..	60,000	60,000	60,000	62,305	62,460
Flotation of loan expenses ..	5,011	..	1,005	3,012	7,956
Redemption of loans expenses ..	925	..	..	2,392	4,499
Maintenance .. .. .	55,520	53,375	70,112	35,706	77,766
Total expenditure .. .. .	235,243	238,017	256,064	223,555	280,678
Surplus on revenue account .. .. .	80,041	84,657	64,231	102,036	53,619
Less depreciation and renewals account and sinking fund .. .. .	30,415	51,364	51,747	52,000	52,500
Net surplus on revenue account .. .. .	49,626	33,293	12,484	50,036	1,119

**CAPITAL EXPENDITURE.**

	£	£	£	£	£
Land and property .. .. .	2,060	1,316	588	1,153	964
Deepening waterways .. .. .	93,615	82,429	50,871	108,037	68,746
Wharves construction .. .. .	120,627	105,803	62,246	37,321	77,305
Approaches construction .. .. .	10,921	8,960	6,201	11,417	3,774
Other harbour improvements .. .. .	4,275	35,946	26,923	7,352	3,068
Floating plant .. .. .	3,112	25,190	3,814	811	1,435
General plant .. .. .	4,107	2,853	1,728	130	509
Stock account .. .. .	25,451	21,784	4,686	..	..
Total .. .. .	264,168	284,281	157,057	166,221	155,801

4. **Geelong Harbour Trust.**—To the 31st December, 1919, this Trust had borrowed £591,000. The sinking fund at the same date stood at £27,542. The revenue receipts for the year 1919 were £48,213, and the disbursements £56,207.

5. **Bundaberg Harbour Board.**—The Harbour Board consists of eight members, instead of nine as heretofore, representing the district shire councils and the shipowners and exporters, with one Government nominee.

The total exports for the year ending 31st December, 1919, amounted to 17,865 tons, as against 41,192 tons for the previous year. The decrease was owing to shipping troubles and prolonged drought. The principal items of export were:—Raw sugars, 586 tons; refined sugars, 11,097 tons; syrups and molasses, 1,595 tons; rum and spirits, 1,203 tons; copper ores, 181 tons. The revenue for 1919 amounted to £5,470, as against £7,567 for 1918; the expenditure for 1919 was £6,751 as compared with £9,390 for 1918. Dredging resulted in 82,000 tons of silt, etc., being lifted and deposited at sea.

6. **Cairns Harbour Board.**—For the year ended 31st December, 1919, the receipts from harbour and berthage dues and miscellaneous items amounted to £24,872, while the revenue from taxes and fixed rates was £21,600. The total income amounted to £24,907. The principal items of export were:—Raw sugar, timber, maize, fruit, meat, and tallow.

7. **Rockhampton Harbour Board.**—The principal items of export by water in 1919 were—wool, 25,137 bales; preserved and frozen meats, 33,986 tons; tallow, 5,983 tons; blister copper and concentrates, 4,527 tons; and gold, £298,349 in value. For the year 1919 the receipts were £24,621, including loan advances, £3,026; and the expenditure was £27,451, including £5,088 interest on loans. The total net registered tonnage entering the port in 1919 was 241,950.

8. **Bunbury (Western Australia) Harbour Board.**—The work of extending the jetty is nearing completion, and this will give two additional berths at which vessels drawing up to 28 feet can load.

The capital expenditure for the year ending 30th June, 1919, was £9,541, making the total capital expenditure to that date £338,392. The revenue for the year was £12,510 and the expenditure £5,381, the balance being paid into Consolidated Revenue to meet interest and sinking fund. The export tonnage for the year was made up as follows:—Jarrah timber, 78,424 loads of 50 cubic feet; wheat, 8,984 tons; coal (bunker), 10,947 tons; and miscellaneous goods, 390 tons; the total export value being £413,890. The total import tonnage was 6,144 tons.

9. **Fremantle Harbour Trust.**—For the year ended 30th June, 1919, the total revenue of the Fremantle Harbour Trust was £185,817, and the expenditure £94,093. The gross amount paid to the Treasury for the year was £91,724, being interest £70,861, sinking fund £18,837, and surplus revenue, £2,026.

10. **Burnie and Table Cape (Tasmania) Marine Board.**—A breakwater has been constructed 1,250 feet in length with a depth alongside up to 42 feet at low water, together with two timber wharves 500 feet and 400 feet long respectively. The revenue for the year 1918 was £9,738, and the expenditure £15,249, including £11,446 interest on construction loan.

11. **Hobart Marine Board.**—The total capital debt on properties in connexion with the Harbour Trust vested in the Board is £106,350. The interest paid in 1919 amounted to £4,350, and the contributions to sinking fund, £1,350. The receipts and expenditure of the Board for the last five years were as follows:—

#### HOBART MARINE BOARD.—RECEIPTS AND EXPENDITURE, 1915 TO 1919.

Year.	Receipts.			Expenditure.		
	General.	Harbour Improvements, Debentures, etc.	Total.	General.	Harbour Improvements.	Total.
	£	£	£	£	£	£
1915 .. .. .	23,448	5,264	28,712	(a)23,096	6,983	30,079
1916 .. .. .	22,800	6,062	28,862	(b)21,803	7,801	29,604
1917 .. .. .	17,294	6,627	23,921	(c)17,247	5,212	22,459
1918 .. .. .	20,046	3,775	23,821	(d)20,887	3,131	24,018
1919 .. .. .	21,505	367	22,872	20,303	108	20,411

(a) Including £1,500 transferred from General Account to Harbour Improvements. (b) Including £4,000 debentures purchased. (c) Including £938 transferred from General Account to Harbour Improvements. (d) Including £3,775 transferred from General Account to Harbour Improvements.

12. **Launceston Marine Board.**—The total capital debt on 31st December, 1919, was £231,539, of which £184,301 was incurred on the Tamar Improvement Scheme. The revenue for 1919 was £33,748 and the expenditure £30,238.

### § 5. Fire Brigades.

1. *New South Wales.*—*Receipts and Disbursements of Board of Fire Commissioners of New South Wales.* The subjoined table shows the actual receipts and disbursements of the Board for the past five years in respect of the Sydney Fire District :—

#### NEW SOUTH WALES BOARD OF FIRE COMMISSIONERS.—RECEIPTS AND DISBURSEMENTS FOR SYDNEY FIRE DISTRICT, 1915 TO 1919.

Year.	Receipts.					Total.	Disbursements.
	From Government.	From Municipalities.	From Fire Insurance Companies.	From Firms.	From other Sources.		
	£	£	£	£	£	£	£
1915	29,071	29,071	28,161	410	1,749	88,462	96,146
1916	29,071	29,071	28,883	188	2,205	89,418	98,934
1917	34,283	34,283	33,562	721	4,103	106,952	103,539
1918	34,231	34,231	33,858	373	3,950	106,643	107,104
1919	34,198	34,198	33,819	379	4,339	106,933	115,637

The Sydney fire district includes the City of Sydney and suburbs, comprising a total area of 257 square miles. On the 31st December, 1919, the Board had under its control in this district 63 stations, 310 permanent men, 167 partially paid firemen, 10 steam and 42 motor fire engines, 45 horses, 140,690 feet of hose, and 504 telephone fire-alarms. The length of wire used for telephone lines was 1,241 miles.

2. *Victoria.*—(i) *Metropolitan Fire Brigades Board.* On the 30th June, 1919, this Board had under its control 41 stations, 250 permanent men, 102 partially-paid firemen, 49 special service firemen, 6 motor drawn steam fire engines, 8 petrol motor fire pumps, 47 other petrol motor appliances, 100,872 feet of hose, and 321 fire-alarm circuits having 1,032 street fire alarms, containing telephones. The following table gives particulars as to the financial operations of the Board during each year from 1914 to 1918-19 inclusive :—

#### VICTORIA.—REVENUE AND EXPENDITURE OF METROPOLITAN FIRE BRIGADES BOARD, 1914 TO 1918-19.

Particulars.	1914.	1915.	1916.	1917-18.	1918-19.
ORDINARY RECEIPTS.					
	£	£	£	£	£
Contributions ..	68,433	77,794	86,771	84,418	85,569
Receipts for services ..	8,241	6,634	7,595	6,645	7,197
Interest and sundries ..	1,380	9,957	4,110	1,960	2,766
Total ..	78,054	94,385	98,476	93,023	95,532
ORDINARY EXPENDITURE.					
	£	£	£	£	£
Salaries ..	50,966	52,633	55,612	58,900	60,915
Interest and sinking fund ..	9,432	11,442	13,397	13,610	14,971
Other expenditure ..	18,971	25,744	24,566	25,057	20,968
Total ..	79,369	89,819	93,575	97,567	96,854

(ii) *The Country Fire Brigades Board.* At the end of the year 1919 there were 111 municipal councils and 74 insurance companies included in the operations of the Act. All the brigades are volunteer brigades, but in the large centres a few permanent station-keepers and watchmen are employed. There were 133 registered brigades and 2,821 registered firemen at the end of the year 1919.

For the year 1919 the receipts of the Country Fire Brigades Board amounted to £15,585 and the expenditure to £15,308.

3. *Queensland.*—In the year 1918 there were thirty-two fire brigades organised in various towns in Queensland, and the following table gives particulars of revenue and expenditure for the year 1918 :—

QUEENSLAND.—FIRE BRIGADES, 1918.

Receipts.	Amount.	Expenditure.	Amount.
	£		£
From Government .. ..	10,901	Salaries and wages .. ..	20,037
„ Local authorities .. ..	11,093	Building, repairs, etc. .. ..	1,252
„ Insurance companies .. ..	10,857	Plant, stores, clothing, etc. .. ..	3,889
„ Other sources .. ..	1,080	Other .. ..	5,252
Total .. ..	33,931	Total .. ..	30,430

At the end of the year 1918 the fire brigades staffs comprised 104 permanent men, 208 partially paid, and 118 volunteers. The Metropolitan Brigade at Brisbane and the South Brisbane brigade protect an area of 9½ square miles; their joint staffs comprise 66 men. They have three steam engines, three motor turbines, one chemical motor, nine reels, consisting of four horse, two motor, and three hand reels, and 27,367 feet of hose. There are 3 telephone fire alarms and 196 call points.

4. *South Australia.*—The revenue of the Fire Brigades Board in 1919 amounted to £31,129. Brigades are established in the following municipalities, viz., Adelaide, Kensington and Norwood, Unley, Port Adelaide, Glenelg, Gawler, Kapunda, Moonta, Kadina, Port Pirie, Port Augusta, Wallaroo, Thebarton, and Tanunda. The strength of the brigades consists of 96 permanent firemen and 43 auxiliary firemen. The plant consists of 5 steam fire engines, 1 motor engine, 10 motor hose carriages, 1 floating fire engine, 5 hose reels, and 13 horses. The number of calls received during the year 1919 was 439, of which 10 were to fires of a serious nature. Of the total calls, 266 were in the metropolitan district.

5. *Western Australia.*—The receipts of the Western Australian Fire Brigades Board for the year 1919 amounted to £26,298, and the expenditure to £27,908.

The whole of the brigades throughout the State are now controlled by this Board, and number four permanent, seven permanent and partially paid, six permanent and volunteer, one partially paid, and twenty-four purely volunteer brigades; making a total of forty-two. The staff includes a chief officer, deputy chief officer, third officer, motor engineer, electrical engineer, 11 other officers, 65 permanent firemen, 26 partially-paid firemen, and 536 volunteer firemen.

6. *Tasmania.*—The expenditure for the year 1919 for the Hobart Fire Brigade amounted to £3,698. There are also volunteer brigades under the control of local boards in most of the larger centres of population.

## § 6. Local Government Finance.

1. **Introduction.**—In the preceding parts of this section certain particulars have been given regarding local authorities in each individual State. It is proposed to give here in a comparative form for each State particulars regarding the financial operations of local governing bodies. The particulars given in the tables in the two next paragraphs relate to financial years ending as follow :—New South Wales : for the calendar year 1918. Victoria : 30th September, 1918, except Melbourne, 31st December, and Geelong, 31st August, 1918. Queensland : calendar year 1918. South Australia : Corporations, 30th November, and district councils, 30th June, 1918. Western Australia : 31st October, 1918, except road districts, 30th June, 1918. Tasmania : calendar year 1918.

2. **Number, Revenue, Expenditure, and Valuation of Local Authorities.**—The following table gives particulars of the number, revenue, expenditure, and valuation of local authorities in each State and in the Commonwealth during the year indicated above. It should be noted that, excepting in Tasmania, the metropolitan water supply systems are not under municipal control ; the particulars given of revenue and expenditure for the five States other than Tasmania do not, therefore, include revenue and expenditure on account of these systems.

### NUMBER, REVENUE, EXPENDITURE, AND VALUATION OF LOCAL AUTHORITIES(a) IN EACH STATE, 1918.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
No. of local authorities(a)	320	190	173	184	141	50	1,058

#### RECEIPTS.

	£	£	£	£	£	£	£
Rates—							
General ..	1,765,646	1,462,640	749,773	265,194	220,364	56,843	4,520,460
Other (b) ..	206,334	304,925	291,798	92,021	106,159	151,866	1,153,103
Government grants	336,342	62,460	40,385	65,119	34,464	22,266	561,036
Loans (c) and other sources ..	929,627	696,519	172,624	108,680	382,216	326,034	2,615,700
Total ..	3,237,949	2,526,544	1,254,580	531,014	743,203	557,009	8,850,299

#### EXPENDITURE.

	£	£	£	£	£	£	£
Works, services, etc.	2,659,665	1,698,420	958,214	400,856	462,527	319,026	6,498,708
Interest on loans and overdrafts	115,919	277,435	18,902	10,161	85,006	87,382	594,805
Redemptions, sinking funds, etc. ..	53,798	124,797	35,780	19,040	57,963	78,057	369,435
Administration ..	226,943	214,797	151,118	58,342	61,836	40,051	753,087
Other ..	63,293	230,806	183,716	58,801	77,320	33,973	647,909
Total ..	3,119,618	2,546,255	1,347,730	547,200	744,652	558,489	8,863,944

#### VALUATIONS.

	£	£	£	£	£	£	£
Capital value of property ..	171,939,144	340,604,233	62,990,360	98,100,538	726,077,875	36,232,654	735,944,804
Annual value of property ..	(e)	18,150,666	(e)	6,514,984	71,509,736	1,787,234	(e)

(a) Including particulars for all areas controlled by local governing bodies responsible for the construction and maintenance of roads and streets, such areas being variously known in the several States as cities, towns, boroughs, shires, municipalities, road districts, etc. (b) Exclusive of rates for water supply and sewerage in metropolitan and most other principal towns, such rates being collected by special boards or general Government. (c) Exclusive of loans in connexion with extraordinary works of construction. (d) Unimproved capital value of all ratable property. (e) Not available. (f) Excluding District Road Boards. (g) Incomplete.

3. Local Government Loans, 1918.—The following table gives particulars for each State of loans raised by local authorities during the year 1918, of loans current at the end of that year, of liability on account of interest and sinking fund, and of loans maturing during 1918 :—

## PARTICULARS OF LOANS RAISED BY LOCAL AUTHORITIES, 1918.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
	£	£	£	£	£	£	£
Loans from general Govern- ment—							
Raised during year ..	..	3,878	27,637	..	..	42,455	73,970
Current at end of year ..	..	575,080	443,844	..	64,039	591,951	1,674,914
Loans from other sources—							
Raised during year ..	608,811	145,982	..	11,867	24,325	168,613	959,598
Current at end of year ..	9,189,241	5,188,970	1,070,852	366,751	1,796,432	1,170,622	18,782,868
Total—							
Raised during year ..	608,811	149,860	27,637	11,867	24,325	211,068	1,033,568
Current at end of year ..	9,189,241	5,764,050	1,514,696	366,751	1,860,471	1,762,573	20,457,782
Current loans, exclusive of those obtained from general Government, raised within the Commonwealth ..	8,368,782	5,188,970	..	366,751	1,326,832	407,823	15,659,158
Annual liability on account Interest .. ..	(a)	246,821	18,802	16,222	85,535	87,820	(a)
Total sinking fund at end of year .. ..	(a)	601,604	140,448	20,213	316,772	155,766	(a)
Amount of loans maturing during year—							
Redeemed .. ..	(a)	(a)	..	15,989	30,842	132,784	(a)
Renewed .. ..	..	(a)	..	6,700	..	100	(a)

(a) Not available.

## SECTION XXVII.

## INDUSTRIAL UNIONISM AND INDUSTRIAL LEGISLATION.

## § 1. Development of Trade Unions in Australia.

1. **Historical Development of Trade Unionism in Australia.**—A special article, reviewing the development of trade unionism from its inception, appeared in Year Book No. 9, pp. 937-41.

2. **Registration under Trade Union Acts.**—The benefits conferred by registering trade unions under the Trade Union Acts in force in the various States are not held in much repute; consequently the statistics of registered trade unions of employees not only do not represent the position of unionism, but, in addition, the statistics themselves for past years are so defective as to be practically valueless. The particulars furnish no reliable indication of the numerical and financial position of trade unions. Some of the registered unions fail to supply returns; this non-supply may lead to cancellation of the registration. Some of the unions have obtained the cancellation of their certificates of registration, the apparent reason being that they proposed registering under the Commonwealth Conciliation and Arbitration Act or a State Arbitration Act. In Queensland, some of the largest labour unions withdrew from registration during 1911, mainly on account of the necessity for closer restriction of their objects as set forth in their rules, consequent on legal decisions affecting trade unions. In Victoria, only seven unions of employees are registered, and in South Australia sixteen unions were registered at the end of 1916. Particulars relating to membership and financial position of many of these unions were not furnished. It will be seen, therefore, that the available information is too meagre for statistical purposes.

3. **Registration under Industrial Arbitration Acts.**—Western Australia and New South Wales up to 30th June, 1908, were the only States with Industrial Arbitration Acts under which industrial associations could be, and actually were, registered. The number of registered unions in New South Wales shewed a gradual increase from 1902 to 1907, the figures in the latter year being 109 unions of employers, with 3,165 members, and 119 unions of employees, with 88,075 members. Under the Industrial Disputes Act, which succeeded the Arbitration Act of 1901, it was not necessary to furnish this information. Since the Act of 1908, industrial organisation proceeded rapidly, owing to a general desire on the part of the workers to obtain the status necessary to entitle them to the advantages offered by the Act. The Act of 1908 was repealed by that of 1912, and in 1912 there were 117 industrial unions of employers and 192 industrial unions of employees on the register. On the 31st August, 1914, there were 105 industrial unions of employers and 160 industrial unions of employees registered. On the 27th April, 1920, there were 119 industrial unions of employers, and 162 industrial unions of employees on the register. Registration had been granted to 5 of the 162 employees' unions subject to amendment of rules. In the Queensland Industrial Arbitration Act of 1916 provision is made for the registration of any industrial association or trade union of employees. The Act does not provide for the registration of employers' associations. On the 30th June, 1917, 50 unions of employees were registered. The number of registered industrial unions increased to 62 at the 31st December, 1917, 64 at the end of May, 1918, and to 70 at the 31st December, 1919. In Western Australia, the employers' unions numbered 45, with 441 members, in 1904; and 52, with 810 members, in 1917. From 1904 to 1908 unions of employees were in a fairly stationary condition. Since 1909, however, there has been a rapid expansion. At the end of 1904 and 1905 there were 140 unions, with 15,743 and 15,461 members respectively; and in 1917, 137 unions, with 26,359 members. These figures include councils and associations. Registration under

Commonwealth legislation began in 1906. In that and the four following years, there was but one union of employers; another was registered in 1911. The unions of employees registered were 20 in 1906, with 41,413 members; and 10, with 3,760 members, in 1910. Twenty-four unions of employees were registered in 1911. The membership given above is that at time of registration. At the end of 1912 there were 3 employers' organisations, with 351 members, and 96 employees' organisations, with 245,735 members, on the register under the Commonwealth Conciliation and Arbitration Act. On the 31st December, 1919, there were 6 organisations of employers, with 5,733 members, and 109 organisations of employees, with 462,822 members on the register.

4. **Types of Trade Unions in Australia.**—The trade unions in Australia are very diverse in character, and range from the small independent association to the large interstate organisation, which, in its turn, may be merely a branch of a British or international union. Broadly speaking, there are four distinct classes of labour organisations, viz. :—(i) the *local independent*, (ii), the *State*, (iii) the *interstate*, and (iv) the *Australasian or International*, but a number of variations occur from each of these classes. The leading characteristics of each of these types were briefly outlined in Labour Report No. 2 (pp. 7 to 9) issued by this Bureau.

5. **Total Number of Unions, 1919.**—As already stated, the figures for trade unions registered under the Acts do not represent the position of unionism in Australia. In 1912 the Labour and Industrial Branch of the Commonwealth Bureau of Census and Statistics was established, and by the cordial co-operation of the officials of the labour organisations, comprehensive figures relating to the development of organised labour are now available. The following table gives particulars of the number of trade unions, the number of branch unions, and the number of members in each State, the Northern Territory and the Commonwealth at the end of 1919 :—

**TRADE UNIONS, BRANCH UNIONS, AND MEMBERS, STATES, NORTHERN TERRITORY, AND COMMONWEALTH, 1919.**

State or Territory.	Number of Separate Unions.	Number of Branches.	Number of Members.
New South Wales .. .. .	211	748	255,899
Victoria .. .. .	160	411	164,583
Queensland .. .. .	106	338	97,378
South Australia .. .. .	101	134	56,879
Western Australia .. .. .	112	161	38,169
Tasmania .. .. .	77	76	13,556
Northern Territory .. .. .	4	..	1,221
<b>Total .. .. .</b>	<b>771</b>	<b>1,868</b>	<b>627,685</b>
<b>Commonwealth* .. .. .</b>	<b>394†</b>	<b>2,245†</b>	<b>627,685</b>

\* Allowing for interstate excess. † Number of distinct organisations and interstate groups of organisations in the Commonwealth—not the total number of organisations, which are practically independent and self-governing. (See next page).

In the preceding table the number of separate unions in each State refers to the number of unions which are represented in each State, exclusive of branches within a State. That is to say, each union represented in a State is only counted once, regardless of the number of branches in that State. Except in the last line, the number of branches indicates the number of branches of State head offices, which may, of course, themselves be branches of an interstate or larger organisation. In taking the total number of separate unions in the Commonwealth (see last line but one), it is obvious that, in the case of interstate and similar unions, there will be duplication, since each such union is counted once in each State in which it has any branches. In the figures given in the last line allowance has been made for this duplication. State branches of interstate or federated



unions, as well as sub-branches within a State, are included under the heading "Branches" in the third column—last line. It should be observed, however, that the scheme of organisation of these interstate or federated unions varies greatly in character, and the number of separate Commonwealth unions does not fairly represent the number of practically independent organisations in Australia. In some of these unions the State organisations are bound together under a system of unification and centralised control, while in others the State units are practically independent and self-governing, the federal bond being loose and existing only for one or two specified purposes. It may be seen, therefore, that there are 394 distinct organisations and interstate groups of organisations in the Commonwealth, having 2,245 State branches and sub-branches, and a total of 627,685 members.

6. Number and Membership of Unions in the Commonwealth in Industrial Groups, at the end of the years 1912 to 1919.—The following table shews the number of unions and members thereof in the Commonwealth at the end of the years 1912 to 1919. The number of unions specified refers to the number of different unions represented in each State; that is to say, interstate or federated unions are counted once in each State in which they are represented, but sub-branches within a State are not counted.

**NUMBER AND MEMBERSHIP OF UNIONS IN THE COMMONWEALTH IN INDUSTRIAL GROUPS, AT THE END OF THE YEARS 1912 TO 1919.**

Industrial Groups.	1912.	1913.	1914.	1915.	1916.	1917.	1918.	1919.
I. Wood, Furniture, etc. ..	24	20	20	20	20	19	20	20
II. Engineering, Metal Works, etc. ..	71	79	76	77	76	75	77	77
III. Food, Drink, Tobacco, etc. ..	70	72	70	72	69	74	80	77
IV. Clothing, Hats, Boots, etc. ..	33	32	30	31	28	26	28	27
V. Books, Printing, etc. ..	30	31	29	30	29	29	30	29
VI. Other Manufacturing ..	80	79	80	78	78	84	84	84
VII. Building ..	60	64	67	63	63	60	58	57
VIII. Mining, Quarries, etc. ..	28	26	27	27	26	25	26	20
IX. Railway and Tramway Services ..	25	35	32	31	28	34	40	43
X. Other Land Transport ..	19	28	25	24	23	22	23	23
XI. Shipping, etc. ..	41	62	63	66	65	73	72	71
XII. Pastoral, Agricultural, etc. ..	14	14	11	12	10	10	9	8
XIII. Domestic, Hotels, etc. ..	27	25	22	20	22	19	20	20
XIV. Miscellaneous ..	99	143	160	162	168	197	200	215
Total .. ..	621	710	712	713	705	747	767	771

**NUMBER OF MEMBERS.**

I. Wood, Furniture, etc. ..	18,569	19,913	19,071	16,172	14,762	16,365	18,953	21,156
II. Engineering, Metal Works, etc. ..	29,953	39,145	42,108	47,104	49,230	47,023	47,135	49,043
III. Food, Drink, Tobacco, etc. ..	28,132	33,372	39,763	38,504	41,515	41,229	40,953	46,569
IV. Clothing, Hats, Boots, etc. ..	16,691	18,217	17,593	21,885	25,962	29,150	31,856	38,620
V. Books, Printing, etc. ..	8,214	9,318	9,821	10,784	11,079	11,401	11,972	13,259
VI. Other Manufacturing ..	24,838	27,010	29,002	30,648	32,119	30,017	30,673	34,901
VII. Building ..	25,609	31,544	36,593	37,739	36,255	34,772	35,761	37,301
VIII. Mines, Quarries, etc. ..	39,203	40,449	39,733	33,024	33,515	34,029	35,519	40,278
IX. Railway and Tramway Services ..	56,005	66,323	71,260	76,482	75,896	79,520	74,813	83,183
X. Other Land Transport ..	14,550	18,369	17,687	17,208	15,719	14,728	14,487	15,903
XI. Shipping, etc. ..	35,000	40,913	44,536	42,903	45,868	51,746	50,433	48,598
XII. Pastoral, Agricultural, etc. ..	52,180	51,696	44,593	38,334	37,679	40,735	44,176	46,794
XIII. Domestic, Hotels, etc. ..	14,289	13,416	11,135	9,269	9,907	10,163	11,169	14,702
XIV. Miscellaneous ..	69,991	88,240	100,376	107,975	117,050	123,309	133,855	137,378
Total .. ..	433,224	497,925	523,271	528,031	546,556	564,187	581,755	627,685

Particulars are given in Labour Report No. 10 (pp. 13-15) of the number of male and female members of unions and the percentage of such members on the total number of adult wage earners. Other tables in the same Report shew the classification of unions according to number of members and the number of central labour organisations. Information is also given below as to the development of trade unionism since 1901.

7. Development of Trade Unions in Australia, 1901 to 1919.—The following table shews for the years specified the total number of trade unions in the Commonwealth, and the number and membership of those unions for which returns are available. The estimated total membership of all unions for years prior to 1912 is shewn in the last line :—

**NUMBER AND MEMBERSHIP OF TRADE UNIONS IN COMMONWEALTH,  
1901 TO 1919.**

Particulars.	1901.	1906.	1911.	1912.	1914.	1915.	1916.	1917.	1918.	1919.
Total number of unions	108	302	573	621	712	713	705	747	767	771
Number of unions for which membership available ..	139	253	542	621	712	713	705	747	767	771
Membership of these unions	68,218	147,049	344,999	433,224	523,271	523,031	546,556	564,187	581,755	627,685
Estimated total membership of all unions ..	97,174	175,529	364,732	..	..	..	..	..	..	..

NOTE.—Particulars for 1907, 1908, 1909, 1910, and 1913 are given in Labour Report No. 2, p. 13.

These figures shew that while the number of unions in 1919 was more than double the number in 1906, the estimated membership during the same period increased nearly fourfold. During the last nine years the estimated annual increase in membership was greatest in the year 1912, when it amounted to no less than 68,492, and least in 1915, when it was only 4,760.

8. Interstate or Federated Unions, 1919.—The following table gives particulars as to the number and membership of interstate or federated unions in 1919 :—

**NUMBER AND MEMBERSHIP OF INTERSTATE OR FEDERATED UNIONS IN THE  
COMMONWEALTH, 1919.**

Particulars.	Unions Operating in—					Total.
	2 States.	3 States.	4 States.	5 States.	6 States.*	
Number of Unions .. ..	16	14	12	17	36	95
Number of Members ..	19,323	43,643	51,882	106,430	276,652	497,930

\* Four Unions in this Group have, in addition to Branches in each of the six States, a Branch in the Northern Territory.

It appears, therefore, that 95 out of the 394 separate associations and groups of associations in the Commonwealth are organised on an interstate basis. The membership of these 95 unions amounts to 497,930, or no less than 79.3 per cent. of the total membership (627,685) of all unions.

**9. Central Labour Organisations.**—In each of the metropolitan towns, as well as in a number of other industrial centres, delegate organisations, consisting of representatives from a group of trade unions, have been established. Their revenue is raised by means of a per capita tax on the members of each affiliated union. In most of the towns where such central organisations exist, the majority of the local unions are affiliated with the central organisation, which is usually known as the Labour or the Trades Hall Council or the Labour Federation. In Western Australia a unified system of organisation extends over the industrial centres throughout the State. In this State there is a provincial branch of the Australian Labour Federation, having a central council and executive, and metropolitan and branch district councils, to which the local bodies are affiliated. The central council, on which all district councils are represented, meets periodically. In the other five States, however, the organisation is not so close, and though provision usually exists in the rules of the central council at the capital town of each State for the organisation of district councils or for the representation on the central council of the local councils in the smaller industrial centres of the State, the councils in each State are, as a matter of fact, independent bodies.

The table below shews the number of metropolitan and district or local labour councils, together with the number of unions and branches of unions affiliated therewith, in each State at the end of the year 1919 :—

**CENTRAL LABOUR ORGANISATIONS.—NUMBER, AND UNIONS AFFILIATED, 1919.**

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
Number of Councils	3	5	4	3	10	1	26
Number of Unions and Branch Unions affiliated ..	127	175	50	76	168	19	615

The figures given in the preceding table as to number of unions do not necessarily represent separate unions, since the branches of a large union may be affiliated to the local trades councils in the several towns in which they are represented.

Between the trade union and the central organisation of unions may be classed certain State or district councils, organised on trade lines and composed of delegates from separate unions, the interests of the members of which are closely connected by reason of the occupations of their members, such, for example, as delegate councils of bakers, bread carters, and mill employees, or of unions connected directly or indirectly with the iron, steel, or brass trades, or with the building trades.

## § 2. Laws Relating to Conditions of Labour.

**1. Tabular Statement of Statutes affecting Labour.**—The statutes in force at the end of 1919 in the several States of the Commonwealth, which, more or less directly, affect the general conditions of labour, are shewn in the tables on pages 991–2 of Year Book No. 11. The following additions have been made to the Statutes in force therein: in New South Wales an amendment to the Industrial Arbitration Act in 1919; and in 1918 to the Queensland Workers' Compensation Act.

**2. Provisions and Administration of the Acts.**—For information regarding the benefits sought, and the provisions for the registration, administration, and record-keeping, etc., under these Acts, reference should be made to Year Book No. 9, pp. 949 to 952.

3. **Registered Factories.**—The number of establishments registered under Factories Acts is shewn below :—

**FACTORIES REGISTERED UNDER ACTS, 31st DECEMBER, 1918.**

State.	Number of Registered Factories.	Numbers Employed.		
		Males.	Females.	Total.
New South Wales .. ..	8,346	74,719	31,246	105,965
Victoria .. ..	7,994	65,802	38,440	104,242
Queensland* .. ..	2,639	21,014	7,939	28,953
South Australia .. ..	1,814	13,039	5,527	18,566
Western Australia .. ..	1,160	8,601	3,007	11,608
Tasmania† .. ..	975	6,553	1,542	8,095
Commonwealth .. ..	22,928	189,728	87,701	277,429

\* At 31st March.

† At 30th June.

**FACTORIES REGISTERED UNDER ACTS, 31st DECEMBER, 1919.**

State.	Number of Registered Factories.	Numbers Employed.		
		Males.	Females.	Total.
New South Wales† .. ..	8,346	74,719	31,246	105,965
Victoria .. ..	8,221	75,994	40,379	116,373
Queensland* .. ..	3,180	21,980	7,847	29,827
South Australia .. ..	1,833	14,512	6,026	20,538
Western Australia† .. ..	1,160	8,601	3,007	11,608
Tasmania† .. ..	963	7,048	1,513	8,561
Commonwealth .. ..	23,703	202,854	90,018	292,872

\* At 31st March. † At 30th June. ‡ Particulars for 1918. Figures for 1919 not available.

4. **Comparative Statement of Factories Law in Australia.**—The tables on pp. 994 to 999 of Year Book No. 11 shew at a glance the chief provisions of the Factories and Shops Acts in the Commonwealth. Amendments to the Early Closing Act of New South Wales, in which special provisions for the closing of hairdressers, tobacconists, and chemists' shops were made, and to the Victorian Factories and Shops Act which altered the hour of closing shops on Friday nights from 10 to 9 o'clock were passed in 1919.

5. **Mining Acts.**—Under the Mining Acts the employment underground of all females and of boys under fourteen years is prohibited. A minimum age, usually seventeen, is fixed for employment as lander or bracedman at plats and landing places; no lander, bracedman, underground worker, or man in charge of motive power may be employed more than eight hours a day. A large number of scientific provisions for the protection of the lives and health of miners is also inserted in the Acts. Engine drivers must hold certificates of competency. Persons may be licensed to certify to the condition of boilers. Provision is made to enable injured persons or the relatives of persons killed to recover damages if the injury or death results from a breach of the regulations referred to above. Inspection of mines is fully provided for. Sunday labour is forbidden. In New South Wales and (since 1st February, 1910) Victoria still more advanced mining legislation exists; numerous sections are designed to ensure the well-being of the workers, such as limitation of hours, etc.

6. **Employers' Liability and Workmen's Compensation Acts.**—In each of the States, Acts have been passed allowing compensation to workers who have been killed or injured while engaged in industrial occupations. In the Commonwealth, one Act provides for compensation to all workers employed by the Commonwealth, and another to all seamen working on ships registered in Australia. A conspectus of these Acts is given below :—

## CONSPECTUS OF WORKMEN'S

HEADING.	NEW SOUTH WALES.	VICTORIA.	QUEENSLAND.	SOUTH AUSTRALIA.
<i>Name of Act</i> ..	Workmen's Compensation Act 1916	Workmen's Compensation Act 1915	The Workers' Compensation Act 1916 and 1918.	The Workmen's Compensation Act 1911, 1918, and 1919
<i>Definition of Employer</i>	Includes any body of persons, corporate or incorporate, and the legal representative of a deceased employer.	Includes any body of persons, corporate or incorporate.	Includes persons, firms, companies and corporations employing workers.	Includes any body of persons, corporate or incorporate.
<i>Nature of work to which Act applies.</i>	Any person who is under contract of service or apprenticeship, whether by way of manual labour, clerical work or otherwise.	Manual workers. Other workers with incomes up to £250.	Any person (including a domestic servant) who works under a contract of service or apprenticeship, whether by way of manual labour, clerical work or otherwise, including tributaries in mines and jockeys.	Manual only, with incomes up to £5 a week.
<i>Workers expressly excluded.</i>	Casuals, persons whose remuneration exceeds £312 per annum.	Workers other than manual earning over £250. Police, outworkers, members of employer's family.	Persons earning over £400. Casuals, police, subscribers to superannuation fund, members of employer's family, salesmen, canvassers, collectors, or persons in receipt of commission.	Persons earning over £5 a week. Outworkers, members of employer's family, seamen whose injury occurs outside jurisdiction, agricultural, horticultural, viticultural, dairying or pastoral workers where machinery is not used, clerks, domestic servants.
<i>Employer not liable to pay compensation for</i>	Injury disabling for less than one week.	Injury incapacitating for less than a week.	Injury incapacitating for less than three days.	First week of injury if disabled for less than two weeks.
<i>In event of insolvency maximum amount of compensation admitted as first charge on assets per individual.</i>	£200.	£200.	Insurance compulsory in State Accident Insurance Fund.	£100.
<i>Compensation in case of Death.</i> <i>If dependents left</i> ..	3 years' earnings, or £300, whichever is larger; maximum, £500.	3 years' earnings, or £200, whichever is the larger; maximum, £500.	3 years' earnings, or £300, whichever is larger; maximum, £600.	4 years' earnings, or £200, whichever is larger; maximum, £300.
<i>If no dependents, maximum amount for medical attendance and funeral expenses.</i>	£20.	£50.	£50.	£20.
<i>Compensation in case of Incapacity.</i> <i>Weekly payment</i> ..	Half average weekly earnings; maximum, £2.	Half average weekly earnings; maximum, 30s.	Half average weekly earnings; maximum, £2, minimum, £1.	Half average weekly earnings; maximum, single man 30s., married man £2.
<i>Maximum total liability</i> ..	£750.	£500.	£750	£500.
<i>Compensation for Workers over 60 years of age who have entered into an agreement.</i> <i>Death, with dependents—Minimum</i> ..	..	£50.	..	£50.
<i>Incapacity—Minimum weekly payment</i> ..	..	5s., or quarter of weekly earnings, whichever larger.	..	5s.
<i>Maximum total liability</i> ..	..	£50.	..	£50.

## COMPENSATION ACTS IN AUSTRALIA.

WESTERN AUSTRALIA.	TASMANIA.	COMMONWEALTH. (Employees.)	COMMONWEALTH. (Seamen.)
Workers' Compensation Act 1912.	The Workers' Compensation Act 1918.	Commonwealth Workmen's Compensation Act 1912.	Seamen's Compensation Act 1911.
Same as South Australia.	Same as South Australia.	The Commonwealth.	Same as South Australia.
Manual, clerical, or otherwise with income up to £300 a year.	Work under contract of service or apprenticeship by way of manual labour, clerical work, or otherwise, on land or water.	Manual, clerical, or otherwise.	Navigation or working of ships registered in Australia. Seamen shipped under Articles of Agreement in Australia while under Commonwealth law included.
Persons whose remuneration exceeds £300 a year. Casuals, police, outworkers, members of employer's family.	Casuals, outworkers, police force, domestic servants under 16 years and not working 8 hours per day, and persons whose weekly earnings do not exceed £4.	Persons not employed in manual labour earning over £500 a year. Outworkers, naval and military forces on active service.	Seamen on vessels ordinarily propelled by oars, and those in naval or military service.
Same as South Australia.	Injury incapacitating for less than three days.	..	Same as South Australia.
£150.	£100.	..	Full amount.
3 years' earnings, or £300, whichever larger; maximum, £400.	3 years' earnings, or £200, whichever larger; maximum, £400.	3 years' earnings, or £200, whichever larger; maximum, £500.	3 years' earnings, or £200, whichever larger; maximum, £500.
£100.	£30.	£30.	£30.
Medical attendance up to £1. Half average weekly earnings; maximum, £2.	Half average weekly earnings; maximum, £2, minimum, £1.	Half average weekly earnings; maximum, £2.	Half average weekly earnings; maximum, 30s.
£400.	£500.	..	..
£100.	£100.	..	(If seamen entitled to Commonwealth Old-age pension, amount of compensation and pension together not to exceed 30s. weekly.) ..
10s.	20s.	..	..
£100.	£100.	..	..

## CONSPPECTUS OF WORKMEN'S

HEADING.	NEW SOUTH WALES.	VICTORIA.	QUEENSLAND.	SOUTH AUSTRALIA.
<i>Compensation for in-firm workers who have entered into an agreement.</i>				
Death, Minimum payment .. ..	..	£50.	..	£50.
Incapacity—Minimum weekly payment ..	..	5s., or quarter of weekly earnings, whichever larger.	..	5s.
Maximum total liability .. ..	..	£50.	..	£50.
<i>Compensation for workers under 21 years of age earning less than 20s. weekly.</i>				
Weekly payment ..	Average weekly earnings; maximum, 15s.	Average weekly earnings; maximum, 10s.	..	Average weekly earnings; maximum, 10s.
<i>Waiting time</i> ..	None.	One week.	Three days. Compensation from date of accident if incapacity lasts over three days.	One week. No compensation for first week unless incapacity lasts two weeks.
<i>Period after which lump sum can be substituted for weekly payment.</i>	Six months.	Six months.	Any time.	Six months.
<i>Tribunal, if claim not settled by agreement.</i>	Committee representative of employer and his workmen, if existing, or arbitration, or Judge of District Court.	Judge of County Court or Police Magistrate.	Insurance Commissioner, Industrial Magistrate, Supreme Court.	Arbitrator. If arbitrator not agreed on within one month, special Magistrate. Appeals to Supreme Court.
<i>Regulations for worker leaving the State in which he was injured.</i>	If permanent incapacity likely, quarterly substituted for weekly payments in case of worker ceasing to reside in the State.	Same as South Australia.	If permanent incapacity proved, 156 times weekly payments substituted for weekly payments in case of worker leaving Commonwealth.	If permanent incapacity likely, quarterly substituted for weekly payments in case of worker leaving State.
<i>Proceedings for compensation not maintainable unless commenced within</i>	Six months.	Six months.	Six months.	Six months.

7. *Other Acts.*—Other legislation regulating conditions of labour has been enacted by the States. The British *Conspiracy and Protection of Property Act* (38 and 39 Vic., c. 86) has been adopted in all the States except New South Wales and Queensland. Servants' registry offices are placed under administrative control, and the rates of commission chargeable are fixed by regulation. Power is given to workmen to attach moneys due to a contractor who employs them, in order to satisfy a claim for wages, such wages being made a first charge on moneys due to a contractor. Workmen are given a lien for wages over material whereon they are working, even if it becomes part of other property. This is in addition to the common law lien, which ceases when possession of the property is parted with. Workmen's wages are protected from attachment. In Victoria, provision is made for the compulsory resumption of suburban lands to provide workmen's homes.

COMPENSATION ACTS IN AUSTRALIA—*continued.*

WESTERN AUSTRALIA.	TASMANIA.	COMMONWEALTH. (Employees).	COMMONWEALTH. (Seamen).
£100.	£50, or 39 times average weekly earnings, whichever larger.	..	..
10s.	10s., or quarter of weekly earnings, whichever larger.	..	..
£100.	£100.	..	..
Average weekly earnings; maximum, 20s.	Average weekly earnings, maximum, £1.	Same as New South Wales.	Same as New South Wales.
Same as South Australia.	None.	None.	One week. No compensation for first week unless incapacity lasts two weeks.
Six months.	Two months.	Six months.	Six months.
Local Court.	Commissioner (under Local Courts Act 1896) in Court of Requests.	Arbitrator or County Court.	Arbitrator or County Court
Weekly payments continue in case of worker leaving State.	Same as South Australia.	If permanent incapacity likely, quarterly substituted for weekly payments in case of worker leaving Australia.	If permanent incapacity likely, quarterly substituted for weekly payments in case of worker leaving Australia.
Six months.	Six months.	Six months.	Six months, or 18 months if ship lost at sea.

8. **General Results of Industrial Legislation.**—The results of the legislation described must be sought in the Reports of the Inspectors of Factories of the several States, and in the Reports issued by the Labour and Industrial Branch of this Bureau. Generally speaking, the perusal of these reports and of the reports of Royal Commissions which have inquired into the working of the Acts, affords satisfactory evidence that the Acts have, on the whole, effected their objects.

### § 3. Legislative Regulation of Wages and Terms of Contract.

1. **General.**—Two systems, based upon different principles, exist in Australia for the regulation of wages and general terms of contracts of employment. A "Wages Board" system exists in Victoria and Tasmania, and an Industrial Arbitration Court in Western



Australia. In the industrial legislation of New South Wales, Queensland, and South Australia, both systems are embodied, Industrial or Wages Boards, as well as Industrial Courts, being instituted. In accordance with the provisions of the Acts in New South Wales and Queensland, the Industrial Courts in these States have been exercising the functions of Boards, and the work of the existing Boards has been greatly curtailed. Practically all the awards in these States during the last two years have been made by the Industrial Courts. In Victoria, Wages Boards' decisions may be reviewed by the Court of Industrial Appeals. In New South Wales, Industrial Arbitration Acts of 1901 and 1905 instituted an Arbitration Court. This court expired on 30th June, 1908, having delivered its last judgment on the previous day. Wages Boards were substituted under the Industrial Disputes Act 1908, and subsequent years; while the Act of 1912 introduced the mixed system. The Industrial Arbitration (Amendment) Act, assented to on 22nd March, 1918, amends the law for the regulation of the conditions of industries and industrial arbitration. The Act provides for the establishment of a Board of Trade and of special and deputy Courts of Industrial Arbitration, and also for the appointment of Industrial Boards on the recommendation of the Court. There is also the Arbitration Court of the Commonwealth, which has power, however, to deal only with matters extending beyond the limits of a single State.

The chief aims of the Wages Board system are to regulate hours, wages, and conditions of labour and employment, by the determination of a Board usually brought into existence for any specified industry or group of industries by petition or application. Under the Industrial Arbitration Court system an industry does not technically come

#### TRIBUNALS FOR THE REGULATION OF

<i>Particulars.</i>	NEW SOUTH WALES.	VICTORIA.	QUEENSLAND.
<i>Name of Acts</i>	Industrial Arbitration Acts 1912, 1916, 1918, 1919	Factories and Shops Act 1915 and 1919	Industrial Arbitration Act 1916
<i>Nature of Tribunals</i>	Court of Industrial Arbitration. Industrial Boards. Board of Trade	Court of Industrial Appeals. Wages Boards	Industrial Court. Industrial Boards
<i>How Tribunals are brought into existence</i>	Industrial Court (Judge) constituted by Act. Industrial Boards by the Minister on recommendation of Industrial Court. Board of Trade constituted by Act	Court constituted by Act. Wages Boards by Governor-in-Council on resolution of Parliament	Industrial Court constituted by the Act. Industrial Boards by Minister on recommendation of Court
<i>Scope of Acts</i>	To industrial groups named in Schedule to Act, and those added by Proclamation. Includes Government servants. Board of Trade declarations re living wage, apprenticeship, etc.	To any process, trade, business, or occupation specified in a resolution. Government servants are not included*	To all callings and all persons (including Government servants) except (1) State children; (2) domestic servants; (3) persons engaged in farming operations on dairy, fruit and agricultural farms
<i>How a trade is brought under review</i>	Reference by Court or Minister, or by application to the Board by employers (having not less than 20 employees) or industrial unions	Usually by petition to Minister	Upon reference by an industrial union or employer, or any twenty employees in any calling, or the Minister, or of the Court

\* "The Railways Classification Board Act" 1919 provides for a special tribunal to regulate wages and hours of employment of railway employees.

under review until a dispute has actually arisen. Most of the Acts, however, have given the President of the Court power to summon a compulsory conference. In Victoria, where the Wages Board system is in force, there is no provision against strikes, but in Tasmania, where that system has also been adopted, penalties are provided for a lock-out or strike on account of any matter in respect of which a Board has made a determination.

Particulars were given as to the historical development, mode of constitution and general provisions of Wages Boards and Arbitration Courts in Year Book No. 9, pages 960 to 966. These refer to the regulation of wages and working conditions, and the prevention and settlement of industrial disputes.

**2. Comparative Statement of Tribunals for Regulating Wages in Australia.**—The table on pages 992 to 995 shews at a glance the Acts which operate in fixing wages, the constitution and function of tribunals enacted under them, and the effect and extent of the tribunals' decisions. It will be seen that in all the States there is machinery for the regulation of wages.

Under the authority of the Commonwealth Government a War Precautions Coal Board appointed in November, 1916, to regulate wages, working conditions and other matters in the coal mining industry issued "Orders" during 1916 and 1918, but was inactive during 1917. A special tribunal to deal with the coal mining industry was appointed by the Industrial Peace Act of 1920.

#### WAGES IN TRADES IN AUSTRALIA, 1919.

SOUTH AUSTRALIA.*	WESTERN AUSTRALIA.	TASMANIA.	COMMONWEALTH.
The Factories Acts 1907, 1908, 1910 and 1915. Industrial Arbitration Act 1912. Industrial Arbitration Act Amendment Acts 1915 and 1916	Industrial Arbitration Act 1912	Wages Boards Acts 1910, 1911, 1913, and 1917	Conciliation and Arbitration Act 1904-18. Arbitration (Public Service) Act 1911
Industrial Court. Wages Boards	Arbitration Court	Wages Boards	Court of Conciliation and Arbitration
Court constituted by Act of 1912. Wages Boards by the Governor-in-Council, pursuant to resolutions of Parliament	Constituted by the Act	By Governor-in-Council pursuant to resolutions of Parliament	Court of Record constituted by the Act
To processes, trades, etc., specified in Act, and such others as may be authorised by Parliament	All industrial occupations other than domestic service	To clothing and apparel trades and any other trades or groups or parts	Industrial disputes extending beyond limits of any one State or in Federal Capital or Northern Territories
Court—matters or disputes submitted by Minister, Registrar, employers or employees, or by report of Wages Board. Wages Boards by petitions, etc.	Industrial disputes referred by President or by an Industrial Union or Association	Usually by petition to Minister	Industrial disputes either certified by Registrar, submitted by organisation, referred by a State Industrial authority or by President after holding abortive Compulsory Conference

\* In 1919 the Government constituted a Government Workers' Tribunal to enquire into and report upon claims affecting wages and conditions of employment presented to the Government or any Minister or Department, or the South Australian Railways Commissioner.

## TRIBUNALS FOR THE REGULATION OF

Particulars.	NEW SOUTH WALES.	VICTORIA.	QUEENSLAND.
<i>President or Chairman of Tribunal</i>	Industrial Boards—Appointed by Minister on recommendation of Court. Board of Trade—Appointed by the Governor-in-Council	Appointed by Governor-in-Council on nomination of Board, or failing that on nomination by Minister	Appointed by Board, or failing such, by the Minister
<i>Number of Members of Tribunal</i>	Industrial Boards—Chairman and 2 or 4 other members. Board of Trade—President, Deputy-President, 4 commissioners and 1 or more for rural industries	Not exceeding 11 (including chairman)	Industrial Court, not exceeding 3, including president. Industrial Boards, 2 or 4 in addition to chairman
<i>How ordinary members are appointed</i>	Industrial Boards—Appointed by Minister on recommendation of Industrial Court. Board of Trade—By Governor-in-Council	Nominated by Minister. But if one-fifth of employers or employees object, representatives are elected by them	Members of Industrial Court by Governor-in-Council. Members of Industrial Boards by Minister on nomination by employers and employees respectively, and on the recommendation of the Court
<i>Decisions—how enforced</i>	By Registrar and Industrial Magistrate	By Factories Department in Courts of Petty Sessions before Police Magistrates	By Industrial Court on application of any party to the award or agreement, or of Registrar, or Industrial Inspector
<i>Duration of decision</i>	For period fixed by Tribunal, but not more than 3 years, and after such period until varied or rescinded	Until altered by Board or Court of Industrial Appeals	12 months and thereafter, unless sooner rescinded or varied
<i>Appeal against decision</i>	To Industrial Court against decision of Boards	To the Court of Industrial Appeals	To Industrial Court against decision of Boards. Case may be stated for opinion of Full Bench
<i>Is suspension of decision possible pending appeal?</i>	No; except by temporary variation of award by the Court	Yes; for not more than 12 months	Yes, if Court so orders
<i>Can Preference to Unionists be declared?</i>	Yes	No	Yes
<i>Provision against strikes and lock-outs</i>	Fourteen days' notice of intention must be given. Secret ballot, two-thirds of members must vote. Penalty for illegal strike, £500; for lock-out, £1,000	Determination may be suspended by Governor-in-Council for any period not exceeding 12 months	Provision made for taking ballot; majority must vote in favour of strike or lock-out. Penalties for strikes or lock-outs, employer or industrial union, £100; other cases, £10
<i>Special provisions for Conciliation</i>	Special Commissioner. Conciliation Committees for colliery and other districts. Registered agreements	None	Compulsory Conference. Registered agreements

WAGES IN TRADES IN AUSTRALIA, 1919—*continued.*

SOUTH AUSTRALIA.	WESTERN AUSTRALIA.	TASMANIA.	COMMONWEALTH.
Court — President. Wages Board, appointed by Governor on nomination of Board, or falling nomination, a Stipendiary Magistrate	A Judge of the Supreme Court	A Police Magistrate appointed by the Governor	President
Court — President. Provision made for appointment of Deputy-President. Wages Board, not less than 5 nor more than 11 (inclusive of chairman)	Three, including President	Chairman, and not less than 4 nor more than 10	President. Provision is made for appointment of Deputy-President
By Governor on nomination of employers and employees respectively	Appointed by Governor, President directly, and one each on recommendation of unions of employers and workers respectively	By Governor - in - Council on nomination by employers and employees	President appointed by Governor-General from Justices of High Court for a term of 7 years. Deputy-President appointed by Governor-General from Justices of High Court or Judges of Supreme Court of a State
By Factories Department	By Arbitration Court on complaint of any party to the award or Registrar or an Industrial Inspector	By Chief Inspector under Factories Act with consent of the Minister	By proceedings instituted by Registrar, or by any organisation affected, or a member thereof
Until altered by Board or by order of Industrial Court	For period fixed by Court, not exceeding 3 years, or for 1 year and thenceforward from year to year until 30 days' notice given	Until altered by Board	For period fixed by award, not exceeding 5 years
Industrial Court	No appeal except against Imprisonment or a fine exceeding £20	To Supreme Court against validity of determination only	No appeal. Case may be stated by President for opinion of High Court
Yes	No suspension. Court has power to revise an award after the expiration of 12 months from its date	Yes	No appeal
No	No	No	Yes; ordinarily optional, but mandatory if in opinion of Court preference is necessary for maintenance of industrial peace or welfare of society
Penalty £500, or imprisonment for 3 months	Employer or Industrial Union, £100; other cases, £10	Organisations, £500; individuals, £20	Penalty, £1,000
Compulsory Conference. Registered agreements	Compulsory Conference. Registered agreements	None	Compulsory Conference. Court may temporarily refer to Conciliation Committee. Registered agreements

### § 4. Operations under Wages Board and Industrial Arbitration Acts.

1. **General.**—Particulars regarding operations under the Commonwealth Arbitration Acts and the various State Acts for the regulation of wages, hours, and conditions of labour, shewing the number of boards authorised and constituted, and which had or which had not made any award or determination in each State; the number and territorial scope of awards or determinations, and the number of industrial agreements in force, were first compiled to the 31st December, 1913.\*

These particulars have from time to time been revised, and reviews to the end of approximately quarterly periods have been published in the periodical Labour Bulletins to the 30th June, 1917, and thereafter in the Quarterly Summaries to the 31st December, 1919. Information has also been compiled and included in the later issues of the Labour Bulletin and Quarterly Summary respecting the estimated number of work-people affected by awards or determinations and industrial agreements in each State. In addition, a brief quarterly epitome has been given of the number of awards and determinations made and industrial agreements filed under the Act in force in each State and the Commonwealth Conciliation and Arbitration and the Commonwealth (Public Service) Arbitration Acts. The following tabular statement gives particulars of the operations in each State and under the Commonwealth Statutes during each quarter of the years 1918 and 1919 respectively:—

#### AWARDS AND DETERMINATIONS MADE AND INDUSTRIAL AGREEMENTS FILED IN EACH QUARTER OF 1918 AND 1919.

State and Commonwealth.	1st Quarter.		2nd Quarter.		3rd Quarter.		4th Quarter.		Full Year.	
	Awards or Determinations made.	Agreements Filed.	Awards or Determinations made.	Agreements Filed.	Awards or Determinations made.	Agreements Filed.	Awards or Determinations made.	Agreements Filed.	Awards or Determinations made.	Agreements Filed.
1918.										
New South Wales	18	8	25	5	21	14	33	12	97	39
Victoria ..	13	..	12	..	20	..	31	..	76	..
Queensland ..	9	12	35	24	26	19	55	6	125	61
South Australia	3	2	2	5	7	2	17	1	29	10
Western Australia	4	7	1	3	3	9	1	7	9	26
Tasmania ..	2	..	3	..	6	..	4	..	15	..
Commonwealth ..	3	5	5	6	4	151†	10	51‡	22	213
Total ..	52	34	83	43	87	195	151	77	373	349
1919.										
New South Wales	20	10	35	12	32	10	45	16	132	48
Victoria ..	21	..	17	..	13	..	18	..	69	..
Queensland ..	18	5	22	4	28	7	59	13	127	29
South Australia	9	2	8	2	19	2	15	2	51	8
Western Australia	..	3	3	7	1	16	2	11	6	37
Tasmania ..	6	..	4	..	5	..	6	..	21	..
Commonwealth	3	13	2	3	6	44§	10	100	21	160
Total ..	77	33	91	28	104	79	155	142	427	282

\* Information as to the main provisions of the various Acts in force is given on pp. 992-995.  
† Including 140 separate agreements made between the Federated Engine-Drivers and Firemen's Association and various employers. ‡ Including 37 separate agreements made between the Federated Coopers' Association and various employers. § Including 29 separate agreements made between the Federated Engine-Drivers and Firemen's Association and various employers. || Including 68 separate agreements made between the Federated Engine-Drivers and Firemen's Association and various employers.

Owing to the prevailing drought conditions and the advent of war during the year 1914, varying restrictive measures were introduced either for the suspension or curtailment of the operations of industrial tribunals in each of the States. During the second quarter of 1915 these restrictions were somewhat relaxed in New South Wales and Queensland, and early in the third quarter operations gradually assumed normal conditions in all the States. During the third and fourth quarters of 1915 greater activity was evidenced in each State, and this activity continued during the years 1916, 1917, 1918, and 1919. The number of awards and determinations (427) made by the Commonwealth Conciliation and Arbitration Court, the State Industrial Courts and Wages Boards, during the year 1919, was higher than the number made during the previous twelve months, when 373 awards and determinations were issued. The number of industrial agreements entered into during 1919 was 282, as compared with 349 during the year 1918. The number of awards issued by the Commonwealth Conciliation and Arbitration Court was 21, as compared with 22 during the previous year. The number of industrial agreements filed under the provisions of the Commonwealth Act shewed a decrease in comparison with the number filed during the previous year, the number filed during 1919 being 160, as against 213 during the year 1918.

**2. Boards Authorised, and Awards, Determinations, and Agreements in Force.**—In the following table particulars are given for all States, excepting Western Australia, of the number of Boards authorised and constituted, and including operations under the Commonwealth and the Western Australian Arbitration Acts, of the number of awards, determinations, and industrial agreements in force in all States at the 31st December, 1913, and during the four quarters of 1919 :—

**PARTICULARS OF BOARDS AND OF AWARDS, DETERMINATIONS, AND INDUSTRIAL AGREEMENTS IN FORCE AT 31st DECEMBER, 1913 AND DURING EACH QUARTER OF 1919.**

Dates.	Boards Autho- rised.	Boards Con- stituted.	Boards which had made Awards or Deter- minations.	Awards or Deter- minations in Force.*	Industrial Agree- ments in Force.
31st December, 1913 .. ..	504	501	387†	575‡	401
31st March, 1919 .. ..	488	483	453	888	848
30th June, 1919 .. ..	489	484	456	915	845
30th September, 1919 .. ..	492	485	463	932	739
31st December, 1919 .. ..	505	498	465	942	843

\* Including awards made by Arbitration Courts. † Owing to a number of awards made under the New South Wales Industrial Disputes Act (1908) being still in force, the Boards constituted for such industries under the Industrial Arbitration Act (1912) had not made any awards. ‡ Excluding awards or determinations which expired in New South Wales (under the Act of 1908) on 31st December, 1913.

It will be observed from the particulars set out in the above table that considerable expansion of the principle of the fixation of a legal minimum rate of wage and of working conditions took place during the six years ending 31st December, 1919. At the end of 1919, 367 additional awards or determinations were in force in the Commonwealth. The number of industrial agreements (a) made and in force under the various Acts increased during the six years under review by 442.

(a) The registration of industrial agreements is not provided for under the Acts in force in Victoria and Tasmania, but such agreements may be registered and filed under the provisions of the Commonwealth Conciliation and Arbitration Act to operate in any or in all States.

# 998 OPERATIONS UNDER WAGES BOARD AND INDUSTRIAL ARBITRATION ACTS.

In the following table particulars are given for each State and the Commonwealth of the number of Boards authorised, etc., at the 31st December of the years 1913 and 1919 :—

## BOARDS AUTHORISED AND CONSTITUTED, AWARDS, DETERMINATIONS AND AGREEMENTS IN FORCE AT 31st DECEMBER IN 1913 AND 1919.

Particulars.	At 31st Dec.	C'wlth.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	Total.
<i>Boards Authorised, etc.*—</i>									
Boards authorised ..	{ 1913 .. 216†	..	216†	135	75	56	..	23	505
	{ 1919 .. 241	..	241	158	28	58	..	46	505
Boards constituted ..	{ 1913 .. 223†	..	223†	132†	74	51	..	21	501
	{ 1919 .. 241	..	241	154	28	56	..	45	498
Boards which have made Awards or Determinations	{ 1913 .. 123	..	123	123	74	47	..	19	386
	{ 1919 .. 226	..	226	147	28	53	..	37	465
<i>Awards and Determinations—</i>									
Awards and Determinations in force ..	{ 1913 .. 17	..	265	127	73	54	18	21	575
	{ 1919 .. 96	..	316	151	206	88	48	37	942
<i>State Awards and Determinations—</i>									
Applying to whole State	{ 1913 .. 32	..	32	8	3	..	..	15	58
	{ 1919 .. 23	..	23	19	30	..	5	36	113
Applying to Metropolitan area	{ 1913 .. 58	..	58	..	28	53	13	1	153
	{ 1919 .. 94	..	94	1	54	70	30	..	249
Applying to Metropolitan and Country areas	{ 1913 .. 49	..	105	1	..	1	5	161	161
	{ 1919 .. 120	..	121	40	5	2	1	239	239
Applying to Country areas	{ 1913 .. 126	..	14	41	1	4	..	186	186
	{ 1919 .. 79	..	10	82	13	11	..	195	195
<i>Commonwealth Awards—</i>									
Awards in force in each State ..	{ 1913 .. 13	..	13	17	15	16	9	13	..
	{ 1919 .. 71	..	71	70	49	63	44	56	..
<i>Industrial Agreements—</i>									
In force ..	{ 1913 .. 228	..	75	..	5	11	82	..	401
	{ 1919 .. 570	..	89	..	65	28	91	..	843
Commonwealth Agreements in force in each State ..	{ 1913 .. 132	..	129	68	62	57	61	..	..
	{ 1919 .. 141	..	282	58	56	26	91	..	..
Number of Persons working under State Awards and Determinations (estimated) ..	1919 ..	..	275,000	150,000	90,000	27,000	35,000	15,000	592,000

\* The figures for New South Wales are exclusive of Demarcation Boards. † Including Boards which were subsequently dissolved, owing to alteration in the sectional arrangement of industries and callings. ‡ Including one Board subsequently superseded by three Boards. § In pursuance of the provisions of the Industrial Arbitration Act of 1916, all Industrial Boards appointed under the Industrial Peace Act of 1912 were dissolved on the 12th January, 1917, with the exception of those Boards which had matters pending or partly heard. At the 31st December, 1917, these Boards had also been dissolved. The work of the Boards appointed under the old Act is being undertaken by a Court of Arbitration constituted under the new Act. || Omitting a number of awards which expired on the 31st December, 1913.

Particulars for the intervening years 1914 to 1918 inclusive will be found in Year-Book No. 12, pp. 997-8.

## SECTION XXVIII.

## DEFENCE.

## § 1. Military Defence.

1. **Development of State Military Systems.**—A detailed historical account of the Australian defence forces prior to federation will be found in the Official Year Book No. 2, pp. 1075–1080. See also Official Year Book No. 12, p. 999.

The strength of the military forces of the several States prior to federation was generally nearly up to establishments. On 31st December, 1900 (the eve of federation), it was:—New South Wales, 9,338; Victoria, 6,335; Queensland, 4,028; South Australia, 2,932; Western Australia, 2,696; Tasmania, 2,024; total for Commonwealth, 27,353. Cadets, reservists, and rifle club members are excluded.

2. **Development of Commonwealth System.**—Under the terms of the Constitution Act 1900, the Commonwealth took over control of defence matters in March, 1901. Particulars regarding development up to the initiation of the existing system will be found in Official Year Book No. 12, p. 999.

3. **The Present Military System.**—The defence of Australia at the present time is enacted and prescribed by the Defence Acts 1903–1918 of the Federal Parliament. The provisions of the Acts of 1903, 1904, and the regulations under them contain the main working principles of Australian defence, the necessary expansion being provided for in the amendments of 1909, 1910, 1911, 1912, 1914, 1915, 1917, and 1918. The main provisions of the Acts up to 1912 inclusive will be found in Official Year Book No. 6, pp. 1050 *et seq.* The principal provision of the Act of 1909 is the enactment of compulsory military or naval training, with regulations for registration, enrolment, and exemption. Statutes were passed subsequently, extending or modifying the legislative provisions, removing obstacles and difficulties, and, where necessary, providing machinery. (See also Year Book No. 12, pp. 1000 *et seq.*)

(i) **Military Population.** In connexion with the numbers available, the figures of male population are of interest. The total number at cadet age, *i.e.*, between 12 and 18, at the Census of 1911 (3rd April) was about 260,000; at citizen soldier age, *i.e.*, between 18 and 26, 366,000; these latter, with 330,000 at ages between 26 and 35, give 696,000 as the total males at the best period for military service. In addition, there were about 614,000 between 35 and 60.

(ii) **Record for Anthropometric Purposes.** In connexion with the medical inspection it has been arranged that the colour and character of hair, and the colour of eyes of those examined, shall be recorded for statistical purposes.

A systematic record of height, weight and chest measurement of each trainee is also made.

In Official Year Book No. 11, pp. 1203–1209, an analysis is given of the data collected for the year ended 30th June, 1912.

(iii) **Compulsory Training.** By the Defence Acts of 1903 and 1904 all male inhabitants between the ages of eighteen and 60 years were made liable to serve in Australia with the defence forces *in time of war*. The more recent Acts make training and service compulsory up to the age of twenty-six years *in time of peace*. By the Act of 1909 the principle of universal liability to be trained was made law for the first time in any English-speaking community. On 1st January, 1911, by proclamation, compulsory training was established. Details concerning the method of carrying out the scheme, with modifications suggested by the report of Lord Kitchener, will be found in Official Year Book No. 12, pp. 1001, *et seq.*, but owing to limits of space they have been omitted from the present Year Book.



(iv) *Rifle Clubs.* These form part of the Reserves. On the 31st December, 1919, there were 1,383 clubs with a membership of 81,006, and in addition 128 miniature rifle clubs having a membership of 5,827. Applications to form rifle clubs are made to the commandant of a district, and must be signed by not less than thirty male persons between the ages of sixteen and sixty, who are required to be natural-born or naturalised British subjects, and are not undergoing training under the universal clauses of the Defence Act. Persons, however, who are temporarily exempted from universal training may be permitted to join rifle clubs during the period of their temporary exemption. Members of rifle clubs must fire an annual course of musketry, but do not undergo any systematic drill.

(v) *Allotment of Units to Divisional Brigade, Battalion, and Training Areas.* The organisation is territorial, and the divisions based upon infantry units. There are 93 battalion areas, forming 22 brigades. The areas have approximately equal numbers of males of citizen soldier age (about 1,300), and each furnishes a battalion of infantry, and a proportion of other troops. The figures shewn in the following tables are approximate, and include the recruits (19-20) year, but not the 25-26 year men. (See also Year Book No. 12, p. 1005.)

**ALLOTMENT OF UNITS TO BRIGADE, BATTALION, AND TRAINING AREAS,  
30th JUNE, 1920.**

Brigade Areas.			Battalion Areas.						Training Areas.	
State.	No.	No. of Battalions.	Providing the undermentioned units.					Total Nos. in Training Areas.	No.	
			Infantry and Engineers, A.S.C. and A.M.C.	Light Horse.		Field Artillery.				
				Nos.	Squadrons.	Nos.	Batteries.			Nos.
New South Wales ..	8	32	32,023	28	3,706	15	2,850	38,579	69	
Victoria ..	7	31	27,683	31	4,199	19	3,268	35,150	67	
Queensland ..	3	12	11,420	14	1,866	7	1,204	14,490	35	
South Australia ..	2	9	8,482	11	1,463	5	860	10,805	25	
Western Australia ..	1	5	3,857	3	403	3	516	4,776	14	
Tasmania ..	1	4	3,309	3	403	3	516	4,228	11	
Total ..	22	93	86,774	90	12,040	52	9,214	108,028	221	

(vi) *Instructional Staff.* The instructors provided for training consist of 298 officers and 806 warrant and non-commissioned officers of the instructional staff (permanent), and 218 area officers (temporary). They supervise the training of light horse, infantry, and senior cadet units, and instruct in the non-technical duties of specialist corps. Additional officers and non-commissioned officers of the permanent troops instruct in technical work.

(vii) *The Royal Military College, Duntroon, Federal Territory,* is established for the purpose of providing trained officers for the permanent forces. Admission is by open competitive examination, a definite number of vacancies being allotted to each State of the Commonwealth on a population basis. Between 20 and 25 staff-cadets are thus admitted annually, and, in addition to these, ten staff-cadets from New Zealand are nominated yearly by the Dominion Government, which pays £377 10s. per annum for each. The age for admission is between sixteen and nineteen years, though there is a provision in the regulations by which members of the forces over nineteen years of age who pass the prescribed examination, and are approved by the Governor-General-in-Council, may be admitted. The college was opened in June, 1911. The normal college course lasts for four years, and is followed by a tour of duty in England or India, after which graduates will be appointed to staffs or permanent troops in Australia and New Zealand. During the late war the course was temporarily modified. Over 158 staff-cadets were (June, 1918) specially graduated, and appointed to units serving

at the front with the Australian and New Zealand forces. No fees are charged for maintenance and instruction, each staff-cadet being credited with an allowance of 5s. 6d. per diem to meet expenses of necessary uniform, books, instruments, etc. The full establishment of cadets is 150, but owing to special graduations for active service the strength (31st December, 1919), was 138. The course of instruction comprises both educational and military work, the former being mainly completed in the first two years. Cadets are prepared for light horse, artillery, engineer, and infantry duties.

In December, 1919, the staff numbered—military, 37; civil, 17.

(viii) *Railways and Defence.* A War Railway Council, consisting of military and railway officers, was instituted in 1911. Its chief duties are to furnish advice and information regarding railway transport for military purposes, and to secure co-operation between the Commonwealth Defence Department and the States' Railway Departments in regard to concentration and mobilisation of troops. To prevent delay in the transport of troops, particularly that caused by the transshipment of baggage and implements of war, the Council has recommended the adoption of a uniform railway gauge on lines linking up the States' capitals. An Engineer and Railway Staff Corps has been instituted, and numbered 46 officers on 31st December, 1919. Fuller details will be found in Official Year Book No. 6, pp. 1070-1.

(ix) *The Universal Training System in Operation.* Details regarding the various stages in the operation of the system will be found in Official Year Book No. 12, p. 1007, but limits of space preclude their repetition in the present volume.

4. **Strength of Military Forces.**—(i) *Strength in each District, 1901 to 1919.* There was little alteration in the numbers serving in the Australian military forces from the institution of the Commonwealth to the year of the introduction of the compulsory training system. From 1913 to 1918, however, the annual increase was considerable. The following table shews the development:—

STRENGTH OF MILITARY FORCES, 1901 AND 1913 TO 1919.

(a) District.	1901. (b) 1/3/01	1913. 30/6/13.	1914. 30/6/14.	1915. 30/6/15.	1916. 30/6/16.	1917. 30/6/17.	1918. 30/6/18.	1919 30/6/19.
Headquarters ..	..	(c)277	(c)330	(c)416	(c)360	(c)377	(c)473	(c)362
1st Queensland ..	4,310	4,625	5,844	7,734	9,379	11,415	15,899	13,938
2nd New South Wales	9,772	12,105	16,365	21,661	24,761	28,783	41,751	37,851
3rd Victoria ..	7,011	10,840	14,326	18,823	23,830	29,131	39,492	34,770
4th South Australia	2,956	3,228	4,708	6,527	8,154	9,767	12,629	12,867
5th Western Australia	2,283	1,685	2,046	3,004	4,197	4,882	6,333	5,508
6th Tasmania ..	2,554	1,777	2,026	2,807	3,446	4,007	5,609	4,585
Total ..	28,886	34,537	45,645	60,972	74,127	88,362	122,186	109,881

(a) Approximately coterminous with boundaries of States. (b) Date of Commonwealth taking over the military forces from States. (c) Including cadets at Royal Military College of Australia, Duntroon.

(ii) *Strength of the Various Arms.* The numbers of the different arms of the service on the 30th June, 1920, were as follows:—

ARMS OF THE COMMONWEALTH DEFENCE, 1920.

Light Horse ..	7,671	Army Nurs'g Service	352	Engineer and Rail- way Staff Corps	46
Field Artillery ..	3,924	Army Pay Corps ..	856	Pay Department, Rifle Ranges, Rifle Clubs, Officers, etc.	297 <sup>a</sup>
Garrison Artillery	1,024	Army Vet'ary Corps	30	Royal Milit'ry C'lege	233 <sup>a</sup>
Engineers ..	2,552	Ordnance Departm't (including Arma- ment Artificers) ..	278		
Infantry ..	77,405	Area Officers ..	150		
Intelligence Corps	7	Administrative and Instructional Staff	1,069	Grand Total ..	100,512
Army Service Corps	1,612				
Army Medical Corps	2,937				
Aust. Flying Corps	69				

<sup>a</sup> Includes civilians.

(iii) *Classification of Land Forces.* The following table shews the strength of the land forces in each State, classified according to nature of service, on the 30th June, 1920 :—

**CLASSIFICATION OF LAND FORCES, 1920.**

Branch of Service.	Head-quarters.	1st Military District.	2nd Military District.	3rd Military District.	4th Military District.	5th Military District.	6th Military District.	Total.
Permanently employed	(a)463	316	807	985	193	226	164	3,154
Citizen Soldiers	..	12,947	37,621	29,712	10,383	3,959	4,396	99,018
Engineer and Railway Staff Corps	..	8	11	9	5	9	4	46
Army Nursing Service	..	32	88	26	..	204	2	352
Area Officers	..	19	67	26	18	12	8	150
Rifle Clubs	..	12,322	16,377	14,261	5,641	7,064	4,066	59,731
Senior Cadets.	..	13,038	37,385	29,977	9,864	6,090	3,753	100,107
Unattached List of Officers	..	73	80	110	59	9	12	343
Reserve of Officers	..	209	146	487	277	494	43	1,656
Chaplains	..	78	96	61	26	45	21	327
<b>Grand Total</b>	<b>(a)463</b>	<b>39,042</b>	<b>92,678</b>	<b>75,654</b>	<b>26,466</b>	<b>18,112</b>	<b>12,469</b>	<b>264,884</b>

(a) Including cadets at Royal Military College of Australia, Duntroon.

(iv) *Numbers Serving under Compulsory Provisions.* The next table shews those registered and training under the compulsory system, distinguishing citizen forces, senior cadets, and junior cadets :—

**UNIVERSAL TRAINING. — REGISTRATIONS, MEDICAL EXAMINATIONS, EXEMPTIONS, AND NUMBERS SERVING, CITIZEN FORCES, 31st DECEMBER, 1919 (1894 TO 1901 QUOTAS).**

Military District.	Total Registrations.	Total 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.	Total Exemptions Granted in Training Areas.	Total Number Liable for Training.
<b>1901 QUOTA.</b>								
1st ..	3,376	3,266	2,689	82.33	577	17.67	526	2,671
2nd ..	9,079	8,096	6,879	84.97	1,217	15.07	1,247	6,663
3rd ..	7,246	6,975	5,990	85.88	985	14.12	801	5,632
4th ..	2,394	2,354	2,061	87.55	293	12.45	264	2,055
5th ..	1,302	1,263	1,002	79.34	261	20.66	165	989
6th ..	1,061	950	785	82.63	165	17.37	240	775
<b>Total ..</b>	<b>24,458</b>	<b>22,904</b>	<b>19,406</b>	<b>84.73</b>	<b>3,498</b>	<b>15.27</b>	<b>3,243</b>	<b>18,785</b>

**1894 TO 1900 QUOTAS.**

Military District.	Total Registrations in Training Areas.							Total.
	Quota, 1894.	Quota, 1895.	Quota, 1896.	Quota, 1897.	Quota, 1898.	Quota, 1899.	Quota, 1900.	
1st ..	2,929	3,098	3,040	3,035	2,966	3,208	3,376	21,652
2nd ..	8,095	8,162	8,283	8,311	7,856	7,852	8,138	56,697
3rd ..	5,113	5,407	5,787	5,699	5,699	6,182	6,851	40,738
4th ..	2,633	2,910	2,950	2,652	2,175	2,467	2,606	18,393
5th ..	1,387	1,450	1,330	1,419	1,215	1,344	1,274	9,419
6th ..	946	910	997	892	840	878	1,124	6,587
<b>Total ..</b>	<b>21,103</b>	<b>21,937</b>	<b>22,387</b>	<b>22,008</b>	<b>20,751</b>	<b>21,931</b>	<b>23,369</b>	<b>153,486</b>

UNIVERSAL TRAINING.—REGISTRATIONS, ETC.—*continued.*1894 TO 1900 QUOTAS—*continued.*

Military District.	Exemptions Granted.								Number Liable for Training.
	Quota, 1894.	Quota, 1895.	Quota, 1896.	Quota, 1897.	Quota, 1898.	Quota, 1899.	Quota, 1900.	Total.	
1st ..	930	839	862	744	735	769	684	5,563	16,089
2nd ..	1,836	2,034	2,047	1,921	1,711	1,637	1,658	12,844	43,853
3rd ..	1,464	1,477	1,521	1,485	1,290	1,260	1,327	9,824	30,914
4th ..	780	745	821	865	466	606	552	4,835	13,558
5th ..	154	191	172	225	171	226	249	1,388	8,031
6th ..	160	136	165	203	183	173	168	1,188	5,399
Total ..	5,324	5,422	5,588	5,443	4,556	4,671	4,638	35,642	117,844

## UNIVERSAL TRAINING.—REGISTRATIONS, MEDICAL EXAMINATIONS, AND EXEMPTIONS TO THE 31st DECEMBER, 1919 (1902 TO 1905 QUOTAS).

## SENIOR CADETS.

Military District.	Total Registrations in Training Areas.	Total 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.	Total Exemptions Granted in Training Areas.	Total Number Liable for Training.	Total Number Actually in Training.
1st ..	14,910	14,707	13,332	90.64	1,375	9.35	1,399	13,200	13,200
2nd ..	41,132	40,388	37,163	92.02	3,225	7.98	3,449	36,576	36,576
3rd ..	32,324	32,196	29,719	92.30	2,477	7.69	2,500	29,144	29,144
4th ..	10,782	10,723	9,823	91.60	900	8.39	980	9,782	9,782
5th ..	6,799	6,772	6,178	91.23	594	8.77	594	6,136	6,136
6th ..	4,232	4,139	3,771	91.11	368	8.89	406	3,742	3,742
Total	110,179	108,925	99,986	90.75	8,939	8.20	9,328	98,580	98,580

## UNIVERSAL TRAINING.—MEDICAL EXAMINATIONS TO THE 31st DECEMBER, 1919.

## JUNIOR 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.
1st ..	6,481	6,296	97.14	185	2.86
2nd ..	21,306	21,036	98.73	270	1.27
3rd ..	16,156	15,879	98.29	277	1.71
4th ..	5,828	5,711	97.99	117	2.00
5th ..	4,237	4,164	98.28	73	1.72
6th ..	1,872	1,824	97.44	48	2.56
Total	55,880	54,910	98.26	970	1.74

## § 2. Naval Defence.

1. **Naval Defence under the States.**—Information regarding naval defence systems prior to 1901 will be found in Official Year Book No. 12, p. 1011, but considerations of space preclude its insertion in the present volume.

2. **Development of Commonwealth System from 1901.**—Australian defence, in both its branches (military and naval), passed to the Commonwealth in 1901. Prior to 1905 a naval officer commanding administered the naval forces under the Minister. When the Council of Defence was established in that year, the Naval Board was constituted and took over the administration of the Commonwealth naval forces, thereby ensuring continuity of policy and administration.

3. **The Present System.**—(i) *Australian Naval Policy.* An outline of the development of Australian naval policy will be found in Official Year Book No. 3, pp. 1060–1061, and in No. 12, p. 1012.

(ii) *The Building of the Australian Fleet.* Skilled artisans were despatched from Australia to gain practical experience in naval shipbuilding, construction proceeding both in Britain and Australia. Sailors of all ratings were also trained for the Commonwealth service. The first instalment of the Australian fleet unit consisted of two torpedo boat destroyers, of British construction, commissioned in September, 1910, and named *Parramatta* and *Yarra*. A third destroyer, the *Warrego*, was shipped to Sydney in parts, and was re-erected at the Commonwealth dockyard, Cockatoo Island, Sydney, and commissioned on 1st June, 1912. A description of these and the other vessels of the fleet will be found in Official Year Book No. 6, pp. 1066–7.

The battle cruiser *Australia* was commissioned in June, 1913, and arrived in Australian waters in the following September. Two light cruisers, the *Melbourne* and *Sydney*, arrived in Australian waters in 1913, and two submarines in 1914. A third cruiser, the *Brisbane*, and three more destroyers, the *Swan*, *Huon* and *Torrens*, were built at the Commonwealth Naval Dockyard, Sydney. Another cruiser, the *Adelaide*, is under construction at the Commonwealth Naval Dockyard.

(iii) *Modifications Adopted and Proposed.* Certain modifications have been made in the original scheme. These have been prepared in tabular form, and are as follows:—

### FLEET UNIT.—ORIGINAL ESTIMATED COST.

(Imperial Defence Conference, 1909.)

1 Battle cruiser	..	..	..	..	£2,000,000
3 Protected cruisers, £350,000 each	..	..	..	..	1,050,000
6 Destroyers (including 3 ordered before the Conference), £80,000 each	..	..	..	..	480,000
3 Submarines, "C" class, £55,000 each	..	..	..	..	165,000
Total	..	..	..	..	<u>£3,695,000</u>

### AMENDED ESTIMATED COST.

(Consequent on Alteration of Type of Vessels on Admiralty Recommendation.)

1 Battle cruiser	..	..	..	..	£2,000,000
3 Protected cruisers, £450,000 each	..	..	..	..	1,350,000
6 Destroyers, £80,000 each	..	..	..	..	480,000
2 Submarines, "E" class, £105,000 each	..	..	..	..	210,000
Total	..	..	..	..	<u>£4,040,000</u>

LATER ESTIMATED COST OF FLEET UNIT, TOGETHER WITH COST OF VESSELS  
NOT INCLUDED IN ORIGINAL FLEET UNIT.

1 Battle cruiser	..	..	..	..	£1,705,000
*3 Protected cruisers	..	..	..	..	1,400,000
*6 Destroyers	..	..	..	..	653,000
2 Submarines	..	..	..	..	233,500
Auxiliaries—					
1 Submarine depot ship	..	..	..	£160,000	
1 Oil tank vessel	..	..	..	120,000	
4 Oil fuel storage vessels (building in Australia)	..	..	..	75,766	
4 Hulks	..	..	..	25,000	
					380,766

Total .. .. . £4,372,266

The following additional amount has been approved for new  
construction outside the original fleet unit and for increase  
in cost over estimate .. .. .

1,819,257

Total .. .. . £6,191,523

\* Extra cost of building certain of these vessels in Australia is responsible for increase.

(iv) *Expenditure on Fleet Construction for the Royal Australian Navy.* The following is a statement of expenditure out of sums appropriated for construction of fleet :—

EXPENDITURE ON FLEET CONSTRUCTION, 1909 TO 1920.

Year.	Appropriation.	Expenditure.
		£
1908-9	Act No. 19 of 1908 .. .. .	24,855
1909-10	Act No. 19 of 1908 .. .. .	223,959
1909-10	Division No. 11A, New Works, etc. .. .. .	60,000
1910-11	Act No. 18 of 1910 .. .. .	285,863
1910-11	Division No. 12, New Works, etc. .. .. .	850,000
1911-12	Act No. 18 of 1910 .. .. .	1,108,494
1912-13	Act No. 18 of 1910 .. .. .	524,037
1912-13	Division No. 10, New Works, etc. .. .. .	
1913-14	Division No. 12, New Works, etc. .. .. .	637,606
1914-15	Division No. 13, New Works, etc. .. .. .	467,296
1915-16	Division No. 13, New Works, etc. .. .. .	396,073
1916-17	Division No. 17, New Works, etc. .. .. .	374,249
1917-18	Act No. 30 of 1917, New Works, etc. .. .. .	355,397
1918-19	War Loan Act No. 23 of 1917 .. .. .	533,694
1919-20	War Loan Act No. 13 of 1918 .. .. .	350,000(a)
Total .. .. .		6,191,523

(a) Estimated.

(v) *Visit and Report by Sir Reginald Henderson.* At the invitation of the Government, Admiral Sir Reginald Henderson visited Australia to advise upon naval matters generally. A summary of his report will be found in Official Year Book No. 6, pp. 1067-8.

(vi) *The Compact with the Imperial Government.* The Australian Government is building its navy according to the terms of an official paper (cd. 5746-2) submitted to the Imperial Conference held in London in 1911, and on the plan formulated by Admiral Henderson (after an inspection of Australia's capitals and other ports and coast line, in

1911). There is no formal contract or agreement between the British and the Commonwealth Governments. The last actual agreement was that of 1903, already described in Year Book No. 12 (see p. 1012). Before the expiration of the time for which this agreement was made the Commonwealth began the work of fleet construction. Up to the year 1911-12, £200,000 was annually paid. For 1912-13, £175,000 was set down in the estimates, and £166,600 paid. The Commonwealth Parliament amended the *Naval Agreement Act 1903*, by No. 10 of 1912 (*Naval Agreement Act 1912*), providing that the Governor-General may, from time to time, arrange with the Imperial Government for the reduction of the Australian squadron, and for reduction in the naval subsidy. No amount under "Naval Agreement Act" will be found in the estimates for 1913-14 and later years. Some departures are made from Admiral Henderson's recommendations, but generally they have been adopted. The Commonwealth is now fulfilling the larger obligation of fleet-building, and is maintaining its own vessels. The establishment of naval bases and sub-bases required for the fleet unit is also proceeding.

As already stated, the present situation is not governed by a formal contract or agreement. The Commonwealth Government has, by regulations and orders, given effect to some, and intends giving effect to others, of the items submitted to the Conference.

(vii) *Naval College.* A naval college has been established at Captain's Point, Jervis Bay, consisting of numerous buildings necessary for the training of naval officers. The course is similar to that carried out in naval colleges in England. In December, 1919, there were 117 cadet midshipmen under training. There were also 17 officers, including naval instructors, and 68 members of the ship's company in residence at the college. A boy whose thirteenth birthday falls in the year in which the entrance examination is held, is eligible to compete provided he is the son of natural-born or naturalised British subjects. From amongst those qualified the Selection Committee chooses the number required. The Commonwealth Government bears the whole expense of uniforms, victualling, travelling, as well as that of the educational course.

(viii) *Training Ships.* H.M.A.S. *Tingira*, moored in Rose Bay, Sydney, was commissioned in April, 1912, to train boys for the *personnel* of the Royal Australian Navy. The age of entry is fourteen and a half to sixteen years. Only boys of very good character and physique are accepted, after a strict medical examination. The boys must engage to serve until they reach the age of 25. The training lasts about one year, and they are then drafted to a sea-going warship of the Australian fleet. Recruiting has been satisfactory, there being 214 boys under training on 31st December, 1919.

(ix) *The Naval Station of the Commonwealth of Australia.* The following are the limits of the Naval Station which, since 1st June, 1919, have been controlled by the Commonwealth Government, acting through the Naval Board:—North: From a point in 95 degrees East longitude and 13 degrees South latitude along that parallel to the Eastward to the meridian of 120 degrees East longitude; thence along that meridian to the Northward to 11 degrees South latitude; thence to an Easterly direction to the Southern termination of the Eastern boundary of Dutch New Guinea in about 141 degrees East longitude; thence along the meridian of the boundary to the Northward to the Equator; thence along the equator to the Eastward to 170 degrees East longitude. East: From a point on the Equator on the meridian of 170 degrees East longitude along that meridian to the Southward to 32 degrees South latitude; thence along that parallel to the Westward to the meridian of 160 degrees East longitude; thence along that meridian to the South Pole. South: The South Pole. West: From the South Pole by the meridian of 80 degrees East longitude to the Northward of 30 degrees South latitude; thence along that parallel to the Eastward to the meridian of 95 degrees East longitude; thence along that meridian to the Northward to 13 degrees South latitude.

(x) *Visit and Report of Lord Jellicoe.* At the invitation of the Government, Admiral of the Fleet Lord Jellicoe visited Australia in May, 1919, to advise the Dominion Authorities whether, in the light of the experience of the war, the scheme of naval organization which had been adopted or may have been in contemplation, required consideration, either from the point of view of the efficiency of that organization for meeting local needs, or from that of securing the greatest possible

homogeneity and co-operation between all the Naval Forces of the Empire; and, should the Dominion Authorities desire to consider how far it is possible for the Dominions to take a more effective share in the Naval Defence of the Empire, to give acceptance from the Naval point of view in drawing up a scheme for consideration.

The subjects, on which advice was requested, were:—The Naval strategical problem affecting Australian waters and the Pacific; future composition of the Australian Navy; Naval Bases and requirements in the Pacific and East Indian Waters; general organization and administration of the Naval Forces.

4. Vessels and Personnel of the Australian Navy.—The following table shows the vessels of the Royal Australian Navy:—

LIST OF SHIPS OF THE ROYAL AUSTRALIAN NAVY, MAY, 1920.

Vessel.	Description.	Displacement.	Power.
		Tons.	H.P.
<i>Adelaide</i> .. ..	Light Cruiser .. ..	5,500	25,000
<i>Anzac</i> .. ..	Flotilla Leader .. ..	1,660	36,000
<i>Australia</i> .. ..	Battle Cruiser .. ..	19,200	44,000
<i>Brisbane</i> .. ..	Light Cruiser .. ..	5,400	25,000
<i>Cerberus</i> .. ..	Turret Ship .. ..	3,480	1,660
<i>Countess of Hopetoun</i> .. ..	First Class Torpedo Boat .. ..	75	..
<i>Encounter</i> .. ..	Light Cruiser .. ..	5,880	12,500
<i>Franklin</i> .. ..	Yacht .. ..	288	68
<i>Geranium</i> .. ..	Sloop .. ..	1,250	2,000
<i>Huon</i> .. ..	T.B. Destroyer .. ..	700	10,600
<i>Mallow</i> .. ..	Sloop .. ..	1,200	1,800
<i>Marguerite</i> .. ..	" .. ..	1,250	2,000
<i>Melbourne</i> .. ..	Light Cruiser .. ..	5,400	25,000
<i>Parramatta</i> .. ..	T.B. Destroyer .. ..	700	10,600
<i>Penguin</i> .. ..	Depot Ship .. ..	1,130	..
<i>Pioneer</i> .. ..	Light Cruiser .. ..	2,200	9,000
<i>Platypus</i> .. ..	Submarine Depot Ship .. ..	3,476	2,650
<i>Protector</i> .. ..	Gunboat .. ..	920	1,641
<i>Stalwart</i> .. ..	T.B. Destroyer .. ..	1,250	27,000
<i>Success</i> .. ..	" .. ..	1,250	27,000
<i>Swan</i> .. ..	" .. ..	700	10,600
<i>Swordsman</i> .. ..	" .. ..	1,250	27,000
<i>Sydney</i> .. ..	Light Cruiser .. ..	5,400	25,000
<i>Tasmania</i> .. ..	T.B. Destroyer .. ..	1,250	27,000
<i>Tattoo</i> .. ..	" .. ..	1,250	27,000
<i>Tingira</i> .. ..	Boys' Training Ship .. ..	1,800	..
<i>Torrens</i> .. ..	T.B. Destroyer .. ..	700	10,600
<i>Una</i> .. ..	Sloop .. ..	1,438	1,350
<i>Warrego</i> .. ..	T.B. Destroyer .. ..	700	10,600
<i>Yarra</i> .. ..	" .. ..	700	10,600
FLEET AUXILIARIES—			
<i>Biloela</i> .. ..	Fleet Collier .. ..	5,700	2,300
<i>Kurumba</i> .. ..	Fleet Oiler .. ..	3,970	..
SUBMARINES, "J" CLASS—			
1, 2, 3, 4, 5, 7 .. ..		1,900	1,400
		(submerged)	
		1,170	3,600
		(on surface)	

With the exception of the *Adelaide*, which is under construction, all the above vessels are in commission.



Practically the whole of this Fleet was assembled in Port Phillip on 28th May, 1920, and was reviewed there by H.R.H. the Prince of Wales.

Besides the Sea-going Forces, there is a R.A.N. Brigade, which is composed of Citizen Naval Trainees and men enlisted for Home Naval Service on shore (mostly returned soldiers). The *personnel* of the Sea-going Forces, which was originally largely composed of Imperial officers and men, is now mainly Australian in character and will become more so as training schools and establishments for the higher and more technical grades are established after the war. At present (July, 1920) the sea-going forces, except a few units which work under the direct orders of the Naval Board, are commanded by a Commodore commanding His Majesty's Australian Fleet.

### STRENGTH OF NAVAL FORCES (PERMANENT AND RESERVES), 31st DECEMBER, 1919.

Description of Force.	Numbers Borne.	
	Officers.	Men.
Royal Australian Navy (Seagoing) .. ..	431	4,162
Cadet Midshipmen undergoing training at R.A.N. College .. ..	117	..
Boys undergoing training on H.M.A.S. <i>Tingira</i> .. ..	214	..
Royal Australian Naval Reserve (Seagoing) .. ..	41	..
Royal Australian Naval Brigade .. ..	166	5,566

## § 3. Expenditure on Defence.

1. *Expenditure, 1914-15 to 1919-20.*—The following table gives the expenditure on Defence from 1914-15 to 1918-19, and the estimate for 1919-20 :—

### EXPENDITURE ON DEFENCE, 1914-15 TO 1919-20.

Branch or Department.	1914-15.	1915-16.	1916-17.	1917-18.	1918-19.	1919-20. Estimate.
	£	£	£	£	£	£
Defence—Central Administration	(a)211,327	(a)367,967	(a)247,028	(a)134,537	151,473	276,731
Naval Forces .. ..	1,383,030	1,447,068	1,449,062	1,463,945	1,546,890	1,536,924
Military Forces .. ..	1,123,949	988,787	1,120,510	965,769	1,048,580	842,303
Rent, Repairs, and Maintenance .. ..	79,665	94,146	84,283	73,184	79,001	73,118
Additions, New Works, Lands, etc.	258,081	390,774	163,832	46,679	30,437	60,744
Military Stores .. ..	265,252	242,527	183,091	87,893	58,861	76,492
Audit Office .. ..	2,397	6,652	12,297	23,696	10,113	13,550
Pensions and Retiring Allowances .. ..	1,427	1,262	1,115	1,277	1,391	1,867
Supervision of Public Works by State Officers .. ..	6,119	4,573	2,831	1,315	1,278	1,200
Fleet Unit .. ..	568,204	396,072	374,249	355,397	(b)	(b)
Naval Works .. ..	362,782	789,400	913,265	495,836	540,956	176,000
Interest and Sinking Fund on Transferred Properties .. ..	177,741	128,439	129,570	129,548	136,699	129,350
Miscellaneous .. ..	3,320	5,798	522	126,069	49,095	65,368
Sites for Defence purposes .. ..	66,364	120,558	129,809	(c)	(c)	(c)
Machinery, etc., Cockatoo Island, etc.	42,782	66,840	(d)	(d)	(d)	(d)
Proportion Public Works Staff Salaries .. ..	13,881	21,320	19,200	17,710	31,874	22,500
<b>Total (ordinary) .. ..</b>	<b>4,568,321</b>	<b>5,072,183</b>	<b>4,830,664</b>	<b>3,922,855</b>	<b>3,686,653</b>	<b>3,276,147</b>
Buildings and Sites provided from loan funds .. ..	..	..	..	115,700	126,599	519,500
War Expenditure (e) .. ..	15,111,335	41,201,946	61,535,891	66,742,350	83,457,567	77,233,625
<b>Total Expenditure on Defence .. ..</b>	<b>19,679,656</b>	<b>46,274,129</b>	<b>66,366,555</b>	<b>70,665,205</b>	<b>87,270,819</b>	<b>81,029,272</b>

Figures are in some cases liable to small adjustments by audit.

(a) Includes establishments under the control of the Central Administration. (b) Provided from War Loan Fund. (c) Provided from Loan Fund. (d) Included in naval works above. (e) Details of war expenditure will be found on page 1011.

2. Appropriation for Defence Purposes, 1901-2 to 1919-20.—In the following table the Defence expenditure for the whole Commonwealth period 1901-2 to 1919-20, is given :—

## ANNUAL DEFENCE EXPENDITURE.

Year.	Naval.			Military.			Total Defence Expenditure.
	Under Ordinary Votes and Appropriations.	Works, Arms, Equipment, etc. (provided under Estimates for New Works and Buildings).	Total Naval.	Under Ordinary Votes and Appropriations.	Works, Arms, Equipment, etc. (provided under Estimates for New Works and Buildings).	Total Military.	
	£	£	£	£	£	£	£
1901-2 ..	178,819	..	178,819	777,620	2,640	780,260	959,079
1902-3 ..	149,701	..	149,701	595,115	5,537	600,652	750,353
1903-4 ..	240,005	86	240,091	502,517	113,156	615,673	855,764
1904-5 ..	200,394	5,394	205,788	533,945	194,865	728,810	934,598
1905-6 ..	250,273	1,743	252,016	548,439	169,890	718,329	970,345
1906-7 ..	255,120	652	255,772	585,516	194,507	780,023	1,035,795
1907-8 ..	259,247	250,958	510,205	634,579	189,960	824,539	1,334,744
1908-9 ..	263,207	4,055	267,262	686,365	96,965	783,330	1,050,592
1909-10 ..	269,051	60,688	329,739	928,393	277,273	1,205,666	1,535,405
1910-11 ..	303,493	1,161,541	1,465,034	1,092,305	448,687	1,540,992	3,006,026
1911-12 ..	461,546	1,172,920	1,634,466	1,667,103	780,279	2,447,382	4,081,848
1912-13 ..	806,881	853,735	1,660,616	1,805,808	879,883	2,685,689	4,346,305
1913-14 ..	1,006,424	980,677	1,987,101	1,944,297	820,902	2,765,199	4,752,300
1914-15 ..	5,991,776	936,081	6,927,857	12,124,415	584,602	12,709,017	19,679,656
1915-16 ..	7,501,565	1,216,637	8,718,202	36,765,044	724,043	37,489,087	46,274,129
1916-17 ..	7,907,556	1,359,919	9,267,475	56,693,746	405,334	57,099,080	66,366,555
1917-18 ..	3,506,244	111,426	4,357,477	66,066,238	134,572	66,307,728	70,665,205
1918-19 ..	9,177,451	22,937	9,756,438	77,321,699	89,298	77,514,381	87,270,819
1919-20 ..	8,759,127	14,100	8,958,927	71,432,309	137,236	72,070,345	81,029,272

- (a) Includes £42,782 loan expenditure on works. (b) Includes £66,840 loan expenditure on works.  
 (c) Includes £739,807 loan expenditure on works. (d) Includes £556,050 loan expenditure on works.  
 (e) Includes £106,918 loan expenditure on works. (f) Includes £103,384 loan expenditure on works.  
 (g) Includes £185,700 loan expenditure on works. (h) Includes £500,800 loan expenditure on works.

NOTE.—In the year 1900-1 the approximate Defence Expenditure made by the States was :—

Ordinary Services .. ..	£800,000
Works, Arms, Equipment, etc. .. ..	200,000
Total .. ..	<u>£1,000,000</u>

3. Special War Expenditure.—The special war expenditure for the years 1914-15 to 1918-19 and the estimate for 1919-20 will be found on page 1011.

4. Expenditure in Various Countries.—The total expenditure on defence and the expenditure per inhabitant in various countries according to estimates made immediately prior to the late war, were as follows :—

## ESTIMATED PRE-WAR EXPENDITURE ON DEFENCE.—VARIOUS COUNTRIES.

Country.	Year.	Army.	Navy.	Total.	Per Inhabitant.
		£	£	£	s. d.
Great Britain .. ..	1913-14	28,220,000	46,309,000	74,529,000	32 3
Germany .. ..	1913-14	73,833,000	24,012,000	97,845,000	30 2
France .. ..	1913	38,286,000	18,452,000	56,738,000	28 7
Italy .. ..	1913-14	14,546,000	9,068,000	23,614,000	13 7
Austria-Hungary .. ..	1913	16,500,000	3,100,000	19,600,000	7 8
Switzerland .. ..	1913	1,772,000	..	1,772,000	9 1
Russia .. ..	1913	64,136,000	22,817,000	86,953,000	10 5
Spain .. ..	1913	6,391,000	2,827,000	9,218,000	9 3
Portugal .. ..	1913-14	2,190,000	851,000	3,041,000	10 3
Norway .. ..	1913-14	867,000	337,000	1,204,000	9 11
Sweden .. ..	1913	3,063,000	1,447,000	4,510,000	16 0
Denmark .. ..	1913-14	1,081,000	544,000	1,625,000	11 5
Holland .. ..	1913	2,780,000	1,678,000	4,458,000	14 6
Belgium .. ..	1913	3,260,000	..	3,260,000	8 7
United States .. ..	1913-14	35,073,000	29,464,000	64,537,000	14 0
Canada .. ..	1912-13	1,872,000	..	1,872,000	5 2
Japan(a) .. ..	1913-14	7,815,000	4,224,000	12,039,000	3 6
Australia .. ..	1913-14	3,291,000	2,456,000	5,747,000	23 7

(a) Excluding extraordinary expenditure.

### § 4. Industrial Establishments and Remount Depot.

1. **Commonwealth Factories.**—There are seven factories established under the authority of the Defence Act in connexion with the Defence Department. The Commonwealth Harness, Saddlery, and Leather Accoutrements Factory at Clifton Hill, Victoria, was opened in September, 1911. On 30th June, 1919, there were 104 persons employed, including 42 females. A large quantity of harness and saddlery, leather and canvas equipment has been turned out for the Defence and Postmaster-General's Departments. The factory is now able to cope with practically the whole of the peace requirements of these departments in the way of leather and canvas equipment. At the Cordite Factory at Maribyrnong, Victoria, cordite is manufactured for the cartridges required for military purposes. On 30th June, 1919, the employees numbered 183. The Clothing Factory at South Melbourne, Victoria, commenced operations on 3rd January, 1912. Since 1st July, 1912, a satisfactory output has been maintained. The number of employees on 30th June, 1919, was 498, of whom 420 were females. The establishment is able to supply the whole of the uniform clothing required for the Defence Forces and the Postmaster-General's Department. The Small Arms Factory at Lithgow, New South Wales, was opened on 1st June, 1912. The first instalment of Australian arms was delivered in May, 1913. Employees numbered 1,080 on 30th June, 1919. The Commonwealth Woollen Cloth Factory was established at Geelong, Victoria, for the supply of uniform materials and woollen fabrics, and commenced operations in the latter part of 1915; 266 persons, including 133 females, were employed on the 30th June, 1919.

The Acetate of Lime Factory at Bulimba, Brisbane, which manufactures acetate of lime (a raw material used in the production of acetone), commenced operations in September, 1918. On 30th June, 1919, there were 45 persons employed. This factory is run in conjunction with the Cordite Factory.

A seventh Commonwealth Factory was established at the Military Hospital, Caulfield, Victoria, for the manufacture of artificial limbs for returned soldiers. This factory has since been transferred to South Melbourne, Victoria, and branch factories established at Sydney, New South Wales; Windsor, Brisbane, Queensland; Keswick, South Australia; and Fremantle, Western Australia. The total number employed throughout Australia in these artificial limb factories was 67 on 30th June, 1919.

2. **Expenditure.**—The value up to 30th June, 1919, of land, buildings, machinery and plant, factory fittings and furniture in connexion with the factories now in operation was approximately as follows:—

Small Arms Factory	..	..	£217,172
Cordite Factory	..	..	163,957
Clothing Factory	..	..	24,839
Harness Factory	..	..	14,289
Woollen Cloth Factory	..	..	149,977
Acetate of Lime Factory	..	..	105,353

3. **Remount Depot.**—The Act of 1910 authorised the establishment and maintenance of horse depots, farms, and stations for the breeding of horses. Up to the present nearly 2,000 remounts have been purchased. They are primarily to supply the requirements of the Field Artillery Batteries, but are also available for the use of other mounted units. Remount depots have been purchased or are leased in each of the military districts, and veterinary hospitals have also been established in the larger States. In Victoria and South Australia stables have been built. A remount section of the Army Service Corps has been formed for the purpose of breaking, training and looking after remounts generally. These sections were so organised as to be capable of rapid expansion in case of emergency, and when war was declared in 1914 little difficulty was experienced by the Remount Service in coping with the enormous task of obtaining and training horses for the mounted units of the A.I.F. and in providing for the shipment of horses to Egypt and India as required.

### § 5. Australian Contingents.

1. **General.**—In previous issues of the Year Book an account was given of the composition, &c., of the Australian contingents despatched for service in the New Zealand and Sudan Campaigns, in South Africa, China, and the Great War of 1914–18 (see Official Year Book No. 12, pp. 1019 *et seq.*). Owing to limits of space, however, this information has not been repeated in the present issue.

Up to the 31st May, 1919, the troops despatched from Australia for service in the various theatres of the Great War numbered 329,883.

(ii) *Casualties in Australian Imperial Force.*—The number of casualties announced by the Defence Department to 31st July, 1920, was as follows :—

**CASUALTIES IN AUSTRALIAN IMPERIAL FORCE TO 31st JULY, 1920.**

	All Ranks.
Deaths from wounds or disease .. .. .	*59,302
Missing and prisoners of war .. .. .	*1
Casualties from wounds or gas (gross total) .. .. .	166,819
Sick (gross total) .. .. .	87,957
Casualties not specified .. .. .	*218
<b>Total .. .. .</b>	<b>314,297</b>

The figures marked \* represent actual net totals after all corrections consequent upon erroneous and later advice, etc., have been taken into account. The wounded and sick represent totals reported by cable and are in excess of the actual number of men affected, because many are admitted to hospital more than once.

(iii) *The Expeditionary Force in the Pacific.* The operations against the German colonial troops resulted, within two months, in the capture of the whole of the enemy's possessions in the Pacific. The German Pacific wireless chain was broken. Samoa was occupied by a force from New Zealand. The German Pacific Protectorate (*Das Deutsches Südsee Schutzgebiet*) was terminated. It comprised German New Guinea, the Bismarck Archipelago, the two northernmost islands of the Solomon group (Bougainville and Buka), the choicest islands of the Samoan group (now occupied by New Zealand), the Marshall Islands (including Nauru), the Carolines, Pelews and Ladrões (except Guam, which belongs to America). Of these groups, the Bismarck Archipelago is the most important. It includes New Britain, New Ireland, New Hanover, and several small groups and islands, of which the Admiralty, Hermit, Ninigo, Witu and St. Matthias groups are the principal. All former German islands south of the Equator (except the Samoan group) are now occupied and administered by the Commonwealth. Those north of the Equator are under Japanese administration.

(iv) *The Australian Navy in the War.* In Year Book No. 12, pp. 1025 *et seq.*, an account was given of the part played by the Australian Navy in the War, but owing to limitations of space it has not been possible to reproduce this matter in the present issue.

(v) *Special War Expenditure, 1914–20.* According to a return supplied by the Defence Department the special expenditure for war purposes during each of the years 1914 to 1920 was as set out hereunder :—(See also Table on p. 1008.)

**SPECIAL WAR EXPENDITURE, 1914 TO 1920.**

Particulars.	1914–15.	1915–16.	1916–17.	1917–18.	1918–19.	1919–20. <i>a</i>
	£	£	£	£	£	£
Special expenditure on Expeditionary and Australian forces—						
Naval .. .. .	4,288,253	5,249,166	4,089,919	3,893,627	7,255,847	7,409,300
Military .. .. .	10,232,787	32,474,340	47,667,248	50,956,888	48,171,995	24,500,000
Interest on outstanding amounts due for maintenance of Australian troops at the front .. .. .	..	..	..	..	3,430,000	1,816,000
Interest on loans from British Government for war purposes .. .. .	36,489	843,893	2,082,258	2,477,288	2,377,690	2,377,656
Interest on Commonwealth War Loan .. .. .	..	999,976	2,723,823	4,573,355	7,709,184	10,915,000
Interest on Treasury Bills in aid of Revenue .. .. .	78,656	14,845	14,485	..	..	..
Sinking Funds on Loans for War Purposes .. .. .	..	200,777	1,167,127	761,191	1,200,713	1,350,410
Grant to Australian Soldiers' Repatriation Fund .. .. .	..	250,000	..	200,000	1,300,000	2,500,000
War Pensions .. .. .	437	139,460	1,185,907	2,831,386	4,996,287	5,543,095
War Census .. .. .	..	57,444	11,711	40	183	..
Referenda, Military Service .. .. .	..	..	79,427	85,385	35	..
Trading Vessels .. .. .	153,973	318,285	674,565	994,520	272,596	185,000
Miscellaneous .. .. .	319,305	643,170	1,817,275	3,422,720	6,719,678	20,630,164
Premiums on Life Assurance policies of Commonwealth public servants who are members of Expeditionary forces..	1,435	10,590	22,146	29,268	23,359	7,000
<b>Total .. .. .</b>	<b>15,111,335</b>	<b>41,201,946</b>	<b>61,535,891</b>	<b>67,225,668</b>	<b>83,457,567</b>	<b>67,233,625</b>

Figures are in some cases liable to small adjustments by audit.

(a) Estimate. (b) Includes a credit of £3,267,308. (c) Includes a credit of £16,938.

### § 6. War Gratuity.

In accordance with the War Gratuity Acts 1920 (assented to 30th April, 1920, and 29th May, 1920), a bonus, payable as an overseas war service gratuity, is authorized for sailors and soldiers who served in the Great War. The gratuity is in the nature of a free gift from the Commonwealth, in recognition of honorable services during the War, and is not claimable or recoverable as a matter of right. For members of the Naval Forces who served in a sea-going ship; members of the Naval and Military Expeditionary Force to New Guinea; members of the Australian Imperial Force who embarked from Australia on or before 10th November, 1918 (day preceding the Armistice); and Imperial reservists who served, the rate of gratuity is 1s. 6d. per day for the qualifying period. For members of the Naval Forces who did not serve in a sea-going ship; and members of the Military Forces who did not embark for overseas service the rate is 1s. per day. The qualifying period of service is that between the outbreak of War (4th August, 1914) and the Armistice (11th November, 1918). The period for which payment is to be made to individuals commences—for sailors, from the date of taking up duty on a sea-going ship; for soldiers who served overseas, from the date of embarkation (or the first of them, if more than one); the terminating date in all cases being the date of Declaration of Peace (28th June, 1919). For sailors not having service in a sea-going ship, and for soldiers who did not embark, or who embarked after 10th November, 1918, payment will be made from date of taking up duty to date of discharge or Declaration of Peace. Deductions may be made for misconduct on service, and serious crime, military or civil, involves disqualification.

The gratuity is ordinarily payable in Treasury bonds, maturing not later than 31st May, 1924, and bearing interest at  $5\frac{1}{4}$  per cent. In necessitous cases, payment will be made in cash, if so desired by the person entitled. The first gratuities were made available about the beginning of June, 1920. By the 30th June, 1920, the sum of £671,448 was paid in cash, and bonds to the value of £3,939,935 were issued. Up to 9th October, 1920, £16,217,311 in bonds, and £3,712,782 in cash, had been paid. Upwards of 360,000 payments will be made, the total amount being estimated at £30,000,000.

### § 7. Special Defence Legislation.

**1. War Precautions Acts.**—On the outbreak of war in Europe, the Federal Parliament passed an Act to enable the Governor-General to make regulations and orders for the safety of the Commonwealth during the state of war. The provisions of this Act, which was assented to on 29th October, 1914, will be found in Official Year Book No. 8, page 1092. Particulars of the *Enemy Contracts Annulment Act* will be found in the same issue of the Year Book, page 1095.

The War Precautions Act 1918 provides that the War Precautions Act 1914-16 shall remain in force only until 31st July, 1919, or for a period of three months after the issue of a proclamation that the state of war has ceased, whichever period is the longer. All regulations made under the Act will lapse with it.

Under the powers conferred by the above Acts, the *War Precautions Regulations* were made. They provided for the appointment of competent naval or military authorities to exercise certain powers under the regulations, and other matters. The principal provisions of the regulations are given in Official Year Book No. 11, pp. 1035-1043.

### § 8. Persons of Enemy Birthplace.

The following table shews the estimated number of males of enemy birthplace (natives of Germany, Austria-Hungary, Turkey, and Bulgaria, whether naturalised or otherwise, but exclusive of persons of British parentage), in each State at the 31st July,

1915, and the estimated number naturalised. While the States and military districts are not quite conterminous, they approximate sufficiently to admit of the comparison :—

### MALES OF ENEMY BIRTHPLACE IN THE COMMONWEALTH AT 31st JULY, 1915.

State and Military District.		Male Enemy Subjects.*	Number Naturalised.*	Number not Naturalised.*
Queensland	1st Military District	8,080	6,640	1,440
New South Wales	2nd „ „	6,460	4,330	2,130
Victoria	3rd „ „	4,920	3,300	1,620
South Australia	4th „ „	3,270	2,630	640
Western Australia	5th „ „	3,190	1,280	1,910
Tasmania	6th „ „	380	320	60
Total	.. ..	26,300	18,500	7,800

\* These figures are based on Census returns, and can only be considered as a rough approximation.

The number of females of enemy birthplace in the Commonwealth at 31st July, 1915, is estimated at about 12,000.

## § 9. Repatriation.

1. **General.**—In common with others of the late warring countries of the world, Australia has had to face the problem of the returned soldier—to find employment for the fit, to re-establish the disabled, to provide for the dependents of those who have died or of those who are no longer able to support themselves, and to supply medical and surgical treatment for disabilities due to or aggravated by war services.

During the early stages of the war this work was carried out mainly by voluntary effort, assisted by Government funds, and supplemented by private contributions. Disconnected and divergent schemes were extemporised to meet the pressing needs of soldiers and their families, with the result that there was overlapping in some directions and insufficiency in others. The Commonwealth Parliament therefore decided that Repatriation should become a national undertaking, and that a comprehensive scheme should be designed to meet the various claims in connection therewith. On 8th April, 1918, the Department of Repatriation, charged with this responsibility, was established, the first Minister being Senator the Hon. E. D. Millen.

2. **Organisation of the Department.**—The organisation of the Department provides for a Central Administrative Commission of three paid members, termed the Repatriation Commission, one of whom is chairman, and each of whom is a returned soldier. Its duties are to prescribe by regulation the nature and extent of the assistance that may be granted, and to hear appeals from decisions of the State Boards. Under the Amending Act of 19th May, 1920, the Repatriation Commission also takes over the administration of war pensions. Repatriation headquarters are in Melbourne. District branches have been established in the capital city of each State, and associated with these branches are State Boards, comprising three paid members, one of whom is chairman, and providing for the representation of returned soldiers. The permanent official at the head of each State organization is termed Deputy Commissioner. A network of local committees is connected with the district branches. The local committees are voluntary organisations possessing dual functions. They act as sub-agents under the control and direction of the Department so far as the disbursement of assistance specifically provided by the Department is concerned, and they are vested with discretionary powers in regard to the disbursement of supplementary assistance, organised and raised locally. Local Committees work within clearly defined territorial boundaries. Under this scheme every square mile of the whole continent of Australia is brought directly under the operation of the departmental policy.

3. **Policy of the Department.**—The policy of the Department is based upon four main principles :—(a) To secure the re-establishment of returned soldiers in the industrial life of the community to the fullest extent that circumstances permit; (b) to sustain these soldiers until an opportunity for such re-establishment is assured; (c) to provide for the care of the dependents of soldiers who have died on active service, as well as the dependents of soldiers who, on account of injuries sustained, are unable to provide for those formerly dependent upon them; and (d) to

provide medical treatment after discharge for returned nurses, sailors and soldiers who are suffering from disabilities caused or aggravated by war service.

To give effect to these principles the Department undertakes :—

- (1) To provide suitable employment for those who are able to follow their previous occupation or one similar to it, and to pay sustenance until such opportunities are presented ;
- (2) To restore to the fullest degree of efficiency possible, by means of vocational training, those who on account of war service are unable to follow their pre-war occupations, and during the period of such training to assure trainees adequate sustenance ;
- (3) To maintain by pensions or in hostels totally and permanently incapacitated soldiers and their dependents, and soldiers' widows with children.
- (4) To supply gratis all necessary treatment, surgical aids, and medicaments ; all hospital fees, and transport expenses thereto and therefrom, with allowances for certain classes for the period of treatment (where hospital treatment is not feasible the same may be given in the home or in such place as may be approved).

4. *Activities of the Department.*—(a) *Assistance and Employment.* The activities of the Department are classified under five sections—employment, vocational training, land settlement, housing, and assistance. Under assistance, a wide variety of benefits, including the provision of surgical aids, medical treatment, establishment in small businesses, furniture loans and grants, relief from onerous mortgages, educational grants and equipment with tools of trade, are provided. In co-operation with the State Governments a land settlement scheme, whereby the Federal Government lends the States the necessary money to acquire the estimated number of holdings required, and to construct railways or other works necessary to their successful occupation, has been devised. Under this scheme the Commonwealth Government will also make available working capital up to £625 per settler. This will afford every soldier possessing the natural aptitude and fitness an opportunity of ultimately owning his own farm. With the exception of South Australia all the States have agreed to extend the benefits of the Land Settlement Scheme to munition and war workers to whom the Commonwealth advance of £625 will be available.

Under the provisions of the housing scheme a nurse, a returned soldier, a munition or war worker, a soldier's widow, or his dependents are entitled to a maximum advance of £800 for the purpose of acquiring a dwelling. According to the material of the house, the period of repayment will vary. Principal and interest are repayable as rent at the rate of 5 per cent. per annum.

(b) *After-war Treatment of War Service Disabilities.* For disabilities solely due to or aggravated by war service, discharged nurses, sailors and soldiers are entitled to free medical treatment, surgical aids, dressings, and necessary medicines. The expenses of unavoidable travel for any medical or surgical purposes are undertaken by the Department, which likewise defrays any necessary expenses in a hospital or other approved place. While undergoing such treatment and upon the certificate of a Departmental Medical Officer, a married soldier receives sustenance at the fixed rate of £2 17s. per week (inclusive of pension), with 3s. 6d. per week added for each child. In a like situation a soldier without dependents receives sustenance at the rate of £2 2s. per week. By arrangement with the Pharmaceutical Society, upon the production of the medical officer's prescription to any pharmacist in the Commonwealth, such medicines, lotions or dressings as may be required will be immediately supplied free to the soldier. The following classes of after-discharge medical treatment are provided for—

- (1) Treatment in hospitals in metropolitan areas for cases of a class which cannot be effectively dealt with in a country hospital, or cases where continuity of treatment is desirable.
- (2) Treatment as out-patients in metropolitan areas and country centres.
- (3) Treatment in country hospitals in cases which do not present any complications, or in cases of emergency.
- (4) Treatment in homes in cases of emergency within country districts.
- (5) Treatment in convalescent homes and hostels.
- (6) Treatment of incurables, mentals, tuberculars, inebriates, alcoholics, and chronic epileptics in special institutions.

5. *Sustenance Rates and Pensions.*—The sustenance rate that may be granted to applicants awaiting fulfilment by the Department of certain specified obligations

is:—(a) To a soldier without dependents a weekly income inclusive of pension of £2 2s.; (b) To a soldier with a wife a weekly income inclusive of their combined pensions of £2 17s. An additional allowance of 3s. 6d. per week is made for each child up to four, the maximum sum payable being £3 9s. per week.

Those who are eligible for this benefit are applicants awaiting employment; approved applicants waiting to take up land; blind soldiers undergoing training; students receiving training in commercial or professional occupations; trainees in technical schools; convalescents; and soldiers receiving medical treatment.

The general Pensions rates payable to Widow or Widowed Mother on Death of a Member of the Forces, or to a Member, or to the Wife of a Member, upon his total incapacity, are as follows:—

Rate of Pay of the Member per Day at Date of Death or Incapacity.	Fortnightly Pension Payable to Widowed Mother on Death of Member.	Fortnightly Pension Payable to Widow on Death of Member.	Fortnightly Pension Payable to Member upon Total Incapacity.	Fortnightly Pension Payable to Wife of Member who is Totally Incapacitated.
s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
6 0	2 0 0	2 7 0	4 4 0	1 16 0
7 0	2 3 0	2 7 0	4 4 0	1 16 0
9 0	2 9 0	2 9 0	4 4 0	1 16 0
10 0	2 12 3	2 12 3	4 4 0	1 16 0
10 6	2 13 9	2 13 9	4 4 0	1 16 0
11 6	2 16 0	2 16 0	4 4 0	1 16 0
12 0	2 17 3	2 17 3	4 4 0	1 16 0
13 0	2 19 6	2 19 6	4 4 0	1 16 0
17 6	3 10 0	3 10 0	4 4 0	2 0 0
22 6	3 17 6	3 17 6	4 5 0	2 2 6
30 0	4 9 0	4 9 0	4 15 0	2 7 6
37 6	5 0 9	5 0 9	5 5 0	2 12 6
45 0	5 12 3	5 12 3	5 15 0	2 17 6
50 0	6 0 0	6 0 0	6 0 0	3 0 0

In cases of (a) Widows with dependent children, and (b) Widows without children whose circumstances are such as in the opinion of the Commission justify an increase of the rates specified in this Schedule, and whose rate of pension, as specified in column three of this Schedule, is less than £4 4s. per fortnight, the Commission may, for such period as it thinks fit, increase the rate of pension to an amount not exceeding £4 4s. per fortnight.

A Special Rate of Pension amounting to £8 per fortnight, may be granted to members of the Forces who have been blinded as the result of War Service, and to members who are totally and permanently incapacitated (i.e., incapacitated for life to such an extent as to be precluded from earning other than a negligible percentage of a living wage).

The Commission may grant a pension not exceeding the Special Rate of Pension to any member of the Forces who is suffering from tuberculosis, and who has been for at least six months an inmate of an establishment for persons so suffering, and has been discharged from that establishment.

The Special Rate of Pension shall not be payable to any pensioners who are maintained in an establishment at the public expense.

In the case of a member who has been granted the Special Rate of Pension, the wife of such member shall not be entitled to receive a pension exceeding the rate specified above.

6. Summary of Work of Department from 8th April, 1918, to 30th June, 1920.—The following is a summary of the work of the Department from its inception to the latest available date:—(a) *Employment*.—Number of applications, 185,727; number of positions filled, 106,139. (b) *Vocational Training*.—Vocational training is designed for:—(i) Soldiers incapacitated from following their usual occupations. (ii) Apprentices whose indentures were interrupted by war service. (iii) Widows without children. (In cases where a widow with children satisfies the State Board that adequate arrangements can be made for the care of her children during training hours, applications for vocational training may be approved.) (iv) Students whose studies were interrupted by war services. (v) Members of the A.I.F. who enlisted under the age of twenty years. Classes representing 95 trades and callings have been established, with results as follows:—Number of men completed training, 6,070; number in training, 21,437. (c) *Assistance other than Vocational Training and Employment*.—Applications received,



266,701; applications approved, 227,884. (d) *War Service Homes*.—The operations of the War Service Homes Commission to 31st May, 1920, were as follows:—Altogether 581 homes have been completed under the Commission, while 2,198 are at present under construction. Of this number 1,313 are being constructed under contract, while 885 are being erected by day labour. There have been 481 additional contracts let for houses upon which constructional work has not yet been commenced, while tenders have been called for a further 819 houses, but these tenders have not yet been finally dealt with. The number of houses which the Commissioner has assisted to complete is 41, and a total of 5,150 existing houses has been purchased by the Commissioner on behalf of returned soldiers or dependents eligible under the Act, involving a total cost of £2,894,629. Mortgages lifted number 1,288, involving £609,794. The total applications approved by the Commissioner to 31st May, 1920, numbered 10,554, the amount involved being £6,186,195. The Commissioner has purchased approximately 2,168 acres upon which to erect homes for soldiers under the provisions of the War Service Homes Act.

7. *Assistance Granted*.—The table hereunder shews the sums granted by way of assistance during the period from the inauguration of the Department (8th April, 1918) to 31st May, 1920:—

**DEPARTMENT OF REPATRIATION.—ASSISTANCE GRANTED FROM  
8th APRIL, 1918, TO 31st MAY, 1920.**

Particulars.	General.	Loan.	Gift.	Total.
	£	£	£	£
Expenses in providing employment (including tools of trade and transportation expenses) .. .. .	24,008	9,842	2,020,271	2,054,121
Vocational Training (including sustenance, fares, fees for instruction, books and equipment and training classes) .. .. .	203,442	15,402	1,227,046	1,445,890
Furniture .. .. .	..	527,584	62,850	590,434
Small businesses .. .. .	..	163,736	1,459	165,195
Plant .. .. .	41	140,355	750	141,146
Live stock .. .. .	..	15,696	70	15,766
Settlers' sustenance and other expenses .. .. .	4,382	23	125,123	129,528
Homes for blinded soldiers .. .. .	2,525	..	1,082	3,607
Passages beyond the Commonwealth .. .. .	14,133	25	54,235	68,393
Living allowances (including allowances for homes) .. .. .	2,616	34,712	249,660	286,988
Educational grants for children .. .. .	..	65	479	544
Medical treatment (including surgical aids and maintenance of soldiers at institutions not conducted by this Department) .. .. .	11,215	..	339,212	350,427
Funeral expenses .. .. .	..	64	12,037	12,101
Miscellaneous .. .. .	50,787	7,628	24,611	83,026
Expenses of allotment .. .. .	15,716	453	17	16,186
Maintenance of medical institutions .. .. .	42,052	..	..	42,052
Grants to local government bodies to provide employment for returned soldiers .. .. .	411,360	..	..	411,360
Grants to local committees for administrative and other expenditure .. .. .	29,373	..	..	29,373
Payments to trainees incidental to advanced training in building trades and other expenses .. .. .	2,983	..	..	2,983
Totals .. .. .	814,633	915,585	4,118,902	5,849,120

8. *Settlement of Soldiers on the Land*.—In 1917 at the Premiers' Conference in Melbourne it was agreed that the States should undertake the work of settling soldiers on the land but that the Commonwealth should finance them for this purpose.

The classes of persons entitled to assistance as land settlers are:—

- (1) Members of the Australian Expeditionary and Naval Forces;
- (2) Members of the Naval and Military Forces of any part of the King's Dominions other than the Commonwealth if they resided in Australia prior to enlistment;
- (3) Munition workers and war workers who left Australia under engagement with the Imperial Government to undertake war work.

The original arrangement provided that the Commonwealth should take the responsibility of finding up to £500 per settler as working capital, for improvements, implements, seed, &c., an amount which was subsequently increased to £625 per settler.

At the Premiers' Conference held in January, 1919, definite proposals were put forward by the States at the request of the Commonwealth Government and the latter agreed to finance the States to the extent shewn in the following table:—

#### PROVISION FOR SOLDIER SETTLEMENT, 1919.

State.	No. of Settlers.	Advances to Settlers.	Advances to Men Settled.	Land Resumption.	Public Works.	Special Provision.	Total.
	No.	£	£	£	£	£	£
New South Wales ..	8,405	5,253,125	..	1,208,408	2,313,310	..	8,774,843
Victoria ..	5,395	3,371,875	350,000	6,592,500	..	..	10,314,375
Queensland ..	2,826	1,766,250	..	200,000	396,481	..	2,362,731
South Australia ..	1,729	875,000	205,625	625,000	1,190,000	..	2,895,625
Western Australia ..	2,000	1,250,000	125,625	500,000	750,000	1,000,000	3,625,625
Tasmania ..	500	312,500	128,000	360,000	..	..	800,500
Total ..	20,855	12,828,750	809,250	9,485,908	4,649,791	1,000,000	28,773,609

As the number of applicants exceeded the estimates, the States sought further assistance from the Commonwealth. The basis of the agreement arrived at (Premiers' Conference, July, 1920) was that the Commonwealth Government should advance the States a flat rate of £1,000 per settler—£625 per settler (on the average) as working capital and £375 per settler (on the average) for resumptions and works incidental to land settlement, approved by the Commonwealth.

The numbers provided for to the 30th April, 1920, are as follow:—

#### SOLDIER SETTLEMENT, 30th APRIL, 1920.

State.	Quota Agreed on.	No. Settled to 30th April, 1920.	Holdings Available.
	No.	No.	No.
New South Wales ..	8,405	4,210	..
Victoria ..	5,395	4,253	2,097
Queensland ..	2,826	1,816	1,807
South Australia ..	1,729	1,074	450
Western Australia ..	2,000	2,600	..
Tasmania ..	500	1,556	50
Total ..	20,855	15,509	4,404

The amounts reimbursed to the State Governments by the Commonwealth to the 30th June, 1920, are as follows:—

New South Wales ..	£1,996,731
Victoria ..	5,750,371
Queensland ..	728,084
South Australia ..	614,058
Western Australia ..	1,166,097
Tasmania ..	980,375
Total ..	£11,235,716

Prior to the occupancy of the land, the Repatriation Department may pay sustenance for a limited period and subject to certain conditions, and during the first two years of occupancy, sustenance may be paid for six months while awaiting actual production.

The fares of a man and his family to his place of settlement are paid by the Repatriation Department and a limited amount allowed towards the cost of removal of his household effects.

Where men are given rural training the cost of maintenance is shared between the State Lands Department and the Repatriation Department acting on behalf of the Commonwealth.

9. **Conspectus of State Laws affecting Settlement of Returned Soldiers on the Land.**—The following table gives particulars of the laws of the various States relating to returned soldiers' land settlement:—

## CONSPECTUS OF ACTS IN FORCE RELATING TO THE

Particulars.	New South Wales.	Victoria.	Queensland.
(i) Names of Acts ..	Returned Soldiers' Settlement Acts 1916, 1917. Voluntary Workers' (Soldiers' Holdings) Act 1917	Discharged Soldiers' Settlement Act 1917, 1918	The Discharged Soldiers' Settlement Act of 1917
(ii) Acts under which land is made available for Discharged Soldiers	Closer Settlement Acts 1904 to 1916. Murrumbidgee Irrigation Act 1910. Crown Lands Consolidation Act 1913	Closer Settlement Act 1915. Land Act 1915	Land Acts 1910 to 1916 ..
(iii) Minister administering Act	Minister for Lands ..	President of the Board of Land and Works	Secretary for Public Lands
(iv) Boards administering Act	Local Land Boards. Water Conservation and Irrigation Commission. Classification Committees of not over three members	Lands Purchase and Management Board under the Closer Settlement Act 1915. Advisory Committees consisting of Municipal Councils. Qualification Committee	..
(v) Definition of Discharged or Returned Soldier	(a) Resident in Commonwealth, who enlisted in naval or military forces of Commonwealth for service abroad or in United Kingdom and has served outside the Commonwealth (b) Resident in Commonwealth who enlisted as above but was unable to serve abroad through circumstances not within his own control (c) Who has received his discharge and is resident in Commonwealth. Minister may extend definition to other residents who are discharged and are resident in the Commonwealth	(a) Resident in Commonwealth who was appointed an officer or enlisted in His Majesty's or in Commonwealth naval or military forces for service abroad and served abroad, who was discharged and returned to or resides in Victoria (b) Any such person who enlisted and was unable through circumstances not within his own control to serve as aforesaid (c) Non-resident member of His Majesty's naval or military forces who has come to Victoria	Any person who has been a member of the A.I.F. or of any naval or military forces of the Commonwealth, or has joined the naval or military forces of the United Kingdom and who has received an honourable discharge. Governor may extend definition to include any member of His Majesty's military or naval forces or of the military or naval forces of any allied power, who received his discharge before arrival in Queensland
(vi) Discharged or Returned Soldiers excluded from Benefits of Act	Any person whose discharge was due to misconduct or incapacity resulting from his own default	Any person whose discharge was due to misconduct or incapacity resulting from his own default	Any person whose discharge was due to misconduct or incapacity resulting from his own default
(vii) Are Dependents of Deceased Soldier entitled to Benefit of Act?	Only under the Voluntary Workers' (Soldiers' Holdings) Act, when dependents were wholly or in part dependent on earnings or pension of soldier	Yes, if wholly or in part dependent upon earnings of deceased person during period beginning 12 months before enlistment and terminating on discharge or death in connexion with war	Yes, in event of death before or within twelve months after discharge, if wholly or in part dependent upon earnings of soldier during 12 months prior to enlistment
(viii) Definition of Dependent	Wife, husband, father, mother, grandfather, grandmother, step-father, step-mother, son, daughter, grandson, granddaughter, step-son, step-daughter, brother, sister, half-brother, half-sister, illegitimate child or grandchild, parent or grandparent of illegitimate child	Widow, mother, child, ex-nuptial child, orphan brother, orphan sister	Widow, mother, sister, child, ex-nuptial child
(ix) Settlement on Crown Lands—Ordinary Provisions	Minister may set apart Crown land under Closer Settlement or Murrumbidgee Irrigation Acts, to be disposed of under Crown Lands Act or Closer Settlement Act to discharged soldiers exclusively. Discharged soldiers may obtain certificate of preferential right, obviating reference to local land board	Governor in Council may set apart any area of Crown land for disposal under Land or Closer Settlement Acts to discharged soldiers only	Minister may set apart Crown land to be open for selection as Perpetual Lease Selections by discharged soldiers, also as Perpetual Town Leases or Perpetual Suburban Leases

## SETTLEMENT OF DISCHARGED SOLDIERS.

South Australia.	Western Australia.	Tasmania.
Discharged Soldiers' Settlement Acts 1917, 1918, 1919	Land Act Amendment Act 1917	The Returned Soldiers' Settlement Acts 1916, 1917, 1918, 1919
Crown Lands Act 1915. Irrigation and Reclaimed Lands Act 1914	Land Acts 1898 to 1917 ..	The Crown Lands Act 1911. The Closer Settlement Act 1913
Minister of Repatriation ..	Minister for Lands ..	Minister for Lands and Works
No Board appointed. (Land Board under Crown Lands Act must approve of land to be set apart or acquired)	Special Land Qualification Board may be appointed	Closer Settlements Board, consisting of not less than 4 nor more than 9 members, one-third of the members at least to be returned soldiers
Any person who (a) has been a member of the British Army or Navy or of the A.I.F. or of any naval or military force raised in any part of the British Empire for service in the war, and (b) has served in connexion with the war, and (c) has received his discharge	Any person who has been on active service with His Majesty's naval or military forces	Any person (I.) who (a) has been a member of the A.I.F. or of any other naval or military force raised in the Commonwealth for service in the war, or, though a resident of the Commonwealth, has joined the naval or military forces of the United Kingdom, (b) has served abroad, (c) has returned to Tasmania; (II.) who enlisted and was unable to serve abroad owing to circumstances not within his own control; (III.) who has been a member of the naval or military force of the United Kingdom, and has been discharged and has come to Tasmania to farm or settle upon the land pursuant to arrangement with the Imperial Government
Any person (a) whose discharge was due to incapacity resulting from his own default or misconduct, or (b) the terms of whose enlistment did not render him liable to serve abroad, or (c) any prohibited immigrant	..	Any person whose discharge was due to misconduct or incapacity resulting from his own default
Yes, if soldier has died or hereafter dies from wounds inflicted, accident occurring or disease contracted while on service, and leaves children wholly or in part dependent upon his earnings at time of death	Yes .. ..	Yes. One dependent, or two or more dependents jointly of any deceased sailor or soldier who was resident in the State, may be granted all or any of the benefits or assistance to which the deceased would have been entitled. . Total amount of benefit not to exceed £100
Widow of soldier, leaving any children	..	Widow, mother, children, ex-nuptial children, father, brother, sister
Governor may set apart areas of Crown land for allotment to discharged soldiers. No land to be set apart, except on recommendation of Land Board, concurred in by the Inspector of Lands in the Department of Agriculture and at least two other members of the Land Board	Governor may declare any Crown land to be open to selection by discharged soldiers	Governor may set apart areas of Crown land or settlement land to be disposed of under Crown Lands and Closer Settlement Acts to discharged soldiers exclusively

## CONSPECTUS OF ACTS IN FORCE RELATING TO THE

Particulars.	New South Wales.	Victoria.	Queensland.
(x) Settlement on Crown or other Lands—Special Provisions for Discharged Soldiers	Governor may set apart areas of Crown land to be subdivided into blocks and disposed of by sale or lease to discharged soldiers at such prices, etc., as Minister may determine. Qualification certificate to be obtained from Classification Committee. Crown Lands, Closer Settlement and Irrigation Acts not to apply to lands thus disposed of. Holder of lease may apply to purchase by 15 annual instalments with 2½% interest, conditional on residence for 5 years	Governor may set apart Crown land to be subdivided into blocks and disposed of upon such terms as Governor thinks fit. Qualification certificate to be obtained from Qualification Committee. Condition as to residence not enforced in case of discharged soldier	Not necessary to deposit any rent or instalment of survey fee. No rent for first 3 years, then from fourth to fifteenth year rent to be 1½% of capital value. After 3 years, survey fee to be paid in 10 annual instalments. After 5 years lessee may transfer to another discharged soldier, and after 10 years may mortgage, transfer or sublet. Town and suburban leases not offered at auction
(xi) Acquisition of Private Lands	Minister may acquire any land by agreement; and land exceeding £20,000 in value, or, if within 15 miles of a proposed railway, £10,000 in value, compulsorily	Board may, under the Closer Settlement Act, acquire either by agreement or compulsorily blocks of private land to such extent as is actually required. Land cannot be acquired compulsorily from an owner on active service abroad	Minister may, under the Public Works Land Resumption Acts, acquire, either by agreement or compulsorily, country land, town land, or suburban land, as may be required. Purchase may be paid for in debentures at 4½%, not negotiable for 5 years
(xii) Amount which may be borrowed by Parliament	..	£2,250,000 during 3 years from commencement of Act	As may be necessary for the purposes of the Act
(xiii) Preparation of Land	Minister or Water Conservation and Irrigation Commission may effect improvements on or prepare blocks of land prior to being disposed of	Board may clear, drain, sow, plant, or fence or erect buildings on or improve land prior to disposal in allotments, within 3 years after disposal under conditional purchase lease, or prior to being resold after forfeiture	..
(xiv) Training Farms, etc.	Governor may provide and maintain training farms or may make arrangements with owners of private lands for enabling discharged soldiers to acquire knowledge of farming, etc.	Governor may provide and maintain training farms for discharged soldiers	..
(xv) Advances to Discharged Soldiers on the land. Purposes for which money is advanced	(a) Clearing, fencing, draining, water supply, and general improvement (b) Erection of buildings (c) Purchase of implements, stock, seeds, plants, trees, etc. Maximum amount, £625	(a) Clearing, fencing, supplying with water, draining, grading, preparing for irrigation and general improvement (b) Erection of buildings (c) Purchase of implements, live stock, seeds, plants, trees, etc. Maximum amount, £625	Improvements on Perpetual Lease Selections and the erection of workers' dwellings Maximum amount, £625 Term of advance, 40 years
(xvi) Security for Advances	First mortgage on lands and improvements	(a) Lien on improvements to an amount not exceeding 100% of unencumbered value thereof (b) Stock mortgage (c) Hire purchase agreement (d) Any security in the Closer Settlement Act with respect to advances (e) All or some of the above	Mortgage in favour of the Government Savings Bank.
(xvii) Rate of Interest on Advances	As determined by the Minister or the Water Conservation and Irrigation Commission. Maximum 3½% for the first year, increasing by ½% annually until rate determined reached	As determined by Minister. Maximum 3½% for first year, increasing by ½% annually until rate determined reached	3½% for first year, increasing by ½% annually until rate payable by State in respect of loan out of which advance is made is reached, but not exceeding 5%. If land acquired compulsorily, rate not exceeding 5%, fixed by Minister

SETTLEMENT OF DISCHARGED SOLDIERS—*continued.*

South Australia.	Western Australia.	Tasmania.
Land set apart under § ix., if, in the opinion of the Land Board, the area is too large to be allotted as a separate holding, is to be subdivided into such blocks as the Land Board, with the approval of the Minister, determines. Such blocks may be offered to discharged soldiers on perpetual lease or on leases for such terms as Minister thinks convenient		Discharged soldier to obtain qualification certificate from Closer Settlements Board. Land may be sold or leased to discharged soldiers, after subdivision. No deposit on application necessary. No rent for the first year at least. No rates or taxes for 4 years. Discharged qualified soldier may select up to 100 acres of first-class rural land or its equivalent in value of second or third class land. No price paid, but residential conditions apply
Minister may purchase land of any tenure, including land held under Crown lease or agreement. No land to be acquired except on recommendation of Land Board, concurred in by Inspector of Lands in the Department of Agriculture, and at least two other members of the Land Board	Governor may acquire private land, either by purchase or in exchange for Crown land	Minister may, under the Closer Settlement Act, purchase by agreement or compulsorily acquire private land
		£350,000, but not more than five-sixths to be expended for private lands
Minister may clear or prepare land for settlement, and may employ discharged soldiers for such purposes	Land set apart may be improved before selection	Minister may effect improvements on or prepare land prior to its being set apart for application by discharged soldiers
Minister may provide and maintain farms to enable discharged soldiers to acquire knowledge requisite for agricultural, horticultural, viticultural, or dairying pursuits, pig-raising or poultry farming, and to test their aptitude therefor	Applicant for land may be required to acquire experience on a training farm or with some established farmer	
(a) Clearing, fencing, grading, draining, irrigating, and general improvement (b) Erection of buildings (c) Purchase of implements, stock, seeds, plants, trees, etc. Maximum amount, £625	(a) Improvements up to £625 (b) Fertilizers, seeds, sacks, etc. (c) Machinery, drays, stock, etc. (d) Stores (e) Fees	(a) Clearing, fencing (including wire and wire-netting), draining, irrigating, and general improvement (b) Erection of buildings at a cost not exceeding £400 (c) Purchase of implements, stock, seeds, plants, trees, etc. Maximum amount, £625
As regards § xv. (a) and (b), first mortgage on land and (c) bill of sale or other security on goods and chattels	Mortgage in favour of the Agricultural Bank	Moneys advanced remain a charge on the land and may be further secured by a hire-purchase agreement
As determined by Minister	34% for first year, increasing by 4% annually until maximum fixed by agreement is reached. After 5 years, advances repayable by instalments over 25 years. Advances for machinery on 8 years' terms. During first 3 years interest only	As determined by Minister

## CONSPECTUS OF ACTS IN FORCE RELATING TO THE

Particulars.	New South Wales.	Victoria.	Queensland.
(xviii) Remission of Interest, Rent, etc.	Minister or Water Conservation and Irrigation Commission may, in case of hardship, dispense with payment of interest, or may remit rent or charges for water, or may postpone instalments of purchase money	Minister may direct that no instalment of purchase money and interest and rent be payable for the first 3 years	Minister may remit or postpone the payment of rent
(xix) Conditions of Residence	Conditions of residence on lease fixed by Regulation. Purchase of lease subject to condition of residence for 5 years	Conditions of residence in Closer Settlement and Land Acts waived	Lease subject to the condition of personal residence by the lessee during the whole term
(xx) Transfer of Land, etc.	Not transferable, except by way of mortgage, for 5 years, and then only with consent of Minister or Commission, only in case of sickness or other adverse circumstances can consent be given sooner. Transfer to discharged soldier only allowed during first 10 years	Holding transferable only in accordance with Closer Settlement or Land Acts, except where Governor in Council is satisfied that soldier is compelled by sickness or other adverse circumstances to leave	After 5 years lease may be transferred to another discharged soldier. After 10 years lessee may mortgage, transfer, or sublet his lease
(xxi) Application of Act to Soldiers already settled on Land and others	Residence condition attaching to holding held by soldier on active service deemed to be complied with by such service abroad for period of same	Privileges conferred by Act extended to a discharged soldier (a) to whom the interest in a conditional purchase lease has been assigned, or (b) who is a lessee under the Land or Closer Settlement Act	Benefits relating to advances extended to holders of agricultural land under lease or licence who are serving abroad. Minister may suspend condition of residence during absence on active service and for 6 months after return, and rent and instalment of survey fee need not be paid
(xxii) Voluntary Workers' Associations, etc.	Governor may issue Crown Grants to Public Trustee of land. Public Trustee may acquire, hold, subdivide, alienate, and mortgage land, may borrow money and make advances to Voluntary Workers' Associations for purchase of materials. Completed building conveyed to discharged soldier or dependents subject to mortgage to secure repayment for materials. Houses, while property of soldier or dependent, exempt from insolvency or bankruptcy or from being distrained upon	Where any person or body of persons has settled or proposes to settle discharged soldiers on private land Governor may extend benefits of Act to such discharged soldiers	..

SETTLEMENT OF DISCHARGED SOLDIERS—*continued.*

South Australia.	Western Australia.	Tasmania.
Minister, in case of hardship, may dispense with the payment of interest. Minister may remit or postpone the payment of rent or purchase money	..	Minister may, in case of hardship, dispense with payment of interest, and remit any rent payable under a lease, or may postpone such rent, or may postpone payment of any instalment of purchase money
No lease or agreement granted until applicant has occupied the block on permit for a period of at least 12 months, and has complied with the terms and conditions of the permit	Residence compulsory for at least 6 months in each year for the first 5 years	Governor may make regulations with provisions as to the residence of lessees on the land
No lease granted or agreement entered into to be transferred, assigned, sublet, mortgaged, or encumbered, except with the consent of the Minister	No transfer can be effected without the approval of the Minister on the recommendation of the Land Qualification Board	No land leased or sold to be transferred for 10 years, except with consent of Minister
Advances may be made to discharged soldiers who are holders of Crown land on lease or agreement, who are owners of freehold or leasehold with not less than 3 years to run, or are share farmers	Any settler, who has enlisted, may obtain protection against forfeiture for non-compliance with conditions and non-payment of rent, or if he held land under conditional purchase, may have land brought under these Regulations	Advances may be made to discharged soldier, who has purchased Crown land on credit or is a selector of Crown land, or is a lessee of any privately-owned land or land leased under the Closer Settlement Act
..	..	..



## SECTION XXIX.

## PAPUA (BRITISH NEW GUINEA).

## § 1. New Guinea.

1. *Geographical Situation of New Guinea.*—New Guinea, frequently described as the largest island in the world, lies to the north of Australia, between  $0^{\circ} 25'$  and  $10^{\circ} 40'$  S. latitudes, and between  $130^{\circ} 50'$  and  $150^{\circ} 35'$  E. longitudes. Its estimated area exceeds 300,000 square miles, the greatest length being 1,490 miles and the greatest breadth 430 miles.

2. *Discovery.*—The island was probably sighted by Abreus in A.D. 1511. The first visit by Europeans was apparently either that by the Portuguese Don Jorge de Meneses on his way from Goa to Ternate in 1526, or that by the Spaniard Alvaro de Saavedra in 1528. In 1606 Torres, having parted company with De Quiros at the New Hebrides, sailed, on his way to the Philippines, through the strait which separates the island from Australia, and which now bears his name.

3. *Colonisation.*—Little progress was made for many years in exploration and settlement. First the Portuguese, and afterwards the Dutch, who to a great extent replaced them as the principal European traders in the East, seem to have jealously excluded other traders and adventurers, and to have kept the knowledge of their discoveries to themselves. The coasts were visited by Roda, Schouten, Lemaire, Tasman, Dampier, Torres, Bougainville, and Cook; but the difficulties of navigation, the savagery of the islanders, and the tempting fields for enterprise in the more temperate regions further south, diverted the energy of traders and voyagers. Forrest describes a voyage by himself in 1774. In 1793, New Guinea was annexed by two commanders in the East India Company's service. Since that date the Dutch have made extensive surveys of the western portion, and the British and Germans have occupied and colonised the eastern. In September, 1914, German New Guinea was seized and occupied by Great Britain by means of a force raised and despatched by the Australian Government.

4. *Partition.*—The three colonising powers agreed to the partition of New Guinea, each having suzerainty over islands adjoining its own territory. The whole of the portion west of the  $141^{\text{st}}$  degree of latitude, comprising about 150,000 square miles, or nearly half the island, belongs to the Dutch. The eastern half was divided in almost equal portions between Great Britain and Germany, the area possessed by each (with adjacent islands) being about 90,000 square miles. An Anglo-German boundary commission, appointed for the purpose of defining the boundary between the territories of the two nations, started operations on 26th December, 1908, and completed the field-work on 27th October, 1909. The total length of boundary delimited was  $66\frac{1}{2}$  miles. The work was both important and difficult. For a considerable portion of the survey, the country was exceedingly rough and mountainous, and the natives hostile. In one instance, the line was carried over a range at an elevation of 11,110 feet. The Dutch colony forms part of the residency of Ternate in the Moluccas, and has not been extensively developed. The German protectorate, where considerable commercial development had taken place, included the northern part of the eastern half of the mainland, known as Kaiser Wilhelm Land, and the large islands of the Bismarck Archipelago and the Solomon Group, as well as nearly 200 smaller islands. The south-eastern portion of New Guinea, nearest Australia, is a dependency of the Commonwealth of Australia. The German Pacific protectorate was terminated in 1914. (*Vide* also next par.)

5. *Late German New Guinea Possessions.*—(i) *General.* Pending the issue of a mandate by the League of Nations the late German New Guinea is at present under Australian military occupation.

(ii) *Physical Characteristics.*—The portion of New Guinea, formerly under German control, lies between lat.  $1^{\circ}$  and  $8^{\circ}$  South and long.  $141^{\circ}$  and  $156^{\circ}$  E., and consists of part of the mainland and a large number of islands. Some of these islands are of considerable size. For example, New Britain contains 10,000 square miles; New Ireland,

4,600; Bougainville, 3,500; and New Hanover, 500 square miles. Rabaul, the Seat of Government, and the most important commercial centre, was founded in 1906, and is situated at the north-eastern extremity of Blanche Bay in New Britain. The total area available for settlement is limited by the circumstance that portion of the country is mountainous, and portion is swampy, inaccessible, or of poor quality. Land required by the natives for purposes of food supply is not available for alienation. On the mainland, there are several chains of mountains with peaks reaching to 10,000 feet and upwards in height; on New Ireland the main range rises to 7,000 feet; and a large portion of Bougainville is occupied by lofty mountain ranges. The principal rivers on the mainland are the Sepik and the Ramu. The former, known also as the Kaiserin Augusta River, is navigable by vessels of 600 tons for over 250 miles. Smaller vessels may navigate the Ramu, but the other streams are valueless as highways to the interior.

(iii) *Industries*.—The main exports from the territory are copra, cocoa, rubber, and pearl and trochus shell. In 1918 the exports of copra amounted to 21,178 tons, cocoa 172 tons, and rubber 18 tons. Up to 1918 the Germans had acquired about 566,000 acres of land, on which they had created plantations covering 100,000 acres.

(iv) *Population*.—(a) *Native*.—The territory is not thickly populated, estimates placing the number of natives at about 350,000. They vary in colour from light-brown to an intense black, and generally live in small communities, although there are some fair-sized villages. In the Bismarck and Solomon group especially, they are assiduous cultivators, and raise large quantities of taro, yams, bananas, sugar cane, and coco-nuts. Cannibalism still prevails in those regions which have not yet been brought under Government control. A large number of dialects are spoken, but despite the long time the Germans were in authority, the German language never became common among the natives, pidgin English being the current medium of spoken exchange.

(b) *White*. According to the latest available records, the white population, exclusive of persons in military service, numbered 910. The preponderating race is German, the number being 680, including 384 adult males, 150 adult females, and 146 children. British number 66. Occupations of the 384 adult German males were given as—missionaries, 145; settlers and planters, 140; business and trading, 61.

(c) *Chinese and Japanese*. The Chinese population in the group numbers about 1,400, and the Japanese 230, the Chinese being employed chiefly as coolies for working cargo, as artisans, and as small traders, and the Japanese as boat builders, pearl fishers, and, in a few instances, as traders and planters.

## § 2. The Australian Dependency of Papua.

1. *Australian Dependency of Papua*.—Surveys of the east coast of New Guinea by Stanley, Yule, Blackwood, Moresby, and others, brought home to Queensland, and to Australia generally, the danger to her commerce which would result from foreign possession of the islands and coasts opposite to Cape York, and from the holding by a hostile power of the entrance to the splendid waterway inside the Barrier Reef. The mainland opposite the shores of Queensland east of the 141st meridian was therefore annexed by that colony in 1883, but the action was disallowed by the British Government. In 1884, however, a British protectorate was authoritatively proclaimed by Commodore Erskine over the region lying east of the 141st meridian as far as East Cape, with the adjacent islands as far as Kosman Island. In the year following, an agreement with Germany fixed the boundaries between the possessions of the two countries, and to Great Britain was assigned the portion now known as Papua, lying between the extreme limits of 5° and 12° S., and 141° and 155° E. The British protectorate was subsidised by Queensland, New South Wales, and Victoria, and lasted until 30th September, 1888, when it was proclaimed a possession of the Empire. Its constitution was then that of a Crown colony, in association, however, with Queensland. Administration was in the hands of a Lieutenant-Governor, aided by an Executive and a Legislative Council, and advised by a Native Regulation Board. Port Moresby, on the south coast, was made the headquarters of the official establishment; a supreme court was established there, and magisterial courts in the districts; and an armed native constabulary force (numbering 340 on the 30th June, 1919), under a European officer, was instituted for the maintenance of order. There were also, on the same date, 821 native village constables and 396 native interpreters, warders, boats' crews, etc., employed by the Crown.

2. **Annexation by Commonwealth.**—The territory was placed under the authority of the Commonwealth on 1st September, 1906, by proclamation issued in pursuance of Letters Patent of the 18th March, 1902, and was accepted by the Commonwealth by the Papua Act 1905, which came into force by virtue of the proclamation aforesaid. The transfer was made under the authority of section 122 of the Constitution (see p. 30 hereinbefore). The territory is now under the administration of the Commonwealth, but not included within it, and is divided into eleven magisterial districts.

3. **Physical Characteristics.**—Papua lies wholly within the tropics. The northernmost point touches 5° S. latitude; its southernmost portion, comprising Sudest and Rossel Islands, lies between 11° S. and 12° S. latitude. It is separated from Australia by Torres Strait. The length of Papua from east to west is upwards of 800 miles; towards either end the breadth from north to south is about 200 miles, but about the centre it is considerably narrower. The territory comprises also the islands of the Trobriand, Woodlark, D'Entrecasteaux, and Louisiade groups. The length of coast-line is computed at 3,664 miles—1,728 on the mainland, and 1,936 on the islands. The total area is about 90,540 square miles, of which 87,786 are on the mainland, and 2,754 on the islands. From the eastern end of the territory rises a chain of mountains, which forms a great central ridge and attains its greatest altitude, as it extends westwards, in the Owen Stanley Range, the highest points of which are Mount Victoria (13,200 feet), Mount Scratchley, the Wharton Range, and Mount Albert Edward. The western end of the possession is for nearly 300 miles generally low and swampy for some distance along the coast. The whole territory is well watered. The great mountains and a great portion of the lower country are covered with forest. The islands are mountainous, and, with the exception of the low coral islands of the Trobriand Group, part of Murua, and a few others of small dimensions, principally of volcanic formation. The highest is Goodenough Island, 8,000 feet. The largest rivers of the mainland flow into the Gulf of Papua. The Fly River, with its tributaries, drains an extensive area of the territory of the Netherlands, as well as of the British. Its length in British territory is about 620 miles, and it is navigable by a steam launch for over 500 miles. Other important rivers are the Turama and the Purari. There are many excellent harbours.

### § 3. Population.

The total white population of Papua on 30th June, 1919, was 971, made up of 601 adult males and 236 adult females (adults being persons over 16 years of age), and 74 male and 60 female children. The following table gives the white population of Papua for the last five years :—

#### WHITE POPULATION OF PAPUA, 1915 TO 1919.

YEAR ENDED 30TH JUNE.

1915.	1916.	1917.	1918.	1919.
1,037	992	1,036	962	971

The chief occupations of adult male Europeans were :—Government officials and employees, 123; planters (including managers and assistants), 94; miners, 88. The number of missionaries is stated as 85.

It is not possible to make a reliable estimate of the number of natives, owing to the fact that much of the interior country is unexplored. It is generally assumed to be somewhere between 250,000 and 500,000. These speak many languages and dialects. The coloured population, other than Papuans, numbered on 30th June, 1919, 304, of whom 217 were mission teachers principally from Samoa, Fiji, Solomon Islands, and other South Sea Islands. On the same date, half-castes, including Papuan half-castes, totalled 316. An Immigration Restriction Ordinance prohibits the immigration into the territory of persons who fail to pass the dictation test, or who are persons of bad character, or likely to become a charge upon the public. Exemptions may, however, be granted by the Lieutenant-Governor to persons of special skill whom it is desired to employ as overseers or foremen.

### § 4. Native Labour.

The rights of both employer and labourer are conserved by the Native Labour Ordinances. Service on the part of the native is voluntary, and he must be justly treated, and properly housed and fed. Employers may recruit personally, or obtain their natives through a licensed recruiter. Contracts of service must be in writing, entered into before a magistrate or other qualified officer, and the natives must be returned to their homes on completion of engagement. The labour question is complicated by the communistic system which prevails in the villages. Native custom demands that the friends or fellow-clansmen of the returned labourer receive a share in whatever he gets. The result is that the stimulus of individual interest is largely absent. During the period of service the recruiter or employer is personally responsible for the native's welfare. Refusal to work after engagement, or desertion from service, renders the labourer liable to imprisonment. On the other hand, a magistrate may terminate an engagement where unjust or harsh treatment by the employer is proved. The term of indenture must never exceed three years, and in the case of miners and carriers eighteen months is the limit, but re-engagements may be made. The magistrate must satisfy himself that the remuneration is fair, that the native is willing to undertake the service, and that there is no probability of unfair treatment or detention. Wages must be paid in the presence of an officer. A medicine chest, stocked with necessary drugs and first aid instruments, must be kept by all employers.

Just treatment, good food, and satisfactory remuneration for his labour have made the Papuan savage an excellent servant. With considerable natural aptitude and intelligence, he is able to understand readily what is required by his employer; consequently native labour is very largely engaged by the Administration for the construction of roads and public works, and by the private employer for the clearing and upkeep of plantations. While in some districts the natives manifest a marked unwillingness to work, in other cases, inland villagers have offered themselves as labourers without suggestion from recruiters or other officers. Actual ill-treatment of native employees may be said to be non-existent.

In his Report for 1917-18 the Lieutenant-Governor drew attention to the adaptability shewn by some of the natives in the way of house-building, boat-building, the management of sailing vessels and oil launches, and in some cases as clerks.

The number engaged under contract of service during the year ended 30th June, 1919, was 8,610. In addition, there were 2,845 natives employed for short periods who were not under contract of service, 1,161 armed constabulary and village constables, and 396 engaged in miscellaneous services such as interpreters, warders, boats' crews, messengers, etc. There were also on the same date 61 mandated children, nearly all of whom were under care of missionary agencies.

Under the Native Taxes Ordinance, passed in 1918, a tax not exceeding £1 may be imposed on natives, excepting native constables, mission teachers, natives unfit for work, and those who have not less than four living children. The proceeds of the tax are to be expended on education, or for such purposes having for their object the direct benefit of the natives as may be prescribed.

### § 5. Production.

1. **Papuan Products.**—The products of the territory are obtained from its agricultural, forestal, fishing, mining, and manufacturing industries. There is a Papuan court at the Imperial Institute, London, where, beside maps, handbooks and reports, a representative collection of products is shewn, additions being made to the exhibits from time to time. Displays of Papuan produce are also made at exhibitions held in the Commonwealth. The industries of Papua are not numerous, but they are becoming more diversified. In many cases, some years must elapse before the raw material is available for commerce.

2. **Agriculture.**—(i) *Soil and Rainfall.* The physical features of Papua are favourable to agriculture. Rich soils at varying elevations, and heavy and evenly-distributed rainfall, have ensured success in cultivating almost every tropical product of value. The territory comprises immense areas of rich alluvial and volcanic soils along

the coast, and equally fertile land at elevations up to 6,000 feet. Splendid rainfalls are recorded, except over a belt of country which runs back from the coast to the hills, and which has its dry season from May to November. This "dry" area is admirably suited for the production of tobacco, fibres, cotton, etc. There are 20 meteorological stations throughout the territory. An economic museum and agricultural library have been established. By anticipating and removing many of the pioneering difficulties, the Government has made the task of the colonist an easy one. The feature of recent years has been the steady investment of capital in the development of large areas previously acquired. One of the principal difficulties of planters is the heavy growth of weeds, and the Government has undertaken experiments with the planting of grasses to take the place of weeds, and so keep down rank vegetation.

(ii) *Plantations.* On 30th June, 1919, there were 232 plantations. Agricultural settlement has been mostly in the Central and Eastern Divisions, though plantations are rapidly spreading in other districts. The total area planted was 58,513 acres, or an average of 252 acres for each plantation. The principal plantation industries entered upon up to the present are coconuts, rubber, and sisal hemp. Secondary agricultural industries are the cultivation of bowstring hemp, kapok, coffee, tobacco, vanilla, cocoa, tapioca, cinnamon, tea, rice, and maize. The natives are compelled by an ordinance to plant coconuts for food supply. In the Kokoda district, which is not suitable for coconut planting, 8,000 rubber seeds and plants were distributed amongst the native villages in 1918. In addition to the coconuts in these plantations many more are planted over small and widely scattered areas by the older natives in accordance with custom. The following table shews the areas under the different cultures on 30th June, 1918:—

	Acres.					
Coconuts	..	..	..	..	..	43,560
Rubber	..	..	..	..	..	8,598
Hemp	..	..	..	..	..	5,824
Coffee	..	..	..	..	..	73
Other cultures (including fruit trees)	..	..	..	..	..	458
Total	..	..	..	..	..	58,513

It was estimated in 1917 that over £1,000,000 had been expended in plantations, and, with the exception of two large British companies, practically the whole of the capital was subscribed in Australia and locally.

(iii) *Government Plantations and Experimental Stations.* At Orangerie Bay the Government coconut plantation covers an area of 1,171 acres, some of the trees being seven years old. The Government rubber plantation on the Kemp-Welch River has an area of 231 acres, and contains over 4,000 trees large enough for tapping, but no action has been taken in this direction owing to the low price of rubber.

Sylvicultural nurseries have been established in connexion with the plantations with the object of supplying settlers with seeds and plants, which have been imported from the East and West Indies, Central America, tropical Australia, Ceylon, the Malay States, and the Solomon Islands. At the experimental stations, the suitability of the soil and climate for different products is tested, and correct methods of cultivation demonstrated. Large quantities of plants and seeds have been distributed to planters. A Government orchard, for supplying fresh fruit and vegetables, has been established at one of the stations, and yields considerable quantities of European fruit-foods.

(iv) *Indigenous Products.* There are many indigenous plants of great economic value. These comprise sandalwood and other timber trees, sugar-cane, cotton plants, rubber—both vine, nutmegs, ginger, bamboos, palms, bananas, bread-fruit, edible nuts, sago-palms, fruits, and vegetables. The export of mangrove bark for tanning purposes amounted in 1918–19 to 1,738 tons, valued at £4,847.

3. *Live Stock.*—On 30th June, 1919, the live stock in the Territory consisted of 338 horses, 1,331 head of cattle, 65 mules, 6 donkeys, 570 goats, 255 pigs, and 6,045 fowls. A Government stud farm has been established for the breeding of horses. The introduction of rabbits, foxes, hares, and monkeys is prohibited.

4. **Forest Products.**—There is a large diversity of useful timbers in Papua. Of 120 varieties that have been catalogued, 16 are adapted to resisting heavy strains, and are suitable for girders, railway wagons, etc.; 10 for railway carriage and coach building; 15 for joinery, lining, flooring, etc.; 14 for butter boxes; 5 for boat building; 4 for piles, and 15 for cabinet work. Sandalwood is indigenous. It is largely used for cabinet work, and santal oil is distilled from its roots. Ebony is also produced for export. Rubber is a promising industry. There are considerable areas of native rubber (*Ficus Rigo*); but the planters generally prefer the imported Para rubber. Guttapercha is obtained from a species of *palaquium*, which grows on the hills. Drugs, dyewoods, and spices are also obtained from indigenous plants. The mountain firs offer possibilities in the shape of turpentine oils and timbers, while the conifer *Agathis alba* yields a valuable resin. Saw mills have been established, but the output has not been sufficient to supply the local demand for building and other timber, and large quantities of sawn timber have been imported from Australia. Contracts have been made by residents to ship timber to Great Britain. The timber licenses in force during 1918 covered 86,455 acres.

5. **Fisheries.**—Pearl-shell fishing occupies an important place in the industries of Papua. A considerable number of luggers is licensed, but the returns are mostly credited to Queensland, whose boundary approaches to within a few miles of the Papuan coast. The species of tortoise which supplies the commercial tortoise-shell is also a native of the territory. Bêche-de-mer and trochus are found along the shores and reefs. There is a dugong fishery on the coast of the Western Division. The value of fisheries exports in 1918-19 was £33,622, of which bêche-de-mer accounted for £2,240, pearls £21,550, trochus shell £9,344, pearl shell £31, and shell, other, £457.

6. **Mining.**—(i) *Variety of Minerals.* Minerals have been discovered in many places, and over an extremely wide range. Those discovered so far are—gold, copper, tin, lead, zinc, cinnabar, iron, osmiridium, gypsum, manganese, sulphur, graphite, chromite, brown coal, lignite, and petroleum. Indications of the existence of petroleum have been found at scattered intervals over an area of country covering about 1,500 square miles between Yule Island and the Purari Delta, in the Gulf Division of Papua. Quantities of oil and inflammable gas have been met with in the test bores put down, but not in sufficient bulk as yet for commercial purposes. Indications have also been noted in Dutch New Guinea, and in the portion of the territory formerly under German control. According to one observer, the whole of the East Indian Archipelago forms one “petroliferous province,” the statement being supported by the fact that the nature of the oil so far obtained in Papua is more comparable with Dutch East Indian oil than any other.

Exploitation of the Papuan oil-fields by private companies is not permitted.

A scheme has been arranged under which the Imperial Government has entered into partnership with the Commonwealth Government in further exploitation of the field. Additional labour and machinery have been provided for, and the work will be under the control of a field manager selected in England.

Of precious stones, only the topaz and beryl have been obtained. Large beds of apparently good coal also exist. A geologist was added to the Government service at the beginning of the year 1911.

(ii) *Gold.* In 1888 the first gold was discovered. The search has now spread over every division, and finds have been recorded wherever the explorers have gone. Prospecting parties are subsidised by the Government. There are 57 white miners and 511 indentured labourers, of whom 24 whites and 232 indentured labourers were working on the Louisiade field. The quantity, in fine ounces, and value of the gold yield for five years are given below :—

#### GOLD YIELD, PAPUA, 1914-15 TO 1918-19.

1914-15.		1915-16.		1916-17.		1917-18.		1918-19.	
Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
fine ozs. 12,058	£ 51,221	fine ozs. 10,181	£ 43,248	fine ozs. 8,943	£ 37,988	fine ozs. 7,752	£ 32,931	fine ozs. 6,376	£ 27,084

Most of the rivers, with the exception of those flowing into the Gulf of Papua, have been declared open to gold-dredging, and good yields have been obtained from many of the rivers thus dredged. The total value of gold won to 30th June, 1919, was £1,534,252.

(iii) *Copper.* Rich and extensive deposits of cupriferous ore have been located, and prospecting is still in progress. Owing to heavy transport charges, only the richest ore is, at present, shipped. The principal copper mining area is the Astrolabe field. During 1918-19, the export of ore amounted to 224 tons, valued at £1,613. From the Dubuna mine, which is the chief producer, the ore is transported by mules 4 miles to the coast at Bootless Inlet, shipped to Port Moresby, 15 miles, and thence transhipped to Australia. The total amount shipped to the end of June, 1919, was 8,102 tons, valued at £112,965.

(iv) *Other Minerals.* Some good samples of galena (sulphide of lead) have been obtained. Small quantities of cinnabar (sulphide of mercury), graphite (or plumbago), osmiridium (or iridosmine), zinc-blende, native sulphur, and other minerals are also found.

A mineral laboratory and museum has been fitted up, and is available to prospectors and others interested.

## § 6. Statistical Summary.

1. *Revenue and Expenditure.*—The revenue and expenditure for 1918-19, under principal heads, are given below; also a summary covering a period of five years. In addition to the revenue collected during the year, amounting to £73,121, a sum of £30,000 was granted by the Commonwealth Government.

### REVENUE AND EXPENDITURE OF PAPUA, 1918-19.

REVENUE.			£	EXPENDITURE.			£
Customs and Excise	..	..	40,811	Lieutenant-Governor and Civil list	..	..	3,599
Post Office	..	..	2,088	Government Secretary	..	..	42,321
Native labour fees	..	..	2,462	Treasury	..	..	20,787
Hospital fees	..	..	1,360	Lands and Agriculture	..	..	8,801
Mining receipts	..	..	902	Public Works	..	..	10,073
Land revenue	..	..	3,628	Medical	..	..	11,675
Harbour dues	..	..	1,755	Department of Native Affairs	..	..	3,998
Miscellaneous receipts	..	..	20,115*	Central Court	..	..	1,602
				Legislative Council	..	..	105
Total	..	..	£73,121	Total	..	..	£102,961

\* Includes Appropriation of former years, £7,136; Loan from Superannuation Fund Board, £5,000; Service of employees, £766; Fines and fees, £1,099, etc.

### REVENUE AND EXPENDITURE OF PAPUA, 1914-15 TO 1918-19.

Item.			1914-15.	1915-16.	1916-17.	1917-18.	1918-19.
			£	£	£	£	£
Revenue	..	..	51,960	49,311	63,568	72,594	73,121
Expenditure	..	..	82,535	77,913	83,740	103,176	102,961

The loans due to the Commonwealth by the Territory of Papua amount to £57,000.

2. Imports and Exports.—The value of imports and exports for the last five years is shewn in the table below :—

VALUE OF IMPORTS AND EXPORTS OF PAPUA, 1914-15 TO 1918-19.

Particulars.	1914-15.	1915-16.	1916-17.	1917-18.	1918-19.
	£	£	£	£	£
Imports.. ..	202,055	223,040	271,640	285,792	258,112
Exports.. ..	94,354	125,428	156,535	220,599	176,247
Total Trade ..	296,409	348,468	428,175	506,391	434,359

As in all new countries, the imports consist chiefly of articles necessary for the primal needs of the community. Thus in 1918-19 the imports of agricultural products and groceries came to £80,900; drapery, £27,000; metals and machinery, £38,000; tobacco, £20,000; oils, paints, etc., £14,000; drugs, £5,000. Government stores to the value of £30,000 were also imported. The chief items of export during the last five years are as follows :—

EXPORTS OF PAPUA, 1914-15 TO 1918-19.

Article.	1914-15.	1915-16.	1916-17.	1917-18.	1918-19.
	£	£	£	£	£
Gold .. ..	50,889	43,249	37,988	32,931	27,084
Copra .. ..	12,693	19,051	40,882	68,225	53,264
Rubber .. ..	1,501	14,846	26,682	37,020	33,010
Hemp .. ..	1,269	11,999	11,463	17,682	12,532
Copper Ore .. ..	5,607	9,971	14,050	11,572	1,613
Pearl Shell and Trochus Shell ..	4,292	6,770	8,050	6,625	9,375
Pearls .. ..	6,113	1,000	2,400	19,250	21,550
Bêche-de-Mer .. ..	3,853	3,229	2,521	3,551	2,240
Bark .. ..	..	..	4,423	7,228	4,847

The development of the plantations is reflected above in the increased exports of copra, rubber, and hemp, and as greater areas come into bearing, these figures will, of course, increase. Up to the end of 1914-15 the copra exports were almost wholly native products.

3. Postal and Shipping.—Considerable development has been shewn in means of communication—the postal returns, and the tonnage of vessels entered and cleared at ports, having largely increased. Particulars regarding postal matter are given hereunder :—

POSTAL STATISTICS OF PAPUA, 1914-15 TO 1918-19.

Ycar.	Letters.		Packets.		Newspapers.		Parcels.	
	Received.	Des-patched.	Received.	Des-patched.	Received.	Des-patched.	Received.	Des-patched.
1914-15 ..	144,193	98,158	23,878	7,215	111,011	37,393	3,220	1,004
1915-16 ..	157,218	112,572	30,054	2,460	100,464	13,302	2,904	876
1916-17 ..	127,296	106,836	14,724	4,476	98,016	33,900	3,108	1,044
1917-18 ..	137,850	124,656	20,214	5,850	91,866	45,738	3,606	882
1918-19 ..	159,702	114,540	10,272	5,832	125,118	42,354	4,266	1,008

The value of money orders issued in 1914-15 was £6,891; of those paid, £975. In 1918-19, the respective values were £5,283 and £1,231.



The following table shews the number, tonnage, and nationality of vessels entered and cleared at ports during the years 1914-15 to 1918-19 :—

**SHIPPING.—FOREIGN-GOING VESSELS ENTERED AND CLEARED AT PORTS OF PAPUA, 1914-15 TO 1918-19.**

Nationality.	Vessels.									
	Number.					Tonnage.				
	1914-15	1915-16	1916-17	1917-18	1918-19	1914-15	1915-16	1916-17	1917-18	1918-19
British ..	610	166	121	117	93	262,897	96,753	72,414	57,955	60,108
Foreign ..	33	48	50	20	..	99,729	151,134	158,594	63,772	..
Total ..	643	214	171	137	93	362,626	247,887	231,008	121,727	60,108

Throughout, the figures are exclusive of ships of war and Government vessels. The falling off in numbers and tonnage is, of course, due to the disorganization resultant on the war.

## § 7. Land Tenure.

1. **Method of Obtaining Land.**—(i) *The Land Laws.* The broad principles upon which the land laws of Papua are based are :—(a) No land can be alienated in fee simple ; (b) the rental of the land leased is assessed on the unimproved value of the land, and is subject to reassessment at fixed periods.

A detailed account of the method of obtaining land was given in Official Year Book No. 6, pp. 1083-4.

(ii) *The Leasehold System.* With a view of attracting pioneer settlers, an ordinance was passed in 1906 under which leases were granted on very liberal terms. No rent was payable for the first ten years, the heavy expense of survey was borne by the Government, and no charge was made for the preparation and registration of the leases ; that is to say, no payments whatever had to be made to the Government for 10 years. Under this system, the area under lease increased in four years from 2,089 acres to 363,425 acres ; about 140 plantations were started, and nearly 1,000 acres planted during that period.

After allowing free survey for three years, it was decided that all future applicants for agricultural leases exceeding in area 100 acres should be required to pay the cost of survey. It was also found desirable to check a tendency amongst a proportion of land applicants to obtain areas so great that the improvement conditions could not be carried out. It was therefore enacted that no leases should be granted after 1st June, 1910, exceeding 5,000 acres in extent, and that rent at the rate of 3d. per acre must be paid from the commencement on all leases exceeding 1,000 acres in area. As a result of these enactments, several leases have been forfeited. On the other hand, a stricter enforcement of improvement conditions has resulted in a substantial raising of the standard.

2. **Land Tenures.**—On 30th June, 1919, the lands of the Territory were held as follows :—

	Acres.			
Area of land held by the natives .. ..	..	..	..	57,010,562
Area of Crown land .. ..	..	..	..	693,002
Area of freehold land .. ..	..	..	..	23,085
Area of leasehold land .. ..	..	..	..	218,951
Area of Territory .. ..	..	..	..	57,945,600

Private sales of land in the Territory have now practically ceased. The Government buys from the natives, and then leases to planters, who are forbidden to have direct dealings in land with Papuans. The position as regards leasehold tenures may be seen from the following table :—

**AREA HELD UNDER LEASE IN PAPUA, 1914-15 TO 1918-19.**

Year ended 30th June.	1914-15.	1915-16.	1916-17.	1917-18.	1918-19.
Land held under lease .. acres (as recorded)	235,072	228,013	227,476	224,010	218,951

Of the total area of 218,951 acres shewn above, about 212,600 acres were agricultural leases, and about 5,000 acres were held under pastoral lease.

In 1918-19, the area of leases granted was 6,981 acres; that of leases surrendered, revoked, and forfeited was 5,059 acres. The area of land acquired by the Crown from the natives was 10,224 acres.

The total area surveyed in the Territory is 22,524 acres of freehold, and 272,661 acres of leasehold.

**§ 8. Progress of the Territory.**

1. Statistical View of Twelve Years' Progress.—As already stated (§ 2, *supra*) the Territory was placed under the Commonwealth control on 1st September, 1906. The following table indicates the progress that has been made since that date :—

**STATISTICAL SUMMARY, PAPUA, 1907 TO 1919.**

Items.	Year ended 30th June.	
	1907.	1919.
White population .. .. .	690	971
Native labourers employed (exclusive of Crown servants) ..	2,000	11,455
Number of white civil servants .. .. .	65	123
Armed constabulary .. .. .	185	340
Village constables .. .. .	401	821
Territorial revenue .. .. .	£ 21,813	73,121
Territorial expenditure .. .. .	£ 45,335	102,961
Value of imports .. .. .	£ 87,776	258,112
Value of exports .. .. .	£ 63,756	176,247
Area under lease .. .. . acres	70,512	218,951
Area of plantations .. .. . acres	1,467	58,513
Meteorological stations established .. .. .	3	20
Gold yield .. .. . fine ounces	12,439	6,376
Copper ore shipped .. .. . tons	137	224
Live stock in Territory—		
Horses .. .. .	173	338
Cattle .. .. .	648	1,331
Mules .. .. .	40	65

## SECTION XXX.

## PUBLIC HYGIENE.

## § 1. Introduction.

1. **General.**—Though the safeguarding of the public health as an organised department of governmental activity is of comparatively modern growth, few branches of administration have expanded more rapidly than the one relating to that subject. The loss of potential wealth incurred through preventable diseases and deaths is of grave concern to the nation, and is a matter which has received an increased amount of attention during the last few years both from the Commonwealth and State Governments and from the Health and other authorities in Australia. Numerous Acts of Parliament have been passed dealing with various aspects of the subject of public hygiene.

## § 2. The Public Health Acts.

1. **General.**—The most important statutes relating generally to the subject of public hygiene are the Health Acts which have been passed in each State. The general trend of public health legislation has been referred to in previous issues of the official Year-Book (see No. 12, pp. 1050-1).

2. **New South Wales.**—The Department of Public Health is controlled by the Minister of Public Health. The Director-General of Public Health is the chief executive officer, and is assisted by various staffs—medical, bacteriological, chemical, veterinary, dairy inspection, meat inspection, sanitary, pure food, and clerical. Briefly put, the work of the Department extends over the whole of the State, and embraces all matters relating to public health and the general medical work of the Government; the Director-General of Public Health holding the position of Chief Medical Officer of the Government as well as being permanent head of the Department.

The Board of Health has certain statutory duties imposed upon it by various Acts of Parliament, and the Director-General is President of the Board. These duties consist largely in supervision of the work of local authorities (Municipal and Shire Councils), so far as that work touches upon public health matters connected with the following Acts:—Public Health Act 1902, Public Health (Amendment) Act 1915, Dairies Supervision Act 1901, Noxious Trades Act 1902, Cattle Slaughtering and Diseased Animals and Meat Act 1902, Pure Food Act 1908, and Private Hospitals Act 1908. The Board further possesses certain powers connected with public health matters under the Local Government Act 1906. It may be mentioned that the Board of Health is a nominee Board, created in 1881 and incorporated in 1894.

The Director-General of Public Health acts independently of the Board of Health as regards the State hospitals and asylums, and the various public hospitals throughout the State which receive subsidies from the Government.

3. **Victoria.**—In this State the Public Health Acts are administered by a Commission composed of the Chief Health Officer and six members appointed by the Governor-in-Council. The medical and sanitary staffs of the Commission consist of (a) the Chief Health Officer, who is also chairman, (b) one assistant medical inspector, (c) two

engineering inspectors, (d) three building inspectors, and (e) five health inspectors. The main function of the Commission is to enforce the execution of the Health Acts by the local municipalities, but it has been found advisable to supplement this supervisory function by an active policy of inspection as to the sanitary condition of various districts, and the sampling of articles of food. The supervision of the sanitary condition of milk production is under the Dairy Supervision Branch of the Department of Agriculture, but distribution is supervised by the Commission. Acts administered by the Department of Public Health are:—The Health Acts, in which are now included the Adulteration of Wine Act and the Pure Food Act, the Cemeteries Act, in which is now included the Cremation Act, and the Meat Supervision Act. The Department administers also the Midwives Act, the Goods Act, and the Venereal Diseases Act. Under the last-mentioned Act it has been made compulsory for all persons affected with venereal disease to place themselves under the care of a duly qualified medical practitioner. Persons other than medical practitioners are prohibited from treating these diseases, or from supplying drugs or medicines. Registered pharmaceutical chemists may, however, dispense prescriptions to patients of medical practitioners. The Act contains various sections—with appended penalties for contravention—designed to check the spread of venereal diseases. A special clinic for the treatment of infected persons was opened in Melbourne in June, 1918. Between 17th June, 1918, and 31st December, 1919, 3,762 males were treated, attendances numbering 112,411. At the same clinic (afternoon clinic for women) during the same period, 233 females were treated, attendances numbering 4,802. It may be mentioned that the Act provides a heavy penalty in the event of a medical practitioner failing to notify cases of these diseases.

4. **Queensland.**—The Public Health Acts 1900 to 1917 are administered by the Commissioner of Public Health under the Home Secretary. The executive staff of the Department includes a health officer, a medical officer for the tuberculosis bureau, two medical officers for enthetic diseases, fourteen food and sanitary inspectors, two staff nurses, in addition to rat squads in Brisbane. Northern offices, in charge of inspectors, are located at Rockhampton, Townsville, Cairns, and Mackay. A laboratory of microbiology and pathology, in charge of a medical director, is controlled by the Department, and performs a wide range of microbiological work for the assistance of medical practitioners and the Department.

One function of the Department is to stimulate and advise local sanitary authorities on matters pertaining to the Health Acts, and, where necessary, to rectify or compel rectification, at the cost of the local authority, of sanitary evils produced by local inefficiency or apathy. Its powers and responsibilities were widely increased by the Health Act of 1911-17.

A scheme for dealing with venereal disease throughout the State is in operation under statutory powers. It includes compulsory notification, free treatment, and the free supply of salvarsan and allied remedies at all public hospitals. Compulsory segregation of venereally infective persons, of either sex, may be effected on occasion.

5. **South Australia.**—The Central Board of Health in South Australia consists of five members, three of whom (including the chairman, who is permanent head of the Department) are appointed by the Governor, while one each is elected by the city and suburban local Boards and the country local Boards. The Health Act 1898 provides that the municipal and district councils are to act as local Boards of Health for their respective districts. There are 183 of these local Boards under the general control and supervision of the Central Board. A chief inspector and two inspectors under the Health and Food and Drugs Acts periodically visit the local districts, and see generally that the Boards are carrying out their duties. There is also a chief inspector of food and drugs (under the Food and Drugs Act 1908), who, in company with an analyst, visits country districts, and takes samples of milk, which are analysed on the spot. There are two nurse inspectors employed in advising and assisting local Boards in connexion with outbreaks of infectious diseases. In the outlying districts there are fifteen inspectors directly responsible to the Board.

6. **Western Australia.**—The legislation in this State is the Health Act 1911, with four amending Acts 1912 (2), 1915, and 1918, which have been consolidated and reprinted as "The Health Act 1911-18." The central authority is the Department of Public Health, controlled by a Commissioner, who must be a qualified medical practitioner. The local authorities constitute :—(a) Municipal Councils, (b) Road Boards where the boundaries of a Health District are coterminous with those of a Road District, and (c) Local Boards of Health, composed of persons appointed by the Governor for a certain period. These Local Boards are only utilised where neither Municipal Councils nor Road Boards are available. Generally speaking, the Act is administered by the local authorities, but the Commissioner has supervisory powers, also power to compel local authorities to carry out the provisions of the Act. In cases of emergency the Commissioner may exercise all the powers of a local health authority in any part of the State.

All the usual provisions for public health legislation are contained in the Act, and in addition, provision is made for the registration of midwifery nurses, the medical examination of school children, the control of public buildings (*i.e.*, theatres, halls, etc.), the control of food, and the provision of standards therefor.

The amending Act of 1915 deals exclusively with venereal diseases. The main features are :—(1) that none but qualified medical practitioners shall treat these diseases ; (2) that all patients shall promptly place themselves under skilled treatment ; and (3) that advertisements of medicines and appliances for the treatment of these diseases, of sexual infirmities, etc., shall no longer be published. For the carrying out of these objects, the Act provides, *inter alia* :—(a) For the notification (without name and address) of cases to the Commissioner of Public Health ; (b) for the notification to the Commissioner of patients who discontinue treatment before receiving a certificate of cure ; (c) for the exercise by the Commissioner, in certain circumstances, of compulsory powers against persons who neglect treatment ; (d) for the provision of free treatment at hospitals, and at the hands of salaried or subsidised medical practitioners.

A penalty of £50, or imprisonment with hard labour for six months, is provided for any person who knowingly infects any other with any venereal disease, or does anything likely to lead to that result.

The 1918 amending Act includes important amendments to that part of the principal Act dealing with venereal diseases. The general principles remain unaltered, but details are much improved.

7. **Tasmania.**—The Public Health Act 1903 vests central control in the Chief Health Officer, who is the permanent head of the Department of Public Health. He is charged with very wide functions and powers, and in the event of the appearance of dangerous infectious disease (small-pox, plague, etc.) in the State, is vested with supreme power, the entire responsibility of dealing with such an outbreak being taken over by him from the local authorities. Local executive is vested in local authorities, who possess all legal requirements for the efficient sanitary regulation of their districts. Controlling and supervisory powers over these bodies are possessed by the Department of Public Health, whereby many of the powers conferred upon them may be converted into positive duties. One function of the Department is to advise local authorities on matters pertaining to the Health Act, and, where necessary, to rectify sanitary evils produced by local inefficiency or apathy. The Department has four full-time inspectors, who assist and instruct the local sanitary inspectors, but full-time district health officers are not provided for. The number of local authorities under the Public Health Act has been reduced to forty-nine since the Local Government Act 1906 came into force. All parts of Tasmania are now furnished with the administrative machinery for local sanitary government.

The Public Health Act 1917 deals with venereal diseases. Medical practitioners are required to report persons suffering from such diseases. Such notification, however, does not disclose the names or addresses of the patients. This information is given to the Department by medical practitioners only if patients fail to consult or attend for a period of six weeks.

Regulations under the Public Health Act 1903, as amended, for checking or preventing the spread of any infectious disease, came into force in February, 1918.

### § 3. Inspection and Sale of Food and Drugs.

1. **Introduction.**—The importance of securing a pure and wholesome supply of food and drugs is recognised by both the Commonwealth and State Parliaments. Under the Acts referred to later, and the regulations made thereunder, the importation of articles used for food or drink, of medicines, and of other goods enumerated, is prohibited, as also is the export of certain specified articles, unless there is applied to the goods a "trade description" in accordance with the Act. Provision is made for the inspection of all prescribed goods which are imported, or which are entered for export.

2. **Commonwealth Jurisdiction.**—Under Section 51 (i) of the Commonwealth Constitution Act 1900, the Commonwealth Parliament has power to make laws with respect to trade and commerce with other countries and among the States. By virtue of that power, the Commerce (Trade Descriptions) Act 1905, and the Customs Act 1910, to which reference has already been made in another part of this book (see pp. 574, 575), were passed.

3. **State Jurisdiction.**—The inspection and sale of food and drugs is also dealt with in each State, either under the Health Acts or under Pure Food Acts. There is, in addition, in the several States, a number of Acts dealing with special matters, such as the adulteration of wine and the supervision of meat. The sanitary condition of the milk supply is also subject to special regulations or to the provisions of special Acts. A brief statement of the general objects of these Acts appears in previous issues of the Year-Book (see No. 12, p. 1054).

4. **Food and Drug Standardisation.**—Conferences aimed at securing uniformity in these matters were held in Sydney in 1910, and in Melbourne in 1913. The resolutions of the latter conference were submitted to the Premiers' Conference held in Melbourne in March, 1914, and in conformity with the determinations arrived at, each State issued regulations which have had the effect of ensuring uniformity throughout the Commonwealth.

5. **The Sale and Custody of Poisons.**—In Victoria, New South Wales, Western Australia, and Tasmania, the enactments for regulating the sale and use of poisons are administered by the Pharmacy Boards in the respective States. In South Australia, the sale of poisons is provided for by regulations under "The Food and Drugs Act 1908," administered by the Central Board of Health. In Queensland, the Poisons Act was formerly administered by the Police, but it is now administered by the Health Department.

In New South Wales and Victoria the Government subsidises the Pharmacy Board, in order to enable it to carry out the provisions of the Poisons Act.

No persons, other than legally qualified medical practitioners and registered pharmaceutical chemists, are permitted to sell poisons without special licence from the bodies administering the legislation in the respective States. These licences are issued to persons in business distant from four to five miles from a registered chemist, on production of certificates from medical practitioners, police, or special magistrates or justices as to the applicant's character and fitness to deal in poisons. Annual licence fees, ranging from 5s. to 40s., are charged in the several States.

The special conditions attaching to the sale of poisons are alluded to on p. 1055 of Official Year-Book No. 12.

Partial exemptions from the regulations are made in some States in the case of sales of poisons for agricultural, horticultural and photographic purposes in so far that any person may sell them subject to the restrictions as to the class of container and the manner in which they may be sold. The sale of what are generally known as industrial poisons, such as sulphuric acid, nitric acid, hydrochloric acid, soluble salts of oxalic acid, etc., is governed by regulations, as also is the sale of poisons for the destruction of rats, vermin, etc. Under the existing laws these poisons are allowed to be sold by any one. The Victorian Government has under consideration a Bill providing for an annual fee of 10s. and the issuing of licences to dealers in exempted poisons.

### § 4. Milk Supply and Dairy Supervision.

1. **General.**—In Official Year-Book No. 12 and preceding issues allusion is made in general terms to the legislation in force in the various States to ensure the purity of the milk supply and of dairy produce generally, but limits of space preclude the repetition of this information in the present issue.

2. **Number of Dairy Premises Registered.**—The following table shews so far as the particulars are available the number of dairy premises registered and the number of cattle thereon. Compulsory registration is not in force throughout the whole area of the various States. The figures do not include unregistered dairies.

DAIRY PREMISES REGISTERED AND CATTLE THEREON.

Particulars.	N.S.W. (1918.) (a)	Victoria. (1916-17.) (a)	Q'land. (1919-20.)	S. Aust. (1919.)	W. Aust. (1918-19.)	Tasmania.
Premises registered ..	18,435	12,662	12,973	1,027	807	(b)
Cattle thereon ..	936,681	107,949	(b)	6,865	9,053	(b)

(a) Later figures not available.

(b) Not available.

3. **New South Wales.**—The provisions of the Dairies Supervision Act 1901 extend to the whole of the Eastern and Central Divisions of this State and to all important dairying districts further inland. Other districts are brought under the operation of the Act by proclamation from time to time. Every dairyman, milk vendor, and dairy factory or creamery proprietor is required, under penalty, to apply for registration to the local authority for the district in which he resides, and also to the local authority of every other district in which he trades. Registrations must be applied for before commencing to trade and must be renewed annually. The Chief Dairy Inspector is in charge of all inspectorial work under the Dairies Supervision Act 1901, and has assisting him fourteen qualified dairy inspectors, each in charge of a district. Samples of milk numbering 3,502, and of food and drugs numbering 822, were taken from the vendors for examination, and 5,330 dairy premises were inspected. Where necessary, warnings and prosecutions followed. A sum of nearly £2,000 was imposed in fines for adulteration, want of cleanliness, etc.

4. **Victoria.**—The inspection and supervision in Victoria of dairies, dairy farms, dairy produce, milk stores, milk shops, milk vessels, dairy cattle and grazing grounds are provided for by the Dairy Supervision Act 1915, administered by the Minister of Agriculture. Under the Health Act 1915, however, the Department of Public Health is empowered to take samples of food (including milk, cream, butter, cheese, and other dairy products) for examination or analysis, to institute prosecutions in case of adulterated or unwholesome food, and to carry out inspection of dairies, etc., in districts not yet proclaimed under the Act. By the end of the year 1918, 113 municipal districts, comprising about one-third of the area of the State, had been brought under the operation of the Dairy Supervision Act. The municipal councils have the option of carrying out the execution of the Act themselves or of electing for execution by the Department of Agriculture; up to the present all but one of the municipalities in which the Act has been proclaimed have elected for Departmental execution.

5. **Queensland.**—The control and supervision of the milk supply and of dairies and the manufacture, sale, and export of dairy produce in Queensland are provided for by the Dairy Produce Act 1920, administered by the Department of Agriculture and Stock. These Acts and the regulations made thereunder apply only to prescribed districts, which comprise the whole of the coastal district from Rockhampton down to the New South Wales border, and the Darling Downs, Maranoa, Mackay, and Cairns districts.

6. **South Australia.**—The Food and Drugs Act 1908, and the Regulations made thereunder, provide for the licensing of vendors of milk and the registration of dairies, milk stores and milk shops. The Metropolitan County Board carries out the requirements of the metropolitan area. In the Country, the majority of local authorities have not made statutory provision for the licensing of vendors of milk and the registration of dairy premises; and, in consequence, the Central Board of Health provides for such under the Act.

7. **Western Australia.**—Control of dairies throughout the State is in the hands of the Public Health authorities under the provisions of the Health Act. The inspectors under the Act supervise the sanitary condition of the premises, the examination of herds being carried out by officers of the Department of Agriculture for the Health Department. Inspection of herds is made at regular intervals, and the tuberculin test is applied in cases of suspected disease.

8. **Tasmania.**—Local authorities are responsible for the dairies in their respective districts. By-laws for the registration and regulation of dairies have been drafted by the Public Health Department, and in the majority of cases have been adopted by the local authorities. By the Food and Drug Act, which came into force March, 1911, milk sampling is carried out by the local authorities. During 1913, attention was drawn by circular to the requirements of local authorities with regard to dairies, and a special report is now required before licences are granted. An Act also provides for the registration and inspection of dairies and other premises where dairy produce is prepared, and regulates the manufacture, sale, and export of dairy produce.

## § 5. Prevention of Infectious and Contagious Diseases.

1. **General.**—The provisions of the various Acts as to precautions against the spread and the compulsory notification of infectious diseases may be conveniently dealt with under the headings—(a) Quarantine; (b) Notifiable Diseases; and (c) Vaccination.

2. **Quarantine.\***—Under the Commonwealth Quarantine Act 1908, the systems of State quarantine formerly in operation were abolished, and a branch of the Department of Trade and Customs, under the immediate control of a Director of Quarantine, was created on 1st July, 1909. Amending Quarantine Acts were passed in 1912 and 1915, correcting certain imperfections in the original Act, and conferring additional powers. Uniformity of procedure has been established throughout the Commonwealth in respect of all vessels, persons, and goods arriving from overseas ports or proceeding from one State to another, and in respect of all animals and plants brought from any place outside Australia. In regard to interstate movements of animals and plants, the Act becomes operative only if the Governor-General be of opinion that Federal action is necessary for the protection of any State or States; in the meantime the administration of interstate quarantine of animals and plants is left in the hands of the States.

(i) *Transfer of Quarantine Stations.* The transfer from the States to the Commonwealth of the quarantine stations, for the purposes of human quarantine, at the following places, has been effected:—(a) *New South Wales.* North Head (near Sydney). (b) *Victoria.* Point Nepean (near Melbourne). (c) *Queensland.* Colmslie and Lytton (near Brisbane), and Thursday Island. (d) *South Australia.* Torrens Island (near Adelaide). (e) *Western Australia.* Woodman's Point (near Fremantle), Albany, and Broome. (f) *Tasmania.* Bruni Island (near Hobart). Animal quarantine stations in each of the States have also been transferred to the Commonwealth. New buildings

\* From information furnished by the Federal Director of Quarantine.



and improvements are in course of construction at several of the transferred stations. New stations have been constructed at Darwin, Thursday Island, Townsville, and Bunbury.

(ii) *Administration of Act.* The administration of the Act in respect of the general division, i.e., vessels, persons, and goods, and human diseases, is under the direct control of the Commonwealth in all States except Tasmania. A medical chief quarantine officer, with assistant quarantine officers, has been appointed in each State. This officer is charged with responsible duties, and is under the control of the Director of Quarantine. In Tasmania, the chief health officer of the State acts as chief quarantine officer, and payment is made to the State for his services. The administration of the Act in the Northern Territory has been combined with that of Queensland under the chief quarantine officer for the North-eastern Division. The administration of the Acts and Regulations relating to oversea animal and plant inspection and quarantine is carried out by the officers of the State Agricultural Departments acting as quarantine officers.

(iii) *Chief Provisions of Act.* The Act provides for the inspection of all vessels from oversea, for the quarantine, isolation, or continued surveillance of infected or suspected vessels, persons, and goods, and for the quarantining and, if considered necessary, the destruction of imported goods, animals, and plants. The obligations of masters, owners, and medical officers of vessels are defined, and penalties for breaches of the law are prescribed. Power is given to the Governor-General to take action in regard to various matters by proclamation, and to make regulations to give effect to the provisions of the Act. Quarantinable diseases are defined as small-pox, plague, cholera, yellow fever, typhus fever, leprosy, or any other disease declared by the Governor-General, by proclamation, to be quarantinable. "Disease" in relation to animals means certain specified diseases, or "any disease declared by the Governor-General, by proclamation, to be a disease affecting animals." "Disease" in relation to plants means "any disease or pest declared by the Governor-General, by proclamation, to be a disease affecting plants." The term "plants" is defined as meaning "trees or plants, and includes cuttings and slips of trees and plants and all live parts of trees or plants and fruit."

(iv) *Proclamations.* The proclamations so far issued specify the diseases to be regarded as diseases affecting animals and plants; appoint first ports of landing for imported animals and plants and first ports of entry for oversea vessels; declare certain places beyond Australia to be places infected, or as places to be regarded as infected with plague; prohibit the importation (a) of certain noxious insects, pests, diseases, germs, or agents, (b) of certain goods likely to act as fomites, and (c) of certain animals and plants from any or from certain parts of the world; fix the quarantine lines, and define mooring grounds, in certain ports of Australia.

(v) *General.* At present, instead of all oversea vessels being examined in every State, as was formerly the case, those arriving from the south and west are now examined only at the first port of call, and pratique is given for the whole of the Commonwealth, except in cases of suspicious circumstances, while vessels arriving from the northern routes are examined only at the first and last ports. It is expected that the restrictions placed upon oversea vessels will be further removed as the machinery of quarantine is improved. The present freedom from certain diseases which are endemic in other parts of the world would, however, appear to justify the Commonwealth in adopting precautionary measures not perhaps warranted in the already infected countries of the old world.

3. *Notifiable Diseases.*—Provision exists in the Health Acts of all the States for precautions against the spread and for the compulsory notification of infectious diseases. When any such disease occurs, the Health Department and the local authorities must at once be notified. In some States notification need only be made to the latter body. The duty of giving this notification is generally imposed, first, on the head of the house to which the patient belongs, failing whom on the nearest relative present, and on his default on the person in charge of or in attendance on the patient, and on his default on the occupier of the building. Any medical practitioner visiting the patient is also bound to give notice.

(i) *Notifiable Diseases Prescribed in each State.* In the following statement those diseases which are notifiable in each State are indicated by a cross :—

DISEASES NOTIFIABLE UNDER THE HEALTH ACTS IN EACH STATE.

Particulars.	N.S.W.	Vic.	Q'land.	S.A.	W.A.(d)	Tas.(e)
Acute lobar pneumonia ..	..	..	+	(g)	..	..
Anthrax ..	..	+	..	+	..	..
Ankylostomiasis ..	..	+	+	..	..	..
Beri-beri ..	..	..	..	..	+	..
Bilharziosis ..	..	+	+	+	+	+
Broncho-pneumonia ..	..	..	+	..	..	..
Bubonic plague ..	+	+	+	+	+	+
Cerebro-spinal fever ..	+	+	+	+	..	..
Cerebro-spinal meningitis ..	+	+	+	+	+	+
Chancroid (soft chancre) ..	..	+(b)	+	..	+	+
Cholera ..	..	+	+	+	+	+
Continued fever ..	..	+	+	..	+	..
Diphtheria ..	+	+	+	+	+	+
Dysentery ..	..	..	+(c)	..	+	..
Enteric fever ..	+	+	+	+	+	+
Erysipelas ..	..	..	..	+	+	+
Favus ..	..	..	..	+	..	..
Gonorrhœa ..	..	+(b)	+	..	+	+
Hæmaturia ..	..	+	+	..	+	+
Infantile paralysis ..	+	+	+	..	+	+
Infective granuloma of the pudenda ..	..	+(b)	+	..	+	..
Influenza ..	..	..	+	+(g)	+	..
Leprosy ..	+	+	+	+	+	+
Malarial fever ..	..	+	+	+	+	+
Measles ..	..	..	..	+	..	..
Membranous croup ..	+	+	+	+	+	..
Ophthalmia neonatorum ..	..	+(b)	..	..	+	+
Pneumonic influenza ..	..	..	+	+(g)	+	+
Poliomyelitis anterior acuta ..	+	+	+	..	+	+
Puerperal fever ..	..	+	+	+	+	+
Pulmonary tuberculosis (phthisis) ..	+(a)	+	+	+	+	+
Relapsing fever ..	..	..	+	+	+	..
Scarlet fever ..	+	+	+	+	+	+
Scarlatina ..	+	+	+	+	+	+
Septicæmia ..	..	+	..	..	+	..
Small-pox ..	+	+	+	+	+	+(f)
Syphilis ..	..	+(b)	+	..	+	+
Trichinosis ..	..	..	..	+	..	..
Typhoid ..	+	+	+	+	+	+
Typhus fever ..	..	+	+	+	+	+
Whooping cough ..	..	..	..	+	..	..
Yellow fever ..	..	+	+	+	+	..

(a) In metropolitan and certain proclaimed districts. (b) Under the Venereal Diseases Acts. (c) Thursday Island area only. (d) Other diseases enumerated as notifiable under "The Health Act 1911" of this State are pyæmia, and Malta, dengue, low and Colonial fevers. (e) Venereal diseases are notifiable under "The Public Health Act 1917." (f) Chicken-pox has been declared a notifiable disease to render certain its differential diagnosis from small-pox. (g) In South Australia influenza vera is notifiable, and any febrile toxic-septicæmic condition similar to influenza, including pneumonic influenza.

(ii) *Duties of Authorities.* As a rule the local authorities are required to report from time to time to the Central Board of Health in each State as to the health, cleanliness, and general sanitary state of their several districts, and must report the appearance of certain diseases. Regulations are prescribed for the disinfection and cleansing of premises, and for the disinfection and destruction of bedding, clothing, or other articles which have been exposed to infection. Bacteriological examinations for the detection of plague, diphtheria, tuberculosis, typhoid, and other infectious diseases within the meaning of the Health Acts are continually being carried out. Regulations are provided in most of the States for the treatment and custody of persons suffering from certain dangerous infectious diseases, such as small-pox and leprosy.

(iii) *New South Wales.* The proclamation and notification of infectious diseases are dealt with in Part III. of the Public Health Act 1902. Special provision is made by that Act for the notification of small-pox and leprosy, and for the custody and treatment of lepers. Special reports dealing with outbreaks and the ætiology of plague, leprosy, and small-pox have been published.

(iv) *Victoria.* Any infectious disease declared to be notifiable is notifiable throughout the State (Health Act 1919).

(v) *Queensland.* Under Part VII. of the Health Act 1900-1917, all cases of infectious diseases must be notified; special provision is made for notification of small-pox. No case of plague has occurred since 1908. Provision is made for the diagnosis of leprosy, and lepers are sent to Peel Island, Moreton Bay.

(vi) *South Australia.* In this State cases of infectious diseases must be reported to the local Board, under the provisions of Part VIII. of the Health Act 1898. The onus of notification is placed primarily on the head of the family, and, failing him, the nearest relative, the person in charge, or the occupier of the house; in any case, notification must be given by the medical practitioner attending.

(vii) *Western Australia.* The necessity for providing hospital treatment for infectious cases has been recognised by the Local Health authorities, and in several instances wards for the treatment of these cases have been erected.

(viii) *Tasmania.* Provisions regarding the prevention and notification of infectious diseases are contained in the Public Health Act 1903 and amending Acts.

4. *Vaccination.*—In the State of New South Wales there is no statutory provision for compulsory vaccination, though in all the other States of the Commonwealth such provision has been made. With the exception of Victoria, the Vaccination Acts are, however, not generally enforced. Jennerian vaccine for vaccination against small-pox is prepared at the Commonwealth serum laboratories in Melbourne. A considerable demand exists for the vaccine in the State of Victoria, where infantile vaccination is compulsory, but in the other States the normal requirements are small. During the years 1912, 1913, and 1914, the output of the vaccine in doses from the depot was respectively 65,000, 570,000, and 146,000. The number of doses issued in 1913 was, however, abnormal, and was due to the epidemic of small-pox which broke out in Sydney at the end of June, this being followed by large numbers of vaccinations in each State.

The following table shews, so far as particulars are available, the number of persons vaccinated in each State from 1915 to 1919 inclusive:—

NUMBER OF PERSONS VACCINATED IN EACH STATE, 1915 TO 1919.

Year.	N.S.W.(a)	Victoria.(b)	Q'land.	S. Aust.	W. Aust.	Tasmania.
1915 .. ..	4,080(d)	24,186	58(e)	854	(c)	(c)
1916 .. ..	2,618	20,916	(c)	531	(c)	(c)
1917 .. ..	4,663	19,759	(c)	251	(c)	(c)
1918 .. ..	(c)	15,306	(c)	36	(c)	(c)
1919 .. ..	324	14,031	(c)	8	(c)	(c)

(a) By officers of the Health Department and at public depots. (b) Children only, who were vaccinated under the Act, see (ii) below. (c) Returns not available. (d) Exclusive of the military. (e) At Health Department, Brisbane.

(i) *New South Wales.* Although there is no provision for compulsory vaccination in this State, public vaccinators have been appointed. No statistics are available as to the proportion of the population who have been vaccinated, but a report of the Principal Medical Officer of the Education Department states that out of 94,918 children medically examined during 1914, 33,109, or 35 per cent., had been vaccinated.

(ii) *Victoria.* Compulsory vaccination, subject to a "conscience" clause, is enforced throughout the State, under Part VII of the Health Act 1919. From the year 1873 up to 31st December, 1918, it is estimated that 72 per cent. of the children whose births were registered were vaccinated. Free lymph is provided. The number of children vaccinated in Victoria during 1919 was 14,031.

(iii) *Queensland.* Although compulsory vaccination is provided for in this State under Part VII. of the Health Act 1900-1917, its operation has not been proclaimed. Vaccination thus being purely voluntary, medical practitioners do not notify vaccinations. In the early part of 1912, the Queensland Government sent a medical expedition to the islands in Torres Straits. Over 1,200 natives were vaccinated with a view to reducing the risk of the introduction of small-pox from New Guinea. Information as to vaccinations in recent years is not available.

(iv) *South Australia.* The Vaccination Act 1882, which applies to South Australia and the Northern Territory, is administered by the vaccination officer of the State. Under this Act vaccination was compulsory, but in 1917 an Act to abolish compulsory vaccination was passed. The total number of vaccinations in 1919 was 8.

(v) *Western Australia.* In this State vaccination is compulsory under the Vaccination Act 1878, which, however, remains almost a dead letter, seeing that under the Health Act 1911, a "conscientious objection" clause was inserted, which is availed of by the majority of parents. The number of children vaccinated is very small. All district medical officers are public vaccinators, but they receive no fee for vaccinations.

(vi) *Tasmania.* All infants in Tasmania are nominally required, under the Vaccination Act 1898, to be vaccinated before the age of 12 months, unless either (a) a statutory declaration of conscientious objection is made, or (b) a medical certificate of unfitness is received. Information in regard to vaccinations in recent years is not available.

**5. Commonwealth Serum Laboratories.**—The establishment for the preparation of Jennerian Vaccine situated at Royal Park, near Melbourne (formerly known as the "Calf Lymph Depot"), has been enlarged and extended. The institution is now designated the "Commonwealth Serum Laboratories," and forms a branch of the Commonwealth Quarantine Service. The list of bacteriological preparations produced by the Laboratories has been extended so as to cover practically the whole range of biological products, and the institution is now a valuable national provision for the protection of public health and for the treatment of human and animal diseases. Price lists of the various products have been issued, and the institution is in full working order.

**6. Malaria and Bilharzia.**—The Defence and Repatriation Departments have jointly requested the Quarantine Service to undertake the control of returned soldiers suffering from malaria and bilharzia after their return to civil life. By arrangement with the various State Health Departments, a scheme is now in active operation for the control of the infectivity of men suffering from these diseases, and, as a result of the success obtained in Egypt in the treatment of bilharzia by tartar emetic, arrangements have now been made for cases of this disease to be taken into hospital and treated by this method until a cure is effected.

**7. Venereal Diseases.**—The Commonwealth, recognising the importance of effective control of venereal diseases, has provided a subsidy of £15,000 per annum to the various States to assist in the work of providing hospital treatment for, and administrative control of, venereal diseases, the supervision of this work in so far as it relates to the expenditure of this subsidy being controlled by the Quarantine Service.

## § 6. Tropical Diseases.

1. **Introduction.**—The remarkable development of parasitology in recent years and the increase in knowledge of the part played by parasites in human and animal diseases have shewn that the difficulties in the way of tropical colonisation, in so far as these arise from the prevalence of diseases characteristic of tropical countries, are largely removable by preventive and remedial measures. Malaria and other tropical diseases are coming more and more under control, and the improvements in hygiene which science has accomplished lend an entirely new aspect to the question of white settlement in countries formerly regarded as unsuitable for colonisation by European races. In Australia the most important aspect of this matter is at present in relation to such diseases as filariasis, malaria, and dengue fever, which, although practically unknown in the southern States, are of common occurrence in many of the tropical and sub-tropical parts of the Commonwealth.

2. **Queensland.**—(i) *Transmission of Disease by Mosquitoes.* The existence of filariasis in Queensland was first discovered about thirty-six years ago. The parasite of this disease (and probably of dengue fever also), is transmitted by *Culex fatigans*, the mosquito most prevalent in Queensland. The *Stegomyia fasciata*, conveyor of yellow fever, is another common domestic mosquito throughout Eastern Queensland during the summer, but so far has never been infected from abroad. Occasional limited outbreaks of malaria occur in the northern parts of the State; one at Kidston, in 1910, resulted in 24 deaths. The infection was traced to newcomers from New Guinea. Allusion to the efforts made to deal with the mosquito, under the Health Act of 1911, will be found in Official Year Book No. 12, p. 1063. By an Order in Council the Local Authorities are now responsible for the taking of measures for the destruction, and the prevention of breeding, of mosquitoes.

(ii) *Australian Hookworm Campaign.* The study and control of hookworm (*Ankylostoma duodenale* and *Necator americanus*) on a large scale in Australia and its dependencies began in Papua. The Commonwealth of Australia in 1916 invited the International Health Board of the Rockefeller Foundation to make a hookworm survey of Papua, and Dr. J. H. Waite, of the staff of the Board, was sent to conduct the investigation. Between 1st June and 1st September, 1917, 1,190 natives were examined, and 598, or 50.3 per cent., were found to be infected with hookworm. Among natives who had come recently from the villages the infection rate was 8.7 per cent., and among plantation labourers it was 63.1 per cent. This led to the conclusion that hookworm infection was being spread by the plantations, and that control measures were needed.

The work in Papua stimulated the interest in the situation in Queensland, where cases of hookworm disease had been reported in the medical literature since 1889. In 1918 a hookworm campaign was undertaken jointly by the State of Queensland and the International Health Board under the direction of Dr. Waite. The prevalence of hookworm disease and its effects in retarding growth and development were found to be greater than had been supposed. The mental retardation in heavily infected children was found to increase with age as follows:—

Age last birthday	..	10	..	11	..	12	..	13	..	14	..	15
Retardation in years	..	1.6	..	2.2	..	2.5	..	3.2	..	3.5	..	4.5

In the case of children, growth and development took place in a remarkable way as soon as a cure was effected. It was found that the disease was responsible for anæmia, dwarfing, retardation—physical and mental—and delay of sexual maturity.

In 1919 the direction of the work in Queensland was taken over by Dr. S. M. Lambert, and on 1st October, 1919, there was begun the Australian Hookworm Campaign, financed jointly by the Commonwealth of Australia, the State of Queensland, the International Health Board, and all other States and territories in which work would be done.

Between 1st June, 1917, and 31st March, 1920, examinations have been made in Queensland, under the several projects, as follows :—

People listed in special census	..	..	..	48,152
Examined for hookworm disease	..	..	..	42,441
Found to be infected with hookworms	..	..	..	6,416 (15.1 %)
Treated	..	..	..	6,873 (a)
Found to be cured, on re-examination	..	..	..	2,293

The number of cures will be greatly increased as the work of re-examining and treating is continued.

On 31st March, 1920, intensive work was in progress in districts with head-quarters at Ayr, Bowen, Mackay, and Nambour, in Queensland. Work had previously been done in the coastal region of Queensland from Cooktown to Townsville.

(iii) *Institute of Tropical Medicine, Townsville.* The Australian Institute of Tropical Medicine was founded at Townsville in January, 1910. During the first two years after its establishment the Institute was subsidised by the Commonwealth and Queensland State Governments, and was controlled by a committee consisting of representatives of both Governments and of the three Australian Universities—Sydney, Melbourne, and Adelaide. A director was appointed to organise the activities of the Institute, and after having accomplished a survey of Northern Australia and New Guinea, to advise as to the best centre where the work could be carried out most expeditiously. The staff consisted at first of the director and one laboratory assistant, but soon the necessity arose of appointing an entomologist. In 1913, after two years of preliminary work, the Commonwealth decided to increase the grant to the Institute considerably, and to take over the financial administration, which was vested in the Department of External Affairs, and later in the Home and Territories Department. The representatives of the three universities were retained as scientific advisers. The decision to increase the scope of the Institute was greatly influenced by a resolution passed by the Australasian Medical Congress in Sydney in 1911, recommending an organised inquiry into the various aspects likely to affect the establishment of a working white race in Australia. The increased subsidy made the appointment of a larger staff possible. The services of three qualified assistants were secured, and the Institute was housed in a ferro-concrete building, situated within the precincts of the Townsville Hospital. During the first two years a survey of tropical diseases existent in North Queensland was carried out; the incidence of human and animal parasites was investigated; and a number of problems which required elucidation were attacked. Amongst other suggestions a hookworm survey of Cairns and surrounding districts was recommended. The staff undertook research on "nodules in beef" and made an important discovery, which at first seemed destined to advance our knowledge, by proving that living larvæ could penetrate through the unbroken skin of the beast and could be found under special conditions on the surface. Research in the consequent fate of the larvæ and the search for an intermediary host, in which the larvæ could undergo further development, proved fruitless, although many possibilities, such as biting flies, aquatic insects, etc., were considered and excluded after patient research. It was shown that the parasites of wild animals, such as reptiles, birds, and small mammals resembled on the whole those found and described from other parts of the tropics, but no new general features of any importance could be discovered. Attention was drawn to the prevalence in the dry western parts of North Queensland of keratosis, a skin disease, characterised by a thickening of the horny layer of the skin, which develops into a chronic ulcer, and is apt to give rise to skin cancers. The occurrence of similar conditions in old people with atrophic skin in other parts of the world has been well known, but in Queensland mostly young people become affected, and the condition has been attributed to the effect of sunlight and dry heat on a skin lacking in normal pigment. In the Torres Strait islands, the occurrence and prevalence of such diseases as malaria, filariasis, elephantiasis, yaws and others has been noted. The increase in the staff made more extended field work possible, and in the course

(a) Including approximately 700 aborigines treated without previous examination, on account of the high infection rate among them.

of time different districts were visited in order to study the local prevalence of fever and disease. A survey of the whole of the coastal districts of British New Guinea was undertaken and yielded interesting results. The prevalence of the different types of malaria, of filariasis and of leprosy was mapped out, the existence of *agchylostomiasis* (caused by the American variety of the hookworm, which is widely distributed in the far East) was noted, and the occurrence of a number of hitherto undescribed diseases was observed. Amongst other diseases, a number of cases of *gangosa*, a condition that occurs not infrequently in some of the Pacific Islands, was encountered, and in the earliest stages of the disease a parasite was discovered which belongs to the genus *Blastomyces* and was named *Cryptococcus mutilans*, on account of the mutilation brought about by it. The etiology of chronic conjunctival affections, so prevalent in Western Queensland, was investigated, and it was proved that true trachoma existed in Western Queensland and that an acute conjunctivitis was the most important predisposing cause. The epidemiology and parasitology of the so-called "Mossman fever" were investigated, and it was found that the disease could be transmitted by direct inoculation of blood of patients in the early stage of the disease into monkeys. This observation indicated that this fever can be separated from other fevers which cannot be transmitted to these experimental animals. A survey of the tropical diseases amongst the Europeans and aborigines of the Northern Territory was undertaken, and with the exception of yaws and ulcerative granuloma, the comparative absence of any serious tropical disease was established. Malarial fever was almost entirely absent from amongst the aboriginal population and, except in a few localities, rarely attacked the European population. Unfortunately the outbreak of the war greatly curtailed the activities of the Institute. The energy of several of the workers was directed towards duties directly connected with the war, and the staff was obliged to assist as far as possible in relieving the tension caused by the scarcity of medical men throughout North Queensland and Australia in general. Prior to the outbreak of the war the staff of the Institute had embarked on an enquiry on a larger scale into the physiological changes of a white race living under such climatic conditions as prevail in the coastal districts of tropical Australia. Special attention was paid to the blood conditions of the white population, to the metabolism and to the influence of exercise, in order to gain an insight into the effects of manual labour upon the human organism under tropical conditions. At the same time the economic conditions as expressed in statistics were studied, and information collected in order to ascertain whether climatic conditions could be held responsible for any alterations of social conditions in North Queensland. An examination of the blood condition of school children, who had resided during the whole or most of their lives in Townsville, was carried out in order to obtain definite evidence whether any deterioration had taken place, in other words whether there existed amongst the North Queensland school children an anemia which could be directly attributed to climatic conditions. The result of the investigation proved that the blood condition, as far as formed elements and colouring matter were concerned, did not differ in any way from that considered as normal in children born and bred in a temperate climate. In one respect, however, namely, in the relative preponderance of a certain type of cells—neutrophile leucocytes with a comparatively small number of nuclei—a definite alteration could be ascertained; the significance of this discovery is not yet clear. A biochemical investigation into the metabolism of a white race living in the Tropics was undertaken by estimating the different excretory substances in the urine of a number of subjects who had lived for some time in the tropics, and only quantitative variations from the averages obtained in temperate climates have been found. An extensive inquiry into the body temperature of a number of subjects under varying conditions has been carried out, and it was shown that during complete rest the rectal temperature did not show any variations from the limits of those observed in Europe, but a considerable rise was produced by slight muscular work, which rise was maintained for some time after the work had ceased. Further experiments into the gaseous metabolism, the mechanism of sweating, the influence of extreme wet bulb temperatures, etc., have been, and are still being carried out, and will in time furnish definite figures and facts in connexion with the solution of the question of the adaptation of a European race to conditions obtaining in the coastal districts of North Queensland. Researches have been carried out into diseases prevalent in North Queensland such as malaria, sprue, filariasis and others. A malarial survey of Cairns and the Innisfail district has been accomplished, and in the former case definite proposals have been

submitted which when carried out faithfully would minimise the incidence of this infection. The staff of the Institute has also taken an active part in the hookworm campaign, undertaken by the Rockefeller Institute. A great deal of work has been done on the parasitic worms of men and beasts, and a great number of genera and species new to science have been described in various publications. General research has not been neglected, and a number of publications dealing with different subjects have been issued by the staff of the Institute. The entomological department has carried out a survey of mosquitoes and biting flies in Northern Australia and parts of British New Guinea. A special journey was made by the entomologist to the irrigation areas of New South Wales and Victoria, in order to ascertain the distribution of anophelines, to which genus the malaria-transmitting mosquito belongs. The purpose of this survey was to advise as to whether the settlement of malaria-infected returned soldiers in these areas would form a menace by setting up conditions for the spread of this disease. Prior to the outbreak of war definite arrangements had been made to hold annually a course in tropical medicine and parasitology, but war conditions made the course impossible. In connection with the Institute the Townsville Hospital has set aside two wards containing twenty beds, which are under the direct control of the staff of the Institute, and are reserved for patients suffering from tropical complaints. Since their establishment, a number of cases have been admitted, treated, and their complaints investigated; amongst others, a number of returned soldiers and sailors suffering from a severe form of malarial fever were sent to the Institute for observation and treatment. The results of the work of the Institute were published at first in the form of an annual report, but later in various scientific journals, and have been re-issued from time to time in the form of "Collected Papers," which contain a variety of scientific investigations. The equipment has lately been perfected by installing electric power and by providing additional accommodation for the breeding of small experimental animals, which are indispensable for the carrying out of scientific research. An extensive library on tropical medicine and other allied subjects has been collected since the inception of the Institute. The Institute extends hospitality to qualified workers who desire to investigate tropical disease or any problems in connection with Northern Australia, and room and equipment are provided.

3. **Northern Territory.**—While the Territory is conspicuously free from most of the diseases which cause such devastation in other tropical countries, a slight amount of malaria exists, and, although such cases as occur very rarely end fatally, the Administration is taking measures for the destruction of mosquito larvæ wherever settlements or permanent camps are formed, while precautions are being taken to prevent the collection of stagnant water in such localities.

4. **Other States.**—In Western Australia it is stated that malaria is not known to exist south of the 20th parallel, while filariasis has never been discovered. Mosquito-borne diseases are unknown in Victoria, South Australia, or Tasmania, and it is stated that filariasis is uncommon in New South Wales, the only cases known being imported ones. Kerosene and petroleum have been successfully used to destroy mosquitoes at various places in these States, both by municipalities and private individuals.

## § 7. Supervision of Infant Life.

Reference has been made in general terms in preceding issues of the Official Year Book to the activities of the States in this direction (see No. 12, p. 1067).

The number of infantile deaths and the rates of infantile mortality in each State are dealt with in Section V. of this volume (see page 166), and it will be convenient to shew here particulars for the year 1919, classified according to metropolitan and other districts in each State.



### INFANTILE DEATHS AND RATES OF INFANTILE MORTALITY FOR METROPOLITAN AND OTHER DISTRICTS, 1919.

Districts.		N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth. (b)
NUMBER OF INFANTILE DEATHS.								
Metropolitan	..	1,509	1,278	504	350	226	93	3,960
Other	..	1,977	869	840	358	198	252	4,494
RATE OF INFANTILE MORTALITY. (a)								
Metropolitan	..	79.33	78.22	93.89	66.19	66.33	68.89	77.99
Other	..	66.99	56.87	63.01	62.03	56.09	63.64	62.96

(a) *i.e.*, the number of deaths of infants under one year of age per thousand births.

(b) Exclusive of Territories.

It will be seen that in each State the rates of mortality are higher in the metropolitan than in other districts. The causes of "preventable" deaths may generally be attributed to milk poisoning, want of knowledge on the part of mothers, inability to nurse, and lack of the necessary medical facilities.

The figures in the foregoing table do not, however, completely represent the hygienic aspect of the question. For every infant death recorded there are probably three or four survivors who have sustained more or less serious permanent physical damage, quite apart from injuries at birth or congenital causes. It is stated that the far-reaching influence of the first year or two of life upon the whole subsequent physical welfare of the individual cannot be recognised too clearly, and it has been alleged that many serious defects and diseases occurring in later life may be credited to results ensuing from infantile disease. This is particularly the case in respect of digestive diseases.

In previous issues a short account has been given of the principal Acts which have been passed in each State dealing with the subject of child-life, and of the principal functions of the States' Children's Departments. (See Year Book No. 6, p. 1011).

### § 8. Medical Inspection of School Children.

1. **General.**—Reference to early efforts in the direction of securing an adequate physical record of school children will be found in Official Year Book No. 12, pages 1068–9, while Official Year Book No. 11, pages 1203 *et seq.* contains an account of the anthropometric records taken in connexion with military trainees.

2. **New South Wales.**—In this State, arrangements were made in May, 1907, for the medical inspection of school children in Sydney, and later in the year the work was extended to Newcastle. In 1911 the scheme was extended to the South Coast District and to a number of inland towns.

In 1913, the scheme of school medical inspection was re-organised so as to embrace every pupil in the State whose parents desired such medical inspection of their children.

Since the reorganization was effected up to the end of 1917 about 60 per cent. of the children examined were found to be suffering from physical defects needing treatment. It is stated that considerably less than half of these received treatment.

During the year 1917, 64,804 children were medically examined, exclusive of the number examined by the Travelling Hospital and Travelling Clinics. Of these children, 40,347, or 62.2 per cent. were found suffering from physical defects, and of these, 39,003 were treated, 23,288 being attended to by the Departmental officers, while 15,715 were treated by outside agencies, including hospitals, lodge doctors, private practitioners, and dentists. Particulars for the year 1918 are not at present available.

Full details of the system in operation will be found in Official Year Book No. 12 (pp. 1069, 1070).

3. **Victoria.**—Details regarding development of school medical inspection in this State are given in Official Year Book No. 12 (pp. 1070–1).

During the year ended 30th June, 1918, 6,613 children were examined, of whom 2,116 boys and 2,006 girls attended elementary and special schools, and 1,292 boys

and 1,199 girls attended high schools. Teachers examined numbered 716, all of whom were women.

The appointment of bush nurses has proved a boon in remote localities beyond convenient reach of medical aid.

4. **Queensland.**—During 1918, 18,200 individual medical examinations were made; the number of children reported as suffering from physical defects being 3,183. (See also Official Year Book No. 12, p. 1071.)

The number of pupils dentally inspected during 1918 was 14,004.

While adenoids and enlarged tonsils appear to be the principal defects throughout all the State schools, the children in the Northern and Western districts suffer largely from defective vision and trachoma. The work of the Ophthalmic Inspector is chiefly confined to these districts. The conclusion has been arrived at, as a result of the examinations, that such climatic conditions as dust, glare, heat, etc., so prevalent in the Western districts, which are often looked upon as the direct cause of serious blight or trachoma, are only predisposing causes, and can be safely ignored, provided elementary precautions are taken. The report of the Dental Inspectors, while still disclosing an appalling percentage of defects in the teeth of the children, shews, even in the short time in which the scheme has been in existence, a marked improvement in the schools that were examined twelve months previously.

5. **South Australia.**—(See also Official Year Book No. 12, p. 1071.)

During the year 1918, 4,044 children were examined, shewing a considerable percentage with defects of sight, hearing, nose and throat, sufficiently serious to interfere with their educational progress. In addition, the teeth of more than 3,000 children required attention, 803 having teeth in so bad a condition as to affect their general health. It was found that, while teeth were bad in all the schools examined, the other defects mentioned were exhibited in a considerably greater degree among the city children as compared with those living in country districts.

6. **Western Australia.**—During 1917, a medical officer for schools was appointed, and inspections were carried out in some of the schools in that and the following year. The number of children examined was 6,072 in 1917, and 4,804 in 1918. (See also Official Year Book No. 12, p. 1072.)

7. **Tasmania.**—The credit of being the first State in the Commonwealth to provide for the medical inspection of schools and school children in a systematic way rests with Tasmania, where, under the direction of the Chief Health Officer and the Director of Education, about 1,200 children attending schools in Hobart were inspected in 1906. (See also Official Year Book No. 12, p. 1072.)

Under the scheme in operation, practically all the primary school children of the State come under medical examination at least once in every two years. The examination in 1918 covered about 8,500 children. During 1916 school dental clinics were established in Hobart and Launceston. In that year 3,282 individual children were examined, 4,573 in 1917, and 4,449 in 1918.

## § 9. Nursing Activities.

By means of various nursing organizations throughout the Commonwealth, the benefits of professional advice and oversight of trained nurses are conveyed to the homes of workers and settlers, where skilled assistance would probably be otherwise unprocurable. While charitable aid has been to some extent responsible for the inauguration and extension of these movements, the trend of the various undertakings is in the direction of eliminating the element of charity, and, by raising subscriptions on a co-operative basis, making the scheme self-supporting. Details of organization and administration vary in different localities. Since the first bush nurse was settled at Beech Forest, Victoria, in 1911, the system has made satisfactory progress. Government aid, in the shape of free railway travelling for nurses, small monetary grants for professional advice in schools, etc., is given. A sum of £15,000 has been placed at the disposal of the Red Cross in each State, the income to be applied to bush nursing for returned soldiers and sailors and their families. By the nursing organizations, baby clinics, etc., a vast amount of useful information and advice concerning diet, hygiene, etc., is disseminated throughout the Commonwealth.

## SECTION XXXI.

## THE COMMONWEALTH SEAT OF GOVERNMENT.

1. **Introductory.**—In Year Books Nos. 4 and 5, information was given in this section as to the events leading to the selection of the Federal Capital Territory, and as to the necessary legislation and the progress of operations in connexion with the establishment of the capital city. The physiography of the Territory was dealt with *in extenso*, and topographical and contour maps accompanied the letterpress, as well as reproductions of the premiated designs for the laying out of the city. Considerations of space, however, preclude the repetition of this information. On the 12th March, 1913, the official ceremony to mark the initiation of operations in connexion with the establishment of the Seat of Government was carried out. At this ceremony the selection of "Canberra" as the name of the capital city was announced.

2. **Progress of Work.**—The design for the laying out of the capital city having been approved, the survey of the main axial lines has been completed, and an area of about 800 acres has been subdivided into sections. A certain amount of road formation has also been effected, but the work is now in abeyance. Considerable progress has been made with the nursery in connection with the afforestation scheme, and the horticultural work undertaken includes cultivating plants for the Continental Arboretum, red park plantation for Narrabundah, pink park plantation for Mount Ainslie, yellow park plantation for Mount Black, and white forest on Mugga-Mugga, for the extensive redwood, pinetum, cedar, and cork oak economic forests. In addition, the previous pine, wattle, and eucalypt plantations have been maintained, and the propagation of native trees in quantities for parkway embellishment undertaken. The power plant is supplying current to all the important points. Active progress with construction has been restricted for the present, and operations are practically being confined to maintenance work.

The following figures indicate the actual work done in road development since the roads were taken over:—

Forming and finishing	..	..	..	93½ miles
Gravelling and metalling	..	..	..	95½ miles
Clearing out, repairing culverts, etc.	..	..	..	162½ miles
General road repairs	..	..	..	178½ miles
Cutting water tables, drains, etc.	..	..	..	146½ miles

3. **Land in the Territory.**—As a considerable portion of the Commonwealth lands within the Territory is not required in connexion with the establishment of the city, such areas are being made available for leasing under certain conditions. A large number of leases has been disposed of under conditions requiring the extermination of rabbits, noxious animals and weeds. 18,000 sheep and 600 head of large stock are on agistment on land that will be required for departmental use at a later date. Reference has already been made on page 316 to the area of alienated, acquired and leased land within the Territory. All areas are classified into three classes of agricultural and three classes of grazing lands, and about 24,000 acres of these lands are at present leased to returned soldiers for periods varying from five to twenty-five years.

4. **Lands at Jervis Bay.**—Sovereign rights over a certain area comprising about 28 square miles of land and water at Jervis Bay, to be used as a Port in connexion with the Federal Capital, have been granted by the New South Wales Government, and accepted by the Commonwealth. The Royal Australian Naval College has been established in this area on a site known as Captain's Point.

5. **Railways.**—The line from Queanbeyan to Canberra, 4 miles 75 chains long, was opened for goods traffic on 25th May, 1914, and is being worked by the New South Wales Railways Commissioners. This line has been extended on to the Power House, and is at present only used for Departmental purposes; the total length is approximately 5½ miles. A trial survey of the Canberra-Jervis Bay line has been completed, and plans have been prepared sufficient to enable an approximate estimate of the cost of the line to be arrived at. The trial survey from Canberra to the boundary of the Federal Territory (towards Yass), a distance of 11 miles, has been completed, as well as the survey of the line by the New South Wales Government from Yass to the Territory boundary, 32 miles.

6. **Population and Live Stock.**—A complete count of the population was taken on 31st December, 1919, when a total of 1,605 was enumerated. It is estimated that 227 usual residents of the Territory were absent on the date in question. The live stock in the Territory, according to the latest returns, comprises:—Horses, 1,312; cattle, 9,039; sheep, 151,666; pigs, 103; and goats, 20.

7. **Educational Facilities.**—Arrangements have been made for the New South Wales Education Department to continue, for the time being, the administration of education in the Territory, the expenditure involved to be refunded annually by the Commonwealth to the State.

8. **Revenue and Expenditure.**—The expenditure in the Federal Territory subsequent to the passing of the "Seat of Government Acceptance Act 1909," and up to the 30th June, 1919, was for 1910–11 £20,319, 1911–12 £64,772, 1912–13 £135,270, 1913–14 £251,669, 1914–15 £212,506, 1915–16 £166,052, 1916–17 £105,971, 1917–18 £32,111, 1918–19 £931, making a total of £989,601. A detailed statement of the various items of expenditure since 1910 is given in the following table:—

**COMMONWEALTH SEAT OF GOVERNMENT.—ADDITIONS, NEW WORKS,  
EXPENDITURE TO 30th JUNE, 1919.**

Item.	Total Expenditure to 30th June, 1918.	Expenditure (or Credit), 1918-19.		Total Expenditure to 30th June, 1919.
		Dr.	Cr.	
	£	£	£	£
Afforestation .. .. .	15,848	..	..	15,848
Bridges, Roads, and Culverts .. .. .	82,759	..	16	82,743
Buildings, Repairs, etc. .. .. .	124,139	..	..	124,139
Brickworks .. .. .	45,802	..	5	45,797
Cement and Quarrying .. .. .	5,111	..	..	5,111
Electric Lighting (Mains and Plant only)	75,335	215	..	75,550
Fire Brigade .. .. .	1,268	..	1	1,267
Fencing .. .. .	3,637	..	..	3,637
General Expenditure (including Ad- ministrative Charges) .. .. .	152,032	1,116	..	153,148
Manufacturing Accounts .. .. .	Cr. 4,840	..	314	Cr. 5,154
Maintenance Accounts .. .. .	1,880	..	2	1,878
Motor Cars and Upkeep .. .. .	9,214	..	..	9,214
Medical Services .. .. .	11,842	..	..	11,842
New South Wales Government (Services Rendered) .. .. .	15,039	..	..	15,039
Plant, Instruments, etc. .. .. .	19,773	62	..	19,835
Railways .. .. .	65,906	..	..	65,906
Rabbit Destruction .. .. .	20,104	..	..	20,104
Stock (Material) .. .. .	43,985	..	433	43,552
Sewerage, Mains, etc. .. .. .	38,429	..	15	38,414
Water Supply .. .. .	254,545	324	..	254,869
Wire Netting Lessees .. .. .	6,862	..	..	6,862
<b>Total .. .. .</b>	<b>988,670</b>	<b>1,717</b>	<b>786</b>	<b>989,601</b>

The revenue of the Federal Territory for the year ended 30th June, 1919, was £35,838, including £404 from rates.

9. **Military College.**—In June, 1911, a Military College was opened at Duntroon for occupation by the cadets and staff. Particulars regarding the establishment of this College may be found in Year Book No. 4 (p. 1159). Previous reference has been made to it in the section of this book dealing with Defence (see page 1000).

10. **Naval College at Jervis Bay.**—See section of this book dealing with Defence, page 1006.

## SECTION XXXII.

## THE NORTHERN TERRITORY.

## § 1. Area and Population.

1. *Introductory.*—Upon the extension of New South Wales westward to the 129th meridian in 1827, the Northern Territory was comprised within that colony (see Year Book No. 4, page 16), and in 1863 was annexed by Royal Letters Patent to the province of South Australia. With the adjacent islands, it was transferred to the Commonwealth on 1st January, 1911.

2. *Area and Boundaries.*—The total area of this Territory is 523,620 square miles, or 335,116,800 acres. Its length from north to south is about 900 miles, while its breadth from east to west is 560 miles. Its eastern boundary, dividing it from Queensland, is the 138th meridian of east longitude; and its western boundary, separating it from Western Australia, the 129th meridian. Its southern boundary is the 26th parallel of south latitude, dividing it from South Australia. The northern boundary is the coast line of those parts of the Indian Ocean known as the Timor and Arafura Seas. Near the mouth of the Wentworth River, in the Gulf of Carpentaria, the coast line is met by the eastern boundary; at Cape Domett, near Cambridge Gulf, the western boundary cuts the northern coast line. The length of coast line is about 1,040 miles, or 503 square miles of area to one mile of coast line; an exact survey has, however, not yet been made.

3. *Population.*—(i) *Character.* In 1881 there were 670 Europeans in the Territory, and at the end of 1913 the number was estimated at 2,143. The Chinese population, at its maximum during the years of railway construction, 1887 and 1888, has gradually dwindled, the estimate for 1914 being 1,033. Japanese, first recorded in 1884, increased up to the year 1898, falling again after five years. The highest recorded population, excluding aborigines, was 7,533 in 1888; the estimate for 1919 was 4,706. The year 1911 was the first in which the population was dominated by the European race. A thirty years table of population, distinguishing races, will be found on page 1156 of the Commonwealth Official Year Book No. 5. Subsequent to the Census of 1911, a revision of the estimates, back to 1901, was made. The results are incorporated in the following table:—

POPULATION OF NORTHERN TERRITORY (EXCLUSIVE OF ABORIGINES),  
1901 TO 1919.

Year ended 31st December.	Male.	Female.	Total.	Year ended 31st December.	Male.	Female.	Total.
1901 ..	3,999	674	4,673	1911 ..	2,662	586	3,248
1902 ..	3,847	627	4,474	1912 ..	2,854	621	3,475
1903 ..	3,582	652	4,234	1913 ..	2,995	677	3,672
1904 ..	3,514	692	4,206	1914 ..	3,252	721	3,973
1905 ..	3,368	678	4,046	1915 ..	3,687	876	4,563
1906 ..	3,248	656	3,904	1916 ..	3,839	928	4,767
1907 ..	3,095	642	3,737	1917 ..	3,886	1,022	4,908
1908 ..	2,963	609	3,572	1918 ..	3,677	1,104	4,781
1909 ..	2,927	576	3,503	1919 ..	3,578	1,128	4,706
1910 ..	2,738	563	3,301				

The census population (3rd April, 1911) was 2,734 males, 576 females; total, 3,310. The estimate for 31st December, 1919, gives 3,578 males, 1,128 females, a total of 4,706.

(ii) *Movement of Population.* The following is a summary of movement of population in 1919 (excluding overland migration):—

## MOVEMENT OF POPULATION, NORTHERN TERRITORY, 1919.

Inwards .. ..	1,159	Outwards .. ..	1,255	Excess of immigration over emigration ..	—96
Births .. ..	106	Deaths .. ..	85	Excess of births over deaths ..	21
Increase .. ..	1,265	Decrease .. ..	1,340	Net result ..	—75

Note (—) signifies decrease.

The immigration and emigration of the Territory in five-year periods from 1881 to 1910, and for each of the years 1911 to 1919, are shewn in the following table:—

## MIGRATION, NORTHERN TERRITORY, 1881 TO 1919.

Year.	Immigration.	Emigration.	Year.	Immigration.	Emigration.	Year.	Immigration.	Emigration.
1881-5 ..	3,683	3,787	1906-10	2,559	3,125	1915 ..	1,904	1,278
1886-90 ..	9,208	7,250	1911 ..	412	431	1916 ..	1,389	1,137
1891-5 ..	1,958	2,353	1912 ..	846	585	1917 ..	1,501	1,366
1896-1900	2,538	2,259	1913 ..	1,033	824	1918 ..	1,259	1,417
1901-5 ..	2,211	2,932	1914 ..	1,102	778	1919 ..	1,159	1,255

(iii) *The Aborigines.* An account of the Australian aborigines, by Dr. W. Ramsay Smith, was given in Year Book No. 3 (pp. 158-176). The interior of the continent is the most thickly populated by the natives, but it is believed that they are rapidly dying out. In these regions, remote from contact with other races, the native has maintained his primitive simplicity, and furnishes an interesting subject of study to the anthropologist and ethnologist. At the census of 1911, full-blooded aborigines in the employ of whites and those who are living in a civilised or semi-civilised condition in the vicinity of European settlements, were enumerated—the males being 743, females 480; total, 1,223. Estimates of the total black population of the Territory vary from 20,000 to 50,000. The interests of the natives are looked after by a Protector of Aborigines, with head-quarters in Darwin. There is also an aboriginal station at Oenpelli.

## § 2. Legislation and Administration.

1. *Transfer to Commonwealth.*—(i) *The Northern Territory Acceptance Act.* A short historical sketch is given in Year Book No. 6, pp. 1113-4. On 1st January, 1911, the Territory was transferred by South Australia to the Commonwealth, upon terms previously agreed upon by the respective Cabinets, and ratified by the Commonwealth *Northern Territory Acceptance Act* (No. 20 of 1910). It is enacted that laws and courts of justice remain in operation, powers and functions of magistrates and officials remain vested; estates and interests continue upon the same terms; trade with Australian States is declared free. The Commonwealth assumes responsibility for the State loans in respect of the Territory, paying the interest yearly to the State, providing a sinking fund to pay off the loans at maturity, and paying off the deficit in respect of the Territory. It also purchases the Port Augusta to Oodnadatta railway, and agrees to complete the construction of the transcontinental railway from Port Darwin to Port Augusta.

(ii) *The South Australian Surrender Act.* The State Act approves and ratifies the agreement surrendering the Territory.

(iii) *The Northern Territory (Administration) Act 1910.* The Act provides for Government authorising the appointment of an Administrator and officials. South Australian laws are declared to continue in force as laws of the Territory, and certain Commonwealth Acts to apply. Power is given to the Governor-General to make Ordinances having the force of law.

(iv) *Administration.* A Resident Administrator, vested with supreme authority in internal affairs, was appointed in the Department of the Minister for External Affairs in February, 1912. Many other important administrative offices have also been filled.

(v) *Legislation.* The main provisions of the Ordinances passed are as follows:—The powers and duties of the Administrator vested in the appointee, include custody of the public seal, appointment and suspension of officials, and execution of leases of Crown lands. A Supreme Court with original and appellate jurisdiction is instituted, the method of appointment of the Judge is prescribed, and provision is made for trial by jury, and for the registration and summoning of jurors. A Sheriff, a Registrar-General, and a Health Officer are provided for, also the registration of births, marriages and deaths, and of deeds and documents. Custody and control of aborigines, with extensive powers of supervision, are vested in the Chief Protector. Provision is made for the control of fisheries. Birds protected during the whole or part of the year are scheduled. Crown lands are classified, and their mode of acquisition, entry and holding defined. The prevention and eradication of diseases in plants have been provided for. Under the Stock Diseases Ordinance the Chief Inspector of Stock has wide powers in regard to the movements of stock, prevention and control of diseases, etc. Shop assistants are to have a weekly half-holiday, and the establishments must be closed at a certain time. A town council has been constituted for Darwin, and provision made for assessments, rates, etc. Mining is encouraged by the provision of rewards for the invention of new processes, and the discovery of valuable deposits and of new mineral fields; subsidisation of the industry and the issue of prospecting licenses are also provided for. Licenses to search for mineral oil, and leases for working, are available. Provision has been made for the granting of leases for oyster culture. A Board is constituted for the purpose of making advances to settlers who intend to improve and stock their holdings, to purchase farm implements, plant, etc., or to pay off mortgages, the rate of interest and terms of repayment being set out. Advances in aid of the erection of workmen's dwellings have also been provided for. A Council of Advice has been appointed, consisting of a chairman and seven members—four being non-official—the object of the Council being to advise the Minister on matters affecting the welfare of the Territory. Reference to the Liquor Ordinance will be found hereunder.

(vi) *Liquor Traffic.* By the Liquor Ordinances of 1915–17–18, the Commonwealth Government assumed the control of the importation, manufacture, and sale of liquor in the Territory. There is a liquor store at Darwin and three hotels, and a hotel at Pine Creek. The Department directs its energies to the minimising of excessive drinking and the prevention of illicit trading in intoxicants.

(vii) *Schedule of Ordinances.* A schedule of the ordinances promulgated up to the end of 1919 is given hereunder:—

- 1911.—1, Northern Territory Government; 2, Council of Advice; 3, Sheriff; 4, Tin Dredging; 5, Marine; 6, Registration of Births, Marriages, and Deaths; 7, Interpretation; 8, Stamp Duties Abolition; 9, Supreme Court; 10, Registration; 11, District Council Assessment; 12, Registration; 13, Fisheries; 14, Lands Acquisition; 15, Interpretation; 16, Aborigines.
- 1912.—1, Native Birds Protection; 2, District Council Assessment; 3, Crown Lands; 4, Supreme Court; 5, Health; 6, Thorngate Estate; 7, Jury; 8, Crown Lands; 9, Early Closing.
- 1913.—1, Mineral Oil; 2, Birds Protection; 3, Registration of Births; 4, Encouragement of Mining; 5, Advances to Settlers; 6, Public Service; 7, Crown Lands; 8, Marriage Validating.
- 1914.—1, Brands; 2, Crown Lands.
- 1915.—1, Licensing; 2, Birds Protection; 3, Roads; 4, District Council; 5, Health; 6, District Council Amendment; 7, Darwin Town Council; 8, Liquor.
- 1916.—1, Liquor Amendment; 2, Eradication of Noxious Weeds.

- 1917.—1, Crown Lands Amendment; 2, Darwin Town Council Amendment; 3, Marriage; 4, Appointment of Acting Administrator; 5, Education; 6, Crown Lands Amendment; 7, Prevention and Eradication of Diseases in Plants; 8, Liquor Amendment; 9, Stamp; 10, Darwin Pound; 11, Crown Lands Amendment.
- 1918.—1, Supreme Court Amendment; 2, Crown Lands Amendment; 3, Darwin Town Council Amendment; 4, Darwin Pound Amendment; 5, Plant Diseases; 6, Liquor Amendment; 7, Oyster Culture Leases; 8, Liquor Amendment; 9, Aborigines; 10, Stock Diseases; 11, Liquor Amendment; 12, Supreme Court Amendment; 13, Real Property; 14, Crown Lands Amendment; 15, Closing of Roads.
- 1919.—1, Interpretation (Amendment of No. 2, 1911); 2, Bush Fires; 3, Jury Amendment; 4, Bank Holidays; 5, Workmen's Dwellings; 6, Supreme Court Amendment; 7, Jury Amendment (No. 2); 8, Council of Advice Amendment; 9, Justices' Appeals; 10, Deputy Administrator; 11, Deputy Administrator, No. 2; 12, Justices' Appeals, No. 2; 13, Supreme Court, No. 2.

### § 3. Physiography.

1. **Tropical Nature of the Country.**—The Territory is within the torrid zone, with the exception of a strip  $2\frac{1}{2}$  degrees wide, which lies south of the Tropic of Capricorn.

2. **Contour and Physical Characteristics.**—The low flat coast line seldom reaches a height of 100 feet. Sandy beaches and mud flats, thickly fringed with mangroves, prevail. Sandstone, marl, and ironstone form the occasional cliffy headlands. The sea frontage of more than 1,000 miles is indented by bays and inlets and intersected by numerous rivers, many of which are navigable for considerable distances from their estuaries.

The principal features of the coast line are enumerated in Year Book No. 1, p. 66; the rivers in Year Book No. 2, p. 76; the mountains in Year Book No. 3, p. 67; the lakes in Year Book No. 4, p. 77; the islands in Year Book No. 5, pp. 71, 72, and the mineral springs in Year Book No. 6, p. 65.

Inland, the country generally is destitute of conspicuous landmarks. From the coast there is a general rise southwards to the vicinity of the 17th or 18th parallel of south latitude, where the higher lands form the watershed between the rivers that flow northwards to the sea, and those that form the scanty supply of the interior systems. Towards the centre of the continent, the land over a wide area is of considerable elevation, and there are several mountain ranges, generally with an east and west trend.

### § 4. Climate, Fauna and Flora.

1. **The Seasons.**—There are two main climatic divisions—the wet season, November to April, and the dry season, May to October, with uniform and regular changes of weather. Nearly the whole of the rainfall occurs in the summer months. Fuller particulars will be found in Year Book No. 6, p. 1116.

2. **Fauna.**—The ordinary types of native Australian fauna inhabit the territory. As elsewhere on the continent, the higher *Theria* are rare, but marsupials, birds, crocodiles, fresh-water tortoises, snakes (mostly non-venomous), and frogs abound. There are many varieties of fresh-water fish and littoral mollusca. Butterflies and beetles are strongly represented. The white ant is a pest, anthills in the Territory sometimes attaining great dimensions. Mosquitoes and sandflies are very troublesome, particularly in the wet season. Native fauna are in some cases protected. The domesticated animals have been introduced, and buffalo also exist in large herds.

3. **Flora.**—The vegetation is North Australian in type, but a number of the forms belong to the Malayan and Oceanic regions. The timber trees are not of great commercial value, but in the coastal regions tropical vegetation grows luxuriantly to the water's edge. On the wide expanses of plain country of the interior, there is little vegetation. The principal orders represented in the Territory are:—*Euphorbiaceæ*, *Compositæ*, *Convolvulaceæ*, *Rubiaceæ*, *Goodeniaceæ*, *Leguminosæ*, *Urticæ*.

Fuller particulars regarding fauna and flora are given in Year Book No. 6, pp. 1116-7.



### § 5. Production.

1. **Agriculture.**—Up to the present, agriculture has made little progress in the Territory, although it has been demonstrated that rice may be grown as an ordinary crop suitable for chaff as fodder, and in certain situations for milling; while maize, cowpeas, sorghum, amercane, millets of various kinds, and sugar-cane can also be cultivated. The drawbacks to success are lack of suitable labour, and deficient means of communication. Purely tropical products such as cotton, tea, coffee, sisal hemp, and cigar tobacco can also flourish, but their profitable cultivation depends on a supply of cheap labour, which is unobtainable. The Commonwealth Government has established demonstration farms at Daly River and Batchelor. During the dry season considerable trouble is caused by the depredations of white ants in the Daly Country, particularly in connexion with such crops as sugar cane and peanuts.

2. **Stock.**—(i) The spacious, well-grassed “runs” of the Territory are, with adequate water supply, suitable for horse and cattle breeding. Large numbers of cattle are overlanded to neighbouring States, which also take considerable quantities of horse hides. The Government has a small experimental sheep station at Mataranka on the head waters of the Roper River, the flock consisting of about 3,000 merino sheep. The total area fenced in with dingo and marsupial proof fencing is about 8,000 acres, including two small home paddocks. The fencing of a large horse and cattle paddock comprising about 45 square miles has also been completed. The total area of the Mataranka Station is about 770 square miles. The estimated number of stock in the Territory on 31st December, 1918, is given in the appended statement:—

#### LIVE STOCK, NORTHERN TERRITORY, 31st DECEMBER, 1918.

Horses.		Cattle.		Sheep.		Pigs.
31,436	..	570,039	..	58,620	..	1,200

In 1917 there were 8,686 goats, 314 camels, 29 mules, and 316 donkeys.

The dairying industry has not been developed, although it has been shewn that it is possible to make butter of good quality. A sample from Oenpelli has been very favourably reported on by the Chief Dairy Produce Expert. Fresh milk is procurable in Darwin from the Government dairy, which was leased to a private supplier in 1914. It is found that the rank indigenous grasses in some localities are greatly improved by constant stocking, and become largely replaced by shorter and sweeter varieties.

Herds of wild buffaloes are found on the mainland and on Melville Island, and are descendants of swamp buffaloes, introduced in the early part of last century.

(ii) *Meat Preserving Works.* Extensive Meat Preserving works capable of dealing with all the stock available for export have been established in the vicinity of Darwin. Although the works are privately owned, the Government has arranged with the proprietors to treat stock from other station holders. In his Report for 1918, however, the Administrator states that owing to cost of treatment private owners find it more advantageous to overland their cattle to Queensland or even to South Australia. The works commenced operations in April, 1917.

3. **Mining.**—Small quantities of the precious and commercial metals are mined. The discovery of gold and tin in various localities, and the measure of success that has attended their working, indicate scope for development. An important discovery of tin at Maranboy Springs was made in 1913, and this field is now the most productive in the Territory. It is stated that better results could be obtained by amalgamating the smaller properties, and working on a larger scale, with more modern methods.

The copper mining industry was hampered in 1918–19 by the decline in the price of the metal.

Wolfram is produced at the Wauchope and Hatches Creek fields in the Davenport Ranges and at Tenberrie.

Two salt areas have been taken up, and are being worked at Darwin and the Foelshe River respectively.

(i) *Mineral Production.* Both alluvial and reef gold are found, and there are several batteries and cyanide plants. Other minerals are also raised. The following table shows the total mineral production for the last five years :—

**VALUE OF MINERAL PRODUCTION, NORTHERN TERRITORY, 1914 TO 1918-19.**

Year.	Gold.	Tin Ore.	Wolfram.	Silver-Lead Ore.	Copper Ore.	Total Value.
	£	£	£	£	£	£
1914 .. ..	10,757	15,200	4,025	545	4,860	35,807*
1915 .. ..	4,182	13,245	5,278	1,073	10,710	34,498†
1916 .. ..	2,554	27,120	20,269	275	5,517	55,780‡
1917-18 .. ..	2,229	41,432	38,788	200	9,648	92,730§
1918-19 .. ..	3,521	30,021	34,805	132	2,349	70,984¶

\* Includes mica valued at £420. † Molybdenite, £10. ‡ Molybdenite, £45.  
§ Scheelite, £350; molybdenite, £58; bismuth, £25. ¶ Mica, £150; molybdenite, £6.

The falling off in 1918-19 is more apparent than real, as large parcels of dressed and bagged wolfram ore from Wolfram Creek, Hatches Creek, and Wauchope Creek fields were unsold at the end of the year.

(ii) *Employment of Miners, 1914 to 1918-19.* The following table shows the average number employed in mining during the last five years, distinguishing Chinese :—

**MINERS, NORTHERN TERRITORY, 1914 TO 1918-19.**

Year.	Europeans.	Chinese.	Total.
1914 .. ..	136	462	598
1915-16 .. ..	137	371	508
1916-17 .. ..	141	350	491
1917-18 .. ..	194	282	544*
1918-19 .. ..	194	260	470†

\* Including 68 aboriginals and other coloured men. † Including 16 aboriginals.

(iii) *Mining Accidents, 1911 to 1918-19.* In 1911 five mining accidents were recorded, four resulting in death. There were no serious accidents in 1910, 1912, and 1913, and only one, resulting in death, in 1914, and one in each of the years 1915, 1916, and 1917-18. No mining accidents were recorded in 1918-19. During the nine years preceding (1901-1909), nine fatal accidents and seven cases of serious injury were recorded. The majority of the victims were Chinese.

4. *Pearl Fishing.*—In 1884 mother-of-pearl shell was discovered in the harbour of Port Darwin. Difficulty in working, principally through heavy tides and muddy water, retarded the development of the industry for many years. Latterly, however, the opening up of new patches led to a revival, but the outbreak of war has given the industry a setback for a time. The latest figures available refer to the year ended 30th June, 1919, when 16 boats were engaged, and 83 men were employed, all of whom, with the exception of 3 Europeans, were Japanese and Koepang natives. Forty tons of pearl shell were obtained. About 39 tons of bêche-de-mer were also obtained.

## § 6. Commerce and Shipping.

1. *Trade.*—The following table shows the total trade of the Territory for 10 years from 1901 to 1910 :—

**VALUE OF TOTAL IMPORTS AND EXPORTS, NORTHERN TERRITORY, 1901 TO 1910.**

Items.	1901.	1902.	1903.	1904.	1905.	1906.	1907.	1908.	1909.	1910.
	£	£	£	£	£	£	£	£	£	£
Imports ..	108,886	107,217	125,244	113,461	86,878	74,659	78,996	68,905	57,994	52,398
Exports ..	302,931	191,558	178,266	235,650	216,279	254,222	345,721	241,028	278,555	269,063
Total Trade	411,817	298,775	303,510	349,111	303,157	328,881	424,717	309,933	336,549	321,461

No record is now kept of the direction of trade between the Commonwealth States and Territories. It is, therefore, impossible to give the total imports and exports of the Northern Territory for years later than 1910. The value of the direct oversea trade for 1901, and for each of the years 1914 to 1918-19, is given hereunder:—

**VALUE OF DIRECT OVERSEA TRADE, NORTHERN TERRITORY,  
1901 AND 1914 TO 1918-19.**

Items.	1901.	1914-15.	1915-16.	1916-17.	1917-18.	1918-19.
	£	£	£	£	£	£
Imports .. ..	37,539	83,708	74,424	82,775	32,287	25,140
Exports .. ..	29,191	13,319	20,953	13,251	268,419	377,258
Total .. ..	66,730	97,027	95,377	96,026	300,706	402,398

The principal items of oversea export in 1918-19 were beef, preserved by cold process, £262,379; tinned meats, £64,302; potted meats, £6,133; tallow, £35,152; and pearl shell, £7,000. The large increase as compared with previous years is due to the operations of the meat preserving works at Darwin.

2. **Shipping.**—The Territory is dependent for its shipping facilities chiefly on the services of the “Montoro” and “Mataram,” trading between Sydney and Singapore. The vessels of the Eastern and Australian Co. make occasional visits, while a quarterly service between Fremantle and Darwin is carried out by the “Bambra,” belonging to the West Australian State Shipping Service.

**SHIPPING, NORTHERN TERRITORY, 1881 TO 1918-19.**

Period.	Arrivals.		Departures.	
	No. of Vessels.	Tonnage.	No. of Vessels.	Tonnage.
1881-1885 (Annual Average) ..	72	71,814	72	71,692
1886-1890 .. ..	95	94,452	103	94,724
1891-1895 .. ..	75	81,128	73	81,090
1896-1900 .. ..	71	88,284	70	88,244
1901-1905 .. ..	63	93,751	63	91,556
1906-1910 .. ..	87	128,502	88	128,408
1914-15 .. ..	82	173,943	81	172,482
1915-16 .. ..	91	208,441	91	208,441
1916-17 .. ..	70	161,636	68	161,313
1917-18 .. ..	51	115,288	50	107,497
1918-19 .. ..	43	88,928	42	88,806

### § 7. Internal Communication.

1. **Railways.**—Under the agreement ratified by the Act, the Commonwealth is to construct the Northern Territory portion of the transcontinental railway line (connecting Adelaide and Darwin, *via* Port Augusta).

The Northern line from Adelaide terminates at Oodnadatta, about 100 miles south of the southern boundary of the Territory. The only line at present in the Territory is one from Darwin to Katherine, a length of 200 miles, of 3 ft. 6 in. gauge. The line to connect Katherine River with Oodnadatta (about 1,010 miles) has been surveyed, the greater part of the survey being exploratory in character. It is stated that this transcontinental railway would bring London within seventeen days of Adelaide. The completion of the gap would also permit of the development of the broad belts of pastoral and mineral country towards the centre of Australia. The Commonwealth also acquired on 1st January, 1911, the property in the line from Port Augusta to Oodnadatta (478 miles).

## 2. Posts.—The principal mail services are as follows :—

(i) *Marine.* Postal communication is maintained between Sydney, Melbourne and Adelaide, *via* North Queensland ports. There is also a service four times a year between Darwin and Boroloola by Government auxiliary vessel, calling at Roper River (this is not largely availed of owing to the more frequent inland service); and a service every sixty days between Darwin and Wyndham, on the estuary of Ord River, in the north-east of Western Australia, by the Western Australian Government steamers.

(ii) *Inland.* Posts are also despatched into the interior of the Continent. One route is from the Katherine Telegraph Station southwards as far as Alice Springs; others are from Katherine to Boroloola, from Camooweal to Boroloola, from Katherine to Victoria River and Wave Hill, from Oodnadatta to Alice Springs, from Alice Springs to Arltunga, from Horseshoe Bend to Hermannsburg, and from Katherine to Marranboy.

3. *Telegraphs.*—The transcontinental telegraph line, covering a length of 2,230 miles, was completed on the 22nd August, 1872, at a cost of nearly half-a-million sterling. The line runs in a northerly direction from Adelaide to Darwin, whence telegraphic communication is provided with Asia and Europe, *via* Banjoewangie (Java), Singapore, and Madras.

Between Darwin and Banjoewangie the submarine cable is duplicated.

## § 8. Finance.

1. *Revenue and Expenditure, 1918-19.*—In the Commonwealth finance statement for 1918-19, separate accounts are given for Northern Territory administration. The following shews the receipts and expenditure for the financial year named :—

## REVENUE AND EXPENDITURE, NORTHERN TERRITORY, 1918-19.

REVENUE.	£	EXPENDITURE.	£
Customs and Excise ..	7,210	Salaries and Contingencies, Ordinary .. ..	182,579
Postal, Telegraph, and Telephone .. ..	10,333	Melbourne Administrative Services, &c. .. ..	3,004
Darwin-Katherine River Railway .. ..	45,725	Buildings, Roads, Bridges, Farms, &c. .. ..	20,971
Territorial .. ..	18,842	Interest and Sinking Fund, Northern Territory ..	161,559
Land and Income Tax ..	14,187	Interest and Sinking Fund, Port Augusta Railway ..	85,748
Miscellaneous .. ..	28,648	Interest on Cost of South Australian Rolling-stock ..	5,720
Quarantine .. ..	27	Loss on working Port Augusta Railway, including Interest Darwin to Katherine River Railway Construction ..	25,792
Lighthouses and Light Dues ..	880	Miscellaneous .. ..	7,568
Stamp Duties .. ..	762		4,360
Capital Expenditure Repayment Account .. ..	12,927		
Deficiency on year's transactions .. ..	357,760		
Total .. ..	497,301	Total .. ..	497,301

The sum of £28,648 set down as miscellaneous receipts includes an amount of £17,334, which had accumulated in the Trust Fund to the credit of the Hotels Insurance Account of the Northern Territory, and was transferred to revenue. Capital Expenditure Repayment £12,927, represents payment made by the North Australia Meat Company on account of the construction of Vestey's Siding.

2. **Northern Territory Debt.**—The items making up the total debt of the Territory as at 30th June, 1919, are as follows :—

	£	£
Debt at date of transfer to the Commonwealth, 1st January, 1911 .. ..	.. ..	3,931,086
Redeemed under Commonwealth Loan Acts .. ..	1,037,353 }	1,497,978
Redeemed from Consolidated Revenue .. ..	460,625 }	
Balance, 30th June, 1919 .. ..	.. ..	2,433,108

To this balance must be added the £1,037,353 shown above as having been raised under the General Loan Acts of the Commonwealth. The total amount (included in the debt of the Commonwealth) incurred on account of the Northern Territory on the 30th June, 1919, was, therefore, £3,470,461. At the same date, the credit balance of the Sinking Fund, established under the *Northern Territory Acceptance Act* 1910, was £75,970.

## § 9. Land Tenure.

1. **Present Policy.**—A description of the system of land settlement in force in the Territory will be found in the chapter "Land Tenure and Settlement," see pages 283 and 284 *supra*. Prior to the transfer of the Territory to the Commonwealth on 1st January, 1911, the sale and occupation of lands were regulated by the South Australian Legislature in Statutes applying particularly to the Territory. Under the Commonwealth Government a complete reorganisation was effected, and the system adopted was embodied in the Crown Lands Ordinances of 1912 to 1918. A leasehold system only is provided for, and no further alienation of Crown lands is permitted, except in pursuance of existing agreements. The land is classified and appraised, and leased in blocks, the maximum areas ranging from 300 square miles of first class pastoral, to 1,280 acres of first class agricultural land. The terms for pastoral leases are for Class 1, 21 years; Classes 2 and 3, 42 years; and for any miscellaneous lease, 21 years. All other leases are to be in perpetuity, making them almost equivalent to freeholds, but with re-appraisal of rent values every 14 years in the case of town lands, and every 21 years in the case of agricultural and pastoral lands. The conditions are of a very favourable nature, with low rents and elastic conditions of tenure. In order to provide for cases where allottees on inspection of their blocks have reasonable grounds for preferring another block, the Administrator is empowered to revoke leases, under certain conditions. Under the Advances to Settlers Ordinance 1913, provision was made for giving settlers financial assistance in the pioneering years. Repayment of loans can be extended over a period of 30 years. Loans granted during the year amounted to £695, of which £116 was repaid. Up to the 30th June, 1918, the total amount outstanding was £7,765. Owing to the high evaporation rate, the surface waters in the Territory dwindle rapidly during the dry season, and, except in favoured localities, sub-artesian supplies must be resorted to where obtainable. In order to encourage the provision of water supply, it is proposed, in granting leases, to allow minimum rentals in the case of lessees who make satisfactory provision by means of bores, wells, or dams.

The revenue from pastoral leases and permits for the year 1918-19 was about £12,000, and from grazing licences £1,600.

2. **Number of Holdings.**—The table on page 284 *supra* shews the total area under lease, license, and permit in 1901 and in each year from 1913 to 1918. At the end of 1918 there were in existence, under South Australian Acts, 224 pastoral leases covering 63,998,080 acres, and 54 pastoral permits covering 9,034,240 acres. Under the Crown Lands Ordinance of 1912, there were 86 grazing licences covering 16,465,230 acres, and 115 pastoral leases covering 24,703,360 acres.

## SECTION XXXIII.

## LABOUR AND INDUSTRIAL STATISTICS.

## § 1. Introductory.

1. **General.**—In Year Book No. 7 (pages 992–3), a résumé was given of the functions and scope of the Labour and Industrial Branch of the Commonwealth Bureau of Census and Statistics. Owing to considerations of space, this information is not repeated in the present issue of the Year Book.

## § 2. Fluctuations in Employment and Unemployment.

1. **General.**—In Australia, but few of the trade unions pay any form of unemployment benefit, and consequently accurate and complete records of unemployment are difficult to obtain. For that reason the investigation for past years was advisedly limited to a record of the numbers unemployed at the end of each year. The results are, therefore, subject to certain limitations, inasmuch as they do not take into account variations in employment and unemployment throughout the year due to seasonal activity and other causes.

For the above reasons it is not safe to conclude that the actual percentage returned as unemployed in past years by trade unions at the end of each year is equal to the average percentage unemployed during the year. Nevertheless, for the purpose of making comparisons and shewing tendencies over a period of years, the percentages returned as unemployed, though not exact, are the most satisfactory figures available, and the average percentages and index-numbers computed for the several States and groups of unions may be taken as denoting the true course of events with substantial accuracy.

It may be mentioned that, in order to overcome the difficulties alluded to in regard to seasonal fluctuations, returns as to numbers unemployed have been collected from trade unions for each quarter since the beginning of the year 1913.

2. **Number Unemployed in Various Industries, 1891 to 1919.**—The following table shews for each of the years specified :—

- (a) The number of unions for which returns as to unemployment are available.
- (b) The number of members of such unions.
- (c) The number of members unemployed, and
- (d) The percentage of members unemployed on the total number of members of those unions for which returns are available.

The information given in this table obviously does not furnish a complete register of unemployment. In the first place, with the exception of the year 1919 it relates only to the number unemployed at the end of the year (see preceding paragraph hereof), and, secondly, it does not cover more than a part of the industrial field. Attention should also be drawn to the fact that the value of the comparisons which can be made is, to some extent, vitiated by the fact that returns are not available for the same unions throughout. For most of the important industries, returns have been available for a considerable number of unions and members since 1912. It is not unlikely, however, that particulars of unemployment are, on the whole, more generally available for those trades in which liability to unemployment is above the average for skilled occupations. Thus the building and engineering industries are heavily represented in the returns, while such comparatively stable industries as railway services are hardly represented at all. On the other hand, unskilled casual labour cannot, in the nature of the case, be well represented in the returns, which relate mainly to skilled workmen.

Thus, for some reasons, the percentage given is likely to be greater, and for other reasons, less than the true average percentage unemployed throughout the country.

**UNEMPLOYMENT.—NUMBER OF UNIONS AND MEMBERS REPORTING AND  
NUMBER AND PERCENTAGE UNEMPLOYED, 1891 TO 1919 (4th QUARTER).**

Particulars.	Unions.	Membership.	Unemployed.	
			Number.	Percentage.
1891 .. .. .	25	6,445	599	9.3
1896 .. .. .	25	4,227	457	10.8
1901 .. .. .	39	8,710	574	6.6
1906 .. .. .	47	11,299	753	6.7
1907 .. .. .	51	13,179	757	5.7
1908 .. .. .	68	18,685	1,117	6.0
1909 .. .. .	84	21,122	1,223	5.8
1910 .. .. .	109	32,995	1,857	5.6
1911 .. .. .	160	67,961	3,171	4.7
1912 .. .. .	464	224,023	12,441	5.5
1913 .. .. .	465	251,207	13,430	5.3
1914 .. .. .	439	250,716	27,610	11.0
1915 .. .. .	465	273,149	18,489	6.8
1916 .. .. .	470	292,051	19,562	6.7
1917 .. .. .	459	296,937	21,989	7.4
1918 .. .. .	475	308,850	16,919	5.5
1919, 1st Quarter .. .. .	477	311,410	20,359	6.5
2nd    "    "    "    " .. .. .	462	303,468	25,768	8.5
3rd    "    "    "    " .. .. .	457	308,287	19,262	6.2
4th    "    "    "    " .. .. .	459	317,413	16,637	5.2

NOTE.—For years prior to 1910 the figures refer to the end of the year only; similar figures for each of the four quarters of the years since 1912 will be found in the Labour and Industrial Reports. The quarterly figures shew the number of persons who were out of work for three days or more during a specified week in each quarter; they do not include persons out of work through strikes or lockouts.

The figures shew that the percentage of unemployment in the fourth quarter of 1919 (5.2 per cent.) was lower than in the same period of any other year shewn in the table except 1911, which closed with a proportion of unemployment of 4.7 per cent.

**3. Unemployment in Different Industries, 1919.**—The following table shews the percentages unemployed in several of the fourteen industrial groups. It may be observed that for those industries in which employment is either unusually stable or, on the other hand, exceptionally casual, information as to unemployment cannot ordinarily be obtained from trade unions. Hence, certain industries such as railways, shipping, agricultural, pastoral, etc., and domestic, hotels, etc., are insufficiently represented in the returns. Particulars are not, therefore, shewn separately for these groups, such returns as are available being included in the last group, "Other and Miscellaneous."

**UNEMPLOYMENT IN DIFFERENT INDUSTRIES AT THE END OF YEAR 1919.**

Industrial Group.	Number Reporting.		Unemployed.	
	Unions.	Members.	Number.	Percentage.
I. Wood, Furniture, etc. ..	20	19,255	1,173	6.1
II. Engineering, Metal Works, etc. ..	61	40,464	2,250	5.6
III. Food, Drink, Tobacco, etc. ..	64	33,443	3,619	10.8
IV. Clothing, Hats, Boots, etc. ..	25	30,915	533	1.7
V. Books, Printing, etc. ..	28	11,577	151	1.3
VI. Other Manufacturing ..	75	29,434	1,126	3.8
VII. Building .. .. .	50	29,075	825	2.8
VIII. Mining, Quarrying, etc. ..	18	22,646	1,430	6.3
X. Other Land Transport ..	14	11,112	289	2.6
IX., XI., XII., XIII., and XIV., Other and Miscellaneous ..	104	89,492	5,241	5.9
 All Groups .. .. .	 459	 317,413	 16,637	 5.2

4. **Unemployment in each State, 1919.**—Any deductions which can be drawn from the data collected as to the relative degree of unemployment in the several States are subject to certain qualifications (in addition to those already stated on page 1061), inasmuch as the industries included in the trade union returns are not uniform for each State. In comparing the results for the individual States, it must therefore be borne in mind that, to some extent at least, comparisons are being drawn between different industries and not only between different States. Nevertheless, since the industrial occupations of the people vary considerably in the several States, all comparisons between the States based on comprehensive data as to unemployment must, to some extent, suffer from the defect indicated.

#### UNEMPLOYMENT IN DIFFERENT STATES AT THE END OF YEAR, 1919.

State.	Number Reporting.		Unemployed.	
	Unions.	Members.	Number.	Percentage.
New South Wales .. .. .	131	142,264	7,170	5.0
Victoria .. .. .	101	86,426	3,694	4.3
Queensland .. .. .	53	38,843	3,286	8.5
South Australia .. .. .	63	25,613	1,082	4.2
Western Australia .. .. .	69	18,094	1,185	6.5
Tasmania .. .. .	42	6,173	220	3.6
Commonwealth .. .. .	459	317,413	16,637	5.2

### § 3. Current Rates of Wage in Different Occupations and States.

1. **Minimum Rates of Wage.**—The collection of material respecting the current rates of wage payable in different callings and in occupations in various industries carried on in each State of the Commonwealth was first undertaken by the Commonwealth Bureau of Census and Statistics in the early part of the year 1913. The particulars acquired were obtained primarily from awards, determinations and agreements under Commonwealth and State Acts, and therefore shew the minimum rates prescribed. In cases where no award, determination, or agreement is in force, particulars are given, where possible, of the ruling union or predominant rate as furnished by employers or secretaries of Trade Unions.

An extensive tabular presentation of the minimum rates of wage for adult male and female workers in the main occupations in the capital city of each State will be found in the Labour Report, No. 10. Space will not permit of the inclusion of the detailed tables in this volume.

2. **Weighted Average Nominal Rate of Wage Payable to Adult Male Workers in each State, 31st December, 1919.**—The following table shews the weighted average nominal weekly rate of wage payable to adult male workers for a full week's work in each State and the Commonwealth. Taking the average for the whole Commonwealth as the base (=1,000), index-numbers for each State are also shewn. The number of occupations upon which these results are based amounts in the aggregate to no fewer than 3,948.

#### WEIGHTED AVERAGE NOMINAL WEEKLY RATE OF WAGE PAYABLE TO ADULT MALE WORKERS FOR A FULL WEEK'S WORK, AND WAGE INDEX-NUMBERS IN EACH STATE AND COMMONWEALTH, 31st DECEMBER, 1919.

Particulars.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
Number of Occupations included .. .. .	874	909	627	567	489	482	3,948
Weighted Average* Weekly Rate of Wage .. .. .	76s. 9d.	72s. 0d.	78s. 7d.	70s. 5d.	77s. 8d.	69s. 0d.	74s. 11d.*
Index-Numbers .. .. .	1,025	961	1,050	940	1,037	921	1,000*

\* Weighted average.



The results shew that the weighted average nominal weekly rate of wage was highest in Queensland, followed in the order named by Western Australia, New South Wales, Victoria, South Australia, and Tasmania.

3. **Weighted Average Nominal Weekly Rate of Wage Payable to Adult Male Workers in each Industrial Group, 31st December, 1919.**—The following table gives similar particulars in regard to the several industrial groups and to the weighted average for all groups combined. In computing the index-numbers the weighted average for all groups is taken as base (=1,000).

**WEIGHTED AVERAGE NOMINAL WEEKLY RATE OF WAGE PAYABLE TO ADULT MALE WORKERS FOR A FULL WEEK'S WORK, AND WAGE INDEX-NUMBERS IN EACH INDUSTRIAL GROUP, 31st DECEMBER, 1919.**

Industrial Group.	No. of Rates Included.	Weighted Average Weekly Wage (for Full Week's Work).	Index Numbers.
		<i>s. d.</i>	
I. Wood, Furniture, etc. .. ..	270	75 9	1,012
II. Engineering, Metal Works, etc. ..	636	77 6	1,034
III. Food, Drink, etc. .. ..	576	75 6	1,008
IV. Clothing, Boots, etc. .. ..	124	73 5	980
V. Books, Printing, etc. .. ..	205	80 9	1,078
VI. Other Manufacturing .. ..	875	75 4	1,006
VII. Building .. ..	190	79 8	1,063
VIII. Mining .. ..	161	88 4	1,179
IX. Rail and Tram Services .. ..	224	78 6	1,048
X. Other Land Transport .. ..	70	73 4	979
XI. Shipping, etc. .. ..	198	77 9†	1,038
XII. Pastoral, Agricultural, etc. ..	72	70 3‡	937
XIII. Domestic, Hotels, etc. .. ..	114	68 7§	915
XIV. Miscellaneous .. ..	233	71 3	951
All Groups .. ..	3,948	74 11	1,000*

\* Weighted average. † Including the value of victualling and accommodation where supplied. ‡ Including the value of board and lodging, where supplied, estimated at 20s. per week. § Including the value of board and lodging, where supplied, as follows :—In Sydney 11s. to 19s. (according to class of establishment); in Melbourne 14s.; in Brisbane 15s. and 17s.; in Adelaide 14s. (Restaurants) and 15s. (Hotels and Clubs); in Perth 22s.; and in Hobart 15s. per week.

From the above table it may be seen that the highest weighted average wage was that paid in Group VIII. (Mining), 88s. 4d. per week, or approximately 18 per cent. above the weighted average for all groups. The rates of wage range from 88s. 4d. per week down to 68s. 7d. per week, in Group XIII. (Hotels, etc.), which is 8.5 per cent. below the average of all groups.

4. **Weighted Average Nominal Rate of Wage Payable to Adult Female Workers in each State, 31st December, 1919.**—The following table shews the weighted average nominal weekly rate of wage payable to adult female workers for a full week's work in each State and the Commonwealth. Taking the average for the whole Commonwealth as the base (=1,000), index-numbers for each State are also shewn :—

**WEIGHTED AVERAGE NOMINAL WEEKLY RATE OF WAGE PAYABLE TO ADULT FEMALE WORKERS FOR A FULL WEEK'S WORK, AND WAGE INDEX-NUMBERS IN EACH STATE AND COMMONWEALTH, 31st DECEMBER, 1919.**

Particulars.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
Number of Occupations included .. ..	85	87	37	47	24	28	308
Weighted Average Weekly Rate of Wage .. ..	40s. 0d.	34s. 5d.	38s. 4d.	33s. 3d.	43s. 7d.	33s. 0d.	37s. 1d.*
Index-Numbers .. ..	1,080	929	1,035	897	1,176	890	1,000*

\* Weighted average.

It will be seen that the weighted average nominal weekly rate of wage for adult female workers was highest in Western Australia, followed in the order named by New South Wales, Queensland, Victoria, South Australia, and Tasmania.

5. **Weighted Average Nominal Weekly Rates of Wage Payable to Adult Female Workers in Industrial Groups, 31st December, 1919.**—The following table gives separate particulars regarding the weighted average nominal weekly rates of wage of females in the chief industrial groups in which they are employed, and also shows the weighted average for all groups combined. Index-numbers based on the average for the Commonwealth as the base (=1,000) are also given :—

**WEIGHTED AVERAGE NOMINAL WEEKLY RATES OF WAGE PAYABLE TO ADULT FEMALE WORKERS FOR A FULL WEEK'S WORK, AND WAGE INDEX-NUMBERS IN INDUSTRIAL GROUPS, 31st DECEMBER, 1919.**

Industrial Group.	No. of Rates Included.	Weighted Average Weekly Wage (for Full Week's Work).		Index-Numbers.
		s.	d.	
III. Food, Drink, etc. .. .. .	35	34	8	936
IV. Clothing, Boots, etc. .. .. .	114	37	4	1,006
I., II., V., VI., All Other Manufacturing combined .. .. .	84	36	9	991
XIII. Domestic, Hotels, etc. .. .. .	57	38	2*	1,028
XIV. Shop Assistants, Clerks, etc .. .. .	18	36	2	976
All Groups .. .. .	308	37	1	1,000†

\* See footnote § on preceding page.

† Weighted average.

6. **Relative Hours of Labour and Hourly Rates of Wage, 1914 to 1919.**—The rates of wage referred to in the preceding paragraphs of this section relate to the minimum rates payable for a full week's work. It should be observed, however, that the number of hours which constitutes a full week's work differs in many instances, not only as between various trades and occupations in each individual State, but also as between the same trades and occupations in the several States. In order to secure what may be for some purposes a more adequate standard of comparison, it is desirable to reduce the comparison to a common basis, viz., the rate of wage per hour. Particulars are given in the following table, classified according to States, for male and female occupations separately, at the end of each of the years 1914 to 1919. These particulars relate to (a) the weighted average nominal weekly wage, (b) the weighted average number of working hours constituting a full week's work, and (c) the weighted average hourly wage. It should be observed that the weighted average weekly wage relates to all industrial groups combined, and includes the value of board and lodging, where supplied, in land occupations, and the value of victualling in marine occupations†; whereas the number of working hours and the hourly wage relate to all industrial groups other than Groups XI. (Shipping), and XII. (Agricultural, Pastoral, etc.). Owing to the fact that many of the occupations included in these two groups are of a casual or seasonal nature, and that the hours of labour in these occupations are not generally regulated either by awards or determinations of industrial tribunals or otherwise, the necessary data for the computation of the average number of working hours are not available.

The general effect of reducing the rates of wage to a common basis (i.e., per hour) is to decrease the amount of the difference shewn when comparing the weekly wage in the several States.

**WEIGHTED AVERAGE NOMINAL WEEKLY AND HOURLY RATES OF WAGE  
PAYABLE TO ADULT WORKERS, AND WEEKLY HOURS OF LABOUR, 31st  
DECEMBER, 1914 TO 1919.**

Date.	Particulars.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	C'with.
<b>MALE WORKERS.</b>								
31st Dec., 1914	Weekly Wage*	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
	Working Hours†	56 2	54 7	53 5	54 5	62 10	52 8	55 7
	Hourly Wage†	49.35	48.66	48.64	48.59	48.18	48.62	48.87
		1/2	1/12	1/12	1/12	1/4‡	1/1	1/2
31st Dec., 1915	Weekly Wage*	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
	Working Hours†	57 7	55 3	54 4	54 8	63 4	53 2	56 6
	Hourly Wage†	49.28	48.50	48.56	48.50	48.12	48.56	48.77
		1/2‡	1/2	1/2	1/2	1/4‡	1/1‡	1/2‡
31st Dec., 1916	Weekly Wage*	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
	Working Hours†	61 11	58 10	60 4	59 0	65 2	57 0	60 8
	Hourly Wage†	48.51	48.22	48.27	48.14	48.11	48.55	48.33
		1/3‡	1/3	1/3‡	1/3	1/4‡	1/2	1/3‡
31st Dec., 1917	Weekly Wage*	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
	Working Hours†	64 5	63 0	65 3	63 1	68 11	59 7	64 2
	Hourly Wage†	48.41	48.14	47.19	47.82	48.10	48.48	48.10
		1/3‡	1/4	1/5	1/4	1/5‡	1/3	1/4‡
31st Dec., 1918	Weekly Wage*	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
	Working Hours†	65 11	65 6	69 6	65 6	70 4	61 2	66 5
	Hourly Wage†	48.16	47.98	46.90	47.47	47.69	48.39	47.88
		1/4‡	1/4‡	1/6	1/4‡	1/6	1/3‡	1/5
31st Dec., 1919	Weekly Wage*	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
	Working Hours†	76 9	72 0	78 7	70 5	77 8	69 0	74 11
	Hourly Wage†	47.77	47.36	46.19	47.58	47.60	47.89	47.41
		1/7‡	1/6‡	1/9	1/5‡	1/7‡	1/5‡	1/7‡

**FEMALE WORKERS.**

31st Dec., 1914	Weekly Wage	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
	Working Hours	26 10	27 9	27 1	24 1	37 4	25 10	27 5
	Hourly Wage	49.34	48.54	49.82	49.33	49.44	50.76	49.11
		-/6‡	-/6‡	-/6‡	-/5‡	-/9‡	-/6‡	-/6‡
31st Dec., 1915	Weekly Wage	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
	Working Hours	27 5	26 11	26 11	24 6	37 5	28 0	27 4
	Hourly Wage	49.45	48.46	49.84	49.35	49.86	50.14	49.12
		-/6‡	-/6‡	-/6‡	-/6‡	-/9‡	-/6‡	-/6‡
31st Dec., 1916	Weekly Wage	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
	Working Hours	28 7	28 5	27 3	24 10	38 10	28 3	28 5
	Hourly Wage	49.44	48.36	49.85	49.02	49.08	49.83	49.02
		-/7	-/7	-/6‡	-/6	-/9‡	-/6‡	-/7
31st Dec., 1917	Weekly Wage	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
	Working Hours	30 5	30 4	30 5	27 9	38 10	28 5	30 5
	Hourly Wage	48.98	48.32	48.99	48.73	48.78	49.83	48.71
		-/7‡	-/7‡	-/7‡	-/6‡	-/9‡	-/6‡	-/7‡
31st Dec., 1918	Weekly Wage	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
	Working Hours	31 10	31 3	32 10	29 5	38 10	28 9	31 9
	Hourly Wage	48.35	48.32	48.37	48.73	48.78	49.83	48.42
		-/8	-/7‡	-/8‡	-/7‡	-/9‡	-/7	-/7‡
31st Dec., 1919	Weekly Wage	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
	Working Hours	40 0	34 5	38 4	33 3	43 7	33 0	37 1
	Hourly Wage	47.53	47.63	46.76	47.67	48.12	49.28	47.54
		-/10	-/8‡	-/9‡	-/8‡	-/11	-/8	-/9‡

\* Weighted average weekly wage in all industrial groups combined. † Weighted average working hours per week, and computed hourly rates of wage for all industrial groups excepting Groups XI. (Shipping, etc.), and XII. (Agricultural, Pastoral, etc.). Working hours have not been generally regulated by industrial tribunals for occupations classified in industrial groups XI. and XII.

From the foregoing table it may be seen that there has been a diminution in each of the States in the number of working hours constituting a full week's work for male and female occupations. The effect of these changes on the hourly rate of wage as compared with the general increase in the weekly wage is readily seen from the comparative index-numbers given in the following table. In each instance (male and female occupations separately) the basis taken is the weighted average for the Commonwealth at the 30th April, 1914, as base (=1,000).

RELATIVE INDEX-NUMBERS FOR WEEKLY AND HOURLY WEIGHTED AVERAGE WAGE, 30th APRIL, 1914, 31st DECEMBER, 1914 TO 1919.

NOTE.—Weighted Average for the Commonwealth at 30th April, 1914, as base (=1,000).

Date.	Particulars.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	C'wlth.
MALE WORKERS.								
30th April, 1914	{ Weekly Wage ..	1,011	984	955	986	1,128	952	1,000
	{ Hourly Wage ..	998	980	963	991	1,170	933	1,000
31st Dec., 1914	{ Weekly Wage ..	1,019	990	969	988	1,140	956	1,008
	{ Hourly Wage ..	1,010	990	985	993	1,173	936	1,009
31st Dec., 1915	{ Weekly Wage ..	1,044	1,002	986	992	1,149	965	1,023
	{ Hourly Wage ..	1,039	1,006	1,008	1,001	1,182	946	1,030
31st Dec., 1916	{ Weekly Wage ..	1,123	1,067	1,095	1,071	1,182	1,034	1,100
	{ Hourly Wage ..	1,127	1,074	1,097	1,075	1,206	1,011	1,105
31st Dec., 1917	{ Weekly Wage ..	1,168	1,143	1,183	1,144	1,250	1,081	1,164
	{ Hourly Wage ..	1,162	1,138	1,209	1,145	1,252	1,079	1,164
31st Dec., 1918	{ Weekly Wage ..	1,196	1,189	1,261	1,188	1,276	1,110	1,205
	{ Hourly Wage ..	1,196	1,192	1,297	1,176	1,282	1,120	1,210
31st Dec., 1919	{ Weekly Wage ..	1,393	1,306	1,426	1,277	1,409	1,251	1,359
	{ Hourly Wage ..	1,405	1,322	1,512	1,262	1,408	1,259	1,378

FEMALE WORKERS.

30th April, 1914	{ Weekly Wage ..	984	1,006	989	885	1,373	950	1,000
	{ Hourly Wage ..	980	1,021	976	881	1,386	920	1,000
31st Dec., 1914	{ Weekly Wage ..	987	1,022	996	885	1,373	950	1,008
	{ Hourly Wage ..	983	1,035	983	881	1,364	920	1,009
31st Dec., 1915	{ Weekly Wage ..	1,007	990	990	901	1,376	1,031	1,005
	{ Hourly Wage ..	1,002	1,005	976	898	1,357	1,011	1,006
31st Dec., 1916	{ Weekly Wage ..	1,050	1,047	1,004	915	1,429	1,041	1,047
	{ Hourly Wage ..	1,044	1,063	991	916	1,431	1,027	1,048
31st Dec., 1917	{ Weekly Wage ..	1,119	1,116	1,120	1,020	1,430	1,045	1,121
	{ Hourly Wage ..	1,122	1,134	1,122	1,027	1,440	1,029	1,130
31st Dec., 1918	{ Weekly Wage ..	1,173	1,151	1,208	1,084	1,430	1,059	1,168
	{ Hourly Wage ..	1,191	1,169	1,226	1,092	1,426	1,044	1,185
31st Dec., 1919	{ Weekly Wage ..	1,474	1,268	1,412	1,225	1,605	1,215	1,365
	{ Hourly Wage ..	1,523	1,307	1,483	1,262	1,639	1,211	1,410

§ 4. Variations in Nominal and Effective Wages.

1. Variations in Wage Index-Numbers in Various Industries, 1901 to 1919.—The total number of different occupations for which particulars as to wages are available back to 1901 is 652. In 1913 the number of occupations was increased to 3,948. These wages relate generally to award rates, but in a few cases, more especially for the earlier years, when there were no award rates fixed, predominant or most frequent rates have been taken. The occupations have been distributed over the fourteen industrial groups

already specified, and index-numbers computed for each group for the whole Commonwealth. The wages refer generally to the capital town of each State, but in industries such as mining and agriculture, the rates in the more important centres have been taken.

The following table shows wage index-numbers for the whole Commonwealth in each of the fourteen industrial groups during the years specified. Rates of wage for females are not included. The index-numbers are "weighted" according to the number of persons engaged in different industrial groups in each State and the Commonwealth (see Report No. 10, page 75). In the tables of index-numbers given in this Section, the weighted average wage in 1911 for all States or industries, as the case may be, is taken as base (= 1,000). The result is that the index-numbers are comparable in all respects, that is to say, they shew not only the variations in wages from year to year in each State or industrial group, but they also furnish comparisons as to the relative wages in each State or industry, either in any particular year, or as between one year and another, and one State or industry and another.

**VARIATIONS IN NOMINAL WAGE INDEX-NUMBERS IN DIFFERENT INDUSTRIES  
IN THE COMMONWEALTH, 1901 TO 1919. (WEIGHTED AVERAGE FOR  
ALL GROUPS IN 1911 = 1,000.)**

Particulars.	Number of Occupations included.		1901.	1906.	1911.	1912.	1913.	1914.	1915.	1916.	1917.	1918.	1919.
	1901 to 1912.	1913 to 1919.											
I. Wood, Furniture, etc. . .	27	270	1,019	1,024	1,125	1,144	† 1,142	1,161	1,174	1,245	1,238	1,345	1,479
II. Engineering, Metal Works, etc. . .	101	636	945	957	1,064	1,104	1,113	1,127	1,174	1,211	1,268	1,340	1,512
III. Food, Drink, etc. . .	34	576	871	887	991	1,038	1,074	1,085	1,127	1,194	1,241	1,288	1,473
IV. Clothing, Hats, Boots, etc. . .	13	124	708	841	981	990	1,019	1,034	1,037	1,104	1,163	1,198	1,433
V. Books, Printing, etc. . .	25	205	996	1,002	1,149	1,188	1,234	1,246	1,259	1,328	1,376	1,446	1,576
VI. Other Manufacturing . .	102	875	907	936	1,013	1,037	1,076	1,093	1,125	1,203	1,245	1,289	1,470
VII. Building . .	67	190	1,050	1,070	1,213	1,245	1,270	1,276	1,285	1,359	1,413	1,449	1,554
VIII. Mining, Quarries, etc. . .	71	161	1,067	1,093	1,194	1,216	1,270	1,272	1,299	1,420	1,528	1,532	1,724
IX. Rail and Tram Services . .	68	224	1,021	1,024	1,113	1,164	1,165	1,165	1,187	1,236	1,286	1,345	1,532
X. Other Land Transport . .	9	70	795	795	910	993	996	1,026	1,041	1,128	1,210	1,237	1,431
XI. Shipping, etc. . .	74	198	751	778	871	942	953	972	1,026	1,153	1,194	1,257	1,518
XII. Agriculture, Pastoral, etc. . .	8	72	627	671	839	944	965	965	969	1,073	1,192	1,231	1,370
XIII. Domestic, Hotels, etc. . .	17	114	598	676	887	894	918	935	948	995	1,052	1,104	1,338
XIV. Miscellaneous . .	36	233	759	771	929	1,015	1,045	1,054	1,065	1,137	1,185	1,234	1,389
All Groups* . .	652	3,948	848	866	1,000	1,051	1,076	1,085	1,102	1,184	1,252	1,296	1,462

Note.—The figures in the above table are comparable both horizontally and vertically.

\* Weighted average: see graph on page 1071 hereof. † The decrease in this group is due to a reduction in the award rates in the furniture trade resulting from an appeal made by employers.

It may be seen that the index-numbers increased during the whole period under review from 848 in 1901 to 1,000 in 1911, 1,051 in 1912, 1,184 in 1916, 1,252 in 1917, 1,296 in 1918, and to 1,462 in 1919.

2. Variations in Wage Index-Numbers in Different States, 1901 to 1919.—The following table shews the progress in rates of wage for all industries in each State, the weighted average wage for the Commonwealth in 1911 being taken as the base (=1,000). These results are based generally upon rates of wage prevailing in the capital town of each State, but in certain industries, such as mining, rates are necessarily taken for places other than the capital towns.

VARIATIONS IN NOMINAL WAGE INDEX-NUMBERS IN DIFFERENT STATES,  
1901 TO 1919.

(WEIGHTED AVERAGE WAGE FOR COMMONWEALTH IN 1911=1,000.)

States.	Number of Occupations included.		1901.	1906.	1910.	1911.	1912.	1913.	1914.	1915.	1916.	1917.	1918.	1919.
	1901 to 1912.	1913 to 1919.												
New South Wales	158	874	858	886	968	1,003	1,058	1,088	1,096	1,124	1,208	1,257	1,286	1,498
Victoria ..	150	909	796	807	924	985	1,038	1,058	1,065	1,078	1,148	1,229	1,278	1,404
Queensland ..	87	627	901	903	960	997	1,010	1,027	1,042	1,060	1,177	1,273	1,356	1,534
South Australia	134	567	819	832	951	1,013	1,048	1,061	1,062	1,067	1,151	1,231	1,278	1,373
Western Australia	69	489	1,052	1,053	1,116	1,152	1,191	1,214	1,226	1,236	1,272	1,345	1,372	1,516
Tasmania ..	54	482	719	749	772	799	934	1,025	1,028	1,039	1,112	1,163	1,193	1,346
Commonwealth*	652	3,948	848	866	955	1,000	1,051	1,076	1,085	1,102	1,184	1,252	1,296	1,462

\* Weighted average.

Note.—The figures in the above table are comparable both horizontally and vertically.

The significance of the above figures since 1906 can be better appreciated by reference to the graph on page 1071, which shews not only variations in wages in each State from year to year, but also the difference in wage level as between the several States. From this graph it is clearly seen that, excluding Western Australia, the difference between nominal wages in the several States has decreased very considerably since 1906. This difference is shewn at any point by the vertical distance between the graphs. Wages in Queensland increased since 1914 at a higher rate than in any other State, and the general level in that State is now higher than in any other State. The graphs for Victoria and South Australia lie very close together throughout the period. In Tasmania the first determination under the Wages Boards Acts 1910 and 1911 came into force in 1911. Since then wages in that State have increased rapidly from 20 per cent. below the average for the Commonwealth to less than 8 per cent. below.

3. Variations in Effective Wages.—In order to obtain an accurate measure of the progress in the material welfare of wage-earners, regard must be had to the purchasing-power of wages, and the index-numbers based merely upon nominal rates of wage must consequently be subject to some modification, inasmuch as they take no account of variations in the purchasing-power of money. In computing these effective wage index-numbers, the nominal wage index-numbers given in sub-section 2 hereof have been divided by the purchasing-power-of-money index-numbers in Section IV., paragraph 5 of Labour Report No. 10, pp. 28-29. The resulting index-numbers shew for each State and for the Commonwealth for the years specified the variations in *effective* wages.

The following table shews the effective wage index-numbers for each State for each of the years indicated from 1901 to 1919:—

VARIATION IN EFFECTIVE WAGES IN EACH STATE AND COMMONWEALTH,  
1901 TO 1919.\*

Particulars.	1901.	1906.	1910.	1911.	1912.	1913.	1914.	1915.	1916.	1917.	1918.	1919.
New South Wales	961	947	973	973	922	924	909	850	867	893	902	943
Victoria ..	915	919	981	1,037	981	1,007	964	844	877	950	947	948
Queensland ..	1,172	1,165	1,095	1,090	1,032	1,060	1,045	912	991	1,078	1,083	1,064
South Australia	948	934	943	957	906	947	929	847	896	989	957	935
Western Australia	1,024	1,029	1,091	1,023	1,032	1,076	1,073	1,011	1,005	1,079	1,107	1,068
Tasmania ..	827	833	812	838	896	976	943	843	870	894	880	900
Commonwealth	964	960	985	1,000	955	975	952	862	894	950	952	968

\* As to the effect in abnormal periods, see Labour Report No. 6, pp. 20-2, Section IV., par. 3.

The figures in the above table from the year 1907 onwards are shewn in the graph on page 1072. A comparison between this graph and the preceding one shews that the difference between nominal and effective wages is very marked. In the first place, the whole nature of the graphs is entirely different. Instead of having a series of lines showing a practically continuous and rapid upward trend, the effective wages shew (except for Tasmania) a series of fluctuating points, in which no very marked tendency is immediately discernible. It will be seen that, generally speaking, the years 1907, 1909, 1910, 1911, 1913, 1916, 1917, 1918 and 1919 were marked by increases in effective wages, but that in each of the years 1908, 1912, 1914 and 1915, there were rapid decreases. In each of these years in which effective wages declined there was a rapid increase in cost of food and groceries, which was not, immediately, compensated by increased wages. Since 1911 the effect of prices on nominal wages has caused serious fluctuations in the effective wage, e.g., the effective wage index-number for the Commonwealth for the year 1915 (862) was 13.8 per cent. below that of 1911. From 1915 to 1919 the effective wage index-number rose by 12.3 per cent. to 968, which, however, still leaves the average effective wage for the Commonwealth lower than in 1911 by 3.2 per cent. In the next table index-numbers are given for nominal wages and for the purchasing-power of money, together with the effective wage index-number derived therefrom.

One important feature common to both graphs (nominal and effective wages) is the manner in which the graphs for the individual States have, on the whole, approached more closely together. With the adoption of rates of wage fixed according to the relative purchasing-power of money, it appears probable that this tendency will continue in the future.

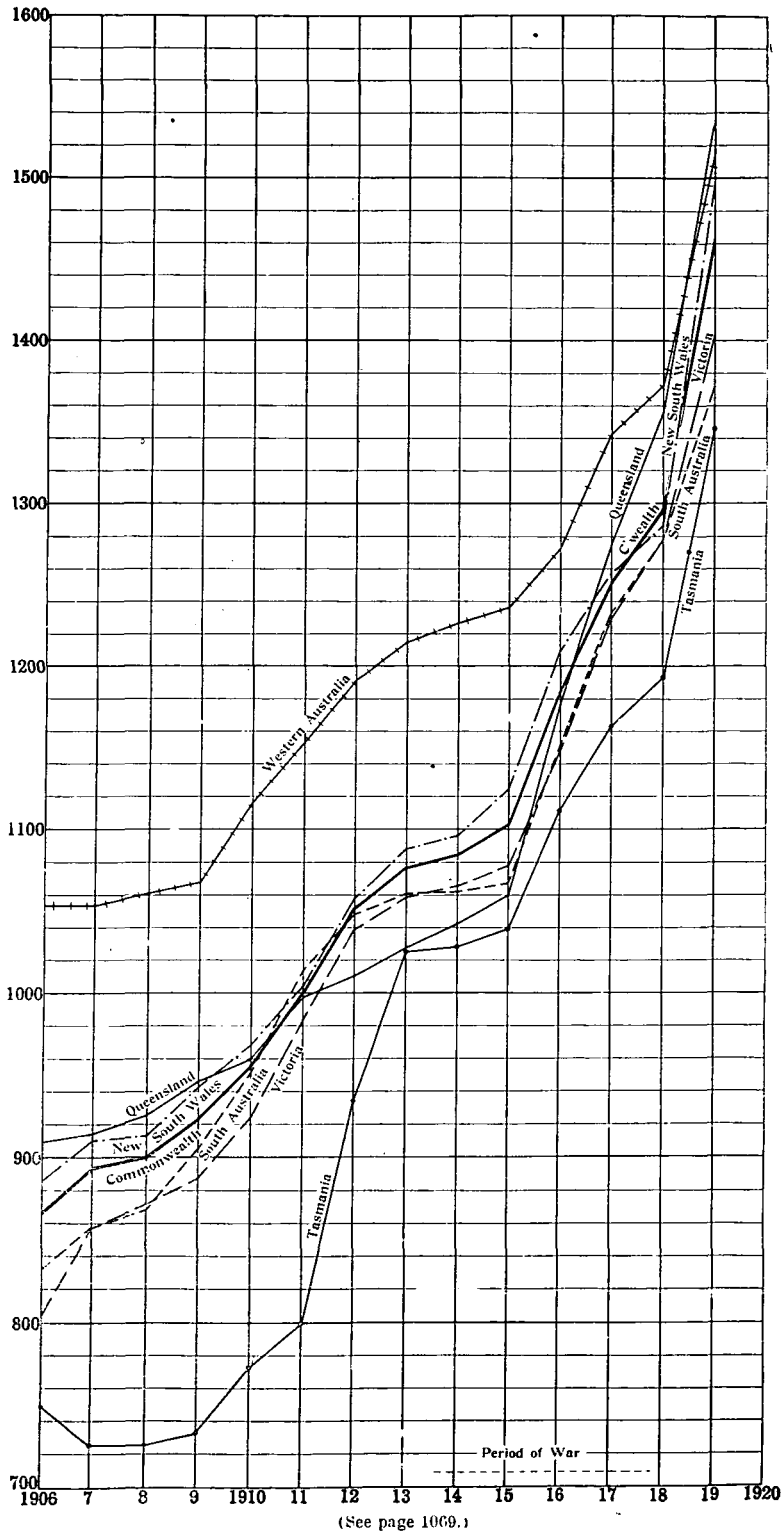
**4. Variations in Effective Wages and Standard of Comfort, 1901 to 1919.**—In the preceding paragraph particulars are given as to variations in effective wages in each State, due allowance having been made for variations in purchasing-power of money, though not for unemployment. Attention has also been drawn to the limitations to which they are subject in abnormal times.

For years prior to 1913 the data available as to unemployment are so meagre that comparative results allowing for variations both in purchasing-power of money and in unemployment cannot be accurately computed for the several States. In the subjoined table, however, the percentage of unemployment for the whole Commonwealth at the end of the years specified has been used in order to obtain results shewing the variations in unemployment upon effective wages. Column I. shews the nominal rate of wage index-numbers, and Column II. the relative percentages unemployed. Applying these percentages to the numbers shewn in Column I., and deducting the results from each corresponding index-number, so as to allow for relative loss of time, the figures in Column III. are obtained. These figures are then re-computed with the year 1911 as base, and are shewn in Column IV. In Column V. the purchasing-power-of-money index-numbers are shewn, and in Columns VI. and VII. the effective wage index-numbers are given, firstly, for full work, and, secondly, allowing for lost time. These are obtained by dividing the figures in Columns I. and IV., respectively, by the corresponding figures in Column V. The resulting index-numbers shew for the Commonwealth, for the years specified, the variations in *effective wages*, or in what may be called the "standard of comfort."\*

A comparison between the figures in Columns I. and VI. shews the relation between the nominal rates of wage and the purchasing efficiency of these rates. The figures in Column VII. shew variations in *effective wages* after allowing not only for variations in purchasing-power of money, but also for the relative extent of unemployment.

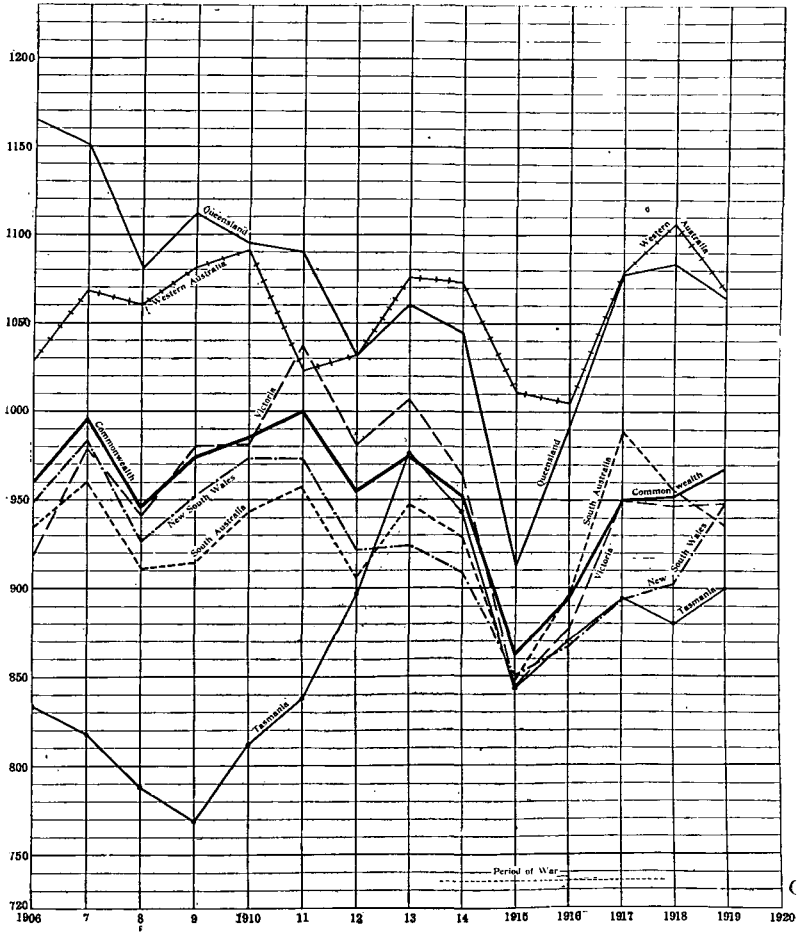
\* This expression must not be confused with "standard of living." A change in the standard of living necessarily involves a change in regimen (see Labour Report No. 1), that is, a change in the nature or in the relative quantity of commodities purchased, or both. A change in the "standard of comfort" merely implies a variation in effective wages, which variation may, or may not, result in, or be accompanied by, a change in the "standard of living."

NOMINAL WAGE INDEX-NUMBERS IN EACH STATE AND COMMONWEALTH  
1906 TO 1919.

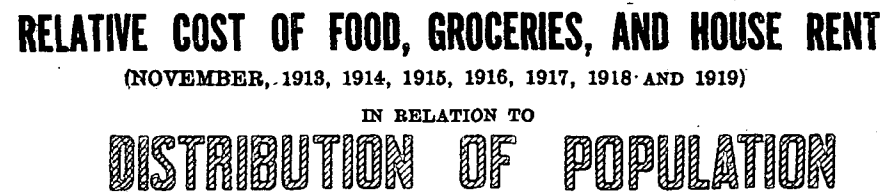




EFFECTIVE WAGE INDEX-NUMBERS IN EACH STATE AND COMMONWEALTH,  
1906 TO 1919.



(See page 1069.)

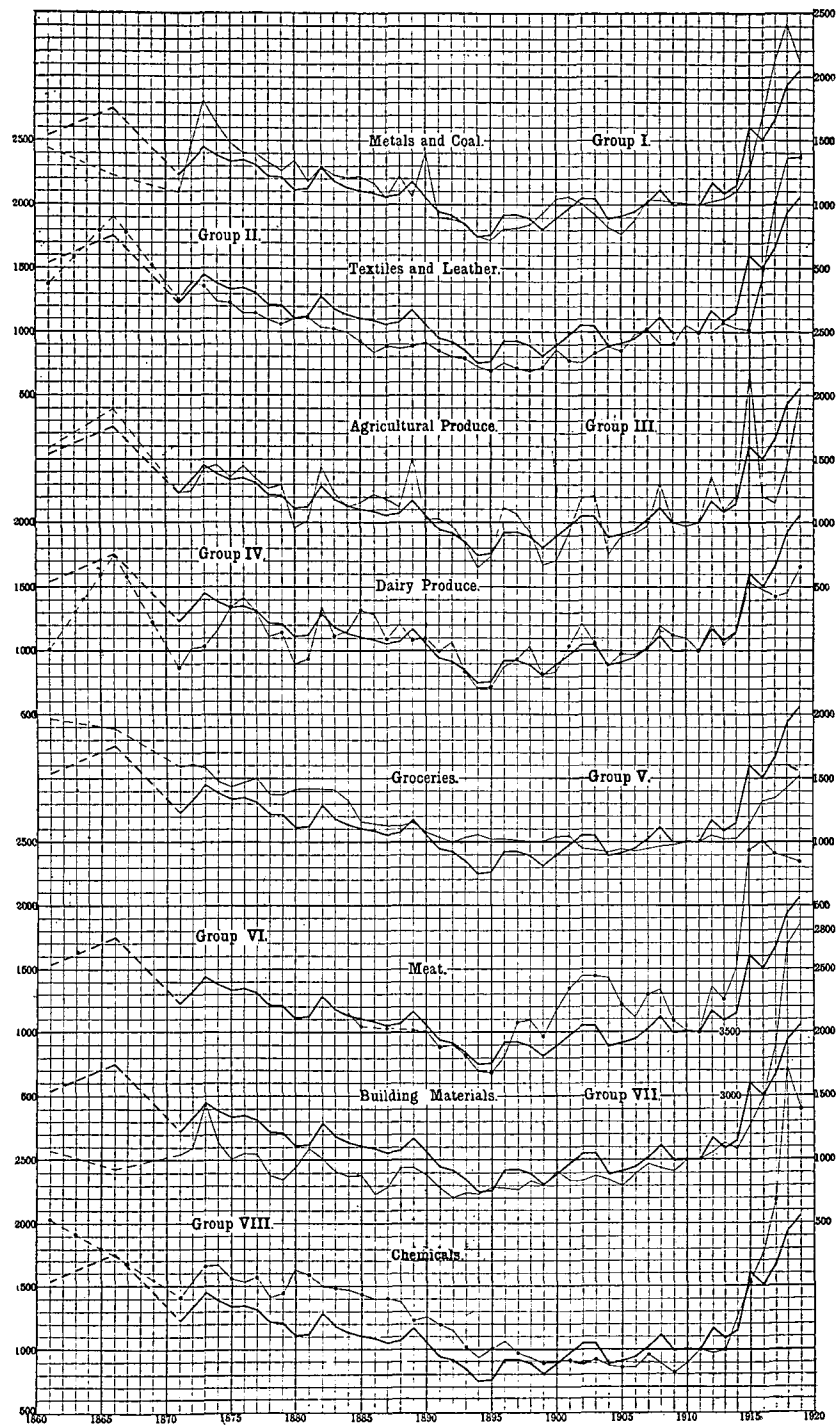


Weighted Average ..\*1,000 \*621\*1,085 \*665 †1,234 †872 †1,204 †840 †1,288 †866 †1,282 †891 †1,477 †1,059

\* Weighted average of 100 Towns.  
† Weighted average of 150 Towns.  
‡ Not available.

	1913.		1914.		1915.		1916.		1917.		1918.		1919.		1915.		1916.		1917.		1918.		1919.		
	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	
1 SYDNEY ..	1,109	634	1,124	651	1,321	861	1,305	851	1,852	895	1,272	896	1,568	1,096	101 Adelong ..	1,110	922	1,016	837	996	855	1,046	874	1,147	994
2 Newcastle ..	980	637	978	648	1,228	847	1,173	856	1,229	888	1,279	907	1,568	1,096	102 Albury ..	1,174	868	1,169	847	1,225	874	1,261	888	1,455	1,027
3 Broken Hill ..	1,116	768	849	773	1,192	1,013	1,341	1,042	1,319	1,002	1,298	954	1,586	1,185	103 Bega ..	1,187	873	1,100	844	1,163	892	1,150	879	1,339	1,065
4 Goulburn ..	974	629	1,036	667	1,271	854	1,247	864	1,237	853	1,287	903	1,487	1,079	104 Bourke ..	1,146	920	1,198	841	1,232	931	1,171	956	1,380	1,156
5 Bathurst ..	892	593	909	608	1,102	825	1,109	832	1,111	858	1,112	858	1,314	1,020	105 Bowral ..	1,135	841	1,162	859	1,252	869	1,247	909	1,487	1,124
6 Armidale ..	876	601	949	618	1,148	863	1,150	834	1,237	886	1,263	899	1,441	1,094	106 Casino ..	1,165	884	1,102	822	1,192	830	1,171	929	1,426	1,097
7 Cobarr ..	887	606	958	747	1,142	862	1,159	862	1,237	886	1,263	899	1,441	1,094	107 Coonamble ..	1,202	883	1,263	944	1,224	837	1,339	988	1,438	1,155
8 Cooma ..	838	675	966	662	1,281	962	1,311	884	1,154	881	1,195	898	1,338	1,191	108 Corramal ..	1,078	854	1,118	901	1,139	915	1,135	905	1,349	1,119
9 Coolangubra ..	977	632	990	653	1,290	922	1,228	864	1,237	876	1,363	894	1,436	1,046	109 Cowra ..	1,217	854	1,228	872	1,234	870	1,280	917	1,572	1,107
10 Deniliquin ..	836	606	943	675	1,199	924	1,148	874	1,173	894	1,190	904	1,343	1,020	110 Dubbo ..	1,190	887	1,188	853	1,223	872	1,278	898	1,488	1,073
11 Grafton ..	919	632	922	654	1,181	913	1,164	830	1,255	936	1,254	935	1,398	1,058	111 Forbes ..	1,131	886	1,083	834	1,136	871	1,215	908	1,421	1,064
12 Hay ..	918	688	989	740	1,277	1,006	1,235	948	1,227	938	1,200	889	1,460	1,068	112 Glen Innes ..	1,101	859	1,114	827	1,184	878	1,246	895	1,392	1,041
13 Lismore ..	931	695	1,042	723	1,213	890	1,183	842	1,299	949	1,353	938	1,535	1,120	113 Grenfell ..	1,221	902	1,181	910	1,258	917	1,307	1,608	1,109	
14 Lithgow ..	915	628	938	625	1,257	894	1,212	884	1,229	906	1,263	912	1,459	1,090	114 Gunnedah ..	1,252	870	1,244	868	1,255	875	1,271	888	1,456	1,112
15 Moree ..	981	681	1,041	696	1,256	897	1,225	908	1,375	928	1,406	960	1,599	1,190	115 Inverell ..	1,201	841	1,212	857	1,271	909	1,393	955	1,570	1,178
16 Mudgee ..	824	569	860	640	1,131	868	1,169	878	1,175	878	1,175	888	1,430	1,099	116 Junea ..	1,233	855	1,266	900	1,231	873	1,279	902	1,503	1,083
17 Quesantbeyan ..	1,062	650	980	635	1,231	906	1,169	873	1,254	901	1,247	911	1,421	1,105	117 Katoomba ..	1,325	847	1,345	907	1,371	928	1,368	928	1,579	1,101
18 Tumworth ..	902	599	1,068	649	1,231	874	1,308	876	1,255	891	1,247	911	1,421	1,105	118 Kempsey ..	1,120	862	1,099	860	1,149	892	1,195	908	1,551	1,061
19 Wagga Wagga ..	987	584	949	670	1,172	834	1,207	818	1,262	841	1,315	875	1,464	1,018	119 Maitland ..	1,087	822	1,148	830	1,178	868	1,182	870	1,411	1,070
20 Yass ..	943	637	1,040	676	1,251	948	1,201	899	1,242	927	1,339	911	1,492	1,159	120 Moss Vale ..	1,258	869	1,222	872	1,360	885	1,251	901	1,516	1,076
21 West Wyalong ..	966	631	952	669	1,130	890	1,177	906	1,229	910	1,278	935	1,474	1,123	121 Narrabri ..	1,190	877	1,221	870	1,297	927	1,313	926	1,593	1,192
22 MELBOURNE ..	964	568	1,019	628	1,240	852	1,207	807	1,229	814	1,304	861	1,473	995	122 Nowra ..	1,080	856	1,100	845	1,205	886	1,172	917	1,514	1,119
23 Ballarat ..	767	566	845	630	1,084	874	1,012	815	1,018	806	1,051	842	1,202	979	123 Orange ..	1,210	834	1,155	849	1,202	850	1,219	888	1,440	1,085
24 Bendigo ..	815	573	873	641	1,068	843	1,030	814	1,047	797	1,090	826	1,207	935	124 Parkes ..	1,153	879	1,155	921	1,236	940	1,258	941	1,471	1,088
25 Geelong ..	872	579	943	649	1,145	849	1,125	813	1,126	816	1,172	863	1,302	972	125 Temora ..	1,263	911	1,210	868	1,247	906	1,272	824	1,475	1,070
26 Warrambbool ..	831	571	914	620	1,152	868	1,100	804	1,117	816	1,172	863	1,302	972	126 Wellington ..	1,197	859	1,193	902	1,244	887	1,233	920	1,455	1,103
27 Ararat ..	833	577	915	641	1,179	895	1,119	852	1,126	849	1,160	879	1,302	1,021	127 Wollongong ..	1,141	838	1,194	881	1,226	904	1,227	902	1,456	1,108
28 Bairnsdale ..	796	579	838	615	1,165	903	1,053	811	1,079	833	1,136	876	1,320	1,052	128 Young ..	1,180	874	1,168	885	1,217	868	1,243	911	1,447	1,090
29 Camperdown ..	866	572	915	625	1,101	818	1,079	800	1,091	806	1,148	865	1,300	975	VICTORIA—										
30 Castlemaine ..	773	547	911	636	1,137	862	1,089	831	1,079	822	1,138	864	1,283	1,005	129 Beechworth ..	1,059	893	1,091	874	998	832	1,017	851	1,176	955
31 Creswick ..	730	577	808	638	1,056	833	1,039	800	998	838	1,055	858	1,145	1,018	130 Benalla ..	1,153	879	1,083	834	1,107	845	1,142	855	1,308	977
32 Daylesford ..	779	590	817	638	1,073	885	1,000	821	991	806	1,080	853	1,222	1,026	131 Bright ..	1,118	921	1,044	833	1,079	861	1,094	868	1,250	1,026
33 Echuca ..	811	607	857	672	1,061	876	1,009	827	1,064	852	1,069	862	1,209	985	132 Colac ..	1,161	856	1,117	845	1,131	847	1,213	879	1,322	1,013
34 Hamilton ..	873	584	936	636	1,175	924	1,129	847	1,153	825	1,106	860	1,314	970	133 Dunnolly ..	1,045	853	977	811	985	842	994	847	1,108	936
35 Horsham ..	873	584	936	636	1,175	924	1,129	847	1,153	825	1,106	860	1,314	970	134 Euroa ..	1,071	857	1,068	845	1,025	818	1,039	815	1,212	960
36 Kooramburra ..	839	596	892	625	1,162	907	1,038	798	1,082	827	1,093	849	1,286	951	135 Maldon ..	996	875	1,003	846	976	848	993	863	1,099	959
37 Kyneton ..	766	582	790	611	1,114	887	1,040	824	1,080	825	1,098	849	1,245	964	136 Omeo ..	1,158	1,005	1,068	914	1,122	949	1,086	920	1,258	1,092
38 Maryborough ..	745	573	808	626	1,029	844	1,037	836	1,032	832	1,040	855	1,205	988	137 Orbost ..	1,162	890	1,167	864	1,190	871	1,201	892	1,376	1,033
39 Mildura ..	972	608	1,053	696	1,272	939	1,330	907	1,346	921	1,356	896	1,533	1,064	138 St Arnaud ..	1,185	946	1,071	864	1,078	877	1,161	872	1,307	1,009
40 Nhili ..	767	593	805	656	1,121	887	1,142	833	1,142	861	1,170	889	1,261	989	139 Shepparton ..	1,149	859	1,151	823	1,146	831	1,171	871	1,320	1,023
41 Portland ..	896	592	904	624	1,220	928	1,121	889	1,079	834	1,170	872	1,336	1,024	140 Stawell ..	1,186	942	1,070	834	1,068	848	1,136	878	1,326	1,042
42 Sale ..	784	551	874	634	1,070	824	1,022	780	1,022	797	1,085	836	1,289	997	141 Wandiligong ..	1,081	954	1,055	870	977	870	1,041	939	1,157	1,030
43 Swan Hill ..	975	618	1,000	649	1,279	874	1,204	827	1,257	859	1,288	858	1,433	993	142 Wonthaggi ..	1,236	917	1,344	897	1,289	873	1,295	912	1,416	1,083
44 Wallara ..	794	583	858	623	1,136	853	1,065	824	1,082	837	1,125	850	1,286	1,037	143 Yackandandah ..	1,038	873	983	830	982	809	1,074	854	1,180	970
45 Warracknabeal ..	810	555	877	647	1,082	814	1,048	783	1,085	788	1,083	804	1,266	955	QUEENSLAND—										
47 BRISBANE ..	878	583	919	627	1,166	878	1,050	763	1,129	838	1,205	901	1,441	1,091	144 Glenosbury ..	1,447	1,032	1,367	980	1,615	1,088	1,646	1,178	1,893	1,425
48 Toowoomba ..	840	603	898	646	1,119	894	992	760	1,094	867	1,192	931	1,350	1,073	145 Hamilton ..	1,379	896	1,222	775	1,294	847	1,460	949	1,622	1,162
49 Rockhampton ..	863	617	920	668	1,184	945	1,063	817	1,090	838	1,178	924	1,390	1,128	146 Mackay ..	1,227	895	1,155	848	1,230	905	1,324	871	1,535	1,158
50 Charters Towers ..	907	658	997	752	1,183	942	1,130	884	1,197	926	1,301	1,015	1,472	1,179	147 Roma ..	1,288	937	1,207	869	1,256	905	1,398	1,016	1,512	1,117
51 Warwick ..	822	590	863	635	1,077	863	987	773	1,080	847	1,175	922	1,355	1,084	S. AUSTRALIA—										
52 Bundaberg ..	811	591	866	630	1,136	873	1,041	828	1,109	877	1,220	1,044	1,460	1,091	148 Gawler ..	1,160	873	1,175	863	1,083	837	1,123	864	1,330	1,015
53 Cairns ..	1,087	704	1,140	809	1,243	913	1,299	929																	

MELBOURNE WHOLESALE PRICE INDEX-NUMBERS, 1861 TO 1919.



EXPLANATORY NOTE.—The scale for each of the graphs for groups 1, 3, 5, and 7 is shewn by the figures on the right of the diagram, that of the graphs for groups 2, 4, and 6 on the left of the diagram, and that for group 8 on the left of the diagram with a continuation upwards on the vertical lines representing the years 1913 and 1914, the line marked 1000 shewing the base line (for the year 1911) in each case. The heavy line in each graph represents the index-numbers for all groups combined, the light line (dotted thus . in the case of the even groups) indicating in each instance the index-numbers for the separate group. (See page 1096.)

## UNEMPLOYMENT, PURCHASING-POWER-OF-MONEY AND NOMINAL AND EFFECTIVE WAGE-INDEX NUMBERS, 1901 TO 1919.\*

Year.	I. Nominal Wage Index- Numbers.	II. Percentage Unem- ployed.	Rates of Wage Index- Numbers, allowing for Lost Time.		V. Purchas- ing-power- of-money Index- Numbers.	Effective Wage Index-Numbers.	
			III. Actual.	IV. Re-com- puted. (1911 = 1,000).		VI. Full Work.	VII. Allowing for Unemploy- ment.
1901 ..	848	6.6	793	832	880	964	945
1906 ..	866	6.7	808	848	902	960	940
1907 ..	893	5.7	842	884	897	996	986
1908 ..	900	6.0	846	888	951	946	934
1909 ..	923	5.8	870	913	948	974	963
1910 ..	955	5.6	901	945	970	985	974
1911 ..	1,000	4.7	953	1,000	1,000	1,000	1,000
1912 ..	1,051	5.5	993	1,042	1,101	955	946
1913 ..	1,076	5.3	1,021	1,071	1,104	975	970
1914 ..	1,085	11.0	966	1,014	1,140	952	889
1915 ..	1,102	6.8	1,027	1,078	1,278	862	844
1916 ..	1,184	6.7	1,105	1,159	1,324	894	875
1917 ..	1,252	7.4	1,159	1,216	1,318	950	923
1918 ..	1,296	5.5	1,225	1,285	1,362	952	943
1919 ..	1,462	5.2	1,386	1,454	1,510	968	963

\* As to the effect in abnormal periods, see Section IV., par. 3, of Labour Report No. 6.

During the period 1901-19, while the nominal wage index-number rose from 848 to 1,462, an increase of 72.4 per cent., prices rose from 880 to 1,510, or by 71.6 per cent., the net result therefore being that effective full time wages rose by only .4 per cent. Compared with 1911, effective wages shew a fall of 3.2 per cent., although nominal wages increased by 46.2 per cent.

## § 5. Changes in Rates of Wage.

1. General.—The collection of information regarding changes in rates of wage throughout the Commonwealth dates from the 1st January, 1913.

(i) *Definition of a Change in Rate of Wage.* For the purpose of these statistics a change in rate of wage is defined as a change in the weekly rates of remuneration of a certain class of employees, apart from any change in the nature of the work performed or apart from any revision of rates due to increased length of service or experience. It is obvious that under this definition certain classes of changes are excluded, such, for example, as (a) changes in rates of pay due to promotion, progressive increments, or, on the other hand, to reduction in pay or grade to inefficient workers, and (b) changes in average earnings in an occupation due to a change in the proportions which higher paid classes of workers bear to lower paid classes. Bonuses to employees have not been taken into account in the tabulations. Each single change recorded relates to a change in the rates of wage effected in a specific industry or calling, and includes any and all changes to workers in that industry, irrespective of the different number of separate occupations

or trades affected. Further, it should be observed that in some instances a change may relate to the employees of a single employer or to those of a number of employers, according to the instrument or method operating to bring about the change.

(ii) *Sources of Information.* Primary information merely as to the fact that a change in rate of wage has occurred is obtained through the following channels :— (a) the Industrial Registrar or Chief Inspector of Factories in each State ; (b) Reports from Labour Agents and Correspondents ; (c) Quarterly reports from Secretaries of Trade Unions ; (d) Returns relating to industrial disputes which resulted in changes in rates of wage ; (e) Reports in newspapers, labour and trade reviews, and other publications.

(iii) *Collection of Particulars concerning Changes.* On the occurrence of a change in rate of wage, forms\* (prescribed under the Census and Statistics Act 1905) are issued to employers and employers' associations (if any) and to the secretaries of the trade unions, the members of which are affected by the change. The particulars which have to be inserted in these forms furnish information regarding the occupations of the workers affected, the number of workers in each occupation, the rates of wage paid before and after the change, the locality affected, and the date on which the change took effect. Information must also be furnished regarding employers and employers' associations concerned (if any), and the method by which the change was effected.

When the forms are returned from the various persons who are required to complete them, the returns are checked and compared with each other and with copies of awards, determinations, and agreements. In all cases when the information furnished on the forms is incomplete or unsatisfactory, further inquiries are made, and the figures checked by reference to census results, industrial statistics, factory reports, etc.

**2. Comparative Summary of Changes in Rates of Wage in each State, 1913–1919.**— The following table gives particulars of changes which occurred in each State of the Commonwealth during the years specified. As regards the number of persons affected, the particulars given refer to the total number of persons ordinarily engaged in the various industries. The results as to the amount of increase in wages are computed for a full week's work for all persons ordinarily engaged in the several industries and occupations affected, and in cases of changes in existing minimum rates under awards or determinations of industrial tribunals, it has ordinarily been assumed (in the absence of any definite information to the contrary) that the whole of the employees in each occupation received the minimum rates of wage before and after the change.

It should be clearly understood that the figures given in the third division of the following table (amount of increase per week) do not relate to the increase each week, but only to the increase in a single week on the assumption that the full number of persons ordinarily engaged in the particular trade or occupation affected by the change were employed during that week. It is obvious, therefore, that the aggregate effect per annum cannot be obtained without making due allowance for unemployment and for occupations in which employment is seasonal or intermittent. It is also obvious that since unemployment and activity in all branches of industry may vary from year to year, and in many branches from season to season also, no accurate estimate of the actual effect of the changes in the total amount of wages received or paid per annum can be made until the determining factors have been investigated. These factors are (a) the amount of unemployment, and (b) the period of employment in seasonal industries.

It should be observed that changes brought about by awards and agreements under the Commonwealth Conciliation and Arbitration Act 1904–18 and the Commonwealth Arbitration (Public Service) Act 1911 are necessarily included hereunder as changes in each State to which such awards and agreements apply. The average increase per head per week is computed to the nearest penny.

\* Since these forms are issued under the authority of the Census and Statistics Act 1905, it is compulsory upon prescribed persons to furnish the information required.

## CHANGES IN RATES OF WAGE.—NUMBER AND EFFECT OF CHANGES IN EACH STATE AND TERRITORY, 1913 TO 1919.

Particulars.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	N.T.	*All States.	C'wealth.
No. of Changes	1913 149 1914 185 1915 169 1916 381† 1917 201 1918 229 1919 457	81 69 87 168 106 201 218	41 50 60 134 142 236 216	26 18 31 98 78 113 136	20 19 25 42 55 63 112	12 19 24 37 38 46 128	.. .. 3 4 16 4 13	.. 1 2 6 1 4 4	329 384 401 870 637 806 1,284
No. of Persons Affected	1913 89,618 1914 56,469 1915 109,260 1916 242,721 1917 101,158 1918 146,399 1919 280,031	49,254 29,876 39,087 119,878 68,272 110,027 125,693	16,645 20,198 22,864 72,079 72,843 74,174 116,627	4,574 5,624 10,206 40,925 20,209 16,239 35,377	3,036 8,399 2,661 5,848 12,997 9,871 26,673	3,005 4,262 3,147 7,232 5,288 3,031 16,108	.. .. 185 258 1,143 624 1,287	.. 390 10,000 3,546 11,000 616 2,095	166,132 125,218 197,410 492,487 292,910 361,581 603,891
Total Net Amount of Increase per Week	1913 21,789 1914 13,558 1915 29,525 1916 56,875 1917 28,896 1918 32,194 1919 137,642	9,880 6,688 8,078 30,566 15,129 25,514 43,930	3,702 5,128 6,398 40,451 20,083 19,619 43,718	1,279 1,941 3,539 9,930 6,070 3,883 11,989	428 2,423 562 1,440 3,407 2,133 10,249	635 804 778 1,980 1,987 1,323 7,350	.. .. 87 88 635 273 618	.. 143 2,938 1,593 4,800 239 949	37,713 30,685 51,905 142,923 81,007 85,260 256,445
Average Increase per Head per Week	1913 4 10 1914 4 10 1915 5 5 1916 4 8 1917 5 9 1918 4 5 1919 9 10	4 0 4 6 4 2 5 1 4 5 4 8 7 0	4 5 5 1 5 7 11 3 5 6 5 4 7 6	5 7 6 11 6 11 4 10 6 0 4 9 6 9	2 10 5 9 4 3 4 11 5 3 4 7 7 8	4 3 3 9 4 11 5 6 7 6 7 3 9 2	.. .. 9 5 6 10 11 1 8 9 9 7	.. 7 4 5 11 9 0 8 9 7 9 9 1	4 6 4 11 5 3 5 10 5 6 4 9 8 6

\* Changes recorded in this column are common to all States, as the particulars relating to the number of workpeople affected and the net amount of increase per week in each State were not ascertainable.

† Including four changes which affected 157 workpeople in the Federal Capital Territory.

In point of number of changes in each State, New South Wales was first, Victoria second, and Queensland third, in each of the years 1913 to 1916. During the year 1917 the number of changes in Queensland exceeded the number recorded in Victoria, while during the year 1918 the number of changes in Queensland was greater than the number recorded as having taken place in New South Wales. It will be seen from the table that, with the exception of Queensland, the number of changes in rates of wage recorded during the year 1919 is higher in each State than during any previous year. The relative position of the States in regard to the numbers of changes effected, and also in regard to the numbers of workers affected in each year is, of course, largely due to the magnitude of the different industries and callings in which changes took place.

The number of workpeople who were affected by changes in rates of wage during the year 1919 was 603,891, and the total net amount of increase per week was £256,445, representing 8s. 6d. per head per week. These figures are greater than in any other year for which records are available, and indicate a widespread attempt to restore wages to their previous relation to the cost of living, *i.e.*, to regain the accustomed effective wage.

The foregoing shews the net results of all changes made in the rates of wage, and includes a few instances in which the weekly wage was reduced. It was in the year 1917 that the greatest number of reductions was recorded, when there were eleven such cases—(1.73 per cent.)—in a total of 637 changes. In 1919 the number of reductions was six, the most important being the cases of the metalliferous miners at Moonta and Kadina, in South Australia, and at Mount Morgan in Queensland, who had entered into an agreement that wages should be related to the price of copper. In other cases the reduced weekly wage was due to a reduction in the number of hours in the working week without corresponding (if any) increase in the hourly rate of pay. Yet other cases were the result of appeals against recent awards, and others again were due to the cessation of special conditions for which higher rates had been temporarily paid. The workpeople who suffered reductions in their weekly wage in the six cases alluded to, numbered 4,293, their aggregate weekly wage being reduced by £886 or about 4s. 2d. each. Therefore, of the 1,284 changes made in 1919, 1,278, or 99.53 per cent. gave increased rates of pay, amounting to 8s. 7d. per head per week to 599,598 persons, representing 99.29 per cent. of the 603,891 persons affected by all changes during the year.

3. Number and Magnitude of Changes in Rates of Wage in the Commonwealth Classified according to Industrial Groups, 1913 to 1919.—*Total Workpeople (Male and Female) affected by Changes.* In the following table particulars are given of the number of changes, the number of persons (males and females) affected, and the total amount of increase per week, classified according to Industrial Groups throughout the Commonwealth during the years 1913 and 1916 to 1919:—

**CHANGES IN RATES OF WAGE IN THE COMMONWEALTH ACCORDING TO INDUSTRIAL GROUPS, 1913 AND 1916 TO 1919.**

Particulars.	Industrial Group.							
	I. Wood, Furniture, Timber, etc.	II. Engineering, Metal Works, etc.	III. Food, Drink, Tobacco, etc.	IV. Clothing, Hats, Boots, etc.	V. Books, Printing, etc.	VI. Other Manufacturing.	VII. Building.	VIII. Mines, Quarries, etc.
1913.								
Number of Changes	10	20	45	15	11	55	21	17
Number of Persons affected	7,975	6,594	17,428	11,727	4,602	17,110	19,237	6,112
Amount of increase per week	£ 1,569	1,607	4,255	2,062	1,126	3,480	5,696	1,210
1916.								
Number of Changes	35	74	107	21	27	108	37	63
Number of Persons affected	16,111	27,412	38,171	30,918	10,210	34,037	37,536	63,308
Amount of increase per week	£ 4,255	6,894	16,383	6,858	2,270	9,172	12,400	17,827
1917.								
Number of Changes	14	60	66	21	31	53	38	28
Number of Persons affected	10,495	16,994	30,515	25,652	6,386	12,585	11,426	25,022
Amount of increase per week	£ 2,568	3,394	2,015	6,104	1,981	4,046	3,477	12,544
1918.								
Number of Changes	61	42	93	26	24	78	30	25
Number of Persons affected	14,651	31,804	32,411	23,215	8,707	15,160	17,419	14,285
Amount of increase per week	£ 4,343	10,565	9,025	5,252	1,804	3,944	5,420	2,988
1919.								
Number of Changes	39	89	156	31	41	138	42	29
Number of Persons affected	13,616	44,133	72,603	26,905	9,335	50,530	19,053	34,501
Amount of increase per week	£ 4,890	20,381	23,551	11,308	4,449	17,829	8,941	17,434

Particulars.	Industrial Group—continued.						
	IX. Rail and Tram Services.	X. Other Land Transport.	XI. Shipping, etc.	XII. Pastoral, Agricultural, etc.	XIII. Domestic, Hotels, etc.	XIV. Miscellaneous.	ALL GROUPS.*
1913.							
Number of Changes	16	12	19	3	9	59	312
Number of Persons affected	20,046	7,335	1,839	828	6,481	38,818	166,132
Amount of increase per week	£ 3,210	2,324	543	436	1,922	8,264	37,713
1916.							
Number of Changes	64	31	44	11	13	186	821
Number of Persons affected	83,526	19,232	12,898	16,266	9,882	92,980	492,487
Amount of increase per week	£ 17,450	5,282	3,411	16,858	2,016	21,847	142,923
1917.							
Number of Changes	50	19	25	10	15	144	574
Number of Persons affected	37,264	10,261	12,613	3,440	15,359	74,898	292,910
Amount of increase per week	£ 12,711	3,054	5,629	1,096	3,720	18,668	81,007
1918.							
Number of Changes	38	25	38	6	23	270	779
Number of Persons affected	59,625	12,782	1,990	1,717	9,230	118,535	361,581
Amount of increase per week	£ 10,320	2,185	719	350	2,167	26,178	85,260
1919.							
Number of Changes	74	37	59	11	49	373	1,168
Number of Persons affected	114,365	20,871	34,294	9,030	25,799	128,856	603,891
Amount of increase per week	£ 56,872	8,701	18,168	5,739	7,620	50,562	256,445

\* In this table an Industrial Award or Agreement under the Commonwealth Conciliation and Arbitration Act or an Order of the War Precautions Coal Board is counted as one change only, although such Award, Agreement or Order may be operative in more than one State.

4. Changes in Rates of Wage in Male and Female Occupations—Number and Effect of Changes in each State, 1913-1919.—Included in the changes in rates of wage recorded in the tables on page 1078 are those which in the whole or part thereof affected female occupations. Particulars in respect to these changes in so far as they relate to the numbers of male and female workers affected, etc., are set out hereunder:—

CHANGES IN RATES OF WAGE.—MALE AND FEMALE OCCUPATIONS.—EFFECT OF CHANGES IN EACH STATE AND TERRITORY, 1913 TO 1919.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	N. Terr.	All States.*	C'wealth.
NUMBER OF MALE EMPLOYEES AFFECTED.									
1913	83,470	44,692	16,095	3,616	3,036	1,525	..	..	152,434
1914	48,773	25,644	19,628	5,624	7,616	4,232	..	390	111,907
1915	97,672	36,022	21,831	9,807	2,588	2,787	185	10,000	180,892
1916	225,806†	99,667	68,125	39,586	5,669	6,885	249	3,546	449,533
1917	82,601	48,136	63,066	16,844	12,788	4,759	1,143	11,000	240,337
1918	128,728	91,857	59,909	12,889	8,452	3,487	624	616	306,562
1919	253,077	106,389	99,167	32,162	24,185	13,906	1,287	2,025	532,198

NET AMOUNT OF INCREASE PER WEEK TO MALE EMPLOYEES.									
	£	£	£	£	£	£	£	£	£
1913	20,682	9,317	3,647	1,127	428	512	..	..	35,713
1914	12,158	6,146	5,055	1,941	2,157	797	..	143	28,397
1915	26,975	7,572	6,250	3,431	545	730	87	2,938	48,528
1916	53,395	26,877	39,874	9,774	1,414	1,937	82	1,593	134,946
1917	25,773	11,080	17,106	5,244	3,329	1,878	635	4,800	69,845
1918	29,410	22,574	16,186	3,311	1,889	1,284	273	239	75,166
1919	132,237	38,115	38,200	10,690	9,560	6,560	618	920	236,900

AVERAGE INCREASE PER HEAD PER WEEK TO MALE EMPLOYEES.									
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
1913	4 11	4 2	4 6	6 3	2 10	6 9	..	..	4 8
1914	5 0	4 10	5 2	6 11	5 8	3 9	..	7 4	5 1
1915	5 6	4 2	5 9	7 0	4 3	5 3	9 5	5 11	5 4
1916	4 9	5 5	11 8	4 11	5 0	5 8	6 7	9 0	6 0
1917	6 3	5 7	5 5	6 3	5 2	7 11	11 1	8 9	5 10
1918	4 7	4 11	5 5	5 2	4 6	7 4	8 9	7 9	4 11
1919	10 5	7 2	7 8	6 8	7 11	9 5	9 7	9 1	8 11

NUMBER OF FEMALE EMPLOYEES AFFECTED.									
1913	6,148	4,562	550	958	..	1,480	..	..	13,698
1914	7,696	4,232	570	..	783	30	..	..	13,311
1915	11,588	3,065	1,033	399	73	360	..	..	16,518
1916	16,915	20,211	3,954	1,339	179	347	9	..	42,954
1917	18,557	20,136	9,777	3,365	209	529	..	..	52,573
1918	17,671	18,170	14,265	3,350	1,419	144	..	..	55,019
1919	26,954	19,304	17,460	3,215	2,488	2,202	..	70	71,693

NET AMOUNT OF INCREASE PER WEEK TO FEMALE EMPLOYEES.									
	£	£	£	£	£	£	£	£	£
1913	1,107	563	55	152	..	123	..	..	2,000
1914	1,400	542	73	..	266	7	..	..	2,288
1915	2,550	506	148	108	17	48	..	..	3,377
1916	3,480	3,689	577	156	26	43	6	..	7,977
1917	3,123	4,049	2,977	826	78	109	..	..	11,162
1918	2,784	2,940	3,513	574	244	39	..	..	10,094
1919	5,405	5,815	5,518	1,299	689	790	..	29	19,545

Note.—For continuation of Table see next page.

\* Changes recorded in this column are common to all States, as the particulars relating to the number of workpeople affected and the net amount of increase per week in each State were not ascertainable.

† Including four changes which affected 157 workpeople in the Federal Capital Territory.



CHANGES IN RATES OF WAGE.—MALE AND FEMALE OCCUPATIONS.—  
EFFECT OF CHANGES IN EACH STATE AND TERRITORY, 1913 TO  
1919—continued.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	N. Terr.	All States.*	C'wealth.
AVERAGE INCREASE PER HEAD PER WEEK TO FEMALE EMPLOYEES.									
1913	s. d. 3 7	s. d. 2 6	s. d. 2 0	s. d. 3 2	s. d. ..	s. d. 1 8	s. d. ..	s. d. ..	s. d. 2 11
1914	3 8	2 7	2 7	..	6 9	4 8	..	..	3 5
1915	4 5	3 4	2 10	5 5	4 8	2 8	..	..	4 1
1916	4 1	3 8	2 11	2 4	2 11	2 6	13 4	..	3 9
1917	3 4	4 0	6 1	4 11	7 6	4 1	..	..	4 3
1918	3 2	3 3	4 11	3 5	3 5	5 5	..	..	3 8
1919	4 0	6 0	6 4	8 1	5 6	7 2	..	8 3	5 5

\* See footnote on previous page.

5. Methods by which Changes were Effected.—(i) *Changes in Rates of Wage and Methods by which Effected—Commonwealth, 1918 and 1919.* In the following table particulars are given for the Commonwealth of the number of changes in rates of wage, the number of workpeople affected, and the total net amount of increase to the weekly wage distribution brought about either without, or after, stoppage of work, during the years 1918 and 1919 respectively, as a result of the application of one or other of the methods set out in the tables :—

CHANGES IN RATES OF WAGE.—METHODS BY WHICH EFFECTED,  
1918 AND 1919.

Methods by which Changes were Effected.	Without Stoppage of Work.			After Stoppage of Work.			All Changes.		
	No. of Changes.	No. of Work-people Affected.	Total Net Amount of Increase per Week.	No. of Changes.	No. of Work-people Affected.	Total Net Amount of Increase per Week.	No. of Changes.	No. of Work-people Affected.	Total Net Amount of Increase per Week.
1918.									
By voluntary action of employers	14	12,916	£ 2,396	..	..	£ 894	14	12,916	£ 2,396
By direct negotiations	103	41,085	8,579	29	2,343	894	132	43,428	9,473
By negotiations, intervention or assistance of third party	1	544	287	2	47	47	3	591	334
By award of Court under Commonwealth Act*	39	20,502	4,481	..	..	..	39	20,502	4,481
By agreement registered under Commonwealth Act*	142	6,764	1,683	..	..	..	142	6,764	1,683
By award or determination under State Acts	353	266,977	63,502	1	3,800	1,140	354	270,777	64,642
By agreement registered under State Acts	90	6,337	2,114	5	266	137	95	6,603	2,251
Total*	742	355,125	83,042	37	6,456	2,218	779	361,581	85,260
1919.									
By voluntary action of employers	36	10,285	4,373	..	..	..	36	10,285	4,373
By direct negotiations	202	77,096	25,796	36	7,439	3,141	238	84,535	28,937
By negotiations, intervention or assistance of third party	18	35,716	20,553	11	9,333	3,680	29	45,049	24,233
By award of Court under Commonwealth Act*	38	67,166	29,108	4	575	476	42	67,741	29,584
By agreement registered under Commonwealth Act*	140	27,084	9,969	1	160	48	141	27,244	10,017
By award or determination under State Acts	580	336,805	148,087	2	820	545	582	337,625	148,632
By agreement registered under State Acts	98	31,232	10,574	2	180	95	100	31,412	10,669
Total*	1,112	585,384	248,460	56	18,507	7,985	1,168	603,891	256,445

\* In this section of the table an Award or Agreement under the Commonwealth Conciliation and Arbitration Act, the Commonwealth (Public Service) Arbitration Act or an Order of the War Precautions Coal Board is counted as one change only, although such Award, Agreement, or Order may be operative in more than one State.

The total number of changes recorded during the year 1919 was 1,168, of which 582 or almost 50 per cent. of the total number were brought about by award or determination under State Industrial Acts. The number of workpeople who were affected by these changes was 337,625, and the total amount of increase per week in wages was £148,632. Of these 582 changes, 271 occurred in New South Wales, 61 in Victoria, 155 in Queensland, 50 in South Australia, 24 in Western Australia, and 21 in Tasmania. The number of changes in rates of wage which were recorded as having been made by awards or variations of awards under the provisions of the Commonwealth Conciliation and Arbitration Act was 42, as compared with 39 during the previous year. Direct negotiations between representatives of employers and employees brought about 238 changes in rates of wage during the year. A large number of industrial agreements were filed under the provisions of the Commonwealth and State Acts during the twelve months under review. Fifty-six changes in rates of wage were arranged after stoppages of work. The number of workpeople affected by these changes was 18,507.

(ii) *Changes in Rates of Wage and Methods by which Effected—Commonwealth, 1913-1919.* Comparative particulars are contained in the following table of the total number and effect of all changes in rates of wage brought about throughout the Commonwealth during the years indicated, as a result of the application of one or other of the specified methods:—

**CHANGES IN RATES OF WAGE, CLASSIFIED ACCORDING TO METHODS BY WHICH EFFECTED—COMMONWEALTH, 1913 AND 1916 TO 1919.**

Particulars.	By Voluntary Action of Employers.	By Direct Negotiations.	By Negotiations, Intervention or Assistance of Third Party.	By Award of Court under C'wealth Act.	By Agreement Registered under C'wealth Act.	By Award or Determination under State Act.	By Agreement Registered under State Act.	TOTAL.*
<b>1913.</b>								
Number of Changes ..	2	30	4	3	24	213	36	312
Number of Workpeople affected ..	12,011	4,336	101	4,487	3,387	136,702	5,108	166,132
Amount of Increase per week £	1,543	1,120	20	1,679	831	31,328	1,192	37,713
<b>1916.</b>								
Number of Changes ..	51	175	9	17	30	467	72	821
Number of Workpeople affected ..	55,580	46,633	4,984	40,978	25,081	305,340	13,911	492,487
Amount of Increase per week £	10,831	12,114	1,518	14,965	6,800	94,005	2,690	142,923
<b>1917.</b>								
Number of Changes ..	24	75	14	35	28	310	88	574
Number of Workpeople affected ..	9,531	15,827	19,500	20,759	16,443	198,723	12,127	292,910
Amount of Increase per week £	3,097	5,429	10,996	7,654	5,579	44,477	3,775	81,007
<b>1918.</b>								
Number of Changes ..	14	132	3	39	142	354	95	779
Number of Workpeople affected ..	12,916	43,428	591	20,502	6,764	270,777	6,603	361,581
Amount of Increase per week £	2,396	9,473	334	4,481	1,683	64,642	2,251	85,280
<b>1919.</b>								
Number of Changes ..	36	238	29	42	141	582	100	1,168
Number of Workpeople affected ..	10,285	84,535	45,049	67,741	27,244	337,625	31,412	603,891
Amount of Increase per week £	4,373	28,937	24,233	29,584	10,017	148,632	10,669	256,445

\* See footnote to table on page 1080.

It will be seen from the foregoing table that the greatest number of changes throughout the period under review was effected through the instrumentalities of the State Acts, though in relation to the total business the activities of the State organizations shew a decline from 80 per cent. of all changes in 1913 to 58 per cent. in 1919, while the changes made under the Commonwealth Acts have increased from 8.7 per cent. to 15.6 per cent. It is interesting to observe the very marked extent to which "direct negotiation" between parties has been resorted to in the later years. In 1913, only 30 changes, or less than 10 per cent. of the total, affecting only 2.6 per cent. of all persons concerned in the changes of that year, were brought about by direct negotiations, whereas in 1919, 238 changes (20 per cent.), affecting 84,535 persons, or 14 per cent. of the whole, resulted from this agency. It must be mentioned that, so far as possible, the effect of awards or agreements is recorded in the figures for the year in which such awards or agreements are made and filed. In certain cases, however, the awards or agreements are made retrospective as to the date on which the increased rate of wage has to be paid, while in others the particulars as to the number of workpeople affected and the effect of the change are difficult to ascertain.

## § 6. Industrial Disputes.

1. **General.**—Information with regard to the collection of particulars and methods of tabulation of industrial disputes involving stoppage of work has appeared in previous issues of the Year Book, and is also given in the Annual Reports of the Labour and Industrial Branch of this Bureau.

In the following tabulations particulars are included only with respect to the industrial disputes which commenced during any calendar year.\* This course requires the elimination of such data as relate to disputes which commenced during an earlier period, but which remained unsettled during some portion of the succeeding year. On the other hand it necessitates the inclusion of the number of working days and wages lost during the following year in connexion with disputes commenced during the calendar year to which the statistics relate.

2. **Comparative Summary of Disputes (involving Stoppage of Work), 1913 to 1919.**—The systematic collection of information as to industrial disputes (causing a stoppage of work) throughout the Commonwealth was first undertaken as from the 1st January, 1913, and particulars concerning disputes occurring during the year 1913 were published in Labour Report No. 5. The following table gives particulars of the number of industrial disputes which began in various years from 1913 to 1919, together with the number of workpeople involved, the number of working days lost, and the total estimated loss in wages in each State and Territory comprising the Commonwealth:—

### INDUSTRIAL DISPUTES IN EACH STATE AND TERRITORY.—COMPARATIVE PARTICULARS FOR 1913 AND 1916 TO 1919.

State or Territory.	Year.	No. of Disputes.	Establishments Involved in Disputes.	No. of Workpeople Involved.			No. of Working Days Lost.	Total Estimated Loss in Wages.
				Directly.	Indirectly.	Total.		
New South Wales	1913	134	466	25,647	14,364	40,011	468,957	216,368
	1916	336	717	91,762	31,638	123,400	1,145,222	674,064
	1917	296	918	118,515	15,508	134,023	3,308,869	1,929,405
	1918	138	182	24,417	8,624	33,041	181,639	112,894
	1919	267	678	64,956	35,040	99,996	3,669,186	2,397,259
Victoria	1913	29	63	4,151	2,026	6,177	85,212	35,744
	1916	55	449	13,576	2,092	15,668	228,269	114,683
	1917	52	636	15,976	2,114	18,090	760,410	378,946
	1918	33	190	4,235	1,513	5,748	165,020	99,346
	1919	62	372	15,169	7,437	22,606	733,333	392,796
Queensland	1913	17	20	1,781	225	2,006	55,288	28,374
	1916	64	252	17,367	2,951	20,318	170,690	96,976
	1917	39	202	12,074	971	13,045	317,699	178,125
	1918	84	696	8,803	1,875	10,678	183,883	131,142
	1919	69	295	9,078	6,336	15,414	586,661	327,537
South Australia	1913	9	13	272	16	288	2,412	1,029
	1916	21	45	1,037	606	1,643	10,583	6,004
	1917	24	44	3,958	146	4,104	57,446	30,306
	1918	17	25	1,576	429	2,005	18,276	10,515
	1919	32	75	4,437	3,409	7,846	238,378	127,303
Western Australia	1913	9	324	967	967	967	6,772	3,515
	1916	24	35	4,318	4,782	9,100	102,357	64,325
	1917	23	128	2,401	547	2,948	102,078	53,004
	1918	22	56	3,368	1,435	4,803	31,145	17,792
	1919	20	157	5,516	4,460	9,976	359,987	213,867
Tasmania	1913	8	30	444	20	464	987	434
	1916	6	36	366	68	434	21,389	11,207
	1917	8	11	1,062	623	1,685	52,541	24,502
	1918	1	1	42	..	42	462	250
	1919	5	127	1,098	588	1,686	63,271	32,738
Fed. Cap. Territory	1913	1	1	100	100	200	1,400	600
	1916	..	..	..	..	..	..	..
	1917	..	..	..	..	..	..	..
	1918	..	..	..	..	..	..	..
	1919	..	..	..	..	..	..	..
Northern Territory	1913	1	4	131	39	170	2,500	1,675
	1916	2	2	120	..	120	420	345
	1917	2	2	75	..	75	615	520
	1918	3	4	112	10	122	428	395
	1919	5	9	46	21	67	1,910	1,436
Commonwealth	1913	208	921	33,493	16,790	50,283	623,528	287,739
	1914	337	1,203	43,073	27,976	71,049	1,090,395	551,228
	1915	358	942	57,005	24,287	81,292	583,225	299,633
	1916	508	1,536	128,546	42,137	170,683	1,678,930	967,604
	1917	444	1,941	154,061	19,909	173,970	4,599,658	2,594,808
	1918	298	1,154	42,553	13,886	56,439	580,853	372,334
	1919	460	1,713	100,300	57,291	157,591	5,652,726	3,492,936

\* Any tabulations as to causes, duration, etc., based on disputes which were in existence in any given year, and not on those which commenced in that year, would inevitably result in confusion, seeing that particulars relating to the same dispute would probably occur in two successive years.

It may be seen from the foregoing table that industrial disputes throughout the Commonwealth were most frequent during the year 1916. The number of workpeople involved in disputes during 1916 and 1917 increased to an enormous extent, while the losses in working days and wages were considerably in excess of such losses during any previous yearly period. The figures for 1917 are swollen by the effects of the dispute at the Government Railway Workshops in New South Wales in connexion with the introduction of the "card system." The dislocation of industry due to this dispute is the most extensive which has been recorded by the Bureau since the systematic collection of particulars was undertaken at the beginning of the year 1913. After careful consideration of the data it was ascertained that 79 disputes throughout the various States were directly associated with the action of the employees at the Government Railway Workshops. The originating dispute, which commenced on the 2nd August, 1917, when the employees at the workshops ceased work as a protest against the introduction of a time-card system, rapidly extended to other industries throughout the Commonwealth. Railway employees in other branches of the service, coal and metalliferous miners, seamen, waterside workers, and others left work, mostly in sympathy with the railway men, while other workers, including carters, storemen, and artificial manure makers, refused to handle "black" goods and coal. Of the 79 disputes, which were the outcome of the original stoppage, 52 occurred in New South Wales; 18 in Victoria; 3 in South Australia; and 2 in each of the remaining States. The total number of workpeople involved in these dislocations was 97,507, the loss in working days was 3,982,250, with a consequent estimated loss in wages of £2,233,000. In addition a large number of employees in various industries, though not directly connected with the dispute, were thrown out of work by the restrictions placed upon the use of coal, gas and electricity.

The figures for 1914 and 1916 were inflated by disputes in the coal mining industry. In the earlier year, there was a protracted dispute in New South Wales through the refusal of the miners to work the afternoon shift. The estimated loss incurred was 523,000 working days, representing £259,000 in wages. In 1916 the coal mining employees in New South Wales, Victoria, Queensland, and Tasmania ceased work over the question of the "eight hours bank to bank." The loss on this occasion was 409,000 working days, equivalent to £240,850 in wages.

In regard to extensive dislocations of industry which occurred prior to the institution of systematic inquiries by the Bureau, efforts have been made to obtain statistical data relating to the shearers' disputes in 1890, 1891 and 1894, and also concerning the number of workpeople involved and the losses caused by the maritime dispute in the early part of 1891, but precise information is not obtainable.

The proportion of disputes in each State expressed as a percentage on the total for the Commonwealth is as follows :—

#### PROPORTION PER CENT. OF DISPUTES IN THE LARGER STATES, 1913 TO 1919.

State.	1913.	1914.	1915.	1916.	1917.	1918.	1919.
New South Wales ..	65	70	76	66	69	46	58
Victoria .. ..	14	13	11	11	12	11	13
Queensland .. ..	8	5	5	13	9	28	15
Other States and Territories	13	12	8	10	10	15	14
Commonwealth ..	100	100	100	100	100	100	100

Although the number of disputes in 1919 was less than that in 1916, and the number of workpeople involved was less than in either of the years 1916 and 1917, yet, measured by the loss of time and wages, the disruption to industry which occurred during 1919 was the most serious which the Commonwealth has experienced since records of such

matters were instituted in 1913. Prior to 1919 the most serious loss in wages was incurred in 1917, when it amounted to £2,594,808, a sum outstanding in its magnitude as compared with other years. In 1919, however, this amount was exceeded by £898,128, the estimated loss in wages being £3,492,936, representing 5,652,726 working days. The more important of the disputes which contributed to this loss were the disputes of the miners at Broken Hill (who ceased work during the second quarter of 1919 and had not resumed at the end of June, 1920) and of the seamen and marine engineers. Particulars of these disputes are given in section 12 of Labour Report No. 10.

It is, of course, obvious that the mere number of disputes cannot by itself be accepted as a proper basis of comparison, nor does the number of workpeople afford a satisfactory basis. A better idea as to the significance and effect of industrial disputes may be obtained from the number of working days lost and the estimated loss in wages.

The position which New South Wales occupies in comparison with the other States is practically wholly due to the prevalence of disputes in connection with coal mining. Apart from these stoppages the number of disputes in all other industries, whilst still in excess of that for each of the other States, does not compare unfavourably when the number of workpeople in each State is taken into consideration.

3. Number and Magnitude of Industrial Disputes in the Commonwealth, Classified according to Industrial Groups.—Comparative Particulars for 1918 and 1919.—The following table gives particulars of disputes in the Commonwealth during the years 1918 and 1919, classified according to industrial groups. The system of classification selected is similar to that adopted in connexion with labour organisations, unemployment, rates of wage, etc. (see Report No. 10, Labour and Industrial Branch, page 9).

#### INDUSTRIAL DISPUTES IN THE COMMONWEALTH, CLASSIFIED ACCORDING TO INDUSTRIAL GROUPS, 1918 AND 1919.

Industrial Group.	No. of Disputes.		No. of Workpeople Involved in Disputes.		No. of Working Days Lost.		Total Estimated Loss in Wages.	
	1918.	1919.	1918.	1919.	1918.	1919.	1918.	1919.
I. Wood, Furniture, Timber, etc.	4	7	272	134	2,232	1,036	£ 1,215	£ 631
II. Engineering, Metal Works, etc.	10	15	3,477	1,846	168,167	18,147	97,225	10,726
III. Food, Drink, etc.	36	39	5,276	12,080	54,014	198,920	40,759	124,422
IV. Clothing, Hats, Boots, etc.	7	2	355	399	3,047	6,365	1,566	2,705
VI. Other Manufacturing	20	31	1,092	5,091	10,833	57,095	6,436	29,477
VII. Building	11	12	685	2,810	3,602	127,729	2,235	76,118
VIII. Mines, Quarries, etc.	135	231	35,149	86,607	219,293	2,718,074	149,406	1,905,075
IX. Rail and Tramway Services	16	21	2,345	2,969	27,310	57,419	15,615	33,573
X. Other Land Transport	1	5	60	683	180	17,009	88	8,763
XI. Shipping, Wharf Labour	14	41	4,102	32,714	26,504	2,271,030	13,395	1,182,933
XII. Pastoral, Agricultural, etc.	24	24	1,985	6,257	49,539	49,770	33,870	34,497
XIII. Domestic, Hotel, etc.	3	5	62	287	486	1,018	142	396
XIV. Miscellaneous	17	27	1,579	5,694	15,646	129,114	10,382	83,620
Commonwealth, All Groups	298	460	56,439	157,591	580,853	5,652,726	372,334	3,492,936

Attention has frequently been drawn to the preponderating influence exercised by disputes in the coal-mining industry in New South Wales on the total number of industrial disputes. In making any comparison as to the number of disputes in this industrial class in each State, it should be observed that while the number of workers engaged in the mining industry is very much larger in New South Wales than in any of the other States, nevertheless the total number of disputes recorded in that State is somewhat greater than in any other State. Of the 2,613 disputes recorded in the Commonwealth for the seven years 1913–19, 1,299 or 49.7 per cent. were connected with the industries included in Group VIII., Mines, Quarries, &c.

4. Duration of Industrial Disputes in the Commonwealth, 1919.—In the following table particulars are given with respect to the number of disputes, workpeople directly and indirectly involved, working days lost, and estimated amount of loss in

wages respectively, consequent on the cessations of work which were recorded for the Commonwealth during the year 1919, classified under the adopted limits of duration :—

#### DURATION OF INDUSTRIAL DISPUTES IN THE COMMONWEALTH, 1919.

Limits of Duration.	No. of Disputes.	No. of Workpeople Involved.			Number of Working Days Lost.	Total Estimated Loss in Wages.
		Directly.	Indirectly.	Total.		
						£
1 day and less .. ..	154	29,218	11,825	41,043	40,977	35,639
2 days and more than 1 day	59	10,973	2,767	13,740	26,561	20,210
3 days and more than 2 days	36	6,724	3,149	9,873	29,371	20,944
Over 3 days and less than 1 week (6 days) .. ..	52	9,165	1,815	10,980	48,935	36,147
1 week and less than 2 weeks	68	15,670	2,171	17,841	132,501	86,101
2 weeks and less than 4 weeks	32	4,852	7,312	12,164	166,998	102,428
4 weeks and less than 8 weeks	26	4,707	3,281	7,988	247,106	159,921
8 weeks and over ..	33	18,991	24,971	43,962	4,960,277	3,031,546
Total .. ..	460	100,300	57,291	157,591	5,652,726	3,492,936

NOTE.—Similar figures for the years 1913 to 1918 will be found in previous issues of the Year Book and also in the Labour Reports.

5. Industrial Disputes, Classified as to Causes, Commonwealth, 1913-1919.—The following table shows the number of disputes, number of workpeople involved, and the total number of working days lost in disputes which commenced during the years 1913 to 1919, classified according to principal cause :—

#### CAUSES OF INDUSTRIAL DISPUTES IN THE COMMONWEALTH, 1913 TO 1919.

Causes of Disputes.	1913.	1914.	1915.	1916.	1917.	1918.	1919.
NUMBER OF DISPUTES.							
1. Wages—							
(a) For increase ..	42	50	73	125	53	54	99
(b) Against decrease ..	4	3	10	7	1	4	2
(c) Other wage questions	31	67	46	96	69	69	100
2. Hours of Labour—							
(a) For reduction ..	3	1	3	16	2	1	4
(b) Other disputes re hours	7	13	6	5	8	11	5
3. Trades Unionism—							
(a) Against employment of non-unionists ..	8	13	19	14	26	7	19
(b) Other union questions	5	11	16	8	32	19	29
4. Employment of particular Classes or Persons ..	44	83	76	83	90	92	118
5. Working Conditions ..	51	72	76	90	81	34	54
6. Sympathetic ..	5	3	6	20	57	1	6
7. Other Causes ..	8	21	27	44	25	6	24
Total ..	208	337	358	508	444	298	460
NUMBER OF WORKPEOPLE INVOLVED.							
1. Wages—							
(a) For increase ..	8,633	7,362	18,783	30,193	7,135	7,095	58,532
(b) Against decrease ..	563	534	1,113	1,051	21	57	667
(c) Other wage questions	7,160	15,243	11,990	23,507	18,894	12,737	26,222
2. Hours of Labour—							
(a) For reduction ..	460	220	896	24,481	1,004	26	578
(b) Other disputes re hours	1,819	3,237	2,643	579	2,576	4,214	961
3. Trades Unionism—							
(a) Against employment of non-unionists ..	5,370	5,807	3,873	1,178	6,182	710	9,001
(b) Other union questions	1,418	1,593	3,739	1,167	17,320	6,673	17,509
4. Employment of particular Classes or Persons ..	11,370	14,863	13,844	15,910	15,445	14,576	21,488
5. Working Conditions ..	10,785	17,053	16,114	20,516	19,021	7,757	11,582
6. Sympathetic ..	947	675	950	4,191	76,076	200	3,080
7. Other Causes ..	1,758	4,462	7,347	47,910	10,296	2,394	7,971
Total ..	50,283	71,049	81,292	170,683	173,970	56,439	157,591

**CAUSES OF INDUSTRIAL DISPUTES IN THE COMMONWEALTH,  
1913 TO 1919—continued.**

Causes of Disputes.	1913.	1914.	1915.	1916.	1917.	1918.	1919.
<b>NUMBER OF WORKING DAYS LOST.</b>							
1. Wages—							
(a) For increase ..	100,069	99,451	190,645	592,625	56,083	198,323	4,748,081
(b) Against decrease ..	9,438	32,965	12,555	6,192	42	316	10,013
(c) Other wage questions ..	78,183	169,847	133,606	143,248	225,080	97,561	96,118
2. Hours of Labour—							
(a) For reduction ..	2,774	9,240	836	583,052	78,016	312	10,372
(b) Other disputes re hours ..	15,111	16,855	23,374	1,598	62,560	20,551	15,760
3. Trades Unionism—							
(a) Against employment of non-unionists ..	91,002	92,720	31,145	48,881	87,600	21,894	279,804
(b) Other union questions ..	32,388	6,968	7,434	10,276	572,949	24,341	329,205
4. Employment of particular Classes or Persons ..	191,723	64,367	77,862	70,452	47,297	113,466	87,225
5. Working Conditions ..	73,562	584,289	82,322	81,511	211,971	93,468	32,029
6. Sympathetic ..	24,066	2,125	6,004	75,447	3,239,798	7,200	21,050
7. Other Causes ..	5,212	11,568	17,442	65,648	18,262	3,421	23,069
Total ..	623,528	1,090,395	583,225	1,678,930	4,599,658	580,853	5,652,726

It will be observed from the above table that the main causes of industrial disputes are "Wage" questions, "Working Conditions," and "Employment of Particular Classes or Persons." In each of the seven years, 1913-1919, the number of dislocations concerning wages exceeded those caused by any other question, having varied between a minimum proportion of 28 per cent. in 1917 and a maximum of 45 per cent. in 1916. The proportion attributed to this cause in 1919 was 44 per cent. The majority of the disputes classified under the heading, "Employment of Particular Classes or Persons," are stoppages of work for the purpose of protesting against the dismissal of certain employees, who, in the opinion of their fellow-workers, have been unfairly treated or victimised. This class of dispute occurs very frequently in the coal mining industry. The number of disputes over "Trade Union" questions and "Hours of Labour" has represented a fairly uniform proportion of the total number of disputes during the years under review. "Sympathetic" disputes were numerous during the years 1916 and 1917. The figures for the latter year were abnormal in comparison with the other periods. It may be mentioned, however, that the disputes which arose during that year in connection with the "time-card system" dispute were responsible for the increase in the number.

**6. Results of Industrial Disputes, Commonwealth, 1913-19.**—The following table shows the number of disputes, number of workpeople involved, and the number of working days lost in disputes throughout the Commonwealth during the seven years 1913-19, classified according to results:—

**INDUSTRIAL DISPUTES CLASSIFIED ACCORDING TO RESULTS,  
COMMONWEALTH, 1913 TO 1919.**

Year.	No. of Disputes.				Number of Workpeople Involved in Disputes.				Total Number of Working Days Lost by Disputes.			
	In Favour of Workpeople.	In Favour of Employer.	Compromise.	Indefinite.	In Favour of Workpeople.	In favour of Employer.	Compromise.	Indefinite.	In Favour of Workpeople.	In Favour of Employer.	Compromise.	Indefinite.
1913	67	64	66	11	10,914	12,211	24,826	2,332	59,823	104,654	433,014	26,037
1914	118	98	110	11	21,224	18,242	30,398	1,187	129,995	119,819	829,265	11,316
1915	190	78	68	22	44,140	15,327	14,860	6,965	245,625	155,659	151,544	30,397
1916	223	178	84	23	70,588	36,670	23,296	40,129	886,010	253,084	476,302	63,534
1917	147	188	100	9	24,331	119,589	22,310	7,740	103,267	4,201,981	285,103	9,307
1918	92	100	93	13	13,780	15,998	23,739	2,922	101,207	177,223	280,045	22,378
1919	154	157	139	10	54,810	43,140	47,995	11,646	2,398,252	406,361	635,671	2,212,442

It will be seen from the above table that, during the years 1913, 1914, 1915, and 1916 the disputes resulting in favour of workpeople exceeded those resulting in favour of employers. During 1917, 1918, and 1919, however, the position was reversed. A considerable number of disputes in each year resulted in a compromise, while certain disputes resulted in such a manner that they could not be definitely classed as in favour of either party. The exceptionally heavy loss of working days shewn under the heading "Indefinite" in the above table is due to the dispute affecting miners and others at Broken Hill, which had not terminated when the tabulations were closed.

7. Methods of Settlement of Industrial Disputes, Commonwealth, 1913-19.—The following tables shew the number of disputes, number of workpeople involved, and number of working days lost in industrial disputes during the seven years 1913-19, classified for the Commonwealth according to the adopted schedule of methods of settlement:—

**METHODS OF SETTLEMENT OF INDUSTRIAL DISPUTES,  
COMMONWEALTH, 1913 TO 1919.**

Methods of Settlement.	1913.	1914.	1915.	1916.	1917.	1918.	1919.
NUMBER OF DISPUTES.							
Negotiations—							
Direct between employers and employees or their representatives...	119	247	254	319	234	171	291
By intervention or assistance of distinctive third party—not under Commonwealth or State Industrial Act ..	17	11	29	34	38	21	35
Under State Industrial Acts—							
By intervention, assistance, or compulsory conference ..	19	7	3	9	12	20	33
By reference to Board or Court ..	22	17	5	10	13	14	5
Under Commonwealth Conciliation and Arbitration Act—							
By intervention, assistance, or compulsory conference ..	4	5	2	6	3	8	9
By Filling Places of Workpeople on Strike or Locked Out ..	13	16	9	18	36	26	22
By Closing-down Establishment Permanently ..	1	4	1	6	4	8	7
By other Methods ..	13	30	55	106	104	30	58
Total ..	208	337	358	508	444	298	460

**NUMBER OF WORKPEOPLE INVOLVED.**

Negotiations—							
Direct between employers and employees or their representatives ..	23,357	48,204	54,242	68,841	49,512	34,680	76,070
By intervention or assistance of distinctive third party—not under Commonwealth or State Industrial Act ..	3,172	8,054	6,170	32,043	23,338	4,155	47,849
Under State Industrial Acts—							
By intervention, assistance, or compulsory conference ..	6,505	770	1,515	2,117	6,295	2,958	6,926
By reference to Board or Court ..	12,774	7,308	815	2,291	2,779	3,392	1,380
Under Commonwealth Conciliation and Arbitration Act—							
By intervention, assistance, or compulsory conference ..	659	205	2,919	1,110	1,490	3,042	1,997
By Filling Places of Workpeople on Strike or Locked Out ..	658	629	205	413	17,780	1,933	2,202
By Closing-down Establishment Permanently ..	170	86	200	150	434	538	401
By other Methods ..	2,988	5,793	15,226	63,718	72,342	5,741	20,766
Total ..	50,283	71,049	81,292	170,683	173,970	56,439	157,591



**METHODS OF SETTLEMENT OF INDUSTRIAL DISPUTES,  
COMMONWEALTH, 1913 TO 1919—continued.**

Methods of Settlement.	1913.	1914.	1915.	1916.	1917.	1918.	1919.
<b>NUMBER OF WORKING DAYS LOST.</b>							
<b>Negotiations—</b>							
Direct between employers and employees or their representatives	94,400	803,799	384,425	563,828	551,484	222,846	632,269
By intervention or assistance of distinctive third party—not under Commonwealth or State Industrial Act	26,335	128,231	56,126	812,763	863,896	37,444	4,724,155
<b>Under State Industrial Act—</b>							
By intervention, assistance, or compulsory conference	187,871	4,256	20,537	31,696	159,799	57,559	94,557
By reference to Board or Court	221,769	120,685	15,418	48,022	48,352	151,472	8,460
<b>Under Commonwealth Conciliation and Arbitration Act—</b>							
By intervention, assistance, or compulsory conference	2,105	1,421	26,883	20,697	33,396	23,239	74,018
By Filling Places of Workpeople on Strike or Locked Out	14,139	4,402	1,533	9,060	908,596	35,298	46,029
By Closing-down Establishment Permanently	20,400	3,646	19,600	2,776	11,392	4,270	5,737
By other Methods	56,509	23,955	58,703	190,088	2,022,743	48,675	67,501
<b>Total</b>	<b>623,528</b>	<b>1,090,395</b>	<b>583,225</b>	<b>1,678,930</b>	<b>4,599,658</b>	<b>580,853</b>	<b>5,652,726</b>

In the above tables the methods of settlement of all disputes recorded during the past seven years are set out in comparative form. In all years it will be observed that direct negotiations between the employers and employees settled the majority of the disputes. The proportion of disputes so settled ranges between a minimum of 53 per cent. in 1917 and a maximum of 73 per cent. in 1914; in 1919 the proportion was 63 per cent. The numbers of dislocations which have been settled by compulsory conferences or the intervention and assistance of officials under State or Commonwealth Arbitration Acts have not varied greatly during the period under review. In connexion with the comparatively large numbers of disputes which are classified as having been settled "By other methods," it must be mentioned that a large number of stoppages of work occur each year, principally at the collieries, without any cause for such stoppages being brought officially under the notice of the employers or their representatives. Such stoppages usually last for one day, and work is resumed without any negotiations for a settlement of the trouble which caused the stoppage. The mining dispute at Broken Hill was unsettled when the tabulations relating to dislocations of work during the year 1919, were closed. In the above table, the figures relating to this particular dispute are included in the totals shewn against the method of settlement "by intervention or assistance of a distinctive third party—not under Commonwealth or State Industrial Act."

## § 7. Retail Prices, House Rents, and Cost of Living.

**1. Introduction.**—In Labour Report No. 1, issued in December, 1912, the results of certain investigations into the subjects of Prices, Price-Indexes and Cost of Living in past years were published, and some account was given of the methods employed for the collection of the data and of the technique adopted in the computation of the results. A detailed examination of the theory upon which the calculation of the index-numbers is based was given, but being necessarily too technical for the ordinary reader, was relegated to Appendixes. In Reports Nos. 2, 5, 6, 7, 8, 9, and 10, results of further investigations were included, and in Labour Bulletins Nos. 1 to 18, and in Quarterly Summaries of Statistics, Nos. 70 to 78, information was incorporated regarding variations in retail and wholesale prices, house-rent, and purchasing-power of money up to the end of 1919.

It must here suffice to state that the method adopted for the computation of the index-numbers is what may very properly be called the "aggregate expenditure" method. The first process is, of course, to work out the average price of each commodity included, and numbers (called "mass-units") representing the *relative* extent to which each commodity was on the average used or consumed are then computed. The price in any year of each commodity multiplied by its corresponding "mass-unit" represents, therefore, the relative total expenditure on that commodity in that year *on the basis of the adopted regimen*. It follows, therefore, that by taking for any year the sum of the price of each commodity multiplied by its corresponding "mass-unit," a figure is obtained which represents the relative aggregate or total expenditure of the community in that year on all the commodities, etc., included. By computing these aggregate expenditures for a series of years and taking the expenditure in any selected year as "base," that is, making the expenditure in that year equal to 1,000 units, the relative expenditure in any other year, that is to say, the "index-numbers," are readily ascertained. Numerical examples of the technique and methods adopted for the computation of index-numbers were given in Report No. 2 (pp. 44 and 45), and in Report No. 9 Appendixes I to IV., pp. 174 to 229.

2. *Scope of Investigation.*—It was pointed out in Report No. 1 that, in any investigation into the question of change in cost of living of a community, a careful distinction must be drawn between two things, viz. :—

- (a) Variations in the *purchasing-power* of money, and
- (b) Variations in the *standard of living*.

In Report No. 2, attention was drawn to the fact that the second element (b) can be limited, at any rate to some extent, by the exercise of self denial and thrift, and that such limitation is at the disposal of each individual; the former (a) is not subject to this possibility. Thus, from this aspect, social economics are concerned *primarily* with an accurate estimation of variations in the purchasing-power of money and only secondarily with the question of the general standard of living which has been reached. The first desideratum demands the selection of a suitable list of commodities, the quantities of each being taken in due proportion to their relative average consumption. The quantities in this list being kept constant, the cost of the whole group must then be ascertained. In this way a comparison may be made of the cost in different areas or districts at the same time, as well as the variation in any one place from time to time. This is the "aggregate expenditure" method explained above.

As explained in Report No. 1, special steps were taken to conduct the investigation back as far as 1901 for the capital towns only. The collection of current monthly returns as to prices and of quarterly returns of house rents commenced in 30 of the more important towns of the Commonwealth in January, 1912.

3. *Commodities and Requirements Included.*—The 47 items of expenditure included are divided into four groups, viz. :—(i) groceries and bread, (ii) dairy produce, (iii) meat, and (iv) house rent. These items cover about 60 per cent. of the total expenditure of a normal family. There are very cogent reasons for the restriction of the enquiries to the items mentioned. If the comparisons made are to be satisfactory, no confusion must arise between changes in the standard of living and changes arising from a variation of the purchasing-power of money. In order to avoid such confusion the items selected are such as are sensibly identical and identifiable in the various localities. The most important group of expenditure which is not included is clothing, the cost of which amounts to about 13 per cent. of the total expenditure. Owing to influences of individual taste, fashion, and the enormous variety of production, articles included in this group are practically not comparable and identifiable. As regards fuel and light, the cost of which amounts to about 4 per cent. of the total expenditure, while these commodities are comparable and identifiable, the usage or relative consumption in the towns included in the inquiries varies to such an extent that their inclusion on an assumed constant regimen would tend to produce a fictitious result in so far as variations in the purchasing-power of money are concerned.

In Report No. 10 (page 26), a tabular statement was given furnishing particulars of the commodities and items included, the units of measurement for which prices are collected, and the mass-units shewing the relative extent to which each item is used or consumed.

4. **Variations in the Purchasing-Power of Money in each Metropolitan Town, 1901 to 1919.**—In Labour Reports and Bulletins, and in recent issues of the Quarterly Summaries of Statistics, index-numbers were given for each of the four groups, and for all groups combined for each capital town since 1901, the expenditure in 1911 being taken in each case as base (=1,000). In this section only summarised results are given. Firstly, for food and groceries; secondly, for house rent; and thirdly, for all groups combined—the weighted average expenditure for all capital towns in 1911 being taken in each case as base (=1,000). The index-numbers in each table are fully comparable with each other, that is to say, they show not only the variations from year to year in each capital town, but also the relative cost as between the towns.

(i) *Food and Groceries.* The index-numbers thus computed for the three groups comprising groceries and food are shewn in the following table :—

**RETAIL PRICES IN METROPOLITAN TOWNS, INDEX-NUMBERS FOR GROCERIES AND FOOD (GROUPS I., II., AND III.), 1901 TO 1919.**

Town.	1901.	1906.	1910.	1911.	1912.	1913.	1914.	1915.	1916.	1917.	1918.	1919.
Sydney ..	917	964	1,000	989	1,124	1,131	1,156	1,396	1,520	1,540	1,549	1,783
Melbourne ..	965	945	960	935	1,082	1,024	1,091	1,411	1,462	1,412	1,466	1,620
Brisbane ..	965	959	1,000	1,018	1,102	1,042	1,078	1,373	1,426	1,406	1,495	1,762
Adelaide ..	1,028	982	1,001	1,020	1,154	1,119	1,215	1,487	1,532	1,445	1,554	1,719
Perth ..	1,184	1,237	1,251	1,346	1,345	1,267	1,302	1,483	1,542	1,505	1,486	1,772
Hobart ..	1,011	1,047	1,073	1,058	1,190	1,164	1,212	1,445	1,523	1,544	1,635	1,748
Weighted Average* ..	972	980	1,005	1,000	1,129	1,095	1,144	1,416	1,495	1,472	1,514	1,716

\* For all capital towns.

The above figures are directly comparable in every respect; thus it will be seen that the same quantity of food and groceries, which cost £1,000 in the capital towns considered as a whole in 1911, would have cost £917 in Sydney in 1901, £1,346 in Perth in 1911, or £1,620 in Melbourne in 1919.

The weighted average retail price index-numbers for the six capital cities shew that the upward tendency of prices was temporarily arrested on two occasions since 1911—first in 1913, and, again, in 1917. The first instance was mainly due to a fall in the prices of sugar, potatoes, and butter; while in 1917 bread, flour, potatoes, milk, and beef were the more important items which contributed to the decline. The movement indicated was, with four exceptions, common to all the capital cities. The prices for Sydney show a rise in every year since 1911; in 1917 Sydney and Hobart constituted exceptions to the decline experienced in all the other capitals; while in 1918 the figures for Perth only shewed a decline. In 1919 increases were experienced in all the cities concerned. Comparing the results for 1919 with those for 1911 it will be seen that the extent, by which prices increased, varied from 80 per cent. in Sydney to 32 per cent. in Perth. It will be noticed, however, that prices were abnormally high in Perth in 1911. Disregarding Perth, it will be found that the variation between the other cities—which were, substantially, on an equality in 1911—is not more than 15 per cent., the extremes being 80 per cent. in Sydney and 65 per cent. in Hobart.

(ii) *House Rent.* In the following table, index-numbers are given computed for the weighted average house rent in each of the capital towns from 1901 to 1919, taking the average rent for the six capital towns in 1911 as the base (=1,000). The average rent has been obtained for each town separately by multiplying the average predominant rent for each class of house (i.e., houses having less than 4 rooms, 4 rooms, 5 rooms, 6 rooms, 7 rooms, and over 7 rooms) by a number ("weight") representing the relative number of houses of that class in the particular town. The sum of the products thus obtained, divided by the sum of the weights, gives the weighted average for all houses. The number of houses in each class for each town was obtained from the results of the 1911 census. It should be observed, therefore, that these index-numbers are based on the weighted average rents for all houses, and that they do not refer to any particular class of houses. The actual predominant rents for each class were given in appendixes to

Reports Nos. 1, 2, 5, 6, 7, 8, 9, and 10, and an examination of these figures shows that for some classes of houses the increase has been greater, and in some less, than the general increase indicated in the following table.

**HOUSE RENTS IN METROPOLITAN TOWNS.—INDEX-NUMBERS SHEWING  
WEIGHTED AVERAGE RENTS (GROUP IV.), 1901 TO 1919.**

Town.	1901.	1906.	1910.	1911.	1912.	1913.	1914.	1915.	1916.	1917.	1918.	1919.
Sydney ..	858	891	988	1,090	1,183	1,246	1,279	1,220	1,212	1,215	1,252	1,289
Melbourne ..	733	782	916	970	1,016	1,089	1,126	1,085	1,089	1,124	1,180	1,283
Brisbane ..	488	524	700	767	804	863	882	859	847	859	905	983
Adelaide ..	629	761	1,018	1,112	1,160	1,125	1,040	932	930	959	1,022	1,108
Perth ..	801	716	696	810	880	928	914	848	869	874	885	916
Hobart ..	667	686	776	805	829	887	914	928	928	951	956	1,134
Weighted Average*	751	793	919	1,000	1,063	1,118	1,135	1,081	1,081	1,098	1,143	1,215

\* For all capital towns.

Note.—The above figures are directly comparable in every respect.

The figures given in the above table shew that from 1901 to 1914 house rents increased in all the capital cities, though varying in degree, from 14 per cent. in Perth to 81 per cent. in Brisbane, where, however, rents were very low in 1901. The weighted average index-number, which is, of course, largely dominated by the experience of the more populous cities of Sydney (with an increase of 49 per cent.) and Melbourne (54 per cent.) increased from 751 in 1901 to 1,135 in 1914, or by 51 per cent. This increase in the weighted average represents the accumulated results of increments of varying amount, in each of the years 1901–1914, without exception. These annual increments to rents were experienced in all the capital cities except Adelaide and Perth. Since 1916 rents have advanced in all the capital cities. The rent index-numbers for Perth for the years 1904–10 consistently followed a direction opposite to that taken by the same indices relating to the other cities, inasmuch as, instead of moving upward, they declined during each year, the aggregate result being a fall from 802 in 1903 to 667 in 1909, and, although they rose in 1910 to 696, they were even then below the level of 1903. This period of falling rents in Perth—in such striking contrast to the experience of all the other capital cities—was contemporaneous with a diminution almost to vanishing point of net immigration, which for many years had been considerable. A further factor in the arrest of the growth of population consisted in the reduction of public expenditure following upon the completion of large public works, while, at the same time, there was a falling-off in speculative ventures in gold-mining. Moreover, during this period there was a marked movement by residents of Perth to land settlement in the southern districts of the State.

A further striking feature in the movements of rents, as shewn by the weighted average index-numbers given in the foregoing table, is the decline registered in the years 1915–1917. This fall was probably, in some measure, due to the circumstance that wives and other dependents of soldiers, for social reasons, gave up their separate establishments and shared houses or apartments, thus reducing the demand for house accommodation. The Government regulations forbidding the increase of rents of houses tenanted by soldiers' dependents would, also, have a restraining influence on any tendency for rents to rise. The high prices for food and groceries during these years also furnished an inducement, for economic reasons, to persons, other than soldiers' dependents, to share a house. The compensating movements of the prices of food and groceries, and of house rents, will be referred to later.

(iii) *Food, Groceries, and House Rent combined.* The weighted averages for all four groups are of importance, as indicating the general results of this investigation so far as the purchasing-power of money is concerned. The following table shews the

index-numbers for groceries, food, and house rent for each metropolitan town, the weighted average cost for the six capital towns in 1911 being taken as base (=1000) :—

**PURCHASING-POWER OF MONEY IN METROPOLITAN TOWNS.—PRICE INDEX-NUMBERS\* SHEWING WEIGHTED AVERAGE RESULTS FOR ALL GROUPS (GROCERIES, DAIRY PRODUCE, MEAT, AND HOUSE RENT), 1901 TO 1919.**

Town.	1901.	1906.	1910.	1911.	1912.	1913.	1914.	1915.	1916.	1917.	1918.	1919.
Sydney ..	893	934	995	1,031	1,148	1,178	1,206	1,323	1,394	1,406	1,427	1,580
Melbourne ..	870	878	942	950	1,055	1,051	1,105	1,277	1,309	1,294	1,349	1,481
Brisbane ..	769	780	877	915	979	969	997	1,162	1,188	1,181	1,252	1,442
Adelaide ..	864	891	1,008	1,058	1,157	1,121	1,143	1,259	1,285	1,245	1,335	1,468
Perth ..	1,027	1,024	1,023	1,126	1,154	1,128	1,143	1,222	1,266	1,246	1,239	1,420
Hobart ..	869	899	951	954	1,042	1,050	1,090	1,233	1,278	1,301	1,356	1,496
Weighted Average† ..	880	902	970	1,000	1,101	1,104	1,140	1,278	1,324	1,318	1,362	1,510

\* As the price index-number increases, the purchasing-power of money diminishes.

† For all capital towns.

Note.—The above figures are directly comparable in every respect.

From this table, which presents the index-numbers for the combined results from food and groceries and rents, it will be seen that, on the basis of the weighted average for the six capital cities, the decline (alluded to in (i) of this sub-section) in the prices of food and groceries during 1913 was more than counterbalanced by the rise in house rents. This, however, was not the case with regard to Melbourne, Brisbane, or Perth, for each of which the combined index shews a decline. Adelaide, alone, shewed a decrease in house rents in 1913, consequently the decline in the combined index-number for that city was the most marked. In 1917 the fall in the prices of food and groceries was sufficient to outweigh the increase in house rents and so effect a slight decrease in the combined index-number. As in 1913, the net effect in Sydney and in Hobart did not conform to the experience indicated by the weighted average. In 1918 the upward movement was experienced in all the cities except Perth, while in 1919 it was general throughout.

The abnormal movements of the prices of food and groceries, and of house rents, during the war years present features of particular interest. It will be seen that, on the basis of the weighted averages, prices of food and groceries rose in 1915 by about 24 per cent. over 1914, and continued on a somewhat higher level, whereas the weighted average for house rents fell in 1915 by 4.8 per cent., and remained below the 1913 level until 1918. The combination of house rents with prices of food and groceries has had the effect of very materially modifying the index of prices, or, in other words, the purchasing-power of money, as compared with the similar index based on food and groceries only. In 1918 and 1919 there were increases in both prices of food and groceries and house rents, the combined results for 1919 being an increase of 10.9 over 1918, 32.5 per cent. over 1914, and 51.0 per cent. over 1911. The decrease in the purchasing-power of money between 1919 and 1914 has varied between the capital cities from 24 per cent. in Perth to 45 per cent. in Brisbane, while between 1919 and 1911 it has varied between 26 per cent. in Perth and 58 per cent. in Brisbane.

**5. Variation in Purchasing-Power of Money, 1901 to 1919.**—The tables in paragraph 4 give the relative cost in the six capital towns of food, groceries, and house rent from 1901 to 1919 in the form of index-numbers. The figures have been converted into a monetary basis in the next table, and shew the sums which would have to be paid in each town and in each year in order to purchase such relative quantities (indicated by the mass-units) of the several commodities, and to pay such sums for house rent as would in the aggregate cost £1, according to the weighted average prices and rents in the six capital towns in 1911.

## CHANGES IN PURCHASING-POWER OF MONEY (FOOD, GROCERIES, AND HOUSE RENT), 1901-19.

Year.	Sydney.	Melbourne.	Brisbane.	Adelaide.	Perth.	Hobart.	Weighted Average of 6 Capital Towns.
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
1901 .. ..	17 10	17 5	15 5	17 3	20 6	17 5	17 7
1906 .. ..	18 8	17 7	15 7	17 10	20 5	18 0	18 0
1911 .. ..	20 7	19 0	18 4	21 2	22 6	19 1	20 0*
1913 .. ..	23 7	21 0	19 5	22 5	22 6	21 1	22 1
1914 .. ..	24 1	22 1	19 11	22 10	22 10	21 10	22 10
1915 .. ..	26 6	25 6	23 3	25 2	24 5	24 8	25 7
1916 .. ..	27 10	26 2	23 9	25 8	25 4	25 7	26 6
1917 .. ..	28 1	25 11	23 7	24 11	24 11	26 0	26 4
1918 .. ..	28 6	27 0	25 1	26 8	24 9	27 1	27 3
1919 .. ..	31 7	29 7	28 10	29 4	28 5	29 11	30 2

\* Basis of Table.

(i) *Groceries and Food only.* The following table has been computed in the same manner as that indicated above, but relates to *groceries and food* (46 items) only. The average expenditure for the six capital towns in 1911 has again been taken as the basis of the table (=20 shillings) and the figures are, of course, comparable throughout.

## CHANGES IN PURCHASING-POWER OF MONEY.—GROCERIES AND FOOD, 1901-19.

Year.	Sydney.	Melbourne.	Brisbane.	Adelaide.	Perth.	Hobart.	Weighted Average of 6 Capital Towns.
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
1901 .. ..	18 4	19 4	19 4	20 7	23 8	20 3	19 4
1906 .. ..	19 3	18 11	19 2	19 8	24 9	20 11	19 7
1911 .. ..	19 9	18 8	20 4	20 5	26 11	21 2	20 0*
1913 .. ..	22 8	20 6	20 10	22 5	25 4	23 3	21 11
1914 .. ..	23 1	21 10	21 7	24 4	26 0	24 3	22 11
1915 .. ..	27 11	28 3	27 6	29 9	29 8	28 11	28 4
1916 .. ..	30 5	29 3	28 6	30 8	30 10	30 5	29 11
1917 .. ..	30 10	28 3	28 2	28 11	30 1	30 11	29 5
1918 .. ..	31 0	29 4	29 11	31 1	29 9	32 8	30 3
1919 .. ..	35 8	32 5	35 3	34 5	35 5	35 0	34 4

\* Basis of Table.

(ii) *House Rent only.* The following table gives similar particulars for *house rent only*, the average for the six capital towns in 1911 being again taken as the basis of the table (=20 shillings):—

## CHANGES IN PURCHASING-POWER OF MONEY.—HOUSE RENT, 1901-19.

Year.	Sydney.	Melbourne.	Brisbane.	Adelaide.	Perth.	Hobart.	Weighted Average of 6 Capital Towns.
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
1901 .. ..	17 3	14 8	9 9	12 7	16 0	13 4	15 1
1906 .. ..	17 11	15 8	10 6	15 3	14 4	13 9	15 11
1911 .. ..	21 10	19 5	15 4	22 3	16 3	16 1	20 0*
1913 .. ..	24 11	21 10	17 3	22 6	18 7	17 10	22 4
1914 .. ..	25 7	22 6	17 8	20 10	18 3	18 3	22 8
1915 .. ..	24 5	21 8	17 2	18 8	17 0	18 7	21 7
1916 .. ..	24 3	21 9	17 0	18 7	17 4	18 7	21 7
1917 .. ..	24 3	22 6	17 5	19 2	17 5	19 0	22 0
1918 .. ..	25 0	23 7	18 1	20 5	17 8	19 1	22 10
1919 .. ..	25 9	25 8	19 8	22 2	18 4	22 8	24 4

\* Basis of Table.

6. Relative Cost of Food, Groceries, and House Rent in Different Towns, 1919.—The index-numbers given in the preceding paragraphs shew *changes in the cost of food, groceries, and house rent separately for each capital town during the years 1901 to 1919*. The figures given in the table below shew *the relative cost of food and groceries, and of house rent in 1919 in the thirty towns for which particulars are now collected*. The weighted aggregate expenditure for the six capital towns for the year 1911 has been taken as base and made equal to 1,000, hence the columns are comparable both horizontally and vertically.

**INDEX-NUMBERS, SHEWING RELATIVE COST IN THIRTY TOWNS, OF FOOD AND GROCERIES AND HOUSE RENT COMPARED WITH WEIGHTED AVERAGE EXPENDITURE THEREON IN THE SIX CAPITAL TOWNS IN 1911 AS BASE (=1,000), YEAR 1919.**

Town.	Groceries and Food.	HOUSE RENT.				GROCERIES, FOOD AND RENT, INCLUDING HOUSES HAVING—			
		Four-roomed Houses only.	Five-roomed Houses only.	Six-roomed Houses only.	All Houses Weight'd Average.	Four Rooms.	Five Rooms.	Six Rooms.	All Houses Weight'd Average.
NEW SOUTH WALES—									
Sydney ..	1,050	414	499	590	530	1,464	1,549	1,640	1,580
Newcastle ..	1,062	334	440	537	431	1,396	1,502	1,599	1,493
Broken Hill*	1,119	281	353	438	300	1,400	1,472	1,557	1,419
Goulburn ..	1,049	300	399	552	475	1,349	1,448	1,601	1,524
Bathurst ..	990	235	299	398	350	1,225	1,289	1,388	1,340
Weighted Average ..	1,053	398	484	577	509	1,451	1,537	1,630	1,562
VICTORIA—									
Melbourne ..	954	381	485	594	527	1,335	1,439	1,548	1,431
Ballarat ..	935	147	221	295	263	1,082	1,156	1,230	1,193
Bendigo ..	918	195	276	362	297	1,113	1,194	1,280	1,215
Geelong ..	935	264	380	464	412	1,199	1,315	1,399	1,347
Warrnambool ..	945	268	349	423	366	1,213	1,294	1,368	1,311
Weighted Average ..	950	346	446	550	486	1,296	1,396	1,500	1,436
QUEENSLAND—									
Brisbane ..	1,038	263	337	445	404	1,301	1,375	1,483	1,442
Toowoomba ..	1,060	205	264	332	342	1,265	1,324	1,392	1,402
Rockhampton ..	1,076	211	265	357	332	1,287	1,341	1,433	1,408
Charters Towers ..	1,166	225	301	351	288	1,391	1,467	1,517	1,454
Warwick ..	1,064	211	287	355	334	1,275	1,351	1,419	1,398
Weighted Average ..	1,055	247	318	414	379	1,302	1,373	1,469	1,434
SOUTH AUSTRALIA—									
Adelaide ..	1,013	338	448	574	455	1,351	1,461	1,587	1,468
Moonta, etc. ..	1,005	237	314	414	325	1,242	1,319	1,419	1,330
Port Pirie*	1,028	354	421	454	396	1,382	1,449	1,482	1,424
Mt. Gambier ..	931	207	265	355	291	1,138	1,196	1,286	1,222
Peterborough ..	1,020	264	357	410	349	1,284	1,377	1,430	1,369
Weighted Average ..	1,011	328	432	551	438	1,339	1,443	1,561	1,449
WESTERN AUSTRALIA—									
Perth, etc. ..	1,044	320	396	479	376	1,364	1,440	1,523	1,420
Kalgoorlie, etc. ..	1,201	361	434	514	344	1,562	1,635	1,715	1,545
Mid. Junction, etc. ..	1,023	231	307	365	290	1,254	1,330	1,388	1,313
Bunbury ..	1,090	223	291	310	219	1,313	1,381	1,400	1,309
Geraldton ..	1,037	359	455	554	388	1,396	1,492	1,591	1,425
Weighted Average ..	1,076	323	398	478	362	1,399	1,474	1,554	1,438
TASMANIA—									
Hobart ..	1,030	339	440	518	466	1,369	1,470	1,548	1,496
Launceston ..	1,006	282	392	459	403	1,288	1,398	1,465	1,409
Zeehan ..	1,093	134	173	215	129	1,227	1,266	1,308	1,222
Beaconsfield ..	1,021	67	90	103	84	1,087	1,110	1,123	1,105
Queenstown ..	1,109	266	329	361	248	1,375	1,438	1,470	1,357
Weighted Average ..	1,030	296	391	459	401	1,326	1,421	1,489	1,431
Commonwealth									
Weighted Average, 30 Towns ..	1,014	350	440	538	467	1,364	1,454	1,552	1,481

\* See remarks on page 48 of Labour Report No. 10, with reference to house rents.

A table shewing the retail price index-numbers (food and groceries) for each of the thirty towns for various months in the year since July, 1914, appeared in previous issues, but consideration of space precluded its repetition in the present issue. This table is, however, given in Labour Report No. 10, issued by this Bureau.

## § 8. Investigation into Purchasing-Power of Money in 150 Towns in Commonwealth.

1. **Introduction.**—In the earlier investigations with regard to the variations in the purchasing-power of money, inquiries were restricted to the 30 towns mentioned in the preceding table. To provide a wider field of observation, investigations were extended in November, 1913, to 100 towns, and in November, 1915, to 150 towns. The index-numbers for these 150 towns are computed from the retail prices ruling in November of each year.

2. **Map shewing the relative Purchasing-Power of Money in various Localities.**—The index-numbers for each of the 150 towns referred to in the preceding paragraph are tabulated on the inset on page 1073, and are accompanied by a map of Australia. The position of any town may be located on the map by the reference numbers printed on the left-hand margin of the table. The weighted average cost for the 100 towns in 1913 has been taken as the base, and the index-numbers are comparable throughout. Separate index-numbers are given for food, groceries, and rent of five-roomed houses (Column headed "A"), and for food and groceries only (Column headed "B").

## § 9. Wholesale Prices.

1. **General.**—The results of an investigation into wholesale prices in Melbourne from 1871 to the end of September, 1912, were given in some detail in Report No. 1 of the Labour and Industrial Branch. Summarized results for later years are included in later Reports of the same Branch.

The index-numbers up to the year 1911 are based on the prices of eighty commodities, but since that year the number has been increased to ninety-two.\* The methods followed for the computation of the wholesale price index-numbers are the same as those adopted in regard to retail prices. The commodities included, the units of measurement for which the prices are taken, and the mass-units, indicating the relative extent to which each commodity is used or consumed, are shewn in a tabular statement in Report No. 10 (page 67).

2. **Index-Numbers and Graphs.**—Index-numbers have been computed for each group of commodities, as well as for all groups together. The index-numbers for the several groups, and for all groups together, are shewn in the following table.

(i) **Table of Index-numbers.** The index-numbers have in each case been computed with the prices in the year 1911 as base. They shew, for each of the years specified, the expenditure necessary, if distributed in purchasing the relative quantities (indicated by the mass-units) of the several commodities concerned, to purchase what would have cost £1,000 in 1911. Thus, in the last column it may be seen that the cost of the relative quantities of the various commodities was 1,229 in 1871, and 974 in 1901, as compared with 1,000 in 1911, 1,170 in 1912, 1,088 in 1913, 1,149 in 1914, 1,604 in 1915, and 1,934 in 1918. In other words, prices were lower in 1911 than in either 1871, 1914, 1915, or 1918, and the purchasing-power of money in 1911 was, accordingly, greater. Again, prices were lower in 1901 than in 1911, and the purchasing-power of money in the former year was, therefore, greater.

\* In the computation of the index-numbers for years prior to 1911, the aggregate expenditure on 80 commodities in 1911 is taken as base (= 1,000), while for later years the aggregate expenditure on 92 commodities is taken.



**MELBOURNE WHOLESALE PRICES, INDEX-NUMBERS, 1861 TO 1919,  
COMPUTED TO YEAR 1911 AS BASE.**

Year.	I. Metals and Coal.	II. Jute, Leather, etc.	III. Agri- cultural Produce, etc.	IV. Dairy Produce.	V. Gro- ceries.	VI. Meat.	VII. Building Mate- rials.	VIII. Chem- icals.	All com- modities together.
1861 ..	1,438	1,881	1,583	1,008	1,963	..	1,070	2,030	1,538
1871 ..	1,096	1,257	1,236	864	1,586	..	1,044	1,409	1,229
1881 ..	1,178	1,115	1,012	935	1,421	..	1,091	1,587	1,121
1891 ..	895	847	1,024	995	1,032	888	780	1,194	945
1901 ..	1,061	774	928	1,029	1,048	1,345	841	917	974
1902 ..	1,007	756	1,193	1,215	945	1,447	837	881	1,051
1903 ..	923	834	1,209	1,059	936	1,443	875	921	1,049
1904 ..	821	885	754	876	916	1,427	845	875	896
1905 ..	772	850	894	980	942	1,209	801	859	910
1906 ..	882	978	916	972	923	1,110	896	864	948
1907 ..	1,037	1,017	973	1,020	948	1,294	968	961	1,021
1908 ..	1,033	901	1,312	1,198	968	1,335	935	891	1,115
1909 ..	1,014	907	1,000	1,119	978	1,088	911	815	993
1910 ..	1,004	1,052	969	1,100	999	1,008	996	898	1,003
1911 ..	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
1912 ..	1,021	991	1,370	1,206	1,052	1,357	1,057	978	1,170
1913 ..	1,046	1,070	1,097	1,054	1,024	1,252	1,128	995	1,088
1914 ..	1,099	1,032	1,207	1,137	1,021	1,507	1,081	1,253	1,149
1915 ..	1,284	1,017	2,162	1,530	1,133	2,435	1,275	1,528	1,604
1916 ..	1,695	1,423	1,208	1,485	1,322	2,515	1,491	1,760	1,504
1917 ..	2,129	2,008	1,157	1,423	1,343	2,403	1,884	2,171	1,662
1918 ..	2,416	2,360	1,444	1,454	1,422	2,385	2,686	3,225	1,934
1919 ..	2,125	2,363	1,985	1,651	1,516	2,343	2,851	2,898	2,055

Note.—The figures given in this table are comparable in the vertical columns, but are not directly comparable horizontally. The index-numbers are reversible.

(ii) *Graphs.* The index-numbers are shewn for each group and for all groups combined in the graphs on page 1074. The heavy line, repeated on each graph, represents the index-numbers for the weighted average for all groups, and is shewn so that comparison may be made between the price levels for all commodities and those for the commodities comprised in each group separately. The index-numbers for the individual groups are represented by the light lines. The broken lines at the commencement of each graph shew the index-numbers for the separate years 1861 and 1866, the continuous records commencing with the year 1871. The actual index-numbers for the whole period were given in Report No. 1.

3. *Seasonal Fluctuations and Tables of Prices.*—Information as to seasonal fluctuations in wholesale prices was given in Report No. 2 (page 64), and tables of prices of each commodity were given in Appendixes to the Reports of the Labour and Industrial Branch of this Bureau.

4. *Fluctuations in Wholesale Prices, July, 1914, to July, 1920.*—Since the outbreak of war, prices of many commodities have increased considerably. This is shewn in the following table in which the index-numbers are given for each group for the month of July, 1920, taking July, 1914, the last month before the outbreak of war, as base (=1,000) for each group:—

**MELBOURNE WHOLESALE PRICES.—VARIATIONS BETWEEN JULY, 1914,  
AND JULY, 1920.**

Particulars.	I. Metals and Coal.	II. Jute, Leather, etc.	III. Agri- cultural Produce, etc.	IV. Dairy Produce.	V. Gro- ceries.	VI. Meat.	VII. Building Mate- rials.	VIII. Chem- icals.	All Groups.
July, 1914	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
July, 1920	2,109	2,518	2,438	1,884	1,928	2,609	3,069	2,834	2,671

It will be seen that, on the basis of the weighted average for all the groups of commodities included in the computation, prices have risen during the period specified by no less than 167 per cent. The greatest increase, 206.9 per cent., is recorded in Group VII. (Building Materials), and the least, 88.4 per cent., in Group IV. (Dairy Produce).

## § 10. Control of Trade and Prices during the War.

1. *General.*—Shortly after the outbreak of war, a conference of Federal and State Ministers met to discuss the financial position and other matters, and it was decided that for the purpose of controlling the prices of foodstuffs, each State should introduce *uniform* legislation, since it was obvious that this was necessary in view of all the circumstances. Particulars of the various Acts passed by the State Governments were given in Labour Bulletin No. 6, September, 1914, pages 132–147. The same publication shews that there was great diversity in regard to the operations of the various authorities created in the different States.

As a further outcome of this conference, in addition to the various State Boards and Commissions, a Federal Royal Commission, consisting of the Hon. Alfred Deakin (chairman), the Hon. Dugald Thomson, formerly Minister for Home Affairs, and Mr. G. H. Knibbs, C.M.G., Commonwealth Statistician, was appointed to collect information and report upon such matters as the supply of foodstuffs and other necessities required by and available for Australia during the war and cognate matters. This Commission ceased to exercise its functions after the 30th October, 1914.

2. *Federal Control of Prices.*—In March, 1916, the Federal Government created a Prices Adjustment Board with authority to fix the prices of flour, bread, bran, and pollard. The Board fixed the prices of flour, bran, and pollard in every milling centre in Australia. Prices of bread were fixed in upwards of 1,000 separate towns, after investigations had been made as to the cost of manufacture, distribution, etc. An important judgment of the High Court, as to the powers of Government to fix prices, was obtained as the result of the conviction of a Melbourne suburban baker, by the local magistrate, for selling bread at a higher rate than that fixed by the Prices Adjustment Board. This conviction was appealed against, but the High Court, by a majority decision, affirmed that in matters affecting the safety of Australia the Government, under the War Precautions Act, had plenary powers, and that the decision as to what is necessary rests with the Executive and not with the judicial authority. After this judgment, the scope of the investigations and activities of the Prices Adjustment Board were considerably enlarged, and an exhaustive list of commodities was declared to be "necessary commodities." Later, a Commissioner was appointed in each State to make investigations, and to make recommendations to the Minister as to the necessity for fixing maximum selling prices of various commodities.

Shortly after the appointment of these Commissioners, the members of the Prices Adjustment Board resigned in a body, and the control of prices was placed in the hands of a Minister acting upon the recommendations of State Commissioners. The Commissioner for Victoria acted also as Chief Prices Commissioner. Prices were fixed, by regulations under the War Precautions Act, for a large number of commodities. In May, 1919, the Commonwealth Government released from the control of the Prices Commissioners many articles, trade in which had been regulated during the war.

In July, 1919, control ceased of all but a few commodities; the more important of which were butter, cheese, and flour. In August, 1920, the Commonwealth organization for the fixing of prices was abolished. Prices, however, of necessary commodities were not permitted to remain uncontrolled except in Tasmania. In New South Wales, Queensland, and South Australia price fixing was resumed under the authority of Acts already in existence, while in Victoria and Western Australia necessary legislation was passed to enable the Governments of these States to deal with the subject.

The following statement shews the Acts which have been passed, and the Bills introduced by the Governments of the various States for the purpose of controlling prices :—

*New South Wales.*—In New South Wales, control of prices was resumed in July, 1919, under authority of the “Necessary Commodities Control Act, 1914.” In January, 1920, this Act was superseded by the “Necessary Commodities Control Act, 1919.”

*Victoria.*—In Victoria, an Act entitled the “Necessary Commodities Control Act, 1919,” was passed. Under authority of this Act a “Fair Profits Commission,” consisting of three members, was appointed for the purpose of regulating prices of necessary commodities in Victoria.

*Queensland.*—Queensland resumed control of prices in December, 1919, under authority of “The Control of Trade Act, 1914.” In March, 1920, this Act was superseded by “The Profiteering Prevention Act, 1920,” under which a “Commissioner of Prices” was appointed to control prices in Queensland.

*South Australia.*—State control was resumed in August, 1919, under authority of the “Prices Regulation Act, 1914.” In November, 1919, this Act was superseded by the “Prices Regulation Act, 1919,” under which a “Prices Regulation Commission,” consisting of three members, was appointed to control prices in South Australia.

*Western Australia.*—In Western Australia, State control of prices was not resumed until December, 1919, when an Act, entitled “The Prices Regulation Act, 1919,” was passed. Under this Act three Commissioners were appointed for the control of prices in Western Australia.

*Tasmania.*—In Tasmania, a “Necessary Commodities Control Bill, 1919,” was introduced, but was not passed.

**3. Control of House Rents.**—No attempt was made by the Commonwealth Government to control rents generally, but War Precautions Regulations afforded special protection to persons connected with the Defence Forces against increases in rent. During the war the Inter-State Commission conducted an investigation into Housing Accommodation and Rents. Fair Rents Courts are in operation in New South Wales, under the “Fair Rents Act, 1915,” and in Queensland under “The Fair Rents Act, 1920.” So far the remaining States have not attempted to control rents.

## SECTION XXXIV.

## MISCELLANEOUS.

## § 1. Immigration.

## (A) The Encouragement of Immigration into Australia.

1. **Introduction.**—Various measures have from time to time been adopted by the Commonwealth and State Governments, as well as by private societies and individuals, with a view to promoting the immigration of suitable classes of settlers into Australia. Since the outbreak of war, however, this work has remained in abeyance. The activities of the Commonwealth Government (which is vested with constitutional powers in regard to immigration under Sec. 51, xxvii., of the Constitution Act 1900) with respect to the encouragement of immigration, have hitherto practically been confined to advertising the resources and attractions of Australia in handbooks, newspapers, and periodicals.

2. **State Immigration.**—The advertising in the United Kingdom of the resources of the individual States has been carried out by their Agents-General in London. During 1910 and the three subsequent years, a great advance was made in Australian immigration generally, the State Governments having adopted more active and direct means than had hitherto existed for making the advantages and opportunities of their respective States better known to the people of the United Kingdom, Europe, and America. During the war, no State action was taken in the matter of immigration. In previous issues of the Year Book will be found in detail the various methods under which intending immigrants could obtain information and assistance (see Year Book No. 8, p. 1053).

Particulars of the net immigration to the Commonwealth are given on page 95, and of assisted immigration on page 115 hereinbefore.

3. **Commonwealth Scheme of Immigration.**—Prior to the war the Commonwealth Government supplemented the efforts of the States to promote immigration by a scheme of general advertising of the resources and attractions of the Commonwealth. An agreement, however, has now been reached between the Commonwealth and States under which the Commonwealth, in addition to carrying on propaganda work, will be responsible for, and have full control of, all organizations and transport arrangements for bringing immigrants to Australia. The sum of £100,000 has been provided on the Commonwealth Estimates for 1920–21 to meet the expenses of this scheme. The States will be responsible for the reception of the immigrants on arrival in Australia, and for their settlement on the land or employment on public works, etc.

4. **The High Commissioner for Australia and the Agents-General.**—Intending settlers or immigrants may, on application, obtain information from the High Commissioner for Australia—

THE RIGHT HON. A. FISHER, P.C.,  
AUSTRALIA HOUSE,  
STRAND,  
LONDON, W.C.

Information regarding individual States may be obtained from the officials specified below :—

## AUSTRALIAN AGENTS-GENERAL.

<i>New South Wales</i> ..	( <i>Vacant</i> )*	
<i>Victoria</i> ..	Sir PETER MCBRIDE, K.B.	Australia House, Strand, London
<i>Queensland</i> ..	The Hon. J. MCE. HUNTER ..	Marble Hall, 409–10, Strand, London
<i>South Australia</i> ..	Hon. EDWARD LUCAS ..	Strand, London, E.C.
<i>Western Australia</i> ..	Sir J. D. CONNOLLY, K.B.	Savoy House, Strand, London, W.C.
<i>Tasmania</i> ..	A. H. ASHBOLT ..	Strand, London, W.C.

\* Sir T. A. Coghlan (acting), Strand, London, W.C.

## (B) The Regulation of Immigration into Australia.

1. **Pre-Federal Restrictions.**—(i) *Alien Races.* The several States of Australia had regarded it as desirable, long prior to Federation, to impose certain restrictions upon the admission of persons wishing to become inhabitants of those States. The influx of Chinese for example, was limited by stringent statutes, and later, general Acts were passed in some of the States which had the effect of restricting the immigration of other—principally Asiatic—races.

(ii) *Undesirable Immigrants.* Further restrictions were placed upon the admission of persons who were undesirable as inhabitants, either for medical or moral reasons, or who were likely to be an economic burden upon the community.

2. **Powers and Legislation of the Commonwealth.**—(i) *Constitutional Powers.* By Chap. I., Pt. V., Sec. 51, xxvii. and xxviii. of the Commonwealth Constitution Act the Parliament of the Commonwealth is empowered to make laws with respect to immigration and emigration and the influx of criminals. (See page 22 herein.)

(ii) *Legislation.* The powers above specified have now been exercised by the Commonwealth Government, and the laws passed in pursuance thereof supersede the previously existing State laws. The present Commonwealth Acts dealing with Immigration are the Immigration Act 1901–1912 and the Contract Immigrants Act 1905. A summary of the provisions of these Acts, giving particulars regarding the admission of immigrants, prohibited immigrants, the liabilities of ship masters and others, and kindred matters will be found in preceding Year Books (see Year Book, No. 12, pp. 1166–1168).

3. **Agreements with other Countries.**—Arrangements may be made with the Government of any country regulating the admission into Australia of the subjects or citizens of such country, such subjects not being, during the subsistence of the arrangement, required to pass the dictation test.

Persons who have resided either continuously or from time to time in the Commonwealth for a period of five years in the whole, and who are about to depart from it, being persons who, if they return, would be prohibited immigrants, may obtain a certificate of exemption entitling them to return.

Certificates of exemption are granted by the Minister for Home and Territories, whose department administers the Act, and by the Collector of Customs in each State.

4. **Statistics.**—The following tables shew the number of persons who desired but were not permitted to land, those who were allowed to land, and the nationality of the persons admitted:—

### PERSONS ADMITTED OR REFUSED ADMISSION TO COMMONWEALTH UNDER PROVISIONS OF IMMIGRATION RESTRICTION ACT, 1911 TO 1919.

Year.			Persons Admitted who Passed Education Test.	Persons Admitted without Passing Education Test.	Persons Refused Admission.
1911	..	..	Nil	139,020	83
1912	..	..	Nil	163,990	187
1913	..	..	Nil	140,251	109
1914	..	..	Nil	110,701	54
1915	..	..	Nil	70,436	56
1916	..	..	Nil	59,140	233
1917	..	..	Nil	53,036	13
1918	..	..	Nil	77,169	16
1919	..	..	Nil	223,736	27

## NATIONALITIES OF PERSONS ADMITTED WITHOUT TEST, 1911 TO 1919.

Nationality.	1911.	1912.	1913.	1914.	1915.	1916.	1917.	1918.	1919.
<b>EUROPEANS—</b>									
Austrians .. ..	1,184	855	794	676	(d)27	(d)10	..	(d)3	(d)22
Belgians .. ..	84	95	63	63	105	69	35	35	31
British .. ..	124,061	146,602	122,443	93,136	60,505	50,489	45,988	471,765	5217,037
Danes .. ..	393	371	444	478	305	173	137	110	124
Dutch .. ..	307	435	288	287	182	156	194	163	526
French .. ..	1,166	1,238	1,491	1,187	595	516	676	571	815
Germans .. ..	2,517	3,501	3,155	3,395	(d)890	(d)452	(d)58	(d)36	(d)54
Greeks .. ..	583	736	480	772	361	160	265	288	93
Italians .. ..	1,365	1,632	1,063	1,642	645	179	93	24	116
Maltese .. ..	41	122	193	464	57	173	212	14	47
Poles .. ..	34	17	7	12	2	..	1	3	2
Portuguese .. ..	6	9	25	12	1	..	7	8	9
Rumanians .. ..	13	24	9	34	6	8	13	9	6
Russians .. ..	994	1,159	1,334	1,446	716	497	341	199	142
Scandinavians .. ..	1,384	1,303	1,285	1,489	1,202	786	552	493	448
Spaniards .. ..	128	118	116	169	206	51	37	23	37
Swiss .. ..	130	209	202	220	64	40	21	39	30
Turks .. ..	10	6	5	19	1	1	..	..	(d)1
Other Europeans .. ..	27	(a)57	5	(b)165	13	7	1	..	106
<b>AMERICANS—</b>									
North Americans .. ..	914	1,386	1,713	1,529	1,066	1,050	870	749	1,102
South Americans .. ..	17	37	14	31	5	16	24	12	8
American Indians .. ..	31	9	..	1	..	..	..	..	..
Negroes .. ..	13	47	7	23	9	8	9	2	5
West Indians .. ..	11	8	1	3	2	9	1	3	5
<b>ASIATICS—</b>									
Afghans .. ..	14	17	7	2	3	..	..	..	..
Arabs .. ..	1	18	14	19	2	6	..	..	..
Burmese .. ..	..	1	..	1	..	..	..	..	..
Chinese .. ..	2,009	2,250	2,286	1,975	2,287	2,289	2,016	1,723	1,495
Cingalese .. ..	4	17	8	9	6	18	11	2	7
Eurasians .. ..	7	13	2	..	..	..	..	..	..
Filipinos .. ..	17	13	12	4	15	15	15	10	18
Hindoo .. ..	188	157	187	305	144	133	111	102	203
Japanese .. ..	459	698	822	387	423	1,089	888	431	521
Javanese .. ..	12	6	3	20	3	4	20	21	27
Malays .. ..	479	326	303	291	285	254	190	65	320
Syrians .. ..	104	75	31	19	5	14	13	1	6
<b>OTHER RACES—</b>									
Maoris .. ..	31	32	41	21	16	6	2	1	..
Mauritians .. ..	9	2	7	1	..	..	..	..	..
Pacific Islanders .. ..	69	92	105	101	37	59	40	43	24
Papuans .. ..	139	196	171	189	185	178	132	133	135
St. Helena Blacks .. ..	..	..	..	..	..	..	..	..	..
Unspecified .. ..	(c)65	(c)102	(c)214	(c)104	(c)58	(c)225	63	(c)88	214
<b>Total .. ..</b>	<b>139,020</b>	<b>163,990</b>	<b>140,251</b>	<b>110,701</b>	<b>70,436</b>	<b>59,140</b>	<b>53,036</b>	<b>77,169</b>	<b>223,736</b>

(a) Bulgarians. (b) Including 162 Bulgarians. (c) A large percentage of these immigrants was Timorese. (d) Principally prisoners of war and their families. (e) Including 44,151 returned troops and nurses. (f) Including 163,756 troops and nurses.

The following table shews to what extent immigration has taken place into the several States of the Commonwealth from 1911 to 1919 :—

## IMMIGRATION INTO THE SEVERAL STATES OF THE COMMONWEALTH, 1911 TO 1919.

Year.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	N.T.	C'wealth.
1911 ..	69,640	21,488	17,778	7,039	18,386	4,563	126	139,020
1912 ..	86,239	34,568	11,820	10,035	16,624	4,480	224	163,990
1913 ..	73,946	29,121	10,496	8,220	15,985	2,350	133	140,251
1914 ..	67,221	20,720	8,594	4,820	6,954	2,249	143	110,701
1915 ..	44,899	13,028	3,963	1,847	4,358	1,925	416	70,436
1916 ..	36,782	12,970	2,426	924	4,054	1,735	249	59,140
1917 ..	32,825	10,701	1,814	1,540	4,761	1,133	262	53,036
1918 ..	37,375	31,114	1,474	1,958	5,043	..	205	77,169
1919 ..	96,331	84,751	6,007	16,897	18,507	1,163	80	223,736

## § 2. Patents, Trade Marks, and Designs.

1. **Devolution of Jurisdiction upon the Commonwealth.**—Prior to the establishment of Federation, and for a few years thereafter, each Australian State possessed independent jurisdiction in respect of patents, copyrights, trade marks, and designs, and had, with the exception of Tasmania in regard to copyrights, enacted its own laws. Any person, therefore, who desired to obtain the grant of a patent, or the registration of any copyright, trade mark, or design had necessarily, with the exception aforesaid, to incur the trouble and expense of making separate applications in each State. The Commonwealth Constitution Act conferred upon the Federal Parliament power to legislate respecting these matters. (See page 22 hereinbefore.) The Patents Act of 1909 applied the laws relating to patents for inventions to the Territory of Papua.

The State Acts, though in general based upon the Imperial Statutes dealing with these subjects, were not wholly governed by them. The Commonwealth Acts, both in regard to principle and practice, have the same general foundation as the Imperial Statutes, but in some respects have been modified and brought into line in accordance with Australian experience.

2. **Patents.**—(i) *General.* The first Commonwealth Patents Act was passed in 1903, and was amended in 1906, 1909, 1910, 1915 and 1916. (See page 41 *ante*.) Under these Acts, which are administered by a "Commissioner of Patents," the powers and functions exercised under the States Acts became vested in the Commonwealth. Comparatively small fees, totalling £8, are now sufficient to obtain for an inventor protection throughout the Commonwealth and the Territory of Papua, and the only renewal fee (£5) is payable before the expiration of the seventh year of the patent, or within such extended time, not exceeding one year, and upon payment of further fees as may be allowed. Particulars in regard to the terms under which patents are granted, publications, etc., of the Commonwealth Patents Office, have been given in full in preceding issues of the Official Year Book. (See Year Book 12, p. 1170 *et seq.*) Limits of space preclude their repetition in the present issue.

(ii) *Applications Filed, Provisional Specifications Accepted, and Letters Patent Sealed.* The numbers of individual inventions in respect of which applications were filed in the Commonwealth during each year from 1910 to 1919 inclusive are shewn in the following table. The number of applications accompanied by provisional specifications and the number of patents sealed in respect of applications made in each year are also shewn.

### PATENTS.—APPLICATIONS FILED AND LETTERS PATENT SEALED IN THE COMMONWEALTH, 1910 TO 1919.

Year .. .. .	1910.	1911.	1912.	1913.	1914.	1915.	1916.	1917.	1918.	1919.
No. of applications .. .. .	3,605	3,497	4,071	4,163	3,436	3,117	2,906	3,244	3,543	4,166
No. of applications accompanied by provisional specifications .. .. .	2,294	2,290	2,273	2,626	2,232	2,133	1,980	2,186	2,405	2,468
Letters patent sealed during each year .. .. .	1,552	2,027	1,502	1,495	2,098	1,279	1,162	1,218	1,130	1,452

(iii) *Revenue of Patent Office.* The revenue of the Commonwealth Patent Office or each year from 1910 to the end of the year 1919 is shewn in the subjoined table:—

### REVENUE OF COMMONWEALTH PATENT OFFICE, 1910 TO 1919.

Particulars.	1910.	1911.	1912.	1913.	1914.	1915.	1916.	1917.	1918.	1919.
	£	£	£	£	£	£	£	£	£	£
Fees collected under—										
States Patents Acts ..	1,940	768	118	50	16	19	15	11	15	4
Patents Acts 1903–16 ..	17,042	19,640	18,542	18,800	21,575	15,463	14,055	15,629	16,223	19,764
Receipts from publications ..	208	237	305	283	274	298	294	281	317	414
Petty receipts .. .. .	33	48	50	49	81	6	4	..	..	..
Total .. .. .	19,223	20,693	19,015	19,182	21,946	15,786	14,368	15,921	16,555	20,182

3. **Trade Marks.**—The remarks made concerning the unification of the patent system of the Commonwealth apply equally to trade marks. Under the Trade Marks Act 1905, which came into force on the 2nd July, 1906, the Commissioner of Patents is appointed to act also as “Registrar of Trade Marks.” The Trade Marks Act of 1905 was amended by the Patents, Trade Marks, and Designs Act 1910, assented to on the 14th November, 1910, by the Trade Marks Act 1912, and by the Trade Marks Act 1919, and is now cited as the Trade Marks Act 1905-1919. The principal objects of the amending Act were to enlarge the scope of marks capable of registration, and repeal the provisions of the Act of 1905 relating to the “Workers Trade Mark,” the provisions regarding which were held to be unconstitutional. Special provisions for the registration of a “Commonwealth Trade Mark” are contained in the Act of 1905 and are applicable to all goods included in or specified by a resolution passed by both Houses of Parliament that in their opinion the conditions as to remuneration of labour in connexion with their manufacture are fair and reasonable. (See also Official Year Book 12, p. 1173.)

4. **Designs.**—The Designs Act of 1906 came into operation on the 1st January, 1907, being subsequently amended by the Patents, Designs and Trade Marks Act 1910, and the Designs Act 1912, and is now cited as the Designs Act 1906-12. Under this Act a Commonwealth Designs Office has been established and the Commissioner of Patents appointed “Registrar of Designs.” (See also Official Year Book 12, p. 1174.)

5. **Applications for Trade Marks and Designs.**—The following table gives particulars of applications for trade marks and designs received and registered under the Commonwealth Acts from 1910 to 1919 inclusive :—

**APPLICATIONS FOR TRADE MARKS AND DESIGNS RECEIVED AND REGISTERED UNDER COMMONWEALTH ACTS, 1910 TO 1919.**

Applications.	1910.	1911.	1912.	1913.	1914.	1915.	1916.	1917.	1918.	1919.
<b>RECEIVED.</b>										
Trade Marks ..	1,729	1,977	1,803	1,957	1,619	1,526	1,636	1,532	1,739	2,634
Designs ..	186	203	235	301	267	326	298	266	262	256
<b>REGISTERED.</b>										
Trade Marks ..	1,190	1,323	1,389	1,468	1,272	1,015	1,126	1,033	1,095	1,229
Designs ..	160	180	211	281	220	266	253	236	223	203

The following table shows the revenue of the Trade Marks and Designs Office during the years 1915 to 1919 :—

**REVENUE OF TRADE MARKS AND DESIGNS OFFICE, 1915 TO 1919.**

Particulars.	1915.			1916.			1917.			1918.			1919.		
	Trade Marks.	Designs.	Publ-ications.	Trade Marks.	Designs.	Publ-ications.	Trade Marks.	Designs.	Publ-ications.	Trade Marks.	Designs.	Publ-ications.	Trade Marks.	Designs.	Publ-ications.
Fees collected under State Acts	£ 32	£ ..	£ ..	£ 21	£ ..	£ ..	£ 28	£ ..	£ ..	£ 14	£ ..	£ ..	£ 192	£ ..	£ ..
Fees collected under Commonwealth Acts	4,024	329	95	4,280	354	89	3,978	312	94	4,330	318	114	5,314	346	101
<b>Total ..</b>	<b>4,056</b>	<b>329</b>	<b>95</b>	<b>4,301</b>	<b>354</b>	<b>89</b>	<b>4,006</b>	<b>312</b>	<b>94</b>	<b>4,344</b>	<b>318</b>	<b>114</b>	<b>5,506</b>	<b>346</b>	<b>101</b>



6. **Enemy Patents and Trade Marks.**—On the outbreak of the European war the Commonwealth Government deemed it advisable to extend the powers of the Governor-General of the Commonwealth during the continuance of hostilities with reference to patents, trade marks, and designs, the property of alien enemies.

Acts Nos. 15 and 16 of 1914 were accordingly passed by the Commonwealth Parliament in November, 1914, giving the Governor-General power to make regulations as follows :—

- (a) for avoiding or suspending in whole or in part any patent or license the person entitled to the benefit of which is the subject of any State at war with the King ;
- (b) for avoiding or suspending the registration, and all or any rights conferred by the registration, of any trade mark or design the proprietor whereof is a subject as aforesaid ;
- (c) for avoiding or suspending any application made by any such person under any of the Acts referred to in this section ;
- (d) for enabling the Minister to grant, in favour of persons other than such persons as aforesaid, on such terms and conditions, and either for the whole term of the patent or registration or for such less period, as the Minister thinks fit, licenses to make, use, exercise or vend patented inventions and registered designs so liable to avoidance or suspension as aforesaid ; and
- (e) for extending the time within which any act or thing may be or is required to be done under any of the Acts referred to in this section.

The regulations prescribed by the Governor-General for giving effect to the provisions of these Acts may be found in the official journals issued by the Commonwealth Commissioner of Patents (see *Australian Official Journal of Patents*, vol. 20, No. 47 *et seq.*).

To the end of December, 1918, 21 applications had been made under these Acts to avoid or suspend patents, of which 6 were granted and 3 refused, the others being withdrawn. Thirty-five applications were also made to avoid or suspend trade marks, of which 8 were granted and subsequently revoked, 22 refused, 3 withdrawn, and 2 were still pending. Five hundred and fifty-eight Commonwealth and 319 State registrations of trade marks, and all rights conferred by such registrations, also have been suspended in favour of the Minister of State for Trade and Customs. Two Commonwealth trade marks—"Lysol" and "Aspirin"—were avoided from the 23rd July, 1917, ten patents were suspended in favour of the Minister of State for the Navy, and in addition, four patents were suspended in favour of the Engineer-in-Chief for the Commonwealth Railways and such person or persons as may be licensed by the Minister.

### § 3. Copyright.

1. **Copyright Legislation.**—Prior to the 1st January, 1907, the date on which the Commonwealth Copyright Act of 1905 came into operation, the subject of copyright was regulated by the laws of the separate States. In general, the provisions of State laws were similar to those of the Imperial Copyright law, including the law of 1842 and the earlier unrepealed or subsequent Acts, the most important of which were the Colonial Copyright Act 1847 and the International Copyright Act of 1886. They were also generally included under the British international relations embracing the Berne-Paris provisions of the International Copyright Union and the reciprocal relations with the United States of America, with the exception that in the Austria-Hungary Treaty, New South Wales and Tasmania were not parties, because they did not exercise the right of ratification especially reserved to individual colonies.

Though the Commonwealth Copyright Act of 1905 took the place of the State Copyright Acts formerly in force, it left unaffected existing rights under the State laws, but transferred the administration thereof to the Commonwealth. Provision was also made

under the law of 1905 for the registration of International and State copyrights. The principal features of the Act of 1905 are given in previous issues of the Year Book (see No. 9, p. 1119). This Act was repealed by the Copyright Act of 1912, which was assented to and became operative on the 20th November, 1912. Subject to modifications relating to procedure and remedies, the Commonwealth law of 1912 adopted the British Copyright Act of 1911, and declared the latter law to be in force within the Commonwealth as from the 1st July, 1912. The British Act extends throughout the whole of His Majesty's dominions, but it is not to be in force in a self-governing dominion unless enacted by the legislature thereof either in full or with modifications relating exclusively to procedure and remedies necessary to adapt the Act to the circumstances of the dominion. (See also Official Year Book 12, p. 1176.)

By an Order-in-Council made by the Government of the Commonwealth of Australia, simultaneously with the issue of a Proclamation by the President of the United States of America on the 15th March, 1913, reciprocal protection was extended to citizens of the respective countries in regard to unpublished literary, dramatic, musical and artistic works in which copyright existed on the date mentioned, or may thereafter subsist under the laws of these countries. The enjoyment of the rights conferred by the Order-in-Council is subject to the accomplishment of the conditions and formalities prescribed by law of the United States of America, or, in other words, registration at the Library of Congress, Washington, D.C., U.S.A., is made a condition precedent to the protection of Australian copyright property in the United States of America.

Further details relative to the provisions of the Act of 1912 will be found in previous issues of the Year Book (see No. 8, p. 1066).

2. Applications for Copyright.—The following table gives particulars of copyright applications received and registered under the Commonwealth Acts from 1915 to 1919 inclusive :—

**APPLICATIONS FOR COPYRIGHT RECEIVED AND REGISTERED UNDER  
COMMONWEALTH ACTS, 1915 TO 1919.**

Year.	Copyrights.			
	Literary.	Artistic.	International and State.	Total.
<b>APPLICATIONS RECEIVED.</b>				
1915 .. .. .	740	237	4	981
1916 .. .. .	845	180	..	1,025
1917 .. .. .	835	141	..	976
1918 .. .. .	816	261	4	1,081
1919 .. .. .	923	216	1	1,140
<b>APPLICATIONS REGISTERED.</b>				
1915 .. .. .	742	222	3	967
1916 .. .. .	797	168	..	965
1917 .. .. .	793	140	..	933
1918 .. .. .	750	232	3	985
1919 .. .. .	850	197	..	1,047

The revenue from copyright for the years 1915, 1916, 1917, 1918, and 1919, was £252, £268, £256, £309, and £234 respectively.

### § 4. Old-age and Invalid Pensions.

1. **General.**—In previous issues an account has been given of the introduction of the old-age pension system into Australasia, together with a detailed description of the Commonwealth Invalid and Old-age Pensions Act of 1908, which became operative on 1st July, 1909. (See Year Books 3-8.)

Details regarding Old-age Pensions for the several States as at 30th June, 1919, are as follows :—

#### COMMONWEALTH OLD-AGE PENSIONS, YEAR ENDING 30th JUNE, 1919.

Particulars.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
Claims examined during year ending 30th June 1919 ..	4,438	2,748	1,481	995	548	512	10,722
Claims rejected ..	806	116	321	110	67	52	1,472
Claims granted ..	3,632	2,632	1,160	885	481	460	9,250
Transfers from other States ..	351	308	123	145	76	57	1,060
Existing 30th June, 1918 ..	35,078	29,159	12,360	9,659	4,401	4,730	95,387
	39,061	32,099	13,643	10,689	4,958	5,247	105,697
To be deducted—							
Deaths ..	2,795	2,298	1,020	741	271	306	7,431
Cancellations and transfers to other States ..	744	622	306	338	169	118	2,297
	3,539	2,920	1,326	1,079	440	424	9,728
Old-age Pensions existing on 30th June, 1919 ..	35,522	29,179	12,317	9,610	4,518	4,823	95,969

2. **Sexes of Old-age Pensioners.**—Of the 95,969 persons in receipt of pensions at 30th June, 1919, 38,261 (or 40 per cent.) were males, and 57,708 (or 60 per cent.) were females. Details for the several States are as follows :—

#### SEXES OF OLD-AGE PENSIONERS, 30th JUNE, 1919.

State.	Males.	Females.	Total.	(a) Masculinity.
New South Wales ..	14,979	20,543	35,522	72.92
Victoria ..	10,989	18,190	29,179	60.41
Queensland ..	5,277	7,040	12,317	74.96
South Australia ..	3,477	6,133	9,610	56.69
Western Australia ..	1,885	2,633	4,518	71.59
Tasmania ..	1,654	3,169	4,823	52.19
Total ..	38,261	57,708	95,969	66.30

(a) Number of males to each 100 females.

3. **Ages and Conjugal Condition of Old-age Pensioners Granted Pensions during 1918-19.**—The recorded ages of the 9,250 persons to whom pensions were granted during the year 1918-19 varied considerably, ranging from 1,830 at age 60 to one at age 95. Particulars for quinquennial age-groups are as follows :—

**AGES AND CONJUGAL CONDITION OF PERSONS GRANTED OLD-AGE PENSIONS DURING 1918-19.**

Age Groups.	Males.				Females.				Grand Total.
	Single.	Married.	Widowed.	Total.	Single.	Married.	Widowed.	Total.	
60-64 ..	41	155	55	251	352	1,724	1,593	3,669	3,920
65-69 ..	610	1,440	496	2,546	81	432	386	899	3,445
70-74 ..	131	399	177	707	29	198	241	468	1,175
75-79 ..	44	152	81	277	8	64	115	187	464
80-84 ..	16	33	48	97	3	15	67	85	182
85-89 ..	4	11	11	26	2	5	17	24	50
90 and above ..	..	3	..	3	..	1	10	11	14
Total ..	846	2,193	868	3,907	475	2,439	2,429	5,343	9,250

4. **Commonwealth Claims for Invalid Pensions.**—Details as at 30th June, 1919, are given hereunder :—

**COMMONWEALTH INVALID PENSIONS.—YEAR ENDING 30th JUNE, 1919.**

Particulars.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	Total C'wealth.
Claims examined during year ending 30th June, 1919 ..	2,562	1,932	1,096	457	421	353	6,821
Claims rejected .. ..	765	340	298	106	107	106	1,722
Claims granted .. ..	1,797	1,592	798	351	314	247	5,099
Transfers from other States ..	109	74	45	46	10	16	300
Existing 30th June, 1918 ..	12,169	8,901	3,679	2,044	1,313	1,806	29,912
	14,075	10,567	4,522	2,441	1,637	2,069	35,311
Deduct—							
Deaths .. ..	698	931	295	169	84	113	2,290
Cancellations and Transfers to other States ..	279	299	176	121	53	94	1,022
	977	1,230	471	290	137	207	3,312
Invalid Pensions existing 30th June, 1919 .. ..	13,098	9,337	4,051	2,151	1,500	1,862	31,999

5. **Sexes of Invalid Pensioners.**—Of the 31,999 persons in receipt of an invalid pension on 30th June, 1919, 15,144, or 47 per cent., were males, and 16,855, or 53 per cent., were females. Details for the several States are as follows :—

**SEXES OF INVALID PENSIONERS, 30th JUNE, 1919.**

State.	Males.	Females.	Total.	(a) Masculinity.
New South Wales .. .. .	6,086	7,012	13,098	86.79
Victoria .. .. .	4,491	4,846	9,337	92.67
Queensland .. .. .	2,094	1,957	4,051	107.00
South Australia .. .. .	819	1,332	2,151	61.49
Western Australia .. .. .	812	688	1,500	118.02
Tasmania .. .. .	842	1,020	1,862	82.55
Commonwealth .. .. .	15,144	16,855	31,999	89.85

(a) Number of males per 100 females.

6. **Ages and Conjugal Condition of Persons Granted Invalid Pensions during 1918-19.**—The recorded ages of the 5,099 persons who received invalid pensions in the period under review varied from 16 to 85. The following table gives particulars for those up to age 20 and in decennial age-groups after age 20 :—

**AGES AND CONJUGAL CONDITION OF PERSONS GRANTED INVALID PENSIONS IN 1918-19.**

Age Groups.	Males.				Females.				Grand Total.
	Single.	Married.	Widowed.	Total.	Single.	Married.	Widowed.	Total.	
16-19 ..	161	..	..	161	196	..	..	196	357
20-29 ..	176	48	2	226	281	16	11	288	514
30-39 ..	127	168	8	303	166	33	49	253	556
40-49 ..	144	255	22	421	165	99	144	408	829
50-59 ..	268	560	89	917	212	347	445	1,004	1,921
60-69 ..	194	402	104	700	24	50	72	146	846
70-79 ..	6	15	14	35	2	11	21	34	69
80 and over ..	1	1	2	4	..	1	2	3	7
Total ..	1,077	1,449	241	2,767	1,026	562	744	2,332	5,099

7. **Cost of Administration.**—Under the State régime the cost of administration differed considerably in the several States, and for 1908-9 represented in New South Wales 4.17 per cent. of the amount actually paid in pensions. In Victoria for the same year the corresponding percentage was 0.70. During the year 1918-19 the total cost to the Commonwealth of administering the Old-age and Invalid Pensions Department was £63,280, or about 1.6 per cent. of the amount actually paid in pensions. Details concerning the cost of administration for 1918-19 are as follows :—

	£
Salaries .. .. .	17,028
Temporary assistance .. .. .	3,420
Services of magistrates, registrars, clerks of courts, and police ..	3,730
Commission to Postmaster-General's Department, at 12s. 6d. per £100 paid .. .. .	23,755
Postage and telegrams .. .. .	4,523
Other expenses .. .. .	10,824
Total .. .. .	£63,280

The actual sum disbursed in Old-age and Invalid Pensions in the financial year 1918-19, apart from the cost of administration, was £3,880,865.

8. *Liability Undertaken in Granting Old-age Pensions.*—As an indication of the extent of the responsibility which an old-age pension scheme involves, it may be mentioned that in connexion with the evidence tendered to the Commonwealth Commission on Old-age Pensions a computation was made of the total liability in respect of accrued pensions which the Commonwealth would have incurred if, at 31st March, 1901, the date of the Census, 39 per cent. of the persons aged sixty-five and upwards were entitled to pensions of ten shillings per week. The present value at that date of the liability so computed was £10,415,820. (See Minutes of Evidence of Royal Commission on Old-age Pensions, p. 80.)

The following table gives detailed statistical information concerning the working of the Act for the last six years :—

INVALID AND OLD-AGE PENSIONS, 1914 TO 1919.

Financial Year ended 30th June—	Number of Pensioners.			Amount Paid in Pensions.	Amount Paid to Asylums for Maintenance of Pensioners.	Total Payment to Pensioners and Asylums.	Cost of Administration.	Cost of Administration per £100 paid to Pensioners and Asylums.	Average Fortnightly Pension on last day of Financial Year.
	Old-Age.	Invalid.	Total.						
				£	£	£	£	£ s. d.	s. d.
1914	87,780	16,865	104,645	2,577,965	14,236	2,592,201	47,015	1 16 3	19 5
1915	90,892	20,417	111,309	2,704,309	27,630	2,731,939	48,018	1 15 4	19 5
1916	91,783	23,439	115,222	2,859,766	31,831	2,891,597	44,401	1 10 9	19 4
1917	93,672	26,781	120,453	3,518,987	35,148	3,554,135	54,393	1 10 7	24 3
1918	95,387	29,912	125,299	3,753,977	39,060	3,793,037	54,355	1 8 8	24 3
1919	95,969	31,999	127,968	3,880,865	55,750	3,936,615	63,280	1 12 2	24 2

9. *Pensions Act, 1916.*—On 30th September, 1916, an Act was assented to, which amended the original Pensions Act in a very important particular. It had been felt for some time that, owing to the increased cost of living, the grant of ten shillings a week was insufficient. Accordingly amendments were made in the case of the two important sections, 24 and 26. Section 24 of the Invalid and Old-age Pensions Act 1908-1912 originally enacted that the pension "shall not exceed the rate of twenty-six pounds per annum in any event, nor shall it be at such a rate as will make the pensioner's income, together with pension, exceed fifty-two pounds per annum." It was amended (a) by omitting the words "twenty-six pounds," and inserting in their stead the words "thirty-two pounds ten shillings"; and (b) by omitting the words "fifty-two pounds" and inserting in their stead the words "fifty-eight pounds ten shillings." Section 26 originally enacted that if an applicant for pension was in receipt of board or lodging, the actual or estimated value or cost of this should be counted as income, to an extent not exceeding five shillings per week. This has now been amended by omitting the words "five shillings" and inserting in their stead the words "seven shillings and sixpence."

The effect of these amendments was to increase the liability under the heading of Invalid and Old-age Pensions by about 25 per cent. This is the cause of the great increase in the amount paid in pensions in the last three years.

### § 5. Maternity Allowance.

The Federal Parliament, during the session of 1912, passed an Act (assented to on 10th October, 1912) providing under certain circumstances for the payment of maternity allowances. The scope and main provisions of the Act will be gathered from the following sections and sub-sections, given in full :—

4. "Subject to this Act, there shall be payable out of the Consolidated Revenue Fund, which is hereby appropriated accordingly, a maternity allowance of Five pounds to every woman who, after the commencement of this Act, gives birth to a child, either in Australia or on board a ship proceeding from one port in the Commonwealth or a Territory of the Commonwealth to another port in the Commonwealth or a Territory of the Commonwealth."
5. (1) "A maternity allowance shall be payable in respect of each occasion on which a birth occurs, and the child is born alive, or is a viable child, but only one allowance shall be payable in cases where more than one child is born at one birth."
6. (1) "The maternity allowance shall be payable only to women who are inhabitants of the Commonwealth or who intend to settle therein."  
 (2) "Women who are Asiatics or are aboriginal natives of Australia, Papua, or the islands of the Pacific, shall not be paid a maternity allowance."

The following table gives a statistical summary of the most important points in connexion with the working of the Maternity Allowance Act since 10th October, 1912, when the first payments were made :—

#### COMMONWEALTH MATERNITY ALLOWANCE.—SUMMARY, 1913 TO 1919.

Year ended 30th June—	Claims Paid.	Claims Rejected.	Amount Paid.	Cost of Administration.	Cost per £100 of allowance paid.
			£	£	£ s. d.
1913 (a) ..	82,475	619	412,375	6,547	1 11 9
1914 .. ..	134,998	709	674,990	10,281	1 10 6
1915 .. ..	138,855	640	694,275	12,900	1 17 2
1916 .. ..	131,943	504	659,715	12,165	1 16 11
1917 .. ..	132,407	459	662,035	13,735	2 1 6
1918 .. ..	126,885	404	634,425	12,250	1 18 7
1919 .. ..	124,016	510	620,080	11,369	1 16 8

(a) From 10th October, 1912.

### § 6. War Pensions.

1. General.—An Act for the provision of war pensions was passed in 1914 and amended in 1915 and 1916. Its scope can be determined by the following extract from Section 3. "Upon the death or incapacity of any member of the forces whose death or incapacity results, or has resulted, from his employment in connexion with warlike operations in which His Majesty is, or has since the commencement of the present state of war been engaged, the Commonwealth shall, subject to this Act, be liable to pay to the member or his dependents, or both, as the case may be, pensions in accordance with this Act." Full details as to rates of pension, etc., are given in the section on Defence, page 1015.

2. Number of Pensioners, 1919.—The following statistical tables shew the position of affairs as at the 30th June, 1919 :—

## PARTICULARS OF WAR PENSIONERS AT 30th JUNE, 1919.

Classification.	In respect of Deceased Members.	In respect of Incapacitated Members.	Total.
(i) Dependents of members of the Forces—			
(a) Wives or widows .. .. .	9,009	23,207	32,216
(b) Children under 16 years .. .. .	14,464	32,190	46,654
(c) Children over 16 years .. .. .	274	270	544
(d) Widowed mothers of unmarried members	6,839	1,201	8,040
(e) Other mothers of members .. .. .	14,685	2,086	16,771
(f) Fathers .. .. .	2,936	125	3,061
(g) Brothers and sisters .. .. .	1,618	173	1,791
(h) Others .. .. .	611	329	940
Total number of dependents of members of the Forces .. .. .	50,436	59,581	110,017
(ii) Incapacitated members of the Forces .. .. .	..	71,512	71,512
Total number of war pensioners at 30th June, 1919 .. .. .	50,436	131,093	181,529

## NUMBER OF WAR PENSIONERS AT 30th JUNE, 1919.

Where Paid.	Incapacitated Members of the Forces.	Dependents of—		Total.
		Deceased Members.	Incapacitated Members.	
Canada .. .. .	2	3	4	9
South Africa .. .. .	17	34	32	83
New Zealand .. .. .	141	226	78	445
New South Wales .. .. .	23,218	13,165	17,453	53,836
Victoria .. .. .	22,836	17,309	19,341	59,486
Queensland .. .. .	8,899	4,325	6,065	19,289
South Australia .. .. .	5,561	4,087	5,311	14,959
Western Australia .. .. .	6,815	4,286	6,387	17,488
Tasmania .. .. .	3,057	2,105	2,621	7,783
London .. .. .	966	4,896	2,289	8,151
Total .. .. .	71,512	50,436	59,581	181,529

## EXPENDITURE IN 1918-19.

£			£		
New South Wales .. .. .	..	1,586,981	Tasmania .. .. .	..	192,837
Victoria .. .. .	..	1,431,849	London and elsewhere .. .. .	..	239,138
Queensland .. .. .	..	505,223			
South Australia .. .. .	..	410,880	Total .. .. .	..	4,828,072
Western Australia .. .. .	..	461,164			

The cost of administration in 1918-19 was £97,738.



## § 7. Local Option.

1. **General.**—The principles of local option as to the sale of fermented and spirituous liquors have been applied in all the States of the Commonwealth. The last State to adopt these principles was Western Australia, where provision was made for a system of local option by the Licensing Act 1911. Since the outbreak of war in 1914, various enactments have been made in several of the States relative to the control of the liquor traffic. While not in any way pertaining to the scheme of local option, these measures are referred to in this section, as possibly, if not probably, affecting future public opinion in regard to this matter.

2. **New South Wales.**—(i) *Local Option.* The Act in force relating to local option in this State is the Liquor Act 1912, which consolidated the laws relating to publicans, brewers, and other persons engaged in the brewing, manufacture or sale of liquor. The local option vote is taken in every electorate on the day fixed for the poll therein at each general election, but special provision was made under the Liquor Amendment Act 1916 to suspend the taking of the local option vote at the general election in 1917. The option with regard to licenses extends to public-houses, wineshops, and clubs, and the persons entitled to vote are those entered on the Parliamentary electoral rolls. The first local option vote under the Liquor (Amendment) Act of 1905 was taken at the general election in 1907, and the second at the election in 1910, while the vote in 1913 was taken under the Liquor Act 1912. In 1907, when the first local option vote was taken, there were 3,023 hotels in existence; of this number 293 were ordered to be closed at varying dates. At the election of 1910 there were 2,869 hotels, and of these, 28 were ordered to be closed. At the 1913 election there were 2,719 hotels, of which 23 were closed before July, 1917. The number of wine licenses at the time of the vote of 1907 was 633, of which 46 were abolished. In 1910, 5 wine shops out of 565 were closed, and in 1913, 7 out of 514 were ordered to be closed. The resolutions to be submitted, and the effects of such resolutions, if carried, are given *in extenso* in previous issues of this book. The following statement shews the number of electorates in which each of the resolutions was carried :—

### NEW SOUTH WALES.—EFFECTS OF LOCAL OPTION VOTES, 1907, 1910, and 1913.

Particulars.	General Election, 1907.		General Election, 1910.		General Election, 1913.	
	Elector-ates.	Votes.	Elector-ates.	Votes.	Elector-ates.	Votes.
<i>Results in favour of—</i>						
(a) Continuance ..	25	209,384	76	324,973	75	380,707
(b) Reduction ..	65	75,706	14	38,856	15	44,453
(c) No license ..	Nil	178,580	Nil	212,889	Nil	245,202

(ii) *Liquor Referendum Act 1916.* On 17th February, 1916, a proclamation was issued, in terms of the War Precautions Act, by the Minister for Defence, ordering that licensed premises be closed at 6 p.m. in the County of Cumberland, and within a radius of 5 miles from any military camp; a week later the closing hour was varied from 6 to 8 p.m. Subsequently the Liquor Referendum Act 1916 was passed in the State Parliament to decide by referendum the hour of closing for premises licensed under the Liquor Act 1912. At the referendum the electors were enabled to record votes in order of preference for each hour from 6 to 11 p.m. inclusively. The count of the first preference votes resulted in a large majority for 6 o'clock, and from 21st July, 1916, all licensed premises and registered clubs in New South Wales have been closed at that hour. This determination prevails during the currency of the war and for a period not exceeding six months thereafter.

(iii) *Liquor Amendment Act 1919*. This Act, which was assented to on the 23rd December, 1919, provides for the continuance of the six o'clock closing of hotels, and suspends Local Option pending a referendum on the question of prohibition, which must be taken within eighteen months after the passing of the Act. Other clauses provided for the establishment of Reduction Boards to regulate the number of licenses and the amount of compensation to be paid in cases where cancellations are recommended.

3. *Victoria*.—The Acts dealing with the subject of local option as to the sale of fermented and spirituous liquors, and with the compulsory closing of hotels in this State, are the Licensing Act 1915, No. 2683, and the Licensing Act 1916, No. 2855. Other Acts, now repealed, which dealt with the subject, were the Licensing Acts 1876, 1885, 1888, 1890, 1906, and 1907.

Part XIII. of the Act of 1915 relates to the subject of local option. Under this Part the local option provisions were to come into operation at the first general election subsequent to 1st January, 1917. The 1916 Act provides that the first local option polls are not to be held till the second general election following on the above date. In the meantime, the Licenses Reduction Board, which by the same Act has been constituted the Licensing Court for the whole State, is empowered to continue the work of closing hotels, which it has carried out since 1906.

The provision of a statutory number of hotels for each licensing district disappeared with the old conditions relating to closing, and the Court is now authorised to close hotels in any licensing district, as if resolution B (Reduction), under the local option provisions, had been carried in each district. This allows of a reduction proportionate to the existing number, the maximum closing not to exceed one-fourth. Power has also been given to accept the surrender of any victualler's license irrespective of the number otherwise closed. A greater number must not be closed than can be compensated, and the old limitation, that hotels licensed after 1886 were not entitled to compensation, has been removed.

(i) *The Licenses Reduction Board*. This Board was established by the 1906 Act, with power to reduce the number of licensed victuallers' premises, up to December, 1916, in districts where there were more than the statutory number of licenses. It had also the duty of fixing and awarding compensation to the owners and licensees of the closed hotels. The compensation was provided by an annual percentage fee of 3 per cent. on all liquor purchased by licensed victuallers. The compensation fund obtained in this manner has risen from £48,233 in 1907, to £63,623 in 1915, which was the highest figure reached. In 1916, with the restricted hours of trading, the amount received was £60,396. The licensing fund which was distinct from the compensation fund, was protected by a provision that the remaining hotels, by a *pro rata* assessment, had to make up annually the amount of the license fees lost by the closing of hotels; the license fees for hotels were of varying amounts, based on the annual municipal value of the premises, ranging from £5 to £50, in four classes, viz., £5, £15, £25, £50. By the 1916 Act, this system of fixed fees was abolished, as was also the *pro rata* assessment of lost fees and the 3 per cent. compensation fees. The two funds referred to above were merged into one, and a system of percentage fees was applied to all licenses for the sale of liquor in the State, whether wholesale or retail, and the amount received is paid into one fund.

Under this system, all vendors of liquor pay in proportion to the benefit they derive from the license. The amount charged the wholesale trade is 4 per cent. on the cost of all liquors sold to non-licensed persons, no charge being made on sales to other licensed vendors. The retail trade is charged 6 per cent. on liquor purchases, except the holders of Australian wine licenses, who are charged 4 per cent.

During 1916, prior to the passing of the above Act, a number of owners and licensees, fearing that no provision would exist for the acceptance of surrenders when Part XIII. came into operation, took advantage of the existing provisions. Consequently, the number closed, 143, was in excess of the average, and the 1917 compensation funds had to be drawn upon to the extent of £18,087. The closings of 1917 had to be somewhat curtailed for this reason. The maximum compensation payable is still governed by the trading results and the rents of the years 1903-6, though a concession was made in the Amending Act by which licensees are entitled to be compensated on a three years' tenure, if they are in possession of a lease of that extent when deprived of

their license. Under the 1916 Act 232 hotels have been closed and £139,105 awarded as compensation to 231 hotels. The total number of hotels closed up to the 31st December, 1919, was 1,286, and the compensation paid, £679,956, or an average of £529 per hotel. The following table shows particulars of the operations of the Board and Court up to the 31st December, 1919 :—

**VICTORIA.—OPERATIONS OF LICENSES REDUCTION BOARD, 31st DECEMBER, 1919.**

Particulars.	Licenses in December, 1906.			Hotels Deprived of Licenses.	Compensation Awarded.		Hotels Surrendered.	Compensation Awarded.	
	Number in Existence.	Statutory Number.	(a) Number in Excess.		Owner.	Licensee.		Owner.	Licensee.
					£	£		£	£
Metropolitan and Suburban ..	1,020	877	401	330	247,042	48,968	15	7,398	1,584
Country ..	2,428	1,622	967	621	241,483	38,447	(b) 320	85,513	9,521
Total ..	3,448	2,499	1,368	951	488,525	87,415	335	92,911	11,105

(a) In some districts the number of hotels was below the statutory number; in these districts the total number of hotels less than the statutory number was 418. (b) Including 4 Roadside licenses.

(ii) *Early Closing of Hotels.* Consequent on the war, an Act (No. 2584) was passed, and came into operation on 6th July, 1915, restricting the hours for the sale of intoxicating liquors, the restriction being limited to the duration of the war. Sale was permitted only between the hours of 9 a.m. and 9.30 p.m. By a subsequent Act (No. 2776), tenants of licensed premises were given the right to apply to the Licenses Reduction Board to adjust the rents of their premises. Four hundred licensees took advantage of this provision. The hours of trading in the evening were further restricted as from 25th October, 1916—six o'clock being fixed as the time of closing.

The provisions of the Rent Adjustment Act were extended so as to enable the Board to deal with applications for reductions of rent arising from fresh restrictions. Between 300 and 400 additional applications were received, the amounts involved being substantial.

Special provision was made in the 1916 Act for the granting of victuallers' licenses in the Mallee. Power was given to proclaim areas containing 500 resident electors, when petitions signed by a majority of the residents were lodged, and where the Licensing Court, after enquiry, recommended this course.

On the proclamation of an area, a poll of the electors is to be taken at which, if the poll is to be recognised, one-third of those enrolled must vote. A majority of those voting decides whether a license is to issue or not. Hotels must be at least twelve miles apart, except at Mildura, where special provision is made for the issue of three licenses. Under these provisions six areas have been proclaimed, in five of which polls were taken and resulted in favour of license. Licenses have now been granted at Mildura, Murrayville, Ouyen, Manangatang, and Ultima.

**4. Queensland.**—The local option clauses of the Liquor Acts of 1912–1914 provide for the following :—

- (i) The conditions under which new licenses may be granted until the completion of the business of the Licensing Court in April, 1916.
- (ii) The continuance of the local option clauses of the Licensing Act of 1885 until the 31st December, 1916.
- (iii) The institution of a new scheme, under which electors from and after the year 1917 will have the opportunity of voting every three years on the question of reduction or increase of licenses.

(i) *New Licenses.* With regard to the granting of "new licenses" from the 1st April, 1913, and until the completion of the business of the Licensing Court in April, 1916, it is provided that no new licensed victualler's or wine seller's or provisional licenses

shall be granted, unless at a local option vote of the electors of the local option area in which the premises or proposed premises are situated a resolution "that new licenses shall be granted in this local option area" has been carried.

If the resolution is carried, the Court may, but need not, grant applications; but if the resolution is not carried, the Court shall not grant any application during the said years in the said local option areas.

The Acts of 1912 and 1914 provided that a local option vote following on an application for a license might be taken in any of the years 1913, 1914, 1915, and 1916 in a local option area, but having been taken once should not be taken again during those years in the same local option area. During 1913 a vote was taken in ten districts on the resolution "that new licenses be granted." In five of these the resolution was carried, the other five districts declaring against any increase in the number of licenses. In 1914, sixteen districts voted on the same resolution, in eleven of which it was carried, while in 1915, sixteen districts also voted, the resolution being carried in ten cases.

(ii) *Continuance of Present System until 1917.* With the exception of the third resolution, viz., "that no new licenses be granted," the local option provisions of the Licensing Act of 1885 remained in full force and effect until the 31st December, 1916, with certain modifications and additions. These will be found fully described in previous issues of the Year Book (see No. 6, p. 1177).

(iii) *General Local Option.* The first vote may be taken in the year 1917, either on the same day as the election of senators takes place, or if no Senate election is held in 1917 before the 30th September, then on a day to be appointed by the Governor-in-Council, and the vote will be by ballot.

The vote will be taken on the request of one-tenth of the number of electors in an area, which is defined in the request, and such area may be:—(a) an electoral district, (b) an electoral division of an electoral district, or (c) a group of two or more divisions of an electoral district, provided that the whole of such local option area is wholly comprised within one and the same electoral district.

There must be a separate request for each resolution on which a vote is required to be taken.

The resolutions on which a vote may be taken are:—(a) reduction by one-fourth of the existing number, (b) further reduction by one-fourth of the existing number, (c) further reduction by one-fourth of the existing number, (d) prohibition, and (e) new licenses.

On the 5th May, 1917, 57 polls were taken, 55 being on the question of reduction (resolution a) and two being on the question of increase (resolution e). Reduction was carried in only four local option areas—Biggenden, Ipswich, Maryborough and Toowong. The number of licenses which cease to exist as from 1st January, 1920, in these districts are two licensed victuallers' in Biggenden; three licensed victuallers' and one wineseller's in Ipswich; seven licensed victuallers', two wholesale spirit merchants' and one wineseller's in Maryborough; and one licensed victualler's in Toowong. Increase was carried in Atherton and Cloncurry.

In previous issues of the Year Book (see No. 6, p. 1178) will be found fuller reference to the effect of the carrying of any of the resolutions.

On the 13th December, 1919, twelve polls were taken, eleven being on the question of increase or new licenses (resolution e) and one on the question of reduction of licenses (resolution a). Increase was carried in five local option areas—Ayr, Eungella, Clermont, Quilpie, and Windorah—but in Eungella and Windorah a sufficient number of electors did not vote, 35 per cent. being required under Section 175 of the Liquor Acts. The poll at Cleveland resulted in a majority against reduction.

The Liquor Act Amendment Act of 1920 provides that every local option vote must be taken in the month of May in every third year, on a day to be fixed by the Governor in Council, but no vote may be taken on the same day as the State General Election or a Commonwealth General or Senate Election.

(iv) *State Option, Prohibition, and Continuance of Present System.* The Liquor Act Amendment Act of 1920 provides for triennial polls throughout the State on the following resolutions :—

- (a) State management of manufacture, importation, and sale of fermented and spirituous liquors.
- (b) Prohibition of manufacture, importation, and retail of fermented and spirituous liquors to take effect from 1st July, 1925, in case of the poll in 1920 or 1923, and for subsequent polls from 1st July in the third year after the carriage of resolution (b).
- (c) Continuance of the present (or if (a) or (b) has been carried—return to the earlier) system of manufacture, importation and retail of fermented and spirituous liquors.

The first poll under this provision will be held on 30th October, 1920, that date having been fixed by the Governor in Council. Voting is compulsory under a compulsory preferential system.

5. *South Australia.*—In this State the subject of local option is now regulated by Part VIII. of the Licensing Act 1917.

Under this Act, each electoral district for the House of Assembly is constituted a local option district, and each electoral district may be divided into local option districts by proclamation of the Governor. A quorum consisting of 500 electors, or one-tenth of the total number of electors, whichever be the smaller number, in any district may petition to the Governor for a local option poll. The persons entitled to vote at the poll are those whose names appear on the electoral roll and who reside in the local option district.

The resolutions to be submitted, together with the effects such resolutions would have, are set out in detail in previous issues of the Year Book (see No. 6, p. 1179).

(i) *Local Option Poll.* On the 2nd April, 1910, local option polls were taken under the Act of 1908 in twenty-four districts; the electors in the remaining nine local option districts did not petition for polls. A resolution that the number of licenses be reduced was carried in only one district, Wallaroo; in the remaining twenty-three districts a resolution that the number of licenses be not increased or reduced was carried. At the general election of the House of Assembly, held on the 10th February, 1912, no local option polls were held in any local option district. On the 27th March, 1915 (the same day as the Parliamentary elections), a local option poll was taken in the Flinders Southern (Port Lincoln) local option district, when the resolution "that the number of licenses be not increased or reduced" was carried. There have been no further polls in any of the districts up to the end of 1917.

(ii) *Early Closing of Hotels.* On the 27th March, 1915, a referendum was held as to the hour for the closing of bar-rooms in licensed premises. Out of a total of 178,362 votes cast, 100,418 were cast in favour of closing bar-rooms at 6 p.m., those in favour of closing at 11 p.m. being 61,362. Electors had the choice of voting for hours other than the two mentioned, but the votes so cast were comparatively few. No polls have since been taken.

(iii) *Re-proclamation of Districts.* Local option districts were re-proclaimed on the 29th November, 1917, the districts, which number thirty-five, being given in the *Government Gazette* of the same date.

6. *Western Australia.*—The law relating to local option in Western Australia is contained in Part V. (sections 75 to 86) of the Licensing Act 1911, which was assented to on 16th February, 1911, and came into force on the 7th April following. Prior to the passing of this Act there was no provision for any system of local option in Western Australia.

The resolutions to be submitted under the above-mentioned Act and the effect such resolutions would have, are given in detail in previous issues of the Year Book (see No. 6, p. 1180).

The first vote under the Act of 1911 was taken on 26th April, 1911, the main question being confined (as prescribed by the Act when the vote is taken prior to 1920) to a resolution "that the number of licenses be increased," the only other questions submitted being those of State control of new publicans' general licenses and State management throughout all licensing districts.

The following table shews the result of this local option poll :—

**WESTERN AUSTRALIA.—RETURN SHEWING THE RESULT OF LOCAL OPTION POLL OF 26th APRIL, 1911.**

Result of Local Option Poll.		Do you vote that all new Publicans' General Licenses be held by the State?		Are you in favour of State Management throughout all Licensing Districts?	
Votes given in favour of the number of Licenses in the various districts being increased.	Votes given in favour of the number of Licenses in the various districts not being increased.	Yes.	No.	Yes.	No.
4,554	17,623	27,007	14,387	26,631	14,944

Under the 1911 Act a second poll was due on 26th April, 1914, but an amending Act was passed in December, 1913, continuing the present conditions until April, 1915. Subsequently, by an amending Act of 1915, the present conditions were further continued until 1918, and by an Act assented on the 7th August, 1917, the poll was postponed until 30th September, 1918, with a proviso that on a resolution passed by both Houses of Parliament the present conditions shall continue for a further period as may be expressed in such resolution. In 1918, the poll was further postponed till 1921.

(i) *Regulation of Liquor Traffic during the War.* In 1914, upon the outbreak of war, a special Act was passed in Western Australia which empowered the Government by proclamation to restrict or prohibit the sale or supply of liquor within any licensing district, or any portion of a licensing district, and rendered it an offence for any person, licensed or unlicensed, to offer for sale or supply liquor contrary to such proclamation, with a penalty of £200, or imprisonment for twelve months.

Provision was also made to limit and fix the hours during which licensed premises in any district, or portion thereof, might be open for the sale of liquor. The Act also contained the necessary powers to enforce the provisions thereof, including power to search without warrant and seize any liquor where there was reason to believe that such liquor existed in a prohibited area.

The Act was passed solely as an emergency measure, and so far there has been no necessity to issue any proclamation thereunder. The Act has been extended up to December, 1920.

In 1915, a further Act was passed *regulating the sale of liquors*. That Act divided the State into four districts—Metropolitan, Goldfields, Agricultural, and North-West, the last-named being exempt from the provisions of the Act.

The main feature, as regards the Metropolitan and Agricultural districts, was to reduce the period during which licensed premises could be open for the sale of liquor to the hours between 9 a.m. and 9 p.m., the previous period being between the hours of 6 a.m. and 11 p.m.

As regards the Goldfields district, the Act provided that upon receipt of a requisition signed by not less than 2,000 electors in the district, a referendum should be held.

In submitting the referendum, each elector had one vote, and the voting paper set out the hours of 6 o'clock, 7 o'clock, 8 o'clock, 9 o'clock, 10 o'clock, and 11 o'clock p.m. as alternative hours of closing. Each elector was to indicate his vote by marking an "X" opposite the hour which he desired to have fixed as the hour of closing. If the majority of votes were cast in favour of any particular hour, that hour was to be certified as being the result of the vote and proclaimed as the hour of closing. If there was no majority, then the votes cast for the earliest hour were to be transferred to the next later hour, and so on until a majority was thus obtained, when such majority would have the same effect as if the votes were originally given in favour of the hour to which they had been transferred, and such hour would be proclaimed the hour of closing.

A petition signed by the necessary number of electors was duly received, and a referendum was taken on the 24th May, 1916, the result of the poll being that the majority of all votes cast was in favour of the hour of 11 o'clock p.m. being fixed as the hour of closing.

The result of the referendum left the hour of closing in the Goldfields district 11 p.m. as previously.

The Act has been extended up to December, 1920.

7. *Tasmania.*—In this State the subject of local option is dealt with in Part VI. (sections 72 to 84) of the Licensing Act 1902, as subsequently amended by section 8 of the Licensing Act 1908, which later Act, however, did not come into full operation until the first of January, 1917. Other Acts which formerly dealt with the subject, but are now repealed, are the Licensing Acts 1889–1890, the Innkeepers Relief Act 1894, and the Licensing Act Amendment Act 1898. Under the Act of 1902, opposition to the grant of a license may be made (i) by any resident ratepayer, (ii) by petition of ratepayers resident in the neighbourhood, or (iii) by local option poll.

The conditions under which applications may be made to the Licensing Bench, opposing the granting of licenses, are set out in detail in previous issues of the Year Book. (See No. 6, p. 1181.)

(i) *Local Option Poll.* Any number of ratepayers not less than seven, resident in the neighbourhood of the house in respect of which a certificate for a hotel license has been applied for, may require, by petition lodged with the Clerk of Petty Sessions, that a poll of the ratepayers resident in the neighbourhood be taken upon the question whether such certificate be granted or not. If a majority of the votes taken be against the granting of the certificate the Licensing Bench must refuse to grant it.

An application refused is not to be renewed within three years.

(ii) *Early Closing of Licensed Premises.* A referendum on the question of the closing time for the sale and supply of liquor on licensed premises (6 Geo. V., No. 63) was taken on the 25th March, 1916, when 42,713 votes were cast in favour of closing at six o'clock p.m., against 26,153 votes in favour of ten o'clock, and 3,951 votes for other hours. The majority in favour of closing at six o'clock over all other hours was 12,609, and the Licensing Act (No. 2) of 1916 gives effect to the wishes of the electors.

## § 8. Preferential Voting.

In previous issues of the Year Book, a description in detail has been given of the systems of preferential voting now in force in the States of Victoria, Queensland, Western Australia, and Tasmania. It is not intended to repeat the description in the present issue. It is interesting to note that the system of preferential voting was introduced into elections for the Federal House of Representatives by Act No. 27 of 1918, which amended the previous electoral law. Section 124, sub-section (a) reads as follows :—

“ Where his (the voter's) ballot-paper is a ballot-paper in accordance with Form F in the Schedule—he shall place the number 1 in the square opposite the name of the candidate for whom he votes as his first preference, and shall give contingent votes for all the remaining candidates by placing the numbers 2, 3, 4 (and so on, as the case requires) in the squares opposite their names so as to indicate the order of his preference for them.”

This regulation will rectify one of the serious anomalies of the old system of voting, though it does not constitute true proportional representation.

### § 9. Valuation of Commonwealth Production.

1. **Value of Production.**—The want of uniformity in methods of compilation and presentation of Australian statistics renders it an extremely difficult task to make anything like a satisfactory valuation of the various elements of production. At present there is so little accurate statistical knowledge regarding such industries as forestry, fisheries, poultry, and bee-farming, that any valuation of the production therefrom can only be regarded as the roughest approximation. As a matter of fact, complete information as to value of production in all States is available in regard to the mining industry alone, and even in this case adjustments have to be made before the returns are strictly comparable. Careful estimates have been made in connexion with the value of production from the agricultural and pastoral industries, which, it is believed, in the main give fairly accurate results. In the case of manufactories, prior to 1909, five of the States collected statistics of the value of production, while for the sixth State, Tasmania, an estimate has been prepared which it is believed gives a fair approximation. The returns given in the following table are fuller and more approximate than those which have been given previously, and the figures furnished for 1909 and subsequent years may be taken as substantially correct. The table hereunder shews the approximate value of the production from all industries during the years 1909 to 1918 :—

#### ESTIMATED VALUE OF PRODUCTION FROM INDUSTRIES, 1909 TO 1918.

Year.	Agriculture.	Pastoral.	Dairy, Poultry, and Bee-farming.	Forestry and Fisheries.	Mining.	Manufacturing. (a)	Total.
1909	£1,000.	£1,000.	£1,000.	£1,000.	£1,000.	£1,000.	£1,000.
1909	41,056	50,864	15,064	4,462	23,036	39,713	174,195
1910	39,752	56,993	17,387	4,789	23,222	45,598	187,741
1911	38,774	50,725	19,107	5,728	23,494	50,767	188,595
1912	45,754	51,615	20,280	6,432	25,645	57,022	206,748
1913	46,162	57,866	20,341	6,338	25,810	61,586	218,103
1914	36,052	60,265	21,562	6,419	22,275	62,922	209,495
1915	73,769	65,607	21,156	5,777	22,428	62,883	251,620
1916	60,207	89,939	26,949	5,505	23,606	64,205	270,411
1917	57,967	93,435	31,326	5,523	25,581	69,797	283,629
1918	58,080	98,297	33,738	7,137	26,156	75,261	298,660

(a) These amounts differ from those given in Section XIII., Manufacturing Industries, owing to certain products which are there included having been included in Dairy Farming and Forestry in this table.

2. **Relative Productive Activity.**—The relative output or production per head of population measured quantitatively cannot be gauged from a mere statement of the total value of production from year to year. If measured by mere value, increase of price would have the effect of making an equal production with that of a time when prices were lower, and shew an increase which would, of course, be misleading. For example, the annual figures shewing the estimated value of production from the Commonwealth industries do not directly shew whether there has been any increase in the *quantity* produced, since the price-level at the time is itself a factor in the determination of the values. Before, therefore, any estimate of the relative increase or decrease in production (that is, in the relative quantity of output) can be formed, the variations due to the price element must be eliminated. This is done in the following table, in which Column I. shews the estimated *value* of production (a) in the aggregate and (b) per head of mean population. In Column II. the estimated value of production per head of population is shown in the form of index-numbers with the year 1911 as base; that is to say, the production per head in 1911 is made equal to 1000, and the values for the other years computed accordingly. In Column III. Wholesale and Production price index-numbers are given; it is assumed that these index-numbers reflect, with substantial accuracy, variations in Wholesale and



Production prices in the Commonwealth as a whole. The figures in Column IV. are obtained by dividing the figures for each year in Column II. by the corresponding figures in Column III. They show the estimated relative productive activity per head of population, taking the year 1911 as the basic or standard year, the fluctuations due to variation in prices having been eliminated.

**ESTIMATED RELATIVE PRODUCTIVE ACTIVITY IN COMMONWEALTH FOR THE YEARS SPECIFIED, 1871 TO 1918.**

Year.	I.		II.	III.		IV.	
	Estimated Value of Production.		Relative Value of Production per Head (Year 1911 = 1,000).	(a) Wholesale Price Index-Number (Year 1911 = 1,000).	(b) Production Price Index-Number (Year 1911 = 1,000).	Estimated Relative Productive Activity Index-Numbers (Year 1911 = 1,000).	
	(a) Total. (000 omitted)	(b) Per Head of Population.					
	£	£				*	†
1871 ..	46,700	27.46	665	1,229	..	541	..
1881 ..	71,116	30.83	747	1,121	..	666	..
1891 ..	96,087	29.65	718	945	..	760	..
1901 ..	114,585	29.96	726	974	..	745	..
1906 ..	147,043	35.94	871	948	..	919	..
1907 ..	166,042	39.90	967	1,021	..	947	..
1908 ..	164,934	38.97	944	1,115	1,070	847	882
1909 ..	174,195	40.29	976	993	995	983	981
1910 ..	187,741	42.43	1,028	1,000	973	1,028	1,057
1911 ..	188,595	41.28	1,000	1,000	1,000	1,000	1,000
1912 ..	206,748	43.68	1,058	1,170	1,101	904	961
1913 ..	218,103	44.77	1,085	1,088	1,050	997	1,033
1914 ..	209,495	42.40	1,027	1,149	1,266	894	811
1915 ..	251,620	51.02	1,236	1,604	1,426	771	867
1916 ..	270,411	55.47	1,344	1,504	1,498	894	897
1917 ..	283,629	57.47	1,392	1,662	1,604	838	868
1918 ..	298,669	59.37	1,438	1,934	1,763	744	816

\* Relative Production computed by application of Wholesale Price Index-numbers. † Index-numbers computed by application of Production Price Index-numbers.

The total production from all industries during 1918 was £298,669,000, equal to an average of £59.37 per inhabitant.

In Year Book No. 5 (page 1217) will be found the value of production in each State at decennial intervals since 1871, and for the year 1909. Details for individual States are not available for subsequent years owing to discontinuance by the Customs Department of the collection of statistics of interstate trade.

## § 10. Norfolk Island.

1. Area, Location, etc.—Norfolk Island, discovered by Captain Cook in 1774, is situated in latitude 29° 3' 45" south, longitude 167° 58' 6" east. Its total area is 8,528 acres, the island being about 5 miles long and 3 miles wide. From Sydney it is distant 930 miles, and from New Zealand 400 miles. The coast line is 20 miles, and its form that of an irregular ellipse. Except on the south-west, inaccessible cliffs rise from the water's edge. The climate is equable, the temperature ranging between 56° and 82° with a mean of 68°. The average annual rainfall is 55 inches. It has been said that the salubrious climate coupled with the beauty of its land and sea scapes should combine to render Norfolk Island "the Madeira of the Pacific."

2. **Settlement.**—The first colonisation, in 1788, was by Lieutenant King, who in H.M.S. *Sirius* established a small penal station as a branch settlement of that at Port Jackson. The settlement was abandoned in 1806, and thence for 20 years its chief use was as a whaling station and place of call for British warships.

From 1826 to 1855 it was again made a penal station. In 1844 it was annexed to Van Diemen's Land (Tasmania).

The descendants of the *Bounty* mutineers, having become too numerous to subsist on Pitcairn Island, were removed thence to Norfolk Island in 1856. The new community numbered 193—94 males and 99 females—and were the descendants of British sailors and Tahitian women.

In 1856 the island was severed from Tasmania, and created a distinct and separate settlement under the jurisdiction of New South Wales. In 1897 it was made a dependency under the Governor of that Colony, and was administered by the Chief Secretary's Department through a resident Chief Magistrate, in whom was vested the executive government of the settlement, and the penal supervision of its affairs. In 1913, however, a Bill was passed by the Federal Parliament providing for the taking over of the island as a territory of the Commonwealth. The Act came into force on 1st July, 1914, and the island is now administered by the Department of Home and Territories, Melbourne, through an Administrator and Chief Magistrate.

3. **Population and Live Stock.**—The population on 31st December, 1918, was 346 males, 420 females, a total of 766, exclusive of 49 Melanesians, of whom 47 were males, and 2 females. Births in 1918 numbered 11, and deaths 11. The latest returns of live stock shew that there are on the island 1,971 cattle, 680 horses, 536 sheep, and 250 pigs. In addition there are about 6,000 head of poultry.

4. **Production, Trade, etc.**—The soil throughout is rich, and is specially suitable for the cultivation of citrus fruits, bananas, and (in parts) coffee. Various other sub-tropical fruits thrive. During 1918–19 the production of oranges was given as 24,335 bushels; lemons, 220,970 bushels; bananas, 222,800 dozen. About 52,000 bushels of guavas, 839 dozen pineapples, and 6,840 bushels of passion fruit were also raised, as well as 44,764 lbs. of coffee. Local production of butter was estimated at 16,000 lbs. The island is visited annually by schools of whales, both of the sperm and hump-backed variety, and whaling was at one time an important industry, but in recent years it has been allowed to languish. Preparations were, however, in progress for a revival of the industry, but were dislocated by lack of shipping. Edible fish in large variety are found in abundance in the ocean waters in the vicinity of the island. In 1918–19 the imports were valued at £13,398. The exports were valued at £5,238, the chief items being fruit and fruit pulp; lemon juice, peel, and seeds; and fish. Nearly all the export trade was with the Commonwealth, only small amounts going to New Zealand and the South Sea Islands. Under ordinary circumstances a monthly steam service is maintained with Sydney, but in 1918–19 only five trips were made by the "Makambo" from Australia, and six trips to Australia. Communication was afforded with New Zealand twice a year by the Melanesian Missionary Yacht "Southern Cross," but the Mission is preparing to change its headquarters from Norfolk Island to some island nearer the centre of its field of operations. The "all red" cable from Great Britain *via* Vancouver, Fanning Island and Fiji bifurcates at Norfolk Island, one line connecting with New Zealand, the other with Brisbane.

5. **Social Condition.**—Education is free and compulsory up to the age of fifteen years. The school is under the N.S.W. Department of Public Instruction, with standards corresponding to the State public schools, but the salaries and allowances of the teachers are paid by the Norfolk Island Administration. The number of scholars enrolled on the 30th June, 1919, was 143 (70 boys and 73 girls). A mission station has for many years been in existence for the education and general training of Melanesians, mostly from the Santa Cruz and Solomon Islands.

The magistrate's court has criminal jurisdiction in all crimes except capital offences, civil jurisdiction in all matters, and authority to grant probate and letters of administration.

### § 11. Lord Howe Island.

1. **Area, Location, etc.**—Between Norfolk Island and the Australian coast is Lord Howe Island in latitude 31° 30' south, longitude 159° 5' east. It was discovered in 1788. The total area is 3,220 acres, the island being seven miles in length and from one-half to one and three-quarter miles in width. It is distant 436 miles from Sydney, and in communication therewith by monthly steam service. The flora is varied and the vegetation luxuriant, with shady forests, principally of palms and banyans. The highest point is Mount Gower, 2,840 feet. The climate is mild and the rainfall abundant, but on account of the rocky formation only about a tenth of the surface is suitable for cultivation.

2. **Settlement.**—The first settlement was by a small Maori party in 1853; afterwards a colony was settled from Sydney. Constitutionally, it is a dependency of New South Wales, and is included in the electorate of Sydney. A Board of Control manages the affairs of the island and supervises the palm seed industry referred to hereunder.

3. **Population.**—The population at the Census of 3rd April, 1911, was 56 males, 49 females—total 105, and on the 31st December, 1918, was estimated at 113.

4. **Production, Trade, etc.**—The principal product is the seed of the native or Kentia palm. The lands belong to the Crown. The occupants pay no rent, and are tenants on sufferance.

### § 12. Interstate Conferences.

1. **General.**—Reference to Inter-State Conferences held in 1914, 1915, 1916, and 1916–17, will be found in earlier issues of Official Year Book—See No. 8, page 1081; No. 11, pages 1191–3; No. 12, pages 1194–5. Considerations of space preclude repetition in present issue.

2. **Premiers' Conference, Sydney, 1918.**—On 8th May, 1918, and following days, a Conference of Premiers was held at Sydney. The substance of the more important resolutions is given below:—

- (i) *Uniform Company Law.* That it is desirable that an amended company law be introduced in each State as far as possible upon uniform lines.
- (ii) *Adoption of Uniform Food Standards.* That the New South Wales Government be requested to draft a model Pure Food Act and submit it to the other States for their consideration.
- (iii) *Uniform Secret Commissions Act.* That it is desirable that uniform Secret Commissions laws should be passed by the States.
- (iv) *Guarantee to Wheat Growers for 1918–19 and 1919–20.* That, subject to the Governments of the Commonwealth and of the States retaining control of the wheat scheme and of responsibility therefor, this Conference recommends that the wheat-growers of 1918–19 and 1919–20 be guaranteed 4s. 4d. per bushel, less freight from point of delivery, except in the case of New South Wales, where the arrangements already announced should be adopted; that the manner and the amounts of payment for wheat delivered and the allocation of responsibility between Commonwealth and States shall be the subject of early negotiations.

- (v) *Definition of Industrial Matters.* That this Conference affirms the desirability of defining the industrial matters which should with advantage be referred to the exclusive jurisdiction of the Federal Arbitration Court, and those that should be regarded as within the exclusive jurisdiction of the State Industrial Courts.

### § 13. Interstate Commission.

In accordance with the provisions of the Commonwealth Constitution Act (sections 101 to 104, see page 29), an Act providing for the appointment of the Commission was assented to on the 24th December 1912. The *personnel* of the Commission was, however, not decided until the 11th August, 1913, when Messrs. A. B. Piddington, K.C. (Chief Commissioner), Hon. George Swinburne, and N. Lockyer, C.B.E., I.S.O., were appointed. On the 8th September, 1913, a request was received from the Government of the Commonwealth that the Commission should make an investigation in regard to the Tariff. This investigation was made, and in all 70 reports were issued in connexion therewith. (*Vide* Official Year Book No. 9, p. 1134, and No. 10, p. 1140.)

In January, 1915, complaints were lodged with the Commission in respect to contravention of the provisions of the Constitution relating to trade and commerce. In this connexion, the case of the Commonwealth of Australia *v.* The State of New South Wales and another was subsequently heard before the Commission, but on an appeal to the High Court against its decision it was held that under section 101 of the Constitution the Interstate Commission had not been given judicial powers. It has been announced that the Government proposes to introduce legislation to confer judicial powers on the Interstate Commission.

On the 14th September, 1915, the Minister for Trade and Customs requested the Commission to furnish for the information of Parliament a report as to the new industries which, in its opinion, could with advantage be established in the Commonwealth, and in pursuance of this request such report was prepared and presented.

On the 7th March, 1916, the Commission was entrusted with an enquiry into the subject of British and Australian trade in the South Pacific, with the result that a report was furnished which deals with all factors affecting the progress of the island possessions in which Great Britain and Australia are interested.

On the 19th April, 1916, the Commission was invited by the Postmaster-General, on behalf of the Commonwealth and the several States, to act as arbitrator on the question of charges, etc., by the Railway Commissioners of the States for the carriage of mails. Subsequently sittings were held in this matter and decisions and awards made.

On the 9th August, 1917, the Prime Minister, as the result of complaints made to him, requested the Commission to inquire into the causes of increased prices of food, clothing, house rent, etc. This inquiry is now completed. In connexion with this investigation a regulation under the War Precautions Act was passed to permit each Commissioner to sit alone, and while so sitting to exercise all the powers of investigation conferred by the Interstate Commission Act of 1912.

On the 31st March, 1919, the Commissioners and Mr. Mills, Comptroller-General of Customs, were appointed a Royal Commission to inquire into and report upon the Sugar Industry. The Commission took evidence in Victoria, New South Wales and Queensland, and presented a report dated 27th February, 1920, to His Excellency the Governor-General.

There is at present a vacancy on the Commission, the Hon. George Swinburne having resigned his position thereon.

### § 14. Commonwealth Institute of Science and Industry.

1. **General.**—An account of the origin of this Institute was given in Official Year Book No. 9, p. 1135, while the progress of its activities was outlined in succeeding issues.

Under the Institute of Science and Industry Act 1920, assented to on the 14th September, 1920, provision is made for the establishment of the Institute on a permanent basis. By that Act it is declared that there shall be a Commonwealth Institute of Science and Industry, which will be a body corporate. The Act provides for the creation of (a) A Bureau of Agriculture, (b) A Bureau of Industries, and (c) such other Bureaux as the Governor-General determines. Power is given for the establishment of a General Advisory Council and Advisory Boards in each State to advise the Director with regard to—

- (a) The general business of the Institute or any Bureau thereof, and
- (b) Any particular matter of investigation or research.

The Director of the Institute is to be appointed for a period of five years. He is to be eligible for reappointment, and shall receive such salary as the Governor-General determines. The Act specifically imposes upon the Director the duty of co-operating as far as possible with existing State organizations in the co-ordination of scientific investigations. The statutory powers and functions of the Director are as follows:—

- (a) the initiation and carrying out of scientific researches in connexion with, or for the promotion of, primary or secondary industries in the Commonwealth;
- (b) the establishment and awarding of industrial research studentships and fellowships;
- (c) the making of grants in aid of pure scientific research;
- (d) the recognition or establishment of associations of persons engaged in any industry or industries for the purpose of carrying out industrial scientific research and the co-operation with and the making of grants to such associations when recognised or established;
- (e) the testing and standardization of scientific apparatus and instruments, and of apparatus, machinery, materials and instruments used in industry;
- (f) the establishment of a Bureau of Information for the collection and dissemination of information relating to scientific and technical matters; and
- (g) the collection and dissemination of information regarding industrial welfare and questions relating to the improvement of industrial conditions.

2. **Work of the Institute.**—The Institute has made investigations into several matters of importance to the Commonwealth, and has issued bulletins and pamphlets shewing the progress made. A list of these publications is given at the end of this section. The more important subjects which have been or are at present under consideration are as follows:—

#### A.—Agricultural and Pastoral Industries.

(i) *Cattle Tick Pest.* (ii) *Worm Nodule Disease.* (iii) *Tuberculosis in Stock.* (iv) *Sheep Blow Fly.* (v) *White Ant Pest.* (vi) *Prickly Pear.* This weed covers in Australia an area of about 23,000,000 acres, and is spreading at the rate of about 1,000,000 acres annually. (vii) *Flax Industry.* The area under flax has been increased from 400 to 2,000 acres. (viii) *Cotton Growing.* Varieties of seed specially suitable for cultivation in Australia are being introduced, and the Government has guaranteed a minimum price for cotton cultivated in Australia. (ix) *Seed Improvement.* (x) *Natural Grasses and Fodder Plants.* (xi) *Viticultural Problems.* (xii) *Castor Beans.* (xiii) *Sorghum.*

#### B.—Forest and Vegetable Products.

(i) *Paper Pulp.* (ii) *Tanning Materials.* (iii) *Zamia Palms.* (iv) *Grass Tree Resin.* (v) *Western Australian Sandalwood.*

C.—*Manufacturing Industries.*

- (i) *Leather and Tanning.* (ii) *Pottery.* (iii) *Power Alcohol.* (iv) *Posidonia Fibre.*  
 (v) *Mechanical Cotton Picker.* (vi) *Engineering Standardization.*

D.—*Mining and Metallurgy.*

- (i) *Mode of Occurrence of Gold.* (ii) *Ferro-alloys.* (iii) *Alunite.*

E.—*Miscellaneous.*

- (i) *Road-making Materials, etc.* (ii) *Weights and Measures.* (iii) *Leather.* (iv) *St. John's Wort.*

In addition to these investigations, a Bureau of Information has been established, with a library of scientific books and journals catalogued and indexed. Information has also been furnished to a large number of persons on scientific and technical matters.

3. **Publications.**—The following is a list of the publications issued to 30th June, 1920, by the Institute :—

1. *Bulletins.*

1. The Cattle Tick in Australia. (Out of print. Sec No. 13.)
2. Worm Nodules in Cattle.
3. The Alunite Deposits of Australia and their Utilization.
4. The Factors Influencing Gold Deposition in the Bendigo Goldfield. Part I. (Out of print.)
5. Wheat-storage Problems (Damaged Grain and Insect Pests).
6. Power Alcohol. Proposals for its Production and Utilization in Australia. (Out of print.)
7. Agricultural Research in Australia. (Out of print. The individual papers contained in this Bulletin can be supplied separately.)
8. The Factors Influencing Gold Deposition in the Bendigo Goldfield. Part II.
9. The Manufacture and Uses of Ferro-alloys and Alloy Steels.
10. Substitutes for Tin-plate Containers.
11. Paper-pulp : Possibilities of its Manufacture in Australia.
12. The Prickly Pear in Australia.
13. The Cattle Tick Pest in Australia.
14. An Investigation of the Marine Fibre of *Posidonia Australis*.
15. Welfare Work.
16. The Factors Influencing Gold Deposition in the Bendigo Goldfield. Part III.

2. *Reports.*

1. Reports of Executive Committee from Date of Appointment to 30th June, 1917.
2. Report of Executive Committee 1917–18.
3. Report on Organization and Work of Permanent Institute of Science and Industry.
4. Organization of Scientific Research Institutions in United States of America, by G. Lightfoot. (Out of print.)
5. The Work and Present Position of the Temporary Institute of Science and Industry (June, 1920).

3. *Pamphlets.*

1. Recent Developments in the Organization of National Industrial Research Institutions, by G. Lightfoot.
2. Engineering Standardization, by G. Lightfoot.

4. *Australian Standard Specifications.*

1. Structural Steel.
2. Tramway Rails and Fishplates.

5. "*Science and Industry.*"

(Monthly Journal.)

Vol. I., Nos. 1 to 8.

Vol. II., Nos. 1 to 6.

### § 15. Department of Chemistry, South Australia.\*

In South Australia, a Department of Chemistry was formed in 1915. The Department is principally engaged in general routine chemical examinations and analyses in pursuance of various Acts of Parliament and for Government Departments, but the chemical investigation of local products and industries forms an important branch of its work. In this connexion a series of Bulletins is in course of preparation. Up to July, 1918, nine Bulletins have been issued, as indicated below. Although publication of Bulletins had to be suspended for a time, it is hoped to continue the series as soon as possible.

No. 1.—*Paper Making*: An investigation into the prospects of establishing a paper-making industry in South Australia. A number of local materials have been investigated, and special attention is directed to straw as the most valuable available material, owing to the very large supply obtainable at a low price and near to the principal sea-ports. No. 2.—*Potash*: Its economic sources in South Australia. Many local sources have been investigated, and wool scour is indicated as especially worthy of attention. *Lanoline*: A process for obtaining wool fat from locally scoured wool is described. No. 3.—*Cream of Tartar*: An examination of local grape products as sources of cream of tartar. No. 4.—*Marine Fibre*: The fibrous portion of the leaf sheath of the sea plant *Posidonia Australis* grows abundantly in the shallow waters around the coasts of South Australia, and on other parts of the Australian Coast. This Bulletin has been written to gather together and publish all the available information respecting it. The sum of £220,000 has already been spent in this industry, and a large amount of experimental work has been done in finding methods of collection and purification and market uses. No. 5.—*Boiler Waters*: Foaming and priming of boiler waters have been studied with a view to the suggestion of a remedy for these faults. No. 6.—*Grass Tree*: An investigation of the economic products of the species *Xanthorrhoea*. The trunk, leaves, and resin were examined. Special attention is drawn to the resin as similar to the high-priced resins, such as dragon's blood, benzoin, etc. It was found that 8 per cent. of para-oxy-benzoic acid was readily obtained from the gum. No. 7.—*Gypsum and Plaster of Paris*: An investigation of the gypsum deposits in South Australia and their uses, with special reference to the manufacture of plaster of paris. No. 8.—*Alcohol as a Source of Power*: This Bulletin discusses the use of alcohol as a motor fuel, details tests carried out under practical conditions, and indicates sources from which alcohol can be obtained. No. 9.—*Bonedust*: Its adulteration with Phosphate Rock. The results of this particular form of adulteration are dealt with, and a method of detection described.

### § 16. Anthropometrical Measurements of Military Cadets.

1. *General*.—Under the Defence Act of 1910, the principle of compulsory training was brought into operation in Australia on 1st January, 1911. Advantage was taken of this to secure a record of certain measurements and other particulars in respect of the cadets subjected to inspection, and an analysis of the data so obtained concerning height, weight, and minimum chest measurement, according to age, was given in Official Year Book No. 11, pages 1203-1209, for the year ended 30th June, 1912.

### § 17. Characteristics of the Development of the Population of Australia and the Effect of the War thereupon.

The population of Australia at 31st December in each of the years 1900 to 1919 is shewn in the following table. Figures are also given shewing the relative populations, that at the date (1st January, 1901) on which the Commonwealth came into existence being taken as 10,000. An analysis of the variations in the population is also furnished in the columns which shew the natural increase (excess of births over deaths), the net

\* Information supplied by the Director, Dr. W. A. Hargreaves, D.Sc., M.A., F.I.C.

# CHARACTERISTICS OF THE DEVELOPMENT OF THE POPULATION OF 1127 AUSTRALIA AND THE EFFECT OF THE WAR THEREUPON.

migration (the difference between arrivals and departures), and the total increase for the several years.

## CHARACTERISTICS OF THE DEVELOPMENT OF THE POPULATION OF THE COMMONWEALTH OF AUSTRALIA DURING THE FEDERATION PERIOD, 1901 TO 1919 INCLUSIVE.

Year.	Population at 31st December.	Relative Population that at 31st December, 1900 = 10,000.	Natural Increase (Excess of Births over Deaths).	Net Immigration (Excess of Arrivals over Departures).	Total Increase.	Total Increase Per Cent. Per Annum for Year Ended.
						%
1900 ..	3,765,339	10,000	..	..	..	..
1901 ..	3,824,913	10,158	56,615	2,959	59,574	1.58
1902 ..	3,875,318	10,292	54,698	— 4,293	50,405	1.32
1903 ..	3,916,592	10,402	51,150	— 9,876	41,274	1.07*
1904 ..	3,974,150	10,555	60,541	— 2,983	57,558	1.47
1905 ..	4,032,977	10,711	61,427	— 2,600	58,827	1.48
1906 ..	4,091,485	10,866	63,557	— 5,049	58,508	1.45
1907 ..	4,161,722	11,053	65,042	5,195	70,237	1.72
1908 ..	4,232,278	11,240	65,119	5,437	70,556	1.70
1909 ..	4,323,960	11,484	69,899	21,783	91,682	2.17†
1910 ..	4,425,083	11,752	71,211	29,912	101,123	2.34†
1911 ..	4,568,707	12,134	74,324	69,300	143,624	3.25†
1912 ..	4,733,359	12,571	80,911	83,741	164,652	3.60†
1913 ..	4,872,059	12,939	83,925	54,775	138,700	2.93†
1914 ..	4,940,952	13,122	86,263	— 17,370	68,893	1.41‡
1915 ..	4,931,988	13,098	82,089	— 91,053	— 8,964	— 0.18‡
1916 ..	4,875,325	12,948	77,229	— 133,892	— 56,663	— 1.15‡
1917 ..	4,935,311	13,107	81,936	— 21,950	59,986	1.22‡
1918 ..	5,030,479	13,360	75,490	19,678	95,168	1.93
1919 ..	5,247,019	13,935	56,360	160,180	216,540	4.30§

\* The season 1902-3 was one of drought. † The large increases are due to immigration. ‡ This is the effect of emigration (despatch of soldiers oversea, etc.). § The large value is due to return of soldiers, and would have been appreciably larger but for the loss of about 14,000 through an epidemic of influenza.

The effect of the war was to stop immigration and to increase the number going abroad, as for example, the soldiers fighting for the Empire. Moreover, the gain by excess of births over deaths fell off from 86,263 in 1914 to 56,360 in 1919, the decline in the latter year being accentuated by the influenza epidemic. The rate of increase from 1st January, 1901, to 31st December, 1913, was 2 per cent. per annum. If this rate had been uniform, the increase for the years 1914 to 1919 would have been as shewn hereunder :—

## THE DEVELOPMENT OF POPULATION, HAD IT BEEN GOVERNED BY PRE-WAR CONDITIONS.

Year.	Population on Assumption of Uniform Increase of 2 Per Cent. Per Annum.	Increase on Basis of 2 Per Cent.	Actual Increase.	Excess of 2 Per Cent. Increase over Actual Increase.
1913 ..	4,872,059	..	..	..
1914 ..	4,969,500	97,441	68,893	28,548
1915 ..	5,068,890	99,390	— 8,964	108,354
1916 ..	5,170,268	101,378	— 56,663	158,041
1917 ..	5,273,673	103,405	59,986	43,419
1918 ..	5,379,146	105,473	95,168	10,305
1919 ..	5,486,729	107,583	216,540	— 108,957
Total ..	..	614,670	374,960	239,710



Hence the difference between the two may be regarded as very largely the consequence of the war, though of course other causes also have contributed. We may note, however, that, as shewn on the first table, the rate of increase was itself increasing. Thus, we might very fairly suppose that the rate from the end of the year 1907, which for the first year was 1.70 per cent. per annum, tended to increase uniformly 0.4 per cent. per annum. This would give for successive years 2.10, 2.50, 2.90, 3.30 per cent., which would be the increase of 1912 over 1911. Let us assume that this last rate, which is of course high, remained constant: then we should get the following figures for the successive years, viz., those shewn hereunder, and these may well have been the actual figures but for the incidence of the war if we had maintained steadily our large net immigration:—

Year.	Population as Computed.	Increase.	Year.	Population as Computed.	Increase.
		%			%
1907 ..	4,161,722	..	1913 ..	4,863,620	..
1908 ..	4,232,471	1.70	1914 ..	5,024,119	3.30
1909 ..	4,321,353	2.10	1915 ..	5,189,915	3.30
1910 ..	4,429,387	2.50	1916 ..	5,361,182	3.30
1911 ..	4,557,839	2.90	1917 ..	5,538,101	3.30
1912 ..	4,708,248	3.30	1918 ..	5,720,858	3.30
1913 ..	4,863,620	3.30	1919 ..	5,909,646	3.30

On 31st December, 1919, we should, on this supposition, have had a population of 5,909,646, or 662,627. more than the actual population (5,247,019). It is, therefore, abundantly clear that the population of Australia is between 240,000 and 660,000 less than it would have been but for the war.

In this connexion it may be mentioned that, with regard to the proposal to create a Capital at Canberra, the Commonwealth Statistician on the 23rd December, 1909, estimated the probable population for 1920 as 5,227,000. On the 31st March, 1920, it had reached 5,274,444, so that the increase prior to the war was somewhat larger than had then been anticipated. This, however, was due to the large net immigration which commenced in 1909, and continued till 1913 inclusive. The two results are thus in very fair agreement, since the prediction was for a point of time between ten and eleven years ahead. Of course, if the increase in the rate of advance for the years 1909 to 1913 could have continued, the loss would be still greater.

### § 18. The Influenza Epidemic of 1918-19.

In common with other countries, Australia was visited during 1918-20 by an epidemic of influenza, which was by far the most severe on record. In the following pages is given a brief analysis of its salient features. The average death rates per 100,000 of the mean population for the first three successive quinquennia of this century, for the four years 1915-18, and for 1919 are shewn hereunder:—

#### DEATH RATES, ALL CAUSES, PER 100,000, 1900-19.

Period.	Males.	Females.	Persons.
1900-4 .. ..	1,322	1,052	1,194
1905-9 .. ..	1,200	957	1,084
1910-14 .. ..	1,189	945	1,072
1915-18 .. ..	1,197	883	1,040
1919 .. ..	1,466	1,098	1,288

This conspicuous increase during 1919 was largely due to deaths from influenza. Of the 65,930 deaths which were registered during that year, no less than 11,989 (7,046 males and 4,943 females) were classified as due to influenza.

The table hereunder shews for each State and the Commonwealth as a whole the deaths and death rates from influenza in 1919:—

## DEATHS AND DEATH-RATE PER 100,000 PERSONS FROM INFLUENZA, 1919.

Particulars.	N.S.W.	Vic.	Qld.	S. A.	W. A.	Tas.	N. T.	F. T.	C'wealth.
Number of deaths—									
Metropolitan areas	3,350	2,413	377	334	230	77	..	..	6,781
Remainder of State	2,630	1,148	734	206	310	163	16	1	5,208
Whole State ..	5,980	3,561	1,111	540	540	240	16	1	11,989
Death rate per 100,000 persons—									
Metropolitan areas	413	329	203	136	167	177	..	..	314
Remainder of State	228	157	137	98	167	97	333	43	174
Whole State ..	304	243	156	118	167	114	333	43	233

A reference to Graph No. 1 (a) discloses the fact that there were marked epidemics of influenza in 1891, 1894-5, and 1899, and that the epidemic of 1918-19-20 was much more severe than any of the preceding ones. The annual death rates per million persons from influenza for the periods 1880-1893 (fourteen years), 1894-1906 (thirteen years), and 1907-18 (twelve years) were 104, 202, and 98 respectively, while the rate for 1919 was 2,331, which was 23.8 times that of the average for the twelve years 1907-18.

It appears that apart from the epidemics there is a secular fluctuation in the frequency, i.e., in the degree of regularity with which the deaths for individual years vary on the positive or negative side. This oscillation is shewn on Graph 1 (see curve 1 (b)), and can be represented by the formula—

$$D = 124 + t - 100 \cos (10^\circ t); t = Y - 1880.$$

Where D denotes the number of deaths per annum per million of population, and Y the calendar year.

There is evidently no clearly defined and regular secular period for this disease. It is at once obvious from the graph that the last epidemic was very much more severe than previous epidemics; the differences from the oscillation curve being of the following order, viz.—

Year 1891, 570; year 1899, 220; year 1907, 68; and year 1919, 2,255.

Though there is no very marked correlation between the mortality-frequencies of influenza and most other diseases, it appears to be fairly definitely associated with pneumonia and heart disease, as the following table shews:—

## DEATHS PER 1,000,000 FROM INFLUENZA, PNEUMONIA, AND HEART DISEASE.

	Influenza.	Pneumonia and Broncho-pneumonia.	Heart Disease.
1880 .. ..	35	527	701
1885 epidemic .. ..	77	865	820
1890 .. ..	130	681	757
1891 epidemic .. ..	739	809	805
1894 epidemic .. ..	257	623	685
1895 epidemic .. ..	277	702	722
1899 epidemic .. ..	462	760	829
1900 .. ..	147	670	848
1907 epidemic .. ..	219	653	922
1910 .. ..	74	529	1,002
1918 .. ..	170	647	798
1919 epidemic .. ..	2,331	776	1,140

The association of these three diseases was conspicuous in 1891 and 1919, and the deaths—recorded as due to influenza and to pneumonic influenza—indicate that on the whole these two causes are closely related. Thus the average number of deaths per month for 1911-17 and the number during each month of 1918 and 1919 were as follows:—

#### MONTHLY NUMBERS OF DEATHS FROM INFLUENZA AND PNEUMONIC INFLUENZA.

Particulars.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Year.
Ordinary influenza—													
1911-17* ..	14.7	9.0	10.6	14.0	18.4	27.7	34.0	52.7	59.6	42.9	33.3	17.7	334.3
1918 ..	12	5	7	12	13	26	41	52	173	275	130	102	848
1919 ..	17	30	72	81	119	293	408	242	103	54	42	37	1,496
Pneumonic influenza—													
1919 ..	62	465	230	1,845	1,491	2,129	2,339	1,074	494	202	84	28	10,493

\* Annual averages.

#### DEATH RATES FROM INFLUENZA PER ANNUM PER MILLION PERSONS DURING EACH CALENDAR MONTH.

Period.	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Year.
1907 ..	132	54	55	62	74	32	120	550	676	503	220	127	219
1908-12	47	27	32	43	67	88	143	177	184	145	109	63	94
1913-17	34	26	27	36	44	67	60	100	131	94	76	43	62
1918 ..	29	13	17	29	31	63	97	123	421	647	316	239	170
1919 ..	185	1,276	817	4,605	3,712	5,745	6,276	2,995	1,397	578	293	146	2,331

The fluctuation of annual period of ordinary influenza is shewn in the following table:—

#### DEATH RATES PER ANNUM PER MILLION PERSONS DURING EACH EQUALISED MONTH AND THE RATIOS OF EACH TO THEIR MEAN VALUE.

Month.	Equalised Month.	Difference from Yearly Mean.	Ratio to Average.	Month.	Equalised Month.	Difference from Yearly Mean.	Ratio to Average.
January ..	40.1	- 34.5	- .462	July ..	92.3	+ 17.6	+ .236
February ..	26.5	- 48.1	- .645	August ..	132.3	+ 57.5	+ .771
March ..	29.2	- 45.4	- .608	September ..	153.2	+ 78.6	+ 1.053
April ..	39.2	- 35.4	- .474	October ..	114.4	+ 39.8	+ .533
May ..	54.2	- 20.5	- .275	November ..	88.5	+ 13.9	+ .186
June ..	76.5	+ 1.8	+ 0.24	December ..	49.4	- 25.3	- .339

The figures in Column I. are the geometric means between the arithmetic means of the periods 1907-12 and 1913-17.

The curve equivalent to the values represented in the third column of the above table is shewn by the curve I. on graph No. 2. For Influenza the maximum of the periodic oscillation of death rate occurs in Australia about September 11, and has the value of 1.124 times the average for the year, and the minimum (by graphic determination) occurs about February 24, and has the value 0.656 of the average for the year. It has but one maximum and one minimum. For the 1919 epidemic, including both ordinary and pneumonic influenza, the following variations in the relative frequency per calendar month throughout the Commonwealth are shewn:—

#### DIFFERENCE IN ANNUAL DISTRIBUTION OF ORDINARY AND PNEUMONIC INFLUENZA (CALENDAR MONTHS).

Influenza.	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
Ordinary ..	-.463	-.646	-.611	-.479	-.282	+.017	+.227	+.769	+1.061	+.544	+.195	-.332
Pneumonic	-.932	-.501	-.649	+.964	+.634	+1.460	+1.786	+.308	-.440	-.777	-.901	-.951

This difference is due in part to the fact that the appearance of the disease was not simultaneous for the several States of the Commonwealth. These results indicate three maxima, viz., February, April, and July, and three minima, occurring in March, May, and December. The maximum death rates in each State occurred as follows, viz., Victoria, February, May, and July; New South Wales, April and July; Queensland, June; South Australia, May, August; Western Australia, August; and Tasmania, September.

The characteristics of the age-incidence of the epidemic are sharply differentiated from those of ordinary influenza. The deaths from influenza per 1,000,000 males and per 1,000,000 females of each age-group during the nine years 1907-15, and during the three years 1916-18, were as shewn in the table hereunder, and were very nearly identical. Graph No. 3 (Curves 1 and 2 for males, and 1' and 2' for females) shews the frequency. Curves 3a and 3'a illustrate the age incidence in the case of the recent epidemic, and disclose its characteristic difference from the age incidence of ordinary influenza, also given for both males and females in the table hereunder. Curves 4 (males) and 4' (females) indicate—for comparison—the age incidence of pneumonia during the period 1907-15, and it will be noticed have the same general character as the curves of ordinary influenza.

## AUSTRALIAN DEATH-RATES FOR INFLUENZA PER MILLION.

Age Group.	Deaths per Million <i>Males</i> in each Age Group.			Deaths per Million <i>Females</i> in each Age Group.		
	1907-15.	1916-18.	1919.*	1907-15.	1916-18.	1919.*
Under 1 year ..	341	240	1,531	250	186	1,286
1 ..	82	41	903	85	49	784
2 ..	35	31	886	38	34	829
3 ..	34	24	659	26	28	427
4 ..	24	12	568	11	23	577
5-9 ..	16	18	250	21	19	340
10-14 ..	9	12	423	15	8	347
15-19 ..	21	31	932	18	12	772
20-24 ..	25	40	1,862	31	13	1,673
25-29 ..	33	46	4,649	29	15	3,309
30-34 ..	27	35	6,243	31	23	3,685
35-39 ..	56	48	5,764	54	33	3,378
40-44 ..	71	50	4,380	46	41	2,468
45-49 ..	101	76	4,283	68	55	2,477
50-54 ..	109	87	3,862	103	67	2,791
55-59 ..	170	153	3,557	122	145	4,113
60-64 ..	248	343	3,852	296	278	3,611
65-69 ..	468	446	3,409	528	437	3,335
70-74 ..	848	759	3,084	1,018	766	3,499
75-79 ..	1,407	1,472	3,712	1,917	1,535	3,860
80-84 ..	2,240	1,967	2,544	2,340	2,221	2,797
85-89 ..	3,274	4,777	3,398	3,836	3,891	3,057
90-94 ..	6,038	3,939	4,201	5,285	2,837	2,356
95-99 ..	5,333	3,016	7,752	7,276	6,726	..
100 and over ..	..	..	..	24,096	..	..

\* Ordinary and pneumonic influenza combined.

There is an extraordinary difference in the incidence of the mortality in respect to age. While in the mortality from ordinary influenza it continually increases with age for both males and females after the age of, say, 12½ is passed (see results for 1907-15 and 1916-18), in the pneumonic form it reaches a maximum—about 6,300—at age 36.4 for males and about 3,700 at age 32.6 for females.\*

The masculinity of death from influenza is also peculiar. If the excess of males over females in 10,000 persons be ascertained, this number may be termed the masculinity per 10,000. Thus if the masculinity be 1,754 per 10,000, it means that the number of

\* For females the results for the higher ages are irregular, being based on small numbers.

cases of males and females were in the proportions:— $\frac{1}{2}$  (10,000 + 1,754) males to  $\frac{1}{2}$  (10,000 - 1,754) females = 5,877 to 4,123. The masculinity figures per 10,000 persons of the mortality from Influenza, Broncho-Pneumonia, Pneumonia and Heart Disease are as follow:—

#### MASCULINITY OF DEATHS FROM INFLUENZA, ETC.

Disease.	1907-12.	1913-19.	1918.	1919.
Influenza .. .. .	575	60	967	1,754
Broncho-Pneumonia .. .. .	1,021	938	175	739
Pneumonia .. .. .	2,441	2,469	2,395	1,694
Heart Disease .. .. .	1,327	1,371	981	1,047

Thus for influenza the masculinity (as defined) greatly increased in 1919; for broncho-pneumonia it distinctly increased over its value for 1918 though it was less than for the period 1907 to 1917; for pneumonia itself it conspicuously diminished; while for heart disease it did not greatly change.

The periods at which the number of deaths from influenza became greater than the normal in each of the States were as follows:—New South Wales—September to December, 1918. Recrudescence March, 1919, to January, 1920. Victoria—September to November, 1918. Recrudescence January to December, 1919. Queensland—July, 1918, to February, 1919. Recrudescence May to December, 1919. South Australia—August to October, 1918. Recrudescence April to November, 1919. Western Australia—July, 1918, to January, 1919. Recrudescence June, 1919, to January, 1920. Tasmania—October to December, 1918. Recrudescence August, 1919, to February, 1920. Commonwealth—July, 1918, to February, 1920.

The number of deaths attributable to the epidemic of influenza involves an analysis of the mortality from all diseases and of the mortality from this disease in normal circumstances. Moreover, since certain other diseases shew an increase they may be brought into account in estimating what may possibly have been the indirect effect of the influenza. Proceeding thus the following results are obtained for the excess deaths:—

#### EXCESS IN THE NUMBER OF DEATHS FROM INFLUENZA, PNEUMONIA, AND HEART DISEASE OVER NORMAL NUMBER, 1918-1919.

Disease.	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Year.
Influenza ..	65	482	339	1,912	1,587	2,396	2,724	1,280	666	453	196	133	12,233
Pneumonia	31	— 3	— 1	160	68	216	166	4	11	— 3	— 80	— 34	535
Heart Disease	30	26	53	121	130	135	303	239	222	257	103	141	1,760
Total ..	126	505	391	2,193	1,785	2,747	3,193	1,523	899	707	219	240	14,528

NOTE.—Minus sign indicates that deaths were less than normal.

As the table shews, there were 14,528 deaths during 1918-19 (590 in 1918 and 13,938 in 1919) more than would have occurred normally. This number was the death-tribute for the two years owing directly and indirectly to the epidemic of influenza, on the supposition indicated, viz., that the increase in deaths from pneumonia and heart disease were associated more or less directly therewith.

This result can be otherwise confirmed. The death-rates for all causes of death per 100,000 of population for 1913 to 1919 were as follows:—

#### DEATH RATES, ALL CAUSES, 1913-19.

Year .. .. .	1913.	1914.	1915.	1916.	1917.	1918.	1919.
Rate per 100,000 ..	1,078	1,051	1,066	1,104	980	1,009	1,282

Obviously the rate for 1919 is very much above the average. If 1918 be taken as substantially normal (since the average for 1913-1917 was 1,056) and allowance be made for the fact that the population in 1919 was 1.03268 times that of 1918, the expected number of deaths in 1919 was 51,891. The actual deaths were 65,930, or 14,039 in excess of the expected number which agrees very well with the number (13,938) given above for 1919.

## § 19. Past Glacial Action in Australia.\*

### 1. Introductory.

One of the most remarkable facts brought to light by geology is the great contrasts of climate that have occurred in the same geographical areas at different periods of the world's history. An arboreal flora, such as is characteristic of temperate regions in the present day, has flourished at certain times in the past both within the Arctic and Antarctic circles. The seas of the Antarctic regions have also, at one time, been tenanted by coral-like organisms, which, together with allied forms of marine life, built reefs in the ocean, indicating a climate that is quite inconsistent with permanent ice-caps and floating ice.

On the other hand, there are unmistakable evidences that many parts of the world, which are now included in the warmer temperate and sub-tropical latitudes, have passed through periods in which permanent ice covered much of the land surface, or the local seas were invaded by floating ice. Geologists are not agreed as to the cause of these remarkable fluctuations of climate, but the facts are indisputable.

The evidences on which these deductions have been reached are based on the fact that the sculpturing of the land surfaces by ice is of a kind that is peculiar, and easily distinguishable from that of other denuding agents. Just as distinctive land forms are developed under arid conditions, and another class of sculpture is developed as the result of a moist climate and running water, so, again, there is a distinct and typical glacial topography which follows as a consequence of ice erosion.

To give in detail the full scope of such evidences would involve too much space, but, stated generally, in a glaciated region the hard rocks that form the floor over which the ice moves, are rounded, polished, and grooved (*roche moutonnée*); and the valleys are wide, flat-bottomed, with steep sides shewing an absence of spurs, and, generally speaking, follow a straight or gently-curved course. The tributary valleys often join the main valley at high levels, giving rise to waterfalls. The detrital matter in the valleys is of a morainic type—that is, stones and clay confusedly mixed (till), large blocks being often carried on the surface of the ice and left stranded in peculiar positions. Many of the ice-carried stones have travelled long distances, and may have been transported across minor watersheds, and are called "erratics," as being foreign to the localities in which they occur. The stones contained in the boulder-clay, or "till," are commonly ice-scratched, unevenly scraped, faceted, and irregularly worn. A glaciated country usually possesses lakes, some of which are held in rock basins that have been excavated by the ice, while others are caused by transverse moraines, left by the retreating glacier, and which act as dams to impound the drainage.

### 2. Periods of Glaciation in Australia.

(i.) **General.**—The present climate of Australia, as a whole, is in keeping with the latitudes in which it is situated, and is in no sense abnormal as compared with other countries that occupy a similar position in relation to the climatic zones; yet, at three distinct geological periods, there has been permanent ice, to a greater or less extent, within its geographical limits. Each of these glacial periods has left its records. In some cases the glacial features are interbedded with other sediments of a remote age, and, in others, they form the present landscape which has been fashioned in its larger contours by the heavy passage of the ice-plough over its surface.

The three glacial periods of Australia are as widely separated from each other in time as they could well be, occurring, respectively, near the top, bottom, and middle of the sedimentary rocks. Beginning with the latest, they are as follows:—(i.) Pleistocene and (?) Recent Glaciations; (ii.) Permo-Carboniferous Glaciations; and (iii.) Cambrian Glaciations.

\* Contributed by Walter Howchin, F.G.S., Professor of Geology and Palæontology, University of Adelaide.

(ii.) Pleistocene and (?) Recent Glaciations.—(a) *General*.—No part of the Australian continent is, at the present time, included within the permanent snow-line, although in the highest portions of the south-eastern part of the mainland and on the central plateau of Tasmania, snow may fall at any time of the year, and, in sheltered nooks, may outlast the summer. There are abundant evidences, however, that within comparatively recent times snow was not only a permanent feature of these highlands, but valley glaciers of considerable extent existed and continued through a sufficient length of time to leave their tool-marks on the topography of the districts concerned.

(b) *The Glaciers of Kosciusko*.—Mount Kosciusko, which attains a maximum height of 7,328 feet, is the culminating peak of an extensive plateau that forms part of the border lands between New South Wales and Victoria, and forms the "knot" that unites the main eastern and southern ranges at the south-eastern angle of the continent. In the first instance, when the question came under discussion, several conflicting reports were received from observers as to the occurrence of glacial features on Kosciusko, but the observations of Lendenfeld, published in 1885; Helms, in 1893; David, Helms, and Pittman, in 1901; and, again, David, in 1908, placed the existence of such features beyond all doubt.\*

The zone of glaciation is embraced between the heights of 7,150 feet and a mean of about 5,600 feet. The eastern side gives greater evidence of glacial action than the western. This is what might be expected on the general law that the snow-fields of the world have their greatest development on the side of greatest precipitation. At Kosciusko the moisture-laden winds come from the east, while the relatively warm and dry north-westerly winds that blow from the interior of Australia would tend to limit the accumulation of snow on the side of the range which was exposed to their influence. According to Professor David, "the ice-sheet extended to at least 12 miles N.E. from Mount Kosciusko, and moved in a general S.E. to E.S.E. direction from the main dividing range, between the Snowy and Murray rivers, towards the valley of the Thredbo . . . while the total area covered by the ice-calotte of Kosciusko, during the maximum glaciation, was probably about 80 to 100 square miles." It is estimated that, at this period, the ice-sheet, in places, reached a thickness of not less than 1,000 feet. The largest and longest glacier was that which filled up the Snowy River Valley and its tributaries, and made an ice-fall over into the Thredbo Valley, coming down to within 4,500 feet of the present sea-level, having a length of  $4\frac{1}{2}$  miles.

On the western side of the divide, draining into the River Murray valley, several smaller glaciers existed, of which the Wilkinson Valley glacier was the principal. Some of the finest glaciated rock surfaces occur on this side, together with much morainic material, including erratics up to 20 feet in length, as well as impounded lakes. On this side of the watershed the glacial features come down to within 6,300 feet of sea-level.

The highest points of the range, in a zone of about 200 feet, exhibit the effects of atmospheric weathering only—which has probably arisen from the thinness of the *névé* at the summit and consequent absence of driving force, as well as the mechanical effects of frost acting on exposed faces of rock—but within the intermediate zone, as defined above, the usual features of glacial topography are strikingly manifest. The period of maximum glaciation is responsible for the excavation of the U-shaped valleys and the rock basin of Lake Merewether, as also for most of the ice-scratched and ice-polished rock-faces (*roches moutonnées*), one of which, according to Lendenfeld, is 3 acres in extent.

When this period of maximum glaciation had passed, the gradual retreat of the ice-sheet was marked by the stranding of the morainic debris left by the glaciers at halting stages in their recession, first as high-level lateral moraines, and later in successive transverse moraines which were piled up as terminals at the glacier snouts. The lowest down of these transverse moraines are the largest (up to 200 feet in height), and they decreased in size as the glaciers shrank upwards, forming barriers to the drainage and giving rise to lakes and tarns. Of these the principal are Lake May (Cootapatamba), situated in Ramshaw Pass, on the southern slopes of Mount Kosciusko, which is a quarter of a mile in length, 17 feet in depth, and is held up by a moraine 75 feet in height; Lake Albina, about the same size as Lake May, situated on the eastern slopes of Mount Townsend, above where the valley plunges steeply down on the western flanks into the head waters of the River Murray; and the Blue Lake and Hedley Tarn, which occupy

\* See *Proc. Linn. Soc. N.S.W.*, vol. X. (1885), pp. 44-53; vol. XVIII. (1893), pp. 349-64; vol. XXVI. (1901), pp. 26-74; vol. XXXIII. (1908), pp. 657-68.

the valley passing from Mount Twynam down to the Snowy River. Some of the more interesting features of the later glaciations are found in connexion with the Blue Lake (or Lake Merewether, the largest of the glacial lakes on the plateau), which was carefully surveyed by Professor David. It is, partly, a rock basin, caused by overdeepening at the time of maximum glaciation, but has been subsequently enlarged by a large transverse moraine left at its lower extremity, 20 chains wide, with a present height above the level of the lake (which David proved to be 75 feet in depth) of 160 feet. Another interesting glacial feature of these U-shaped valleys is the occurrence of "hanging-valleys," in which some of the lateral valleys show a discordance of level up to 150 feet with the trunk valleys. Glaciated erratics are common in the ground moraines.

An attempt has been made to estimate the interval of time that has elapsed since the south-eastern highlands had their capping of ice. The time factor must be estimated on three counts:—(a) the initial stages of glaciation leading up to a maximum, indicated by the amount of glacial erosion; (b) the later stages of glaciation marked by ice-shrinkage and moraine building; and (c) the fluviatile stage which has intervened between the close of the ice-period and to-day. Since the ice-sheet withdrew from the Snowy River valley at a certain level, the stream has cut a V-shaped gorge; first, through the impounding moraine, and then through a bar of solid granite to a depth of 60 feet. Professor David calculated that, to do this, would require from 50,000 to 100,000 years; and that the height of the ice-flood, or maximum glaciation, speaking roughly, occurred some 100,000 to 200,000 years ago, but that only 10,000 to 20,000 years separates the present time from the close of the period of glaciation on the Kosciusko plateau.

(c) *The Glaciers of Tasmania.*—Until comparatively recent times Tasmania formed a part of the mainland, and owes its present isolation to a faulted segment in the earth's crust that sank below sea-level and formed Bass Strait. The island consists mainly of highlands (a continuation southwards of the eastern ranges of the Australian continent) which form a great central plateau reaching a maximum elevation of a little over 5,000 feet, the edges of which are broken by deep gorges and isolated peaks, varying in height from 2,000 feet to 5,000 feet. The elevation is inferior to that of the Kosciusko plateau, but as the country is situated some 6 degrees of latitude further south, it might be expected that at the time of the Kosciusko glaciation a permanent ice-field would also exist in the higher regions of Tasmania.

No expedition for the specific object of investigating the Pleistocene glacial remains of Tasmania has been undertaken, but incidental observations bearing on the subject have been made by several travellers who were visiting the country in pursuit of other objects. We are particularly indebted, in this respect, to Mr. E. J. Dunn,\* Mr. T. B. Moore†, and Prof. J. W. Gregory,‡ whose observations were limited to the region of the West Coast Range and the Eldon Range. It is probable that further investigations will prove that this glacial field is of greater extent.

On the evidence of the travelled erratics, as well as of the direction of the striæ, the central plateau formed the great gathering ground of the *névé* which found its outlet by the western valleys, the glaciers moving in a westerly and south-westerly direction. The greater heights of the Eldon Range, Mounts Tyndall, Sedgwick, Lyell, and Owen, attaining an elevation of approximately 4,000 feet, supplied their tributary glaciers, which at such levels probably coalesced and formed a general ice-cap. One of the main glaciers occupied the valley between Mounts Tyndall and Sedgwick, flowing westward, and in its retreat left Lake Margaret in its course. Another important glacier taking its rise on the Eldon Range flowed southward by the valley of the King River, one branch passing westward between Mounts Sedgwick and Lyell, and another continuing southward to the eastern base of Mount Owen, a portion overflowing the ridge separating the Linda and Queen valleys.

The usual glacial phenomena are much in evidence in this area. The pre-glacial valleys have been widened and deepened, rocks along the paths of the glacier are smoothed and scored (*roches moutonnées*), glacial lakes and tarns are plentiful, extensive moraines cross the valleys and intercept the drainage, ice-worn and striated boulders occur in typical boulder clays, and erratics, some of immense size, have been far-carried. These and other characteristic features place the fact of the glaciation of the region beyond all question.

\* Dunn, *Proc. Roy. Soc. Vict.*, vol. VI. (1894), N.S., pp. 133-38.

† Moore, *Papers and Proc. Roy. Soc. Tasmania*, 1894, pp. 147-149.

‡ Gregory, *Quar. Jour. Geol. Soc. London*, vol. LX. (1904), pp. 37-53.



The Gormanston moraine, which originally crossed the Linda valley, on the eastern side of Mount Lyell mine, has been much eroded by the Linda Creek, but the fragment left on the southern bank of the stream is a mile long and half-a-mile wide, and rises to a height of 320 feet above the level of the creek. The west coast railway shows numerous cuttings intersecting moraines and boulder clays. In the Pieman valley the glacial marks come down to within 400 feet of present sea-level, but as there has been a considerable uplift of the land within recent times in that part of Tasmania, it is not improbable that some of the glaciers came down to sea-level.

There is an apparent correlation between the Australian Pleistocene glaciations and similar features in other parts of the world. The Pleistocene period in the Northern Hemisphere was specially characterized by the "Ice Age" of Europe and North America. About the same time New Zealand, so far as the South Island is concerned, was largely buried under ice, and it is interesting to note that concurrently with the disappearance of permanent ice-fields from Australia and Tasmania there has been a gradual decrease in the size of the ice-covered areas of New Zealand. The ice-flood period of that country has long since passed its maximum, and the wasting glaciers are slowly shrinking upwards towards their source and, in many cases, are now confined to the central portions of their flat-bottomed valleys.

(iii.) *Permo-Carboniferous Glaciations.*—(a) *General.*—The Permo-Carboniferous System is the last of the great geological systems that make up the Palæozoic Division in the classification of the stratified rocks. It is a very remote period in the history of this world, and belongs to a time that antedates the beginnings of all the higher vertebrates in the Animal Kingdom. It marks a most important era in the development of this continent, being the period when the plants that formed the coal of the great Sydney Coal Basin flourished in luxuriant growths, and it is their accumulated remains, preserved by a slow subsidence of the land, that yield the greatest source of mechanical energy in the industries of Australia to-day.

The Permo-Carboniferous period is also remarkable for its widespread glacial conditions that have left their evidences in many countries and on both sides of the equator to an extent that may well suggest that it was the most important "Ice Age" that this world has experienced. Australia possesses one of the greatest of these extinct ice-fields and, while the evidences are most marked in the southern portions of the continent, it is remarkable that each of the respective States of Australia give some evidences of ice action belonging to this period, extending northwards into low latitudes that border on the tropics. The time that has elapsed since the Permo-Carboniferous beds were laid down is so vast, and the geological changes that have occurred in the interval have so altered the face of things, that the glacial remains of the period occur only as isolated patches. How far these were originally united to form a more or less continuous ice-sheet cannot be determined, but the evidences shew that, in some localities, the ice was terrestrial and formed ice-caps of great extent; while, in other parts, the deposits were laid down by floating ice under marine conditions. The presence of marine sediments of this age in many parts of Australia and Tasmania makes it probable that, at that time, the land masses formed islands rather than continental areas.

(b) *Victoria.*—The absence of marine beds of Permo-Carboniferous age from the southern portions of Australia makes it probable that at that time most of South Australia and Victoria, together with Bass Strait and the north-western portions of Tasmania, formed a continuous land area. This is also suggested by the fact that the only remains of that age known to exist within the areas mentioned are such as indicate terrestrial conditions, and, particularly, the existence of land ice on a large scale. The interstratification of true tillites with mudstones, sandstones, and conglomerates suggests the presence of both glacial and fluvio-glacial agencies.

In Victoria, disconnected fragments of these glacial remains occur both on the northern and southern slopes of the Dividing Range. On the northern side of the range, Mr. E. J. Dunn\* has observed them at Wahgunyah, Rutherglen, The Springs, El Dorado, Wooragee, Tarrawingee, Baddaginnie, to the north-east of Costerfield, and at Wild Duck Creek, west of Heathcote. The glacial beds are also met with in exploiting the auriferous beds in the deep leads of the district. The beds occupy a trough or valley in the Ordovician rocks, by which they have been protected from erosion. The best exposures

\* Dunn, *Report Aus. Assoc. Adv. Science*, vol. II. (1890), pp. 452-458.

on the northern side of the Divide are in the neighbourhood of Wild Duck Creek, where the area covered amounts to  $35\frac{1}{2}$  square miles. The floor over which the ice moved is glaciated in places, the striae having a nearly north and south direction. The erratics are numerous and very varied, apparently gathered from the older rocks that form the geological axis of the country. The boulders scattered over the surface are very often faceted and ice-scratched, and, in some instances, reach a diameter of from 20 to 30 feet. The best locality to study the features is at a point where the railway from Heathcote to Bendigo crosses the Wild Duck Creek. As in the case of the Bacchus Marsh section (referred to below), the upper beds consist of a soft sandstone carrying impressions of the fern *Gangamopteris*.

The most important exposures of the glacial beds on the southern side of the Dividing Range occur in the gorges of the Lerderberg Ranges, a few miles to the westward of Bacchus Marsh. Excellent sections can be seen in the Werribee River and its tributaries, Pike's Creek, the Myrniong and Korkuperrimul Creeks, also in the Lerderberg River and its tributaries.

The beds consist of variously-coloured mudstones (the thickest of these measures 193 feet), with numerous erratics, up to  $5\frac{1}{2}$  feet in diameter, many of which are strongly glaciated; sandstones and conglomerates, which occasionally contain glaciated erratics, and, in the upper members, sandstones that have an average thickness of 30 feet,\* carrying plant-remains. Sandstone is a bad medium for the preservation of plant-remains, but three species of *Gangamopteris*, as well as the remains of *Schizoneura*, and *Zeugophyllites* have been determined, which are all characteristic forms in the Permo-Carboniferous flora. The presence of these plants near the top of the series is a very important item of evidence, as it fixes the date of the glaciation as not later than the Permo-Carboniferous, and probably not much, if any, earlier than that period.

The inference that it was land ice that gave rise to the deposits in question is based on two factors; one that the Ordovician rocks on which they rest have been deeply fluted, scored, and polished by glacier movement; and the other that the ploughed up material of which the mudstones consist has been worn away from the local rocks over which the glacier moved. Another conclusion, based on the direction of the glacial striae, is that the ice came from the south and travelled in a north-easterly direction.

(c) *Tasmania*.—The Permo-Carboniferous System in Tasmania is extensively developed, making surface features over about half of the island, and is very generally distributed. Tasmania, at that period, appears to have formed a coastal fringe bordering a mainland, as the sediments show alternating conditions of dry land, fresh water, carbonaceous swamps, and shallow seas.

The Permo-Carboniferous glacial features of Tasmania are of two kinds, the one indicating land ice and glaciers, situated in the north; and the other, floating ice, which dropped its burden of stones and mud in a shallow sea in the south. The most important section in the country belongs to the first of these kinds, and outcrops on the north coast (at a low angle of dip) for a distance of 5 miles, in the neighbourhood of Wynyard. The beds aggregate a thickness of over 1,200 feet,† and consist of tillites, conglomerates, and thinner beds of sandstones and shales. Glaciated erratics, measuring up to 5 feet in diameter, are plentiful in the section. The existence of three striated pavements, at various levels in the beds, noted by Professor David, is an interesting feature, and probably represents an advancing ice-sheet over its own bed after a temporary recession. The western end of the glacial outcrop is capped by the fossiliferous Tertiary beds of Table Cape, and the eastern end or basal portion is covered by a narrow basaltic flow in an old Tertiary valley, which unfortunately obscures the junction of the glacial beds with the older rocks, but as the Ordovician slates form the outcrop on the other side of the basaltic cap there can be no doubt that they form the glacial floor. Many of the erratics included in the tillite shew a very close resemblance to the rocks occurring around Heazlewood and Zeehan and about 30 miles to the southward, which shew a northerly trend for the ice, and also agree with the direction indicated by the striated pavements, the latter trending from S.S.W. towards the N.N.E.

\* For a complete section of these beds see David, *Quar. Jour. Geol. Soc. London*, vol. LIII. (1896), pp. 289-301.

† For a detailed section of the beds see David, *Report Aus. Assoc. Adv. Science*, vol. XI. (1907), p. 278.

There are no marine beds in the Wynyard section, and a microscopical examination of the finer material of the boulder bed, near its base, shews it to be composed of Ordovician shales and quartzites in a triturated condition. As the latter formed the floor over which the ice moved it is confirmatory evidence of its terrestrial character. There is also a very close analogy in the lithological features between the Victorian and Wynyard sections, and it is probable that the latter represents the southern extension of the terrestrial ice-sheet which had its greater developments in the regions now represented by South Australia and Victoria.

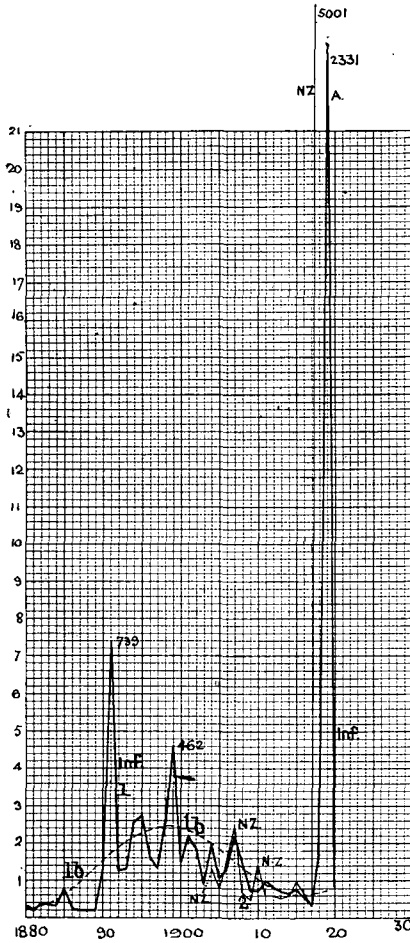
In the southern portions of Tasmania, dark-coloured muds carrying glaciated stones foreign to the neighbourhoods in which they occur, are found in many places. Examples may be seen in the Derwent Valley, Bruni Island, Maria Island, Little Peppermint Bay, in the neighbourhood of Port Cygnet, and other places. These boulder beds either carry marine fossils, intermixed with the glacial erratics, or are closely associated with marine beds, giving evidence that the glaciers in those localities came down to sea-level and, together with shore-ice, became the means of distributing the morainic material from the adjacent land over the sea floor.

(d) *South Australia*.—In connexion with this subject South Australia is distinguished in two ways. It was in South Australia that the first evidence of ice action was discovered on the Australian continent, and it is the State in which the most extensive evidences of Permo-Carboniferous glaciation occur. In 1859, Mr. A. R. C. Selwyn, Government Geologist of Victoria, when passing through the Inman Valley, recognised an ice-smoothed surface in the bed of the River Inman, and stated, "this is the first and only instance of the kind I have met with in Australia." Later observations proved that the glaciation was of Permo-Carboniferous age. This discovery of Selwyn's attracted little notice and remained unverified for many years. In 1877, the late Professor Tate discovered a glaciated pavement on the sea cliffs at Hallett's Cove, 30 miles north of Selwyn's discovery and within 15 miles of Adelaide. Subsequent investigations proved that the Hallett's Cove example was only a small outlier (two miles long and half-a-mile broad) of a much greater glacial field further to the south, covering many hundreds of square miles.

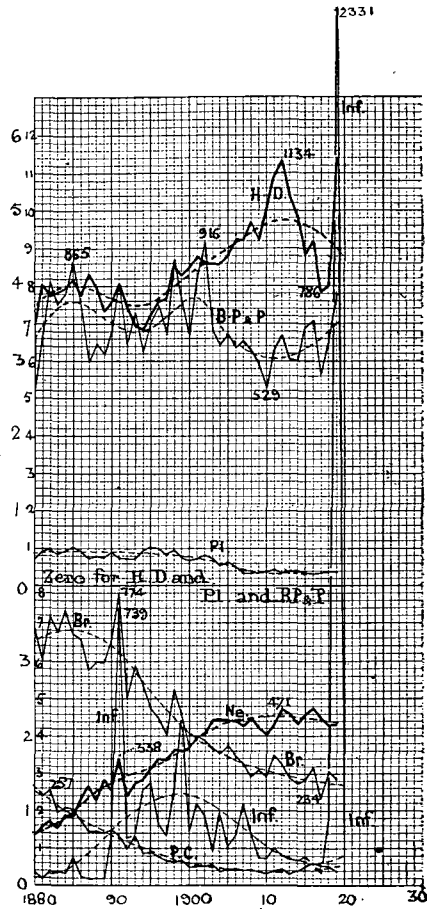
Since the Permo-Carboniferous ice-period the plateau of the Mount Lofty Ranges has been elevated and broken up into very large faulted blocks that have undergone much waste in the interval. The Hallett's Cove fragment is the only survival of the glacial mantle that once overspread the earth-block that, in its present configuration, has Mount Lofty as its highest point, and which dips away southwards to the base of the Willunga Ranges. The last-named ranges form the northern scarp of another faulted block that slopes again southwards to the southern coast. This region is largely covered with glacial debris and ice-marks. The area in which such features are especially manifested takes in most of the Cape Jervis peninsula from Myponga following the coastline by Second Valley to Cape Jervis, and from Myponga in a north-easterly direction by Mount Compass to near Bull's Creek and Strathalbyn. On the east it is bounded by the Strathalbyn and Victor Harbor railway as far as the last-named township. Then, in a westerly direction, it follows the coast again, to Cape Jervis. This block of country includes the glacial valleys of the Myponga and Yankalilla Creeks, the Inman, the Hindmarsh, and the Finniss Rivers, in addition to several ice-smoothed granite islands lying off the coast.

The Inman Valley forms one of the most striking features in this region. The Inman and Hindmarsh valleys together represent an old Palæozoic valley of erosion having an average width of 5 miles, which in its later stages became deluged with an ice flood that has moulded its physical features into a characteristic glacial topography. The ice filled the valley and overflowed the present watersheds, to do which would require an ice-sheet of, approximately, 2,000 feet in thickness. Wherever the glacier floor has been laid bare (which has been noted in over a dozen places, in one of which the exposure is 100 yards in length), it is seen to be powerfully glaciated. All rock prominences on the floor of the valley are ice-smoothed, shewing the characteristic gentle slope on the advancing side of the ice-sheet and the crag face on the lee side. Erratics, up to 25 feet in diameter, in countless numbers, are scattered over the face of the country, many shewing the usual glacial outline and scratches, while typical examples of till can be seen in the banks of the river Inman and elsewhere. Most of the larger erratics have been ploughed up from the granite zone, bordering the southern coast, and have been carried in a N.N.W. direction. The present superimposed drainage is slowly acting on the glacial clays and

## SECULAR FLUCTUATION IN THE FREQUENCY OF INFLUENZA AND OTHER DISEASES.



GRAPH NO. 1.



GRAPH NO. 1A.

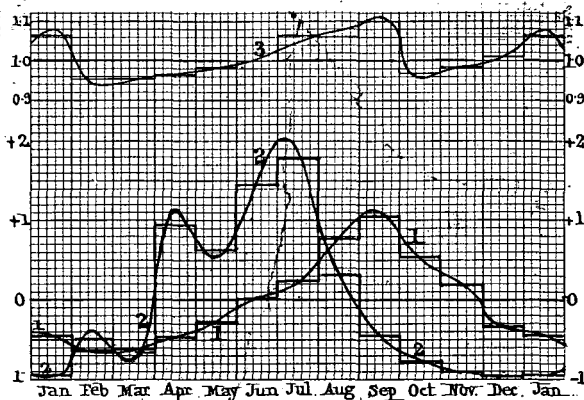
No. 1. Curve 1 represents the death rate per million persons from influenza 1880 to 1919. The light line is the corresponding death rate for New Zealand from 1904 to 1918. The oscillation is shown by the broken line 1b.

No. 1A. The death rates per million persons are given for various diseases as follows:—

H.D.	.. Heart disease.	Br.	.. Bronchitis.
B.P. and P.	.. Broncho pneumonia and pneumonia.	Ne.	.. Nephritis.
Pl.	.. Pleurisy.	P.C.	.. Pulmonary congestion.
		Inf.	.. Influenza.

In the vertical scale each small square represents a death rate of 20 per million persons.

## FLUCTUATION OF THE ANNUAL PERIOD OF INFLUENZA.



GRAPH NO. 2.

NO. 2. Curve 1 shows the ratios of death rates per annum for million persons during each calendar month to their mean annual value.

Curve 2 shows the difference in annual distribution of influenza during 1919, and curve 3 the normal distribution in calendar months.

## AGE-INCIDENCE GRAPHS (see next page).

Curves 1 and 1' show the deaths from influenza per million of males and per million of females of each age group during the 9 years 1907-15, curves 2 and 2' for the 3 years 1916-18, and 3a and 3'a for 1919. Curves 4 and 4' are the corresponding figures for pneumonia for the 9 years 1907-15.

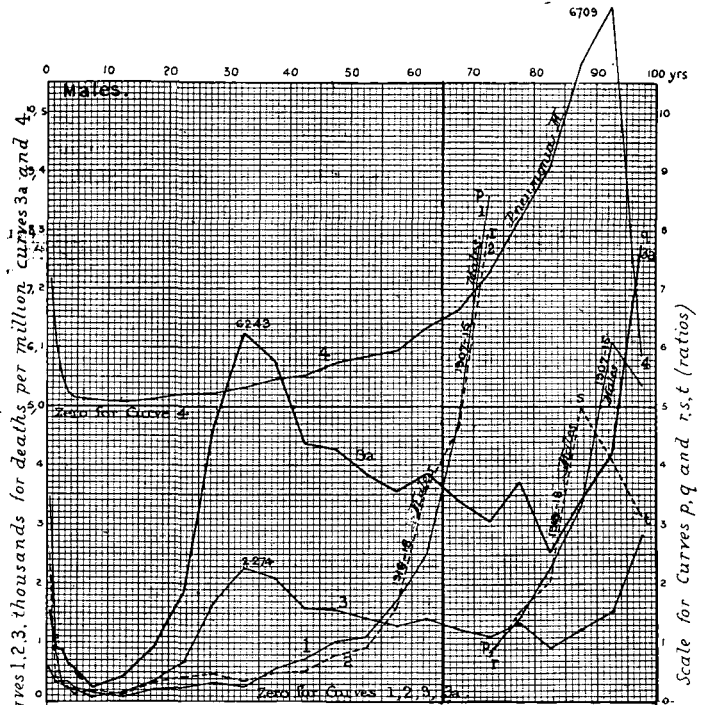
Curves 3 and 3' represent the ratio of deaths per million males and females of same age to deaths per million males and females of all ages.

To compare the death rates per million per annum take curves 1, 2, 3a and 1', 2', 3'a.

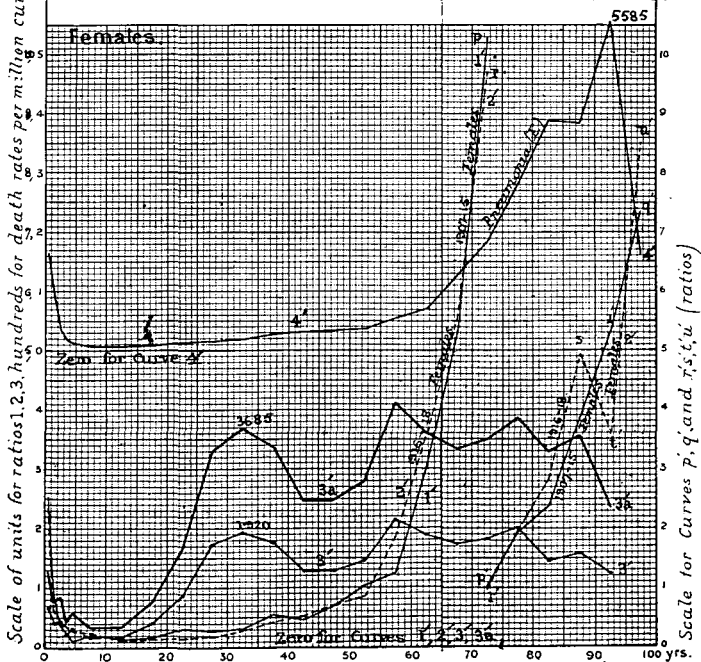
To compare the death rates if the total deaths were equal take curves 1, 2, 3 and 1', 2', 3'.

## CHARACTER OF THE AGE-INCIDENCE IN THE MORTALITY FROM INFLUENZA.

GRAPH NO. 3.



GRAPH NO. 4.



(For explanation of Graphs see preceding page).

1. The first step is to identify the problem. In this case, the problem is that the company is not meeting its sales targets. The second step is to analyze the data. The third step is to develop a plan. The fourth step is to implement the plan. The fifth step is to evaluate the results.

[illegible]

sandstones, thereby exposing a buried landscape that was shaped by the conditions of waste that were operative, by water and ice, as far back as Palaeozoic times, and therefore ranks as one of the oldest examples of surface features that the world can shew.

The eastward extension of this old ice-field has been obliterated by the important earth movements connected with the Murray plains, (where there has been a great subsidence below sea-level since the Permo-Carboniferous ice period), but to the westward it is strongly in evidence over the southern half of Yorke Peninsula and the north-eastern portions of Kangaroo Island, and undoubtedly covered the intervening areas now drowned by the sea. A bore put down at Kingscote (Kangaroo Island), at sea-level, penetrated 1,094 feet of boulder clays before reaching bed-rock.

What remains of the great Permo-Carboniferous ice-field in South Australia indicates an area of glaciation at least 130 miles by 100 miles, but the actual extent must have been much greater than this. It is significant that in Northern Tasmania, as well as in Victoria and South Australia, the ice-sheet was travelling from south to north, which proved that one centre of radiation was to the south of the continent and is now probably submerged. In South Australia, from the mouth of the River Hinammarsh, near Victor Harbor, to Cape Jervis, the coast is severely glaciated and burdened with morainic material, while the coastal islands show similar glaciated features, with the glacial striae pointing south and north. There is plenty of scope for the imagination in restoring the physical features of those remote days with its limitless landscapes of ice and dazzling surface of snow.

(e) *New South Wales*.—When, in 1885, Mr. R. D. Oldham, the Director of the Geological Survey of India, was visiting New South Wales, he was greatly struck with the resemblance which certain beds at Branxton bore to the Talchir glacial beds of India, of a similar geological age, and after a little searching he was rewarded by finding a definitely glaciated pebble in these beds. This was the first discovery of its kind in New South Wales, and was the forerunner of many similar ones in later years.

The glacial features as developed in New South Wales are of a quite different kind from those found in the southern States. While the highlands of Victoria, South Australia, and North-western Tasmania were above sea-level and ice-capped, in Permo-Carboniferous times, the great Sydney coal basin was slowly sinking below sea-level. The system reaches a maximum thickness of 17,000 feet, and includes three well-defined glacial horizons.

The lowest series of glacial beds is included in the Lochinvar stage, of which they form the base, and is over 200 feet in thickness. They consist of mudstones, shales, and sandstones, and while not of the nature of a till, they carry water-worn pebbles, with occasional ice-marked boulders. The beds, in their earlier members, indicate fresh-water conditions, but pass up into marine sediments which, classed under the general name of the Lower Marine Series, have a thickness of 4,800 feet.

A period of emergence followed, when the land was covered with vegetation which took the form of fern brakes and peaty swamps yielding layers of carbonaceous material that formed the Greta and Clyde coal measures, the maximum thickness of which is 250 feet.

Following on the interval of dry land conditions which produced the Greta Coal, a second submergence of the land took place, which resulted in 5,500 feet of marine sediments being deposited, forming the Upper Marine Series, which contain a great assemblage of organic remains. The lower half of the Upper Marine Series is known as the Branxton beds, and towards their upper portions is a well-marked glacial horizon. Mud and stones brought by icebergs, or other forms of floating ice, were scattered over the sea floor, and ice-scratched stones are found mingled with marine forms of life. Where this bed comes to the surface it makes good hunting ground for erratics, some of which reach a weight of over 2 tons, and indented the mud into which they were dropped.

A few hundreds of feet higher in the series than the Branxton horizon, just referred to, are the Muree beds, consisting of fossiliferous sandstones and conglomerates, in which glacial erratics again make their appearance. There are thus, in the Permo-Carboniferous System of New South Wales, three distinct periods of ice aggression and two interglacial periods. The absence of ice-borne material between the Lochinvar stage and the Branxton stage, and the same between the latter and the Muree stage, appears capable of explanation by the well-known fact that glacial intensity is subject to various modifying causes. We may assume that the three occasions when floating ice reached the



latitude of the Sydney basin were periods of maxima in the ice floods of the highlands, while the intervals in which the seas in question were left free from glacial detritus, corresponded with periods in which warmer conditions prevailed when the land ice failed to come down to sea-level. The Muree stage, in the development of the Permo-Carboniferous of New South Wales, appears to be the latest at which there is evidence of glacial conditions of that age. The amelioration of climate, dependent on certain physical changes of which we have no knowledge, led to the disappearance of the permanent ice-cap; first, the glaciers failed to come down to sea-level, and then the tongues of ice, slowly shrinking, receded to higher altitudes until the permanent snow-field ceased to exist.

(f) *Queensland.*—The Permo-Carboniferous System passes northwards from the New South Wales border into Queensland, and occurs in several disconnected areas as far north as Townsville. Upper and Lower Marine beds alternate with Upper and Lower Coal Measures, the latter including very thick and valuable coal seams. No typical tillites or well-defined boulder beds occur in the series, but, in places, boulders of granite and other stones foreign to the series occur, either singly or in groups, included within the finer marine sediments, which is suggestive of similar glacial conditions to those which existed in New South Wales and Western Australia at that time. These sporadic pockets of boulders probably represent the northern limits of the floating ice of the period on the north-eastern portions of the continent.

(g) *Western Australia.*—The Permo-Carboniferous System of Western Australia includes the Collie Coal-field (an isolated fragment, 500 square miles in extent, situated to the east of Bunbury), an outlier in the Irwin River district, and a somewhat narrow zone extending in a north and south direction from the Murchison River, in the south, to Kimberley, in the north. With the exception of the Collie Coal-field the beds are supposed to be of marine origin, and carry a rich Permo-Carboniferous fauna with an admixture of forms that shew a close relationship with the true carboniferous marine fauna of the Northern Hemisphere and Indian types, which feature distinguishes the Western Australian beds from those of a similar age in the eastern States of Australia.

As in other parts of Australia, the Permo-Carboniferous System of Western Australia includes a glacial horizon, known as the Lyons Conglomerate, which, although limited to a few feet in thickness, is very persistent. The most southerly exposure of the glacial conglomerate is in the River Irwin district, where it can be traced for a distance of 24 miles. It is next seen in the Wooramel Valley, about 180 miles north of the Irwin, and continues from there, northwards, in an uninterrupted outcrop for over 200 miles. In this district it crosses the valleys of the Gascoyne, the Minilya, the Lyndon, and other rivers, in which excellent sections are visible. The bed is interstratified with calcareous shales and limestones which are generally highly fossiliferous, and the glacial conglomerate itself is sometimes fossiliferous. The beds usually dip at a low angle, so that notwithstanding the limited thickness of the glacial bed it often makes a considerable spread over the flats adjacent to the rivers, which become covered with erratics weathered out from the matrix. Many of these are glaciated and some are very large—one on the Irwin is 18 feet long and 13 feet wide, and is exposed 7 feet out of the ground. The erratics are said to have been derived from the older rocks which occur in outcrops further to the eastward. The glacial bed has been followed in its northward extension beyond the Lyndon Valley, into the tropics, in about 23° south latitude.

(h) *General Remarks on the Permo-Carboniferous Glaciation.*—So distinctive a feature as an Ice Period suggests more or less contemporaneity in its phenomena, as well as in the associated beds, within the regions concerned. Thus, the Permo-Carboniferous Ice Period is represented in a wide circle of countries, including the Falkland Islands, Brazil, South Africa, India, and Australia, which together comprise what has come to be known as Gondwanaland. Notwithstanding the great extent of the earth's surface involved there was a remarkable similarity in the flora of these countries during the Ice Period which they experienced in common. There is reason to think that on account of the refrigeration of the climate and the prevalence of land ice, which often reached to sea-level, the flora of these countries became greatly changed. With some measure of exception in the case of South Africa, the typical plants of the Coal Measures of the Northern Hemisphere (*Lepidodendra*, etc.), which were of the nature of a rank-growing and warm-climate flora, died out very suddenly, and their place was taken by a dwarfed

herbage, characterized chiefly by the ferns *Glossopteris* and *Gangamopteris*. These plants and some other associated types flourished abundantly in the countries named at the time of the great ice-flood (possibly during interglacial warmer periods), and in many places were the origin of important coal seams. The effect of the cold seems equally evident in the marine life of the period. Floating ice would chill the water and produce uncongenial conditions for some forms of life. Corals, some of which were reef-building, were abundantly developed in Carboniferous seas, as well as certain characteristic brachiopods. These warm-water forms (with the exception of a few survivals in the Western Australian region) became extinct within the Australian area before the Lochinvar glacial deposits were laid down, while some new forms took their place which find their analogues in corresponding beds in India and South Africa.

[NOTE.—By the courtesy of Professor David I have received (under date of 23rd January, 1920) an advance statement of an important discovery made by him and Mr. Süssmich of glacial beds below what has hitherto been regarded as the base of the Permo-Carboniferous System of New South Wales. He states, "We have now proved glacial conglomerates and their tillites, with occasional striated pebbles interstratified with our *Rhacopteris* (Middle Carboniferous, or even Culm) beds at several places east of Maitland. These glacial conglomerates and their tillites underlie conformably the base of our Lower Marine Permo-Carboniferous System. There may, perhaps, be disconformity, but it does not look like it." This important discovery may mean, either that the Permo-Carboniferous Ice Period began earlier than has been estimated hitherto, or we have, in this latest find, a distinct glacial period that took place in Australia in an older geological system.]

(iv.) **Cambrian Glaciations (the Sturtian Tillite).**—(a) *General.*—While the Permo-Carboniferous glaciation is included in the highest system of the Palæozoic Division of the stratified rocks, the Cambrian glaciation belongs to the lowest member of that Division. The length of time that separates us from that remote period is inconceivably great, for the Permo-Carboniferous Ice-Age, remote as it is, takes us only about half-way to the glaciation that occurred in the Cambrian Period.

(b) *South Australia.*—South Australia holds the distinction of being the first to give definite evidences of glaciation at so early a stage in the geological history of the world\*. The discovery was made in 1899, and the first public announcement in 1901†. With the exception of an extension of the glacial beds to the Barrier Ranges, on the New South Wales side of the borders, the Cambrian tillite on the Australian continent, so far as is known, is limited to South Australia.

Notwithstanding the great age of the glacial beds, their resemblance to a recent boulder clay, or till, is very striking. The matrix is a bluish or brownish, flaky mudstone, irregularly indurated, gritty in texture, and contains angular and subangular erratics of all sizes up to 10 feet in diameter. Many of the boulders are faceted and glacially striated. At the Appila Gorge, 155 miles to the north of Adelaide, the beds are nearly vertical and shew a thickness of about 1,526 feet. The basal portion of the section consists of an unstratified boulder clay, or tillite, 750 feet in thickness; then follows a middle series of shales, quartzites, and thin limestones, containing few erratics, totalling 656 feet; and an upper tillite, 120 feet in thickness.

The Cambrian tillite has been traced, in a north and south direction, from the southern banks of the River Onkaparinga (18 miles south of Adelaide) to the Willouran Ranges near Marree (Hergott Springs), a distance of 450 miles; and in an east and west direction, from the ranges near Port Augusta to the Barrier Ranges in New South Wales, a distance of about 200 miles. The beds probably, at one time, formed a continuous sheet over this vast area, but, through folding, the anticlinal curves have been worn away, and by downthrow faulting the continuity of the deposits has been broken.

The Sturt Valley may be regarded as the type locality for these beds. It was there that their glacial origin was first recognised, and in the gorge of the Sturt River some of the grandest exposures of the tillite can be seen. It is on such considerations that the name of the "Sturtian Tillite" has been applied to the formation as a whole. The type

\* For particulars of other ancient tillites, see Howchin's *Geology of South Australia*, pp. 505–509, Education Department, Adelaide.

† Howchin, "Preliminary Note on the Existence of Glacial Beds of Cambrian Age in South Australia," *Trans. Roy. Soc. S. Aus.*, vol. XXV. (1901), pp. 10–13. "Glacial Beds of Cambrian Age in South Australia," *Quar. Jour. Geol. Soc. of London*, vol. LXIV. (1908), pp. 234–259.

locality begins about 9 miles south of Adelaide, and is included in the area bordered by the Adelaide to Melbourne railway on the eastern side and the Sturt Gorge on the western. It forms an isolated patch, rather more than a mile square, the base being on the south-eastern side and the upper limits on the north-western, while the beds are determined on the northern side by an east and west fault.

Within the area that has come under observation in South Australia it is probable that the glacial material was dropped from floating ice. The grounds on which this deduction is made are as follows:—(a) The great extent of country covered and the (original) continuity of the deposits within the area. (b) The absence of any glacial floor or evidence of unconformity at the base. (c) The erratics have not been gathered from the beds which, for several thousands of feet, underlie the glacial horizon, but are gathered from the Pre-Cambrian complex that formed the boundaries of the Cambrian geosyncline on the south and west. (d) While the beds consist, for the most part, of a characteristic till, the latter, in places, is interbedded with laminated shales, sandstones, grits, and impure limestones, which are either destitute of erratics or possess these to a sparing degree, suggestive of intervals when the absence of floating ice permitted ordinary sedimentation of suspended matter in the water to take place. On the other hand, there are evidences that indicate that the permanent snow-field and centres of dispersion were at no great distance. Many of the erratics can, with some degree of confidence, be identified as belonging to Pre-Cambrian forms that occur in the outcrops of rocks of that age in southern Yorke Peninsula, Port Lincoln region, and the Gawler Ranges—regions which, at that remote period, probably formed a highland plateau. As the Pre-Cambrian basement occurs as far south as the Neptunes and Kangaroo Island, it is probable that the ice-clad plateau extended far into what is now the Southern Ocean.

### 3. Persistence of Natural Records.

These climatal facts, as bearing on the earth's condition in the past, are of very great importance in influencing geological deductions. It had previously been thought, chiefly on account of the very wide distribution of certain genera and species in these early times, that there was a marked uniformity of temperature on the earth's surface at this period, and that it was of a mild type. It is now evident that there were temperature zones on the earth's surface in Cambrian times as strongly marked as they are in the present day—extensive regions in which permanent snow and ice must have existed and which, in some localities, must have come down to sea-level. It supplies a further proof of the uniformity and persistence of natural processes, and in the preservation of such frail indications as scratches left by moving ice, fossil rain-pits left by a passing shower, and the track of a marine worm that had crawled over the sand on the shore, we have remarkable instances of conservation in Nature. Nature has blazed her track through the ages, with her tool marks, her fitful changes, her ideals of animal structure, her derelicts, leaving at every step her footprints and an imperishable record of the stages by which she has risen from a primitive simplicity to the complexity of the present age.

## § 20. International Currency.

1. Coinage.—Half a century ago economists were much concerned with the possibility of establishing an international coinage. For this purpose it is not necessary that the coinage of every country in the world should be unified. But, if the currency systems of the most important trading countries of the world are examined, it will be found that very close relationships can be established between simple multiples of their units. Thus, the British sovereign contains 7.32238 grams of fine (pure) gold: the American 5-dollar piece 7.52299 grams: the French 25-franc piece—if such a coin were in circulation—would contain 7.25805 grams: the German 20-mark piece 7.16846 grams: and the Japanese 10-yen piece 7.50000 grams. The nearness of these results suggests that if these nations could be induced to make such alterations in their respective currencies as to bring these five values into exact agreement, then one single piece of gold-money could be struck, circulating in the British Empire as a sovereign, in America as a 5-dollar piece.

in France and the Latin countries as 25 francs, in Germany as 20 marks, and in Japan as 10 yen. Such a coin, with its decimal subdivisions, would then constitute an international coinage, and be current in all countries.

The initial work involved in such a transformation would, of course, be considerable, but this would be offset by solid advantages. Firstly, the work of the cambist in passing from one currency to another would be immensely lightened; and, incidentally, it would be still more lightened if the sovereign were decimalised. Secondly, the interpretation of the foreign exchanges would be very much simplified, since the mint pars of exchange would be expressed in simple integers (*e.g.*, the par of exchange with France would be 25 instead of 25.2215). Thirdly, great encouragement would be given to backward monetary countries to reform their currency. By taking the international coin as their highest coin of account they would secure immediate recognition in the larger countries, and thus help in the establishment of a uniform coinage and the dissipation of the present confusion.

For fifty years the matter has been largely an academic one, until the European war led to a revival of interest therein. The following table gives the main points for consideration in connexion with any inquiries into the subject. By "weighting" the coins according to the populations in which they circulate, it is found that the mean weight is 7.33381 fine grams, only slightly in excess of that of the British sovereign.

INTERNATIONAL COINAGE (GOLD).

Suggested International Coin.	Value, in Pence.	Countries using Coin or its Equivalent.	Population Involved, in Millions.	Weight, in Fine Grams (Gold).	Deviation from Mean Weight (a)	Deviation from Mean Value (b).
Sovereign	240.000	United Kingdom, New Zealand, Australia, South Africa, Chili, Ecuador	59	7.32238	Fine Grams. -0.01143	pence. -0.374
20 marks	234.955	Germany ..	65	7.16846	-0.16535	-5.419
10 yen ..	245.822	Japan, Mexico ..	78	7.50000	+0.16619	+5.448
5 dollars	246.575	United States, Canada	110	7.52299	+0.18918	+6.201
25 francs	237.891	France, Spain, Italy, Belgium, Balkan States, Finland, Argentine (c), Netherlands (d), Scandinavia (e), Russia (f)	295	7.25805	-0.07576	-2.483
			607			

(a) Mean weight is 7.33381 fine grams; (b) Mean value is 240.374 pence; (c) Argentine dollar = 5 francs exactly; (d) 12 florins = 25 francs exactly; (e) 18 kroner = 25 francs exactly; (f) 7½ roubles = 25 francs exactly.

N.B.—1 fine gram of gold = 32.7762 pence.

(ii) *International Unit of Exchange*.—When international units of exchange were discussed sixty years ago the proposals centred entirely round coins, since economists then appear to have thought mainly in terms of money. The latest proposals on the subject reflect the changed attitude in this matter. A proposition has been made in two forms: one due to Dr. Vissering, president of the Netherlands Bank, and the other to two Swedish experts (Axelson and Bittner). The nature of their suggestions may be illustrated by the following extracts from the recent presidential address by Dr. Walter Leaf to the Institute of Bankers, London:—

"Both pamphlets deal, on somewhat different lines, with the same problems, the pressing and urgent need of some combined action to rescue the distressed nations of

Europe from the frightful economic crisis through which they are passing. But both suggest the same means as a practical method of dealing with the purely financial side, the technical difficulties of which are enormously increased by the chaotic state of the exchanges throughout Europe. Both think it necessary that machinery for the barter of goods, to which the world has now practically been reduced, should be created in the form of an *international unit of exchange based on gold*; a purely book currency, not represented by any coins, but following the lines of the old 'mark Banco' of Hamburg. The bank mark served for about a century as a common unit for the whole of the petty German States, each of which had its own system of coinage; the confusion that resulted was such that German trade would have been paralysed had there not been one common denomination to which all could be reduced, and in which all important transactions alike between the German States, and between Germany and other countries, were in fact carried out."

"The Swedish authorities have drawn up a detailed scheme for the foundation of what they call an Associated Bankers' Clearing—A B C for short. No money movement between different countries is to be legal except through the A B C. The effective capital is to be four times the amount of metal coins and securities in its vaults. Each country is to deposit metal coins or securities corresponding to its presumable importations, against which it will be granted a credit of four times that amount. The credits will be granted in denominations called 'Monos,' the 'Mono' being a value in account equal to about 5 francs, 4 shillings, 2 yen, one American dollar, and so on."

It is to be noticed that the new currency is a money of account only. The obligations are only ultimately convertible into gold, and meanwhile would be simply a medium of barter, convertible in each country into the currency of the country. Dr. Leaf expresses no opinion as to the practicability of the larger scheme. But, as regards the financial machinery, he suggests that there are obvious theoretical advantages in an international unit of exchange, especially at a time of confusion like the present. In normal times the pound sterling might have acted as an international unit, but it has lost a certain amount of prestige, which will probably not be restored until London is re-established as a free market for gold.

It will be seen from the foregoing that the idea of an international unit of exchange—so far from being academic—has become intensely practical. It might become necessary at a later stage to assign a value to the "mono," and then the table prepared for this article would become of interest. It might be considered advantageous to link up the international monetary unit with the international system of weights and measures. In that case the "mono" could be defined as the exact equivalent of  $1\frac{1}{2}$  grams of fine gold. This would make it precisely equal to two Japanese yen, or two Mexican pesos, and its value in English currency would be about 49½d.

# APPENDIX.

Recent information and returns which have come to hand since the various sections of this book were sent to press are given hereunder.

## SECTION II. DISCOVERY, COLONISATION, AND FEDERATION OF AUSTRALIA.

### § 9. Commonwealth Legislation.

2. The Several Administrations, p. 33. The Right Honourable HENRY WILLIAM BARON FORSTER, P.C., G.C.M.G., was sworn in as Governor-General of the Commonwealth of Australia on 6th October, 1920, in succession to the Right Honourable Sir Ronald Craufurd Munro Ferguson, P.C., G.C.M.G.

## SECTION IV. POPULATION.

### § 1. Commonwealth Population.—Its Distribution and Fluctuation.

1. Present Population, p. 81.—The following table shews the estimated population of each State and Territory and for the Commonwealth on 30th June, 1920 :—

ESTIMATED POPULATION ON 30th JUNE, 1920.

Particulars.	States.						Territories.		C'wealth.
	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Nor. Terr.	Fed. Terr.	
Males ..	1,023,353	745,257	334,823	226,953	178,401	112,685	3,208	1,187	2,675,867
Females ..	1,005,391	759,003	352,262	245,479	155,651	103,958	1,035	964	2,623,743
Total ..	2,028,744	1,504,260	737,085	472,432	334,052	216,643	4,243	2,151	5,299,610

### § 4. Elements of Growth of Population.

6. Density of Population, p. 99.—According to latest returns the total population of the United Kingdom at 30th June, 1919, was approximately 45,267,000. The figure quoted on page 99 refers to civil population only.

## SECTION VII.

## PASTORAL PRODUCTION.

## § 1. Initiation and Growth of Pastoral Industry.

3. Increase in Numbers, p. 317.—The following table shews the estimated number of horses, cattle, sheep, and pigs in the Commonwealth at the latest dates available :—

## PRELIMINARY FIGURES.—LIVE STOCK.

States and Territories.	Date.	Horses.	Cattle.	Sheep.	Pigs.
New South Wales ..	30/6/19	721,302	3,271,782	37,243,770	294,338
Victoria ..	1/3/20	513,500	1,631,120	14,422,745	186,810
Queensland ..	31/12/19	731,705	5,940,433	17,379,332	99,593
South Australia ..	30/6/19	269,255	342,768	6,625,184	79,078
Western Australia ..	31/12/19	174,919	880,644	6,697,951	58,160
Tasmania ..	1/3/20	39,452	214,442	1,781,425	35,530
Northern Territory ..	31/12/19	35,539	598,534	58,811	1,675
Federal Territory ..	30/6/19	1,421	8,894	138,104	310
Commonwealth ..	..	2,487,093	12,888,617	84,347,322	755,494

## SECTION XII.

## MINES AND MINING.

## § 2. Gold.

2. Production of Gold at Various Periods, p. 444.—The quantity and value of gold produced in each State and the Northern Territory of the Commonwealth during 1919 were as follows :—

## COMMONWEALTH GOLD PRODUCTION, 1919.

State.					Quantity.	Value.
					Fine oz.	£
New South Wales ..	..	..	..	..	65,839	279,666
Victoria ..	..	..	..	..	135,428	575,260
Queensland ..	..	..	..	..	120,885	513,486
South Australia ..	..	..	..	..	3,224	13,696
Western Australia ..	..	..	..	..	734,067	3,118,115
Tasmania ..	..	..	..	..	11,000	46,725
Northern Territory (a)	..	..	..	..	829	3,521
Commonwealth ..	..	..	..	..	1,071,272	4,550,469

(a) Year ended 30th June.

## § 12. Oil Shale and Mineral Oils.

3. Shale Oil Bounties, p. 480.—In 1920 the Commonwealth Government offered a reward of £50,000 for the discovery of petroleum oil in commercial quantities in Australia. The reward is payable provided that oil to the extent of 50,000 gallons has been obtained and that the bore still flows freely and produces oil in commercial quantities.

## SECTION XVII.

## ROADS AND RAILWAYS.

## § 2. Railways.

## (c) State Railways.

14. Traffic Conditions, p. 683.—In addition to the Melbourne suburban lines mentioned on this page as having been electrified, the line from North Melbourne Junction to Williamstown had a partial electric train service inaugurated on the 19th September, 1920. This increases the mileage of lines served by electric trains by  $7\frac{1}{2}$  miles. The running time between Melbourne (Central) and Williamstown Pier has been decreased from 37 to 29 minutes.

## § 3. Tramways.

3. Victoria, p. 711. (i) (c) *Metropolitan Tramway Board*.—The Northcote Council Cable Tramway has been acquired by the Melbourne and Metropolitan Tramways Board.

(i) (fa) p. 712. *The Fitzroy, Northcote and Preston Tramways Trust*.—The lines partly constructed by this Trust, consisting of 1.91 miles of double track and 3.91 miles of single track, were completed by the Melbourne and Metropolitan Tramways Board, and opened for traffic on 1st April, 1920.

(i) (fb). *The Footscray Tramways*.—These lines were practically completed at the 30th June, 1920, but their opening for traffic is deferred owing to a supply of electric power not being available.

## SECTION XXV.

## GENERAL GOVERNMENT.

## § 2. Parliaments and Elections.

9. The Parliament of Victoria, p. 923.—Elections held in Victoria on 21st October, 1920, resulted in the return of parties as follows (figures incomplete):—

Nationalists	..	..	..	..	..	32
Labour	..	..	..	..	..	21
Farmers Union	..	..	..	..	..	12

10. The Parliament of Queensland, p. 924.—Elections held in Queensland on 9th October, 1920, resulted in the return of parties as follows (figures incomplete):—

Ministerialists	..	..	..	..	..	38
Other parties	..	..	..	..	..	34

The Government majority in the Assembly is 4.



## SECTION XXVIII.

### DEFENCE.

#### § 1. Military Defence.

3. **The Present Military System.** *Defence Policy.* In September, 1920, modifications in the defence policy, respecting both army and navy, were announced in Parliament. The army is to be organized and trained on the divisional basis, and will consist of two light-horse divisions, four infantry divisions, and three mixed brigades, with the necessary extra-divisional units. Peace establishment will be about 130,000. The Council of Defence will be restored, to ensure continuity of policy, and to co-ordinate the requirements on sea, air, and land. The Military and Naval Boards will exercise control and administration. The principle of compulsory training remains. Sufficient permanent troops will be maintained as are necessary for administration and instruction, and to provide nuclei for technical services. The sea-going (permanent) forces of the Navy will be considerably reduced, many of the vessels of the Royal Australian Navy passing to the reserve. Training will be compulsory for all males from 12 to 22 years of age. Physical and recreational training will continue to be the main features for cadets. In the first year of citizen force service, ten weeks are allotted for continuous training, and in each of the following years, sixteen days. An arsenal will provide the army's peace requirements. The nucleus of a fleet for local defence will be maintained, and will consist of six submarines, six destroyers, two sloops, one light cruiser and one training cruiser, sixteen in all. A combined naval and military air corps will be established, organized and administered by an Air Board. It will consist of Corps Headquarters, three station headquarters, a central flying school, an aircraft depot, a squadron of flying boats, a squadron of ships' seaplanes, a squadron of torpedo carriers, two fighting squadrons, and two corps reconnaissance squadrons. The permanent section will perform service with the fleet, and form nuclei for citizen force units. In addition, it will undertake special services, including survey and other necessary work in preparing routes for civil aviation.

# INDEX.

An index to special articles, etc., appearing in previous issues, is given at the commencement of this book, page vii.

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