

SECTION V.
VITAL STATISTICS.

§ 1. Births.

1. **Male and Female Births, 1901 to 1906.**—The total number of male and female births registered in the Commonwealth and New Zealand during the years 1901 to 1906 is as shewn in the two tables hereunder :—

TOTAL MALE BIRTHS, AUSTRALASIA, 1901 to 1906.

State, etc.	1901.	1902.	1903.	1904.	1905.	1906.
New South Wales. ...	19,149	19,322	18,377	19,857	20,206	21,066
Victoria ...	15,876	15,583	15,115	15,313	15,523	15,716
Queensland ...	7,281	7,279	6,427	7,134	6,978	7,280
South Australia ¹ ...	4,687	4,587	4,484	4,686	4,514	4,617
Western Australia ...	2,946	3,241	3,433	3,666	3,862	4,043
Tasmania ...	2,570	2,604	2,570	2,702	2,812	2,792
Commonwealth ...	52,509	52,616	50,406	53,358	53,895	55,514
New Zealand ...	10,471	10,653	11,217	11,762	12,109	12,397

1. Including Northern Territory.

TOTAL FEMALE BIRTHS, AUSTRALASIA, 1901 to 1906.

State, etc.	1901.	1902.	1903.	1904.	1905.	1906.
New South Wales ...	18,726	18,513	17,589	18,810	19,295	19,882
Victoria ...	15,132	14,878	14,454	14,450	14,584	15,128
Queensland ...	7,022	6,937	6,194	6,948	6,648	6,739
South Australia ¹ ...	4,424	4,360	4,024	4,447	4,354	4,329
Western Australia ...	2,772	2,991	3,266	3,510	3,720	3,757
Tasmania ...	2,360	2,481	2,510	2,590	2,445	2,541
Commonwealth ...	50,436	50,160	48,037	50,755	51,046	52,376
New Zealand ...	10,020	10,002	10,612	11,004	11,573	11,855

1. Including Northern Territory.

2. **Total Births, 1901 to 1906.**—While the total number of births for the Commonwealth was higher in 1906 than in any of the preceding five years, the following table of particulars discloses also the fact that in Victoria, Queensland and South Australia the number of births was less in 1906 than in 1901 :—

TOTAL BIRTHS, AUSTRALASIA, 1901 TO 1906.

State, etc.	1901.	1902.	1903.	1904.	1905.	1906.
New South Wales ...	37,875	37,835	35,966	38,667	39,501	40,948
Victoria ...	31,008	30,461	29,569	29,763	30,107	30,844
Queensland ...	14,303	14,216	12,621	14,082	13,626	14,019
South Australia ¹ ...	9,111	8,947	8,508	9,133	8,868	8,946
Western Australia ...	5,718	6,232	6,699	7,176	7,582	7,800
Tasmania ...	4,930	5,085	5,080	5,292	5,257	5,333
Commonwealth ...	102,945	102,776	98,443	104,113	104,941	107,890
New Zealand ...	20,491	20,655	21,829	22,766	23,682	24,252

1. Including Northern Territory.

3. **Birth Rates, 1901 to 1906.**—(i.) *Crude Birth Rate.* The birth rate for the whole Commonwealth was lower in 1906 than in 1901, and Tasmania is the only State in which a slight increase in the rate took place, as will be seen from the following table, which gives also the number of persons per square mile in each State:—

CRUDE BIRTH-RATE¹, AUSTRALASIA, 1901 to 1906.

State, etc.	1901.	1902.	1903.	1904.	1905.	1906.	Density ² (No. per sq. mile).
New South Wales ...	27.78	27.20	25.41	26.81	26.79	27.12	4.92
Victoria ...	25.75	25.16	24.46	24.65	24.83	25.20	14.02
Queensland ...	28.53	27.89	24.62	27.13	25.92	26.31	0.80
South Australia ³ ...	25.11	24.54	23.25	24.71	23.67	23.55	0.42
Western Australia ...	30.34	30.27	30.26	30.33	30.29	30.01	0.27
Tasmania ...	28.60	29.23	28.62	29.60	29.33	29.82	6.87
Commonwealth ...	27.14	26.66	25.23	26.33	26.12	26.41	1.38
New Zealand ...	26.34	25.89	26.61	26.94	27.22	27.08	8.68 ⁴

1. Number of Births per 1000 of the mean annual population.
2. On 31st December, 1906.
3. Including Northern Territory.
4. Excluding Maories.

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," viz., the number of births per thousand of mean annual population. The number of births per thousand of the female population of child-bearing ages, viz., from 15 to 45, would furnish a more significant rate. To calculate this, would, of course, involve assumptions concerning the variations of the age and sex constitution of the population since the last Census. Calculations of this nature at the present time would be subject to so large an uncertainty that it has been decided to defer computing the rates of fecundity and fertility on other and better bases until after the next Census.

4. **Birth Rates of Various Countries.**—A comparison with other countries shows that the Australian States occupy a very 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 on page 200.

CRUDE BIRTH RATE¹ OF VARIOUS COUNTRIES.

Country.	Year.	Rate.	Country.	Year.	Rate.
Russia, European ...	1901	47.9	Tasmania ...	1906	29.8
Bulgaria ...	1904	42.8	Denmark ...	1905	28.4
Jamaica ...	1905	38.8	Scotland ...	1905	28.1
Ceylon ...	1905	38.7	Norway ...	1905	27.4
Roumania ...	1905	38.6	Switzerland ...	1905	27.4
Servia ...	1905	37.3	England and Wales ...	1905	27.2
Hungary ...	1905	35.7	New Zealand ...	1905	27.2
Austria ...	1904	35.4	New South Wales ...	1906	27.1
Spain ...	1905	35.3	Belgium ...	1905	27.1
Chile ...	1905	35.1	United Kingdom ...	1905	26.9
German Empire ...	1904	34.1	Commonwealth ...	1906	26.4
Prussia ...	1905	33.5	Queensland ...	1906	26.3
Italy ...	1905	32.3	Sweden ...	1905	25.7
Japan ...	1903	32.0	Victoria ...	1906	25.2
Finland ...	1904	31.8	South Australia ...	1906	23.6
Netherlands ...	1905	30.8	Ireland ...	1905	23.4
Western Australia ...	1906	30.0	France ...	1905	20.6

1. Number of births per 1000 of the mean population.

5. **Masculinity at Birth.**—The masculinity of births registered during the last six years in the several States of the Commonwealth, *i.e.*, the number of males per 100 females, has varied from 102.26 in New South Wales in 1901 to 115.01 in Tasmania in 1905. The following table, which gives the values for the States and Commonwealth for 1901 to 1906, shews the remarkable fact that for the Commonwealth there has been a steady increase of masculinity from 1901 to 1906.

MASCULINITY¹ OF BIRTHS REGISTERED IN AUSTRALIA, 1901 TO 1906.

State.	1901.	1902.	1903.	1904.	1905.	1906.
New South Wales ...	102.26	104.37	104.48	105.57	104.72	105.96
Victoria ...	104.92	104.74	104.57	105.97	106.44	103.89
Queensland ...	103.69	104.93	103.76	102.68	104.96	108.03
South Australia ...	105.94	105.21	111.43	105.37	103.67	106.65
Western Australia ...	106.28	108.36	105.11	104.44	103.82	107.61
Tasmania ...	108.90	104.96	102.39	104.32	115.01	109.88
Commonwealth ...	104.11	104.90	104.93	105.13	105.58	105.99

1. Number of males to each 100 females.

There is ordinarily a very small difference between the masculinity of legitimate and illegitimate births. Thus, according to Bodio, for Europe, for the period about 1887-1891, the masculinity was about 105.5 and 104.5 for total and illegitimate births respectively. The masculinity of illegitimate births in Australia was as follows:—

MASCULINITY¹ OF ILLEGITIMATE BIRTHS REGISTERED IN
AUSTRALIA, 1901 TO 1906.

State.	1901.	1902.	1903.	1904.	1905.	1906.
New South Wales ...	108.46	103.67	97.79	100.80	102.50	103.10
Victoria	102.22	106.78	114.83	108.68	102.52	102.23
Queensland	107.84	100.23	95.22	95.77	105.63	104.17
South Australia ...	100.56	106.91	100.00	83.50	96.94	116.97
Western Australia ...	100.00	111.11	114.29	107.28	98.75	118.13
Tasmania	102.07	93.17	122.66	93.71	102.80	124.92
Commonwealth ...	105.50	103.96	104.10	100.98	102.44	105.44

1. Number of males to each 100 females.

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, this has not been the case in regard to illegitimate births, where in South Australia in 1904 the masculinity was only 83.50. On the other hand it rose as high as 124.82 in Tasmania in 1906. Little weight, however, can be attached to the two last figures on account of the small totals on which they are based.

6. **Illegitimacy.**—The total illegitimates fell from 1901 to 1903, then rose rapidly to 1906. See the following table :—

TOTAL ILLEGITIMATE BIRTHS REGISTERED IN AUSTRALASIA,
1901 TO 1906.

State, etc.	1901.	1902.	1903.	1904.	1905.	1906.
New South Wales ...	2,712	2,497	2,413	2,755	2,912	2,882
Victoria	1,729	1,677	1,695	1,707	1,689	1,721
Queensland	848	859	857	971	950	1,076
South Australia ...	361	389	354	367	386	358
Western Australia ...	222	247	315	313	318	373
Tasmania	293	311	285	308	290	308
Commonwealth ...	6,165	5,980	5,919	6,421	6,545	6,718
New Zealand ...	937	921	994	1,029	1,082	1,132

It is, of course, possible that the number of illegitimate births is somewhat understated, owing to diffidence in proclaiming the fact of illegitimacy, and it is not unlikely that the majority of unregistered births are illegitimate.

(i). *Rate of Illegitimacy, 1901-1906.* The rate of illegitimacy, viz., the percentage of illegitimate to total births, shews on the whole a slight increase, to which an advance in the rate for Queensland and Western Australia is largely contributory, as the subjoined table shews :—

PERCENTAGE OF ILLEGITIMATE ON TOTAL BIRTHS, AUSTRALASIA,
1901 TO 1906.

State, etc.	1901.	1902.	1903.	1904.	1905.	1906.
New South Wales ...	7.16	6.60	6.71	7.12	7.37	7.04
Victoria ...	5.58	5.51	5.73	5.74	5.61	5.58
Queensland ...	5.93	6.04	6.79	6.90	6.97	7.68
South Australia ...	3.96	4.35	4.16	4.02	4.35	4.00
Western Australia ...	3.88	3.96	4.70	4.36	4.19	4.78
Tasmania ...	5.94	6.12	5.61	5.82	5.52	5.78
Commonwealth ...	5.99	5.82	6.01	6.17	6.24	6.23
New Zealand ...	4.57	4.46	4.55	4.52	4.57	4.67

A comparison of greater significance would be obtained by calculating the number of illegitimate births per thousand of the single and widowed female population between the ages of 15 and 45, but until the next Census has once more shewn the composition of the population, such a calculation would be liable to considerable error, and will, therefore, be deferred.

(ii.) *Causes of Increase.* Since the rate of illegitimacy might appear to increase by the mere decrease in the general birth-rate, the following table has been prepared:—

CRUDE ILLEGITIMATE, LEGITIMATE AND TOTAL BIRTH RATES,¹
AUSTRALIA 1901 to 1906.

Births.	1901.	1902.	1903.	1904.	1905.	1906.
Illegitimate ...	1.62	1.56	1.52	1.62	1.63	1.65
Legitimate ...	25.52	25.10	23.71	24.71	24.50	24.76
Total ...	27.14	26.66	25.23	26.33	26.13	26.41

1. Number of births per 1000 of mean population.

(iii.) *Illegitimacy—Rates of Various Countries.* The rate for the Commonwealth is higher than that for England and Wales, slightly lower than that for Scotland, and considerably below the rates for many of the countries for which returns are available, as the table hereunder shews. The rates for the States and Commonwealth are means for 1901 to 1906, while those for other countries are for 1904 or 1905, generally.—

PERCENTAGE OF ILLEGITIMATE ON TOTAL BIRTHS IN VARIOUS
COUNTRIES, 1901-6.

Country.	Rate.	Country.	Rate.
Netherlands ...	2.2	Scotland ...	6.4
Ireland ...	2.6	Belgium ...	6.6
Russia ...	2.6	Queensland ...	6.7
England and Wales ...	4.0	New South Wales ...	7.0
South Australia ...	4.1	Norway ...	7.0
West Australia ...	4.3	Germany ...	8.4
Switzerland ...	4.6	France ...	8.8
Italy ...	5.4	Hungary ...	9.4
Victoria ...	5.6	Denmark ...	9.6
Tasmania ...	5.8	Sweden ...	11.7
Commonwealth ...	6.2	Austria ...	13.3

It may be added that the general circumstances in Australia with regard to opportunity for marriage are probably relatively easy as compared with those in older established countries.

7. **Ages of Parents.**—A computation recently made shews the average age of fathers in the Commonwealth, as stated at the time of the registration of the birth of a child, to be 34.27 years, and the age of mothers of legitimate children 29.90 years. These figures bear out the fact ascertained at the Census that the average difference in the age of married couples is about four-and-a-half years. The average age of mothers of illegitimate children was found at the same time to be 23.93 years.

§ 2. Marriages.

1. **Marriages, 1901 to 1906.**—The number of marriages registered in the Commonwealth in 1906 was 30,410, the highest number ever recorded. There has been a steady increase in the annual number of marriages in each State since 1903, and the crude marriage-rate increased similarly in all the States, with the exception of Western Australia, where a further diminution may reasonably be expected until the composition of the population as to sexes and ages approaches more closely to that of the other States. The number of marriages in each State since 1901 is shewn below :—

TOTAL MARRIAGES, AUSTRALASIA, 1901 TO 1906.

State, etc.	1901.	1902.	1903.	1904.	1905.	1906.
New South Wales ...	10,538	10,486	9,759	10,424	10,970	11,551
Victoria ...	8,406	8,477	7,605	8,210	8,774	8,930
Queensland ...	3,841	3,243	2,933	3,078	3,173	3,588
South Australia ...	2,309	2,383	2,272	2,534	2,599	2,681
Western Australia ...	1,821	2,024	2,064	2,088	2,123	2,261
Tasmania ...	1,338	1,313	1,344	1,350	1,365	1,399
Commonwealth ...	27,753	27,926	25,977	27,684	29,004	30,410
New Zealand ...	6,095	6,394	6,748	6,983	7,200	7,592

2. **Marriage-Rates, 1901 to 1906.**—The number of marriages registered per thousand of mean population is shewn in the following table for the same period :—

CRUDE MARRIAGE-RATE,¹ AUSTRALASIA, 1901 TO 1906.

State, etc.	1901.	1902.	1903.	1904.	1905.	1906.
New South Wales ...	7.73	7.54	6.89	7.23	7.44	7.65
Victoria ...	6.98	7.00	6.29	6.80	7.24	7.30
Queensland ...	6.66	6.36	5.72	5.93	6.03	6.73
South Australia ...	6.36	6.54	6.21	6.86	6.94	7.06
Western Australia ...	9.66	9.83	9.32	8.83	8.48	8.70
Tasmania ...	7.76	7.55	7.57	7.55	7.62	7.82
Commonwealth ...	7.32	7.24	6.66	7.00	7.22	7.44
New Zealand ...	7.83	8.01	8.23	8.26	8.28	8.48

¹ Number of marriages (not persons married) per 1000 of mean annual population.

3. **Marriage-Rates in Various Countries.**—A comparison of the Australian marriage-rate with that of European countries shews it to be considerably below the rates prevailing in the East of Europe, slightly below those of Central and Western Europe, and higher than those of the North of Europe :—

CRUDE MARRIAGE RATE—VARIOUS COUNTRIES.

Country.	Year.	Crude Marriage Rate.	Country.	Year.	Crude Marriage Rate.
Bulgaria	1904	11.4	Italy	1905	7.6
Servia	1905	9.9	Switzerland	1905	7.6
Russia	1901	8.6	Commonwealth	1906	7.4
Hungary	1905	8.4	Netherlands... ..	1905	7.3
New Zealand	1905	8.3	Denmark	1905	7.2
German Empire	1904	8.1	Spain	1905	7.2
Belgium	1904	8.0	Scotland	1905	6.7
Rumania	1905	7.9	Finland	1904	6.6
Austria	1904	7.8	Sweden	1905	5.9
England and Wales	1905	7.7	Norway	1905	5.8
France	1905	7.7	Ireland	1905	5.3

4. **Age at Marriage.**—The average age of males at the time of marriage is, for the Commonwealth, according to the latest computation, 29.71 years, and that of females, 25.52 years, *i.e.*, reverting to ages given in § 1, 7 hereinbefore, bridegrooms and brides are respectively about 4.56 and 4.38 years younger than fathers and mothers. For the purposes of calculation, this difference may be taken as five years.

5. **Fertility of Marriages.**—The quotient obtained by division of the legitimate births registered, say during the five years 1902-1906, by the number of marriages registered during the five years 1897-1901, *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 3.77, or in other words, the number of children to be expected from every four marriages in the Commonwealth is fifteen. This method, while not professing any claim to accuracy, furnishes results which agree fairly well with those found by more elaborate and careful investigation.

6. **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 percentage of marriages celebrated by ministers of religion has increased from 91.25 per cent. in 1901 to 96.97 per cent. in 1906. The figures for the individual States were in 1906: New South Wales, 97.89 per cent.; Victoria, 98.90 per cent.; Queensland, 94.90 per cent.; South Australia, 95.15 per cent.; Western Australia, 88.94 per cent.; and Tasmania, 98.86 per cent. According to the latest returns the registered ministers belong to thirty-seven different denominations, some of which, however, can hardly be regarded as having any valid existence. The extraordinary number of marriages credited to some denominations, the number of whose adherents, according to the Census returns, was very small indeed, is not inconsistent with the supposition that some of these denominations have been created for the purpose of obtaining the registration necessary to conduct marriages, or to be connected with a so-called "Matrimonial Agency."

7. **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, 1901 to 1906.* For a number of years mark signatures by males have been slightly more numerous than those by females, the percentages for the Commonwealth during the past six years having been as follows :—

PERCENTAGE OF MARK SIGNATURES AT MARRIAGE, AUSTRALIA,
1901 to 1906.

Year.	1901.	1902.	1903.	1904.	1905.	1906.
Male	1.35	1.21	1.17	0.95	0.91	0.92
Female	1.29	1.11	1.02	0.91	0.93	0.86

(ii.) *Mark Signatures in Commonwealth States, 1901 to 1906.* The following table shews that while the Tasmanian percentage has been the highest, and the Victorian the lowest, in each of the six years under review, there has been a marked decrease in every State :—

PERCENTAGE OF MARK SIGNATURES AT MARRIAGE IN AUSTRALASIA,
1901 to 1906.

State.	1901.	1902.	1903.	1904.	1905.	1906.
New South Wales	1.34	1.22	1.10	0.90	1.12	0.94
Victoria	0.53	0.61	0.60	0.54	0.44	0.43
Queensland	2.56	1.93	1.86	1.72	1.39	1.67
South Australia	0.95	1.15	1.32	0.65	0.83	0.67
Western Australia	0.99	0.69	0.75	0.53	0.57	0.66
Tasmania	4.11	3.12	2.38	2.85	2.12	2.18
Commonwealth	1.32	1.16	1.10	0.93	0.92	0.89
New Zealand	0.54	0.34	0.50	0.54	0.32	0.33

A complete disappearance of mark signatures is hardly to be expected, for the available information tends to shew that 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, 1901 to 1906.*—The total number of deaths registered in the Commonwealth from 1901 to 1906 inclusive, gives an annual average of 26,309 males and 19,211 females, the details being as follows :—

MALE DEATHS, AUSTRALIA, 1901 TO 1906.

State.	1901.	1902.	1903.	1904.	1905.	1906.	Rate. 1906.
New South Wales	9,327	9,535	9,428	8,733	8,709	8,715	10.84
Victoria	9,035	9,152	8,626	7,992	8,273	8,342	13.63
Queensland	3,838	3,924	3,951	3,259	3,499	3,212	10.99
South Australia	2,289	2,389	2,242	2,071	2,041	2,109	10.56
Western Australia	1,653	1,832	1,829	1,823	1,728	1,878	12.25
Tasmania	1,001	1,044	1,136	1,061	1,061	1,118	12.09
Commonwealth	27,143	27,876	27,212	24,939	25,311	25,374	11.78

FEMALE DEATHS, AUSTRALIA, 1901 TO 1906.

State.	1901.	1902.	1903.	1904.	1905.	1906.	Rate. 1906.
New South Wales ...	6,694	7,111	7,069	6,627	6,269	6,260	8.86
Victoria ...	6,869	7,025	6,969	6,401	6,403	6,895	11.27
Queensland ...	2,169	2,280	2,395	1,991	2,004	1,883	7.83
South Australia ...	1,776	1,925	1,709	1,707	1,763	1,822	10.11
Western Australia ...	866	991	959	994	981	1,206	11.31
Tasmania ...	813	870	980	913	783	893	10.34
Commonwealth ...	19,187	20,202	20,081	18,633	18,203	18,959	9.81

2. **Male and Female Death Rates, 1906.**—The crude male and female death rates for 1906 only are given, viz., in the last column of the preceding tables: both are high for Victoria and Western Australia, while the Queensland rate is lowest for females, and South Australia for males.

Owing to differences in the age constitution of the six States, the crude rates are not, however, strictly comparable, but as has been pointed out in the case of the births, the available data, at a period so remote from the Census, are insufficient for a satisfactory distribution of the population according to ages. For the purposes of calculating the "Index of Mortality" (see page 204) a distribution into five age-groups has, however, been made.

3. **Death Rates of Various Countries.**—A comparison with foreign States is, for the same reason, apt to show 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:—

DEATH RATES OF VARIOUS COUNTRIES.

Country.	Year.	Crude Death Rate.	Country.	Year.	Crude Death Rate.
New Zealand ...	1905	9.3	German Empire ...	1904	19.6
Commonwealth ...	1906	10.9	Japan ...	1903	20.0
Norway ...	1905	14.8	Bulgaria ...	1904	21.4
Denmark ...	1905	15.0	Italy ...	1905	21.7
England and Wales ...	1905	15.2	Jamaica ...	1905	21.9
Netherlands ...	1905	15.3	Austria ...	1904	23.7
United Kingdom ...	1905	15.5	Servia ...	1905	24.4
Sweden ...	1905	15.6	Rumania ...	1905	25.0
Scotland ...	1905	15.9	Spain ...	1905	25.9
Belgium ...	1904	16.9	Ceylon ...	1905	27.7
Ireland ...	1905	17.1	Hungary ...	1905	27.8
Finland ...	1904	17.7	Russia (European) ...	1901	32.1
Switzerland ...	1905	17.9	Chile ...	1905	32.3
France ...	1905	19.6			

4. **Total Deaths, 1901 to 1906.**—The total number of deaths in each of the Commonwealth States during the six years 1901-1906, shewn below, indicates a marked decrease for Queensland.

TOTAL DEATHS, AUSTRALASIA, 1901 TO 1906.

State.	1901.	1902.	1903.	1904.	1905.	1906.
New South Wales ...	16,021	16,646	16,497	15,360	14,978	14,975
Victoria ...	15,904	16,177	15,595	14,393	14,676	15,237
Queensland ...	6,007	6,204	6,346	5,250	5,503	5,095
South Australia ...	4,065	4,314	3,951	3,778	3,804	3,931
Western Australia ...	2,519	2,823	2,788	2,817	2,709	3,084
Tasmania ...	1,814	1,914	2,116	1,974	1,844	2,011
Commonwealth ...	46,330	48,078	47,293	43,572	43,514	44,333
New Zealand ...	7,634	8,375	8,528	8,087	8,061	8,339

5. **Crude Death Rates, 1901 to 1906.**—The death rate for 1906 was the lowest experienced during the six years under review in the States of New South Wales and Queensland. In Victoria, South Australia, and Western Australia there were lower rates in some of the intermediate years, though a satisfactory decrease on the 1901 rate is shewn. In Tasmania, however, the rate for 1906 was higher than that for 1901, and was only surpassed in 1903. The Commonwealth rate for 1905 was a little lower than that for 1906, but the difference is insensible.

CRUDE DEATH RATES, AUSTRALASIA, 1901 TO 1906.

State.	1901.	1902.	1903.	1904.	1905.	1906.
New South Wales ...	11.75	11.97	11.65	10.65	10.16	9.92
Victoria ...	13.21	13.36	12.90	11.92	12.10	12.45
Queensland ...	11.98	12.17	12.38	10.11	10.47	9.56
South Australia ...	11.20	11.83	10.80	10.22	10.15	10.35
Western Australia ...	13.37	13.71	12.60	11.91	10.82	11.87
Tasmania ...	10.52	11.00	11.92	11.04	10.29	11.24
Commonwealth ...	12.22	12.47	12.12	11.02	10.83	10.85
New Zealand ...	9.81	10.50	10.40	9.57	9.27	9.31

6. **Male and Female Death Rates, 1901 to 1906.**—The rise in the Commonwealth rate from 1905 to 1906 was due to an increase in the female death rate, as the subjoined table shews:—

MALE AND FEMALE DEATH RATES, AUSTRALIA, 1901 TO 1906.

Year.	1901.	1902.	1903.	1904.	1905.	1906.
Male Rate ...	13.65	13.78	13.30	12.02	11.98	11.78
Female Rate ...	10.64	11.02	10.82	9.92	9.56	9.81
Crude Total Rate ...	12.22	12.47	12.12	11.02	10.80	10.85

7. **Infantile Death Rate.**—(i.) *Deaths and Death Rates of Male and Female Infants, 1901 to 1906.* A marked improvement has taken place in the infantile death rate since 1901, in which year it stood at 103.61 per thousand births registered, while in 1906 it had fallen to 83.26 per thousand, a rate slightly higher than that experienced in 1904 and 1905. In the following table, which shews both the total number of deaths of children under one year and the rate per thousand births since 1901, males and females are distinguished. The universal experience that during the first few years of life the excess of male births disappears as a consequence of the higher death rate of male infants is shewn by the fact that out of 318,298 male infants born from 1901 to 1906, 32,498 died during their first year of life, while of 302,810 female infants the number who died was only 26,219:—

NUMBER OF INFANTILE DEATHS AND RATE OF INFANTILE MORTALITY, AUSTRALIA, 1901 TO 1906.

Year.	Registered Deaths under one year.			Rate of Infantile Mortality. ¹		
	Males.	Females.	Total.	Males.	Females.	Total.
1901	5,888	4,778	10,666	112.13	94.73	103.61
1902	6,008	5,004	11,012	114.19	99.76	107.15
1903	6,008	4,960	10,963	119.09	103.25	111.36
1904	4,713	3,800	8,513	88.33	74.87	81.77
1905	4,884	3,696	8,580	90.62	72.41	81.76
1906	5,002	3,981	8,983	90.10	76.01	83.26

1. No. of deaths under 1 year per 1000 births registered.

(ii.) *Infantile Mortality, 1901 to 1906.* Divided among the six States, the rate of infantile mortality during the last six years was as follows:—

RATE OF INFANTILE MORTALITY, AUSTRALASIA, 1901 TO 1906.

State.	1901.	1902.	1903.	1904.	1905.	1906.
New South Wales ...	103.74	109.74	110.35	82.42	80.55	74.53
Victoria ...	102.94	108.60	106.40	77.92	83.30	92.92
Queensland ...	101.94	100.17	119.88	76.13	75.52	74.68
South Australia ...	99.99	94.00	97.09	70.51	72.96	75.90
Western Australia ...	128.89	142.01	141.22	113.02	104.19	110.00
Tasmania ...	89.05	79.06	110.83	90.70	80.65	90.19
Commonwealth ...	103.61	107.15	111.36	81.77	81.76	83.26
New Zealand ...	76.28	82.89	81.08	70.98	67.52	62.10

The movement has been a fairly regular one, shewing an increase in the rate during 1902 and 1903, and a fall since the latter year, so that the 1906 rate was lower than that for 1901 in every State except Tasmania, but above the 1905 rate in Victoria, South Australia, Western Australia, and Tasmania.

(iii.) *Infantile Mortality in Various Countries.* Compared with European countries the States of the Commonwealth occupy a very enviable position, and it may be pointed out that experience has shewn that a high birth rate is often, though not invariably, accompanied by a high infantile death rate. The figures in the subjoined table relate to the latest years for which returns are available:—

RATE OF INFANTILE MORTALITY IN VARIOUS COUNTRIES.

Country.	Year.	Rate of Infantile Mortality.	Crude Birth Rate.	Country.	Year.	Rate of Infantile Mortality.	Crude Birth Rate.
New Zealand ...	1905	68	27.2	Belgium ...	1904	152	27.1
Norway ...	1904	76	28.1	Bulgaria ...	1903	154	41.3
Commonwealth ...	1906	83	26.4	Italy ...	1904	161	32.6
Sweden ...	1903	93	25.7	Jamaica ...	1905	165	38.8
Ireland ...	1905	95	23.4	Servia ...	1905	165	37.3
Denmark ...	1904	112	28.9	Spain ...	1904	173	34.3
Finland ...	1904	120	31.8	Ceylon ...	1905	176	38.7
Scotland ...	1904	123	28.7	German Empire ...	1904	196	34.1
England and Wales	1905	128	27.2	Rumania ...	1899	198	42.0
Switzerland ...	1905	129	27.4	Austria ...	1902	218	37.0
Netherlands ...	1905	131	30.8	Hungary ...	1905	230	35.7
France ...	1904	144	20.9	Chile ...	1903	263	34.0
Japan ...	1901	151	32.7	Russia, European	1901	272	47.9

8. **Deaths in Age-Groups, 1901 to 1906.**—A distribution of the 273,120 deaths which occurred in the Commonwealth from 1901 to 1906 into age-groups has been made, and the results are 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, AUSTRALIA, 1901 to 1906.

Ages.	Males.	Females.	Total.	Percentage of Total Males.	Percentage of Total Females.	Percentage of Total.
Under 1 year ...	32,501	26,216	58,717	20.59	22.75	21.50
1 year and under 5 ...	9,553	8,857	18,410	6.05	7.68	6.70
5 years and under 20 ...	9,543	8,580	18,123	6.04	7.44	6.64
20 years and under 40 ...	23,152	19,400	42,552	14.67	16.83	15.58
40 years and under 60 ...	29,831	17,419	47,250	18.90	15.11	17.90
60 years and under 65 ...	9,111	5,531	14,642	5.77	4.80	5.36
65 years and over ...	43,943	29,232	73,175	27.84	25.36	26.79
Age not stated ...	221	30	251	.14	.03	.09
Total ...	157,855	115,265	273,120	100.00	100.00	100.00

9. **Average Age at Death.**—A statement of the average ages at death is not of great value, unless the average ages of the population living are also known; a calculation has, however, been made on the basis of recent results, which shews the average age at death of males to be 39.73 years, and that of females, 36.82 years.

10. **Index of Mortality.**—The death rates 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 should be ascertained. The calculation for 1906 is shewn below for each of the six States and for the Commonwealth, but it will be understood

that the distribution of the mean population of 1906 into age-groups according to the distribution as found at the Census of 1901 must be taken as the best approximation which the data will admit of, not as absolutely correct.

THE INDEX OF MORTALITY¹ (STATES AND COMMONWEALTH), 1906.

Age-Groups.	Mean Population, 1906, distributed according to Results of Census of 1901.	Number of Deaths, 1906.	No. of Deaths per 1000 of Mean Population, 1906, in each Age-Group.	Age Distribution per 1000 of Standard Population.	Index of Mortality.
NEW SOUTH WALES.					
Under 1 year	38,070	3,052	80.17	25.5	2.04
1 year and under 20	662,068	1,966	2.97	398.0	1.18
20 years .. 40	484,226	2,123	4.38	269.6	1.18
40 .. 60	241,284	2,840	11.77	192.3	2.26
60 .. and upwards	84,455	4,994	59.13	114.6	6.78
Total	1,510,103	14,975	9.92	1000.0	13.44
VICTORIA.					
Under 1 year	28,863	2,866	99.30	25.5	2.53
1 year and under 20	509,100	1,645	3.23	398.0	1.29
20 years .. 40	400,771	1,984	4.95	269.6	1.33
40 .. 60	187,473	2,476	13.21	192.3	2.54
60 .. and upwards	97,026	6,266	64.18	114.6	7.36
Total	1,223,833	15,237	12.45	1000.0	15.05
QUEENSLAND.					
Under 1 year	13,763	1,047	76.08	25.5	1.94
1 year and under 20	231,072	633	2.74	398.0	1.09
20 years .. 40	176,451	891	5.05	269.6	1.36
40 .. 60	85,729	1,096	12.78	192.3	2.46
60 .. and upwards	25,772	1,428	55.41	114.6	6.35
Total	532,786	5,095	9.56	1000.0	13.20
SOUTH AUSTRALIA.					
Under 1 year	8,575	679	79.18	25.5	2.02
1 year and under 20	168,660	409	2.42	398.0	0.96
20 years .. 40	116,192	554	4.77	269.6	1.39
40 .. 60	62,413	799	11.68	192.3	2.25
60 .. and upwards	24,099	1,560	64.73	114.6	7.42
Total	379,939	3,931	10.35	1000.0	13.94
WESTERN AUSTRALIA.					
Under 1 year	7,096	858	120.91	25.5	3.08
1 year and under 20	86,361	468	5.42	398.0	2.16
20 years .. 40	118,193	660	5.58	269.6	1.50
40 .. 60	39,767	583	14.66	192.3	2.82
60 .. and upwards	8,491	515	60.65	114.6	6.95
Total	259,908	3,084	11.87	1000.0	16.51
TASMANIA.					
Under 1 year	4,776	481	100.71	25.5	2.57
1 year and under 20	80,747	259	3.21	398.0	1.23
20 years .. 40	55,797	255	4.57	269.6	1.23
40 .. 60	26,642	294	11.04	192.3	2.19
60 .. and upwards	10,886	722	66.82	114.6	7.60
Total	178,848	2,011	11.24	1000.0	14.87
COMMONWEALTH.					
Under 1 year	101,142	8,983	88.82	25.5	2.26
1 year and under 20	1,738,008	5,380	3.10	398.0	1.23
20 years .. 40	1,351,630	6,467	4.78	269.6	1.29
40 .. 60	643,308	8,018	12.46	192.3	2.40
60 .. and upwards	251,329	15,485	61.61	114.6	7.06
Total	4,085,417	44,333	10.85	1000.0	14.24

1. The "index of mortality" may be thus popularly defined:—In lieu of the actual population of any country, which, in relation to that of any other, would have a different relative number of persons at each age, the particular constitution in respect of age of the population of Sweden in 1890 has been taken as an arbitrary basis for comparison. That is to say, in respect of age each 1000 persons are supposed to be divided as shewn in column 4 of the table, *i.e.*, there are 25.5 persons under 1 year of age, 398.0 between 1 year and under 20 years, etc. Had the local population been thus constituted in respect of age, the actual death rates for each age-group would have furnished the results in column 5, *viz.*, for a 1000 deaths in New South Wales, 2.04 deaths of persons under 1 year of age, 1.18 between 1 and 20 years of age, etc., in all 13.44 persons per 1000 of the population instead of 9.92 per thousand. In this way each group and total rate may be regarded as independent of the accident of the local distribution as to age.

The small number of persons whose ages were not ascertained at the 1901 Census have been proportionately distributed among the various age-groups, and the same plan has been followed in respect of the 251 persons who died in 1906, and whose ages were not stated in the certificates of death.

It will be seen that the States and the Commonwealth remain in the same order with one exception—while the crude death rate was second highest in Western Australia, and highest in Victoria, the index of mortality was higher in Western Australia than in Victoria. The range of the indexes is rather wider than that of the crude death rates, for while the latter in 1906 rose from 9.56 per thousand in Queensland to 12.45 per thousand in Victoria, a range of 2.89 per thousand, the indexes varied from 13.20 per thousand in Queensland to 16.51 per thousand in Western Australia, a range of 3.31 per thousand.

11. **Causes of Death.**—(i.) *Changes in Classification from 1903 to 1905.* The causes of death were classified in all the States of the Commonwealth to the end of 1903 according to the system originally devised by Dr. William Farr, and modified in 1886 by Dr. William Ogle. A conference of the State Statisticians, held at Hobart in January, 1902, decided to substitute for that system the classification adopted since 1901 by the Registrar-General of England. While New South Wales, Queensland, and Tasmania remodelled their vital statistics on that plan, Victoria, South Australia and Western Australia continued to tabulate according to the Farr-Ogle system, and a comparison of the causes of death in the six States during the years 1903, 1904, and 1905 is, therefore, a matter of extreme difficulty. The differences in tabulation will be seen in the following statement :—

COMPILATION OF CAUSES OF DEATH.

State.	1902.	1903.	1904.	1905.	State.	1902.	1903.	1904.	1905.
New South Wales	Old	Old	Old	New	South Australia ...	Old	Old	Old	Old
Victoria ...	Old	Old	Old	Old	Western Australia	Old	Old	Old	Old
Queensland ...	Old	New	New	New	Tasmania ...	Old	New	New	New

Old= Farr-Ogle classification. New= New classification by Registrar-General of England.

(ii.) *The Classification of the International Institute of Statistics.* At a conference held in Melbourne in November and December, 1906, the Commonwealth Statistician recommended the adoption of the classification of the International Institute of Statistics, generally known as the Bertillon Index, and after some discussion that recommendation was accepted, a course which has met with wide approval in medical circles. This index, as the one used by the Registrar-General of England, is based on the original Farr-Ogle classification, but approximates more closely to the present English system than to the older one. The chief advantage possessed by the international classification is that it presents a very extensive field for comparison, the countries which have adopted it representing a population which is probably not less than 150,000,000. The detailed classification groups causes of death under 179 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. |

(iii.) *Compilation of Vital Statistics for 1907 in Commonwealth Bureau.*—The vital statistics of the six Commonwealth States for 1907 are being tabulated according to this classification in the Commonwealth Bureau, and the system is being employed in the majority of the State offices in the preparation of their monthly and quarterly bulletins of vital statistics.

(iv.) *Classification of Causes of Death, 1905, according to Abridged Bertillon Index.* An abridged classification, which enumerates thirty-five diseases and groups of diseases, is in use in many European and American States, and while the Commonwealth Statistics for 1907 are being compiled on the detailed classification of 179 headings, it was at least possible to group the causes of death experienced in 1905, the latest year for which returns are available, under the 35 headings of the abridged classification. Two slight modifications had to be made, viz., in No. 31, Congenital Debility and Malformations, only children under three months, who died of congenital debility, should have

CAUSES OF DEATH—AUSTRALIA, 1905.

(a) MALES.

Cause.	N.S.W.	Vict.	Q'land.	S. Aust.	W. Aus.	Tas.	C'wth.
1 Typhoid Fever	151	71	66	23	71	16	398
2 Typhus	—	—	—	—	—	—	—
3 Intermittent Fever and Malarial Cachexia	10	—	34	1	3	—	48
4 Small-pox	—	—	—	—	—	—	—
5 Measles	14	47	1	—	1	1	64
6 Scarlet Fever	9	6	1	6	1	1	24
7 Whooping Cough	3	5	7	4	1	—	20
8 Diphtheria and Croup	56	46	22	6	16	10	156
9 Influenza	99	71	28	16	6	9	229
10 Asiatic Cholera	—	—	—	—	—	—	—
11 Cholera Nostras	1	—	—	—	1	—	2
12 Other Epidemic Diseases	89	37	180	2	45	3	356
13 Tuberculosis of the Lungs	638	699	285	130	102	62	1,916
14 Tuberculosis of the Meninges	47	77	6	15	7	7	159
15 Other forms of Tuberculosis	68	113	46	18	13	19	277
16 Cancer and other Malignant Tumours	525	498	196	118	74	45	1,456
17 Simple Meningitis	78	82	39	29	22	14	264
18 Congestion, Hæmorrhage and Softening of the Brain	374	266	101	74	18	32	865
19 Organic Diseases of the Heart	289	247	187	21	37	18	799
20 Acute Bronchitis	126	71	20	33	14	16	280
21 Chronic Bronchitis	218	213	76	37	19	10	573
22 Pneumonia	424	618	165	104	114	47	1,472
23 Diseases of the Stomach (Cancer excepted)	53	62	32	47	17	11	222
24 Diarrhœa and Enteritis (children under two years only)	528	403	213	62	184	31	1,421
25 Hernia (Intestinal Obstructions)	72	99	22	18	14	7	232
26 Cirrhosis of the Liver	70	64	22	13	16	5	190
27 Nephritis and Bright's Disease	413	384	126	88	57	15	1,083
28 Non-cancerous Tumours and other Diseases of the Female Genital Organs	—	—	—	—	—	—	—
29 Puerperal Sæpticæmia (Puerperal Fever, Puerperal Peritonitis, Puerperal Phlebitis)	—	—	—	—	—	—	—
30 Other Puerperal Accidents of Pregnancy and Confinement	—	—	—	—	—	—	—
31 Congenital Debility and Malformations	741	545	161	138	155	85	1,825
32 Senile Debility	578	734	124	171	47	153	1,807
33 Violence	666	539	339	173	189	108	2,014
33A Suicide	132	114	85	47	44	9	431
34 Other Diseases	2,054	2,027	817	609	398	232	6,137
35 Unspecified or Ill-defined Diseases	183	135	98	38	42	95	591
Total—Males	8,709	8,273	3,499	2,041	1,728	1,061	25,311

been included. The age limit had here to be extended to 12 months, as in the majority of States the causes of death were only tabulated for the group "under one year." For the same reason, the very few cases of "Insufficient Nourishment of Infants," No. 153 of detailed, and No. 34 of abridged classification, had to be included with No. 173, "Inanition," of detailed, and No. 33 of abridged classification. Apart from the two cases mentioned, it is believed that all the causes of death enumerated either under the Farr-Ogle, or under the Registrar-General's classification, have been grouped under the correct headings of the abridged Bertillon Index:—

CAUSES OF DEATH—AUSTRALIA 1905.

(b) FEMALES.

Cause.	N.S.W.	Vic.	Q'land.	S. Aus.	W. Aus.	Tas.	C'wth.
1 Typhoid Fever	90	50	30	19	36	7	232
2 Typhus	—	—	—	—	—	—	—
3 Intermittent Fever and Malarial Cachexia	3	—	4	—	—	—	7
4 Small-pox	—	—	—	—	—	—	—
5 Measles	15	32	—	—	—	2	49
6 Scarlet Fever	12	4	—	2	2	—	20
7 Whooping Cough	2	15	3	2	—	—	22
8 Diphtheria and Croup	59	42	24	8	23	2	158
9 Influenza	84	62	25	11	10	7	199
10 Asiatic Cholera	—	—	—	—	—	—	—
11 Cholera Nostras	2	1	—	—	—	—	3
12 Other Epidemic Diseases	68	23	128	5	17	—	241
13 Tuberculosis of the Lungs	399	536	112	149	60	72	1,328
14 Tuberculosis of the Meninges	46	56	8	13	4	4	131
15 Other forms of Tuberculosis	54	99	21	22	12	13	221
16 Cancer and other Malignant Tumours	440	455	155	131	53	52	1,286
17 Simple Meningitis	56	63	26	28	15	9	197
18 Congestion, Hæmorrhage, and Softening of the Brain	307	268	61	57	8	45	746
19 Organic Diseases of the Heart	267	208	124	21	15	15	650
20 Acute Bronchitis	87	52	19	21	10	9	198
21 Chronic Bronchitis	163	179	38	44	13	13	450
22 Pneumonia	242	413	81	76	56	22	890
23 Diseases of the Stomach (Cancer excepted)	74	86	28	15	12	5	220
24 Diarrhœa and Enteritis (children under two years only)	450	331	155	72	136	28	1,172
25 Hernia, Intestinal Obstructions	50	86	17	28	14	5	200
26 Cirrhosis of the Liver	30	43	17	3	4	3	100
27 Nephritis and Bright's Disease	234	294	74	45	28	15	690
28 Non-cancerous Tumours and other Diseases of the Female Genital Organs	46	43	19	14	7	5	134
29 Puerperal Septicæmia (Puerperal Fever, Puerperal Peritonitis, Puerperal Phlebitis)	104	53	22	9	9	8	205
30 Other Puerperal Accidents of Pregnancy and Confinement	175	119	45	25	33	14	411
31 Congenital Debility and Malformations	558	384	132	113	118	75	1,375
32 Senile Debility	406	529	72	219	19	108	1,353
33 Violence	254	218	75	50	36	16	649
33A Suicide	38	26	11	10	4	—	89
34 Other Diseases	1,324	1,511	415	526	199	151	4,126
35 Non-specified or Ill-defined Diseases	130	122	63	25	33	78	451
Total—Females	6,269	6,403	2,004	1,763	981	783	18,203

CAUSES OF DEATH—AUSTRALIA, 1905.
(c) TOTAL, MALES AND FEMALES.

Cause.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	C'w'lth.
1 Typhoid Fever	241	121	96	42	107	23	630
2 Typhus	—	—	—	—	—	—	—
3 Intermittent Fever and Ma- larial Cachexia	13	—	38	1	3	—	55
4 Small-pox	—	—	—	—	—	—	—
5 Measles	29	79	1	—	1	3	113
6 Scarlet Fever	21	10	1	8	3	1	44
7 Whooping Cough	5	20	10	6	1	—	42
8 Diphtheria and Croup	115	88	46	14	39	12	314
9 Influenza	183	133	53	27	16	16	428
10 Asiatic Cholera	—	—	—	—	—	—	—
11 Cholera Nostras	3	1	—	—	1	—	5
12 Other Epidemic Diseases	157	60	308	7	62	3	597
13 Tuberculosis of the Lungs	1,037	1,235	397	279	162	134	3,244
14 Tuberculosis of the Meninges	93	133	14	28	11	11	290
15 Other forms of Tuberculosis	122	212	67	40	25	32	498
16 Cancer and other Malignant Tumours	965	953	351	249	127	97	2,742
17 Simple Meningitis	134	145	65	57	37	23	461
18 Congestion, Hæmorrhage, and Softening of the Brain	681	534	162	131	26	77	1,611
19 Organic Diseases of the Heart	556	455	311	42	52	33	1,449
20 Acute Bronchitis	213	123	39	54	24	25	478
21 Chronic Bronchitis... ..	381	392	114	81	32	23	1,023
22 Pneumonia	666	1,031	246	180	170	69	2,362
23 Diseases of the Stomach (Can- cer excepted)	127	148	60	62	29	16	442
24 Diarrhœa and Enteritis (child- ren under two years only)	978	734	368	134	320	59	2,593
25 Hernia, Intestinal Obstructions	122	185	39	46	28	12	432
26 Cirrhosis of the Liver	100	107	39	16	20	8	290
27 Nephritis and Bright's Disease	647	678	200	133	85	30	1,773
28 Non-cancerous Tumours and other Diseases of the Female Genital Organs	46	43	19	14	7	5	134
29 Puerperal Septicæmia (Puer- peral Fever, Puerperal Peritonitis, Puerperal Phlebitis)	104	53	22	9	9	8	205
30 Other Puerperal Accidents of Pregnancy and Confinement	175	119	45	25	33	14	411
31 Congenital Debility and Mal- formations	1,299	929	293	251	268	160	3,200
32 Senile Debility	984	1,263	196	390	66	261	3,160
33 Violence	920	757	414	223	225	124	2,663
33A Suicide	170	140	96	57	48	9	520
34 Other Diseases	3,378	3,538	1,232	1,135	597	383	10,263
35 Non-specified or Ill-defined Diseases	313	257	161	63	75	173	1,042
Total—Males and Females...	14,978	14,676	5,503	3,804	2,709	1,844	43,514

12. Deaths from Special Causes.—It is not considered advisable to give detailed statements as to the number of deaths from various classes of diseases until a uniform tabulation is once more available. The three foregoing tables furnish, however, several indications to which it seems desirable to draw attention.

Infantile and senile debility were responsible for nearly equal numbers of deaths, viz., 3200 and 3160. Diarrhoeal diseases claimed 2593 victims under two years of age.

Tubercular diseases ranked first in order of fatality, tuberculosis of the lungs being responsible for 3244, tuberculosis of the meninges for 290, and other forms of tubercu-

losis for 498 deaths, a total of 4032. Other pulmonary troubles were also much in evidence during the year, 2362 deaths being ascribed to pneumonia, 1023 to chronic bronchitis, and 478 to acute bronchitis. Cancer in its various forms, such as Carcinoma, Sarcoma, Epithelioma, etc., claimed 2742 victims, and, as has been the case for a number of years, male deaths predominated over female deaths, the number being 1456, and 1286 respectively. The three diseases next in order of fatality were Nephritis and Bright's disease, with 1773 deaths; congestion, hæmorrhage, and softening of the brain, with 1611 deaths; and organic diseases of the heart, with 1449 deaths. Deaths from violence, mainly of course accidental deaths, numbered no less than 2663, viz., 2014 male and 649 female deaths. Although the figures here given do not disclose the fact, it may be stated that the male liability to accidental death is three times greater than the female liability for all kinds of accidents except burning, where the number of male and female deaths are nearly equal. Deaths from puerperal septicæmia numbered 205, and from other puerperal accidents, 411.

The number of suicides during 1905 was 520, viz., 431 males, and 89 females. Deaths from epidemic diseases were not numerous; typhoid fever claimed 630 victims; influenza, 423; diphtheria and croup, 314; measles, 113; scarlet fever, 44; and whooping cough, 42. No deaths from small-pox were registered, and it is some years since that scourge last made its appearance in Australia. The only two diseases beside small-pox which figure in the abridged classification, and from which no deaths were registered, are typhus and Asiatic cholera. Fortunately no cases of either have ever yet occurred in Australia.

(i.) *Deaths from Phthisis.* Deaths from tubercular diseases have shown a satisfactory decrease for a number of years. The subjoined table shows that while the actual number of deaths was practically the same in 1904 and in 1891, this was equivalent to a decrease from 1110 to 897 per million of population, with a further fall to 808 per million in 1905.

DEATHS FROM PHTHISIS—AUSTRALIA, 1891-1905.

Year.	1891.	1896.	1901.	1902.	1903.	1904.	1905.
Males	2,227	2,030	2,097	2,124	2,076	2,016	1,916
Females	1,322	1,416	1,460	1,427	1,482	1,532	1,328
Total	3,549	3,446	3,557	3,551	3,558	3,548	3,244
Per 1,000,000 of population	1,110	978	938	921	912	897	808

The favourable position occupied by Australia, a position only surpassed by that of the Dominion of New Zealand, in regard to deaths from tubercular diseases, as compared with various countries of the old world, will be seen from the following table, which gives the information for the latest available dates:—

DEATHS FROM PHTHISIS—VARIOUS COUNTRIES.

Country.	Year.	Deaths per Million Inhabitants.	Country.	Year.	Deaths per Million Inhabitants.
New Zealand	1905	570	Spain	1904	1,509
Commonwealth	1905	808	Jamaica	1905	1,522
Ceylon	1905	957	German Empire	1904	1,796
Belgium	1904	1,091	Switzerland	1904	1,882
England and Wales	1905	1,144	Norway	1904	1,964
Italy	1905	1,182	Chile	1905	2,017
Netherlands	1905	1,357	Ireland	1905	2,099
United Kingdom	1904	1,365	Servia	1905	3,325
Japan	1903	1,449	Austria	1903	3,362
Scotland	1904	1,456	Hungary	1905	4,415

(ii.) *Deaths from Cancer.* In regard to deaths from cancer, the position is much less favourable. From 1891 to 1896 there was an increase of 44 deaths per million of population, followed by a further increase of 75 per million from 1896 to 1901. The variations from 1901 to 1904 were slight, but a considerable increase was again shewn in the 1905 figures, which amounted to 683 per million of population, an increase of 37 per cent. as compared with the figures for 1891. The following table shews both the actual number of deaths and the deaths per million of population:—

DEATH FROM CANCER—AUSTRALIA 1891-1905.

Year.	1891.	1896.	1901.	1902.	1903.	1904.	1905.
Males	908	1,027	1,336	1,344	1,368	1,293	1,456
Females	685	883	1,065	1,123	1,188	1,275	1,286
Total	1,593	1,910	2,401	2,467	2,556	2,568	2,742
Per 1,000,000 of population	498	542	633	640	655	649	683

It will be seen from the table below that compared with the majority of European countries the Australian death rate from cancer, high as it is, does not shew unfavourably.

DEATHS FROM CANCER.—VARIOUS COUNTRIES.

Country.	Year.	Deaths per Million Inhabitants.	Country.	Year.	Deaths per Million Inhabitants.
Ceylon	1905	53	Commonwealth ...	1905	683
Servia	1905	104	Austria	1903	735
Jamaica	1905	188	Ireland	1905	749
Chile	1905	286	German Empire ...	1904	787
Hungary	1905	402	Scotland	1904	847
Spain	1904	469	United Kingdom ...	1904	857
Japan	1903	547	England and Wales ...	1905	891
Belgium	1904	561	Norway	1904	955
Italy	1905	576	Netherlands	1905	1,012
New Zealand ...	1905	651	Switzerland	1904	1,302

(iii.) *Suicide.* The number of suicides has fluctuated from 112 per million of population in 1891 to 131 per million in 1903, with a slight decrease since the latter year to 126 in 1904, and 129 in 1905.

SUICIDE—AUSTRALIA, 1891-1905.

Year.	1891.	1896.	1901.	1902.	1903.	1904.	1905.
Males	305	365	375	387	435	426	431
Females	52	72	77	64	78	72	89
Total	357	437	452	451	513	498	520
Per 1,000,000 of population ...	112	124	119	117	131	126	129

The figures are about 27 per cent. in excess of those for England and Wales, where the numbers per 1,000,000 of population were:—In 1891, 85; in 1896, 86; in 1901, 96; in 1902, 99; in 1903, 105; in 1904, 99; and in 1905, 104.

(iv.) *Deaths from Bubonic Plague.* The first case of bubonic plague occurred in Sydney in January, 1900. As Sydney was in regular communication by steamer with Hong Kong, Bombay, and Noumea, in all of which places plague had been endemic for some time prior to 1900, it has not been definitely ascertained from which of these three ports the disease was originally introduced into Australia. Since the 1900 outbreak there has not been a year in which a few cases have not occurred in New South Wales, Queensland, or Western Australia; out of a total number of 416 fatal cases between January, 1900, and June, 1907, 199 belonged to New South Wales, 182 to Queensland, 34 to Western Australia, and 1 to Victoria. The number of deaths in 1900 was 155; in 1901, 21; in 1902, 76; in 1903, 25; in 1904, 19; in 1905, 49; in 1906, 32; and in the first half of 1907, 39; the mortality during the various outbreaks was approximately one out of every three cases attacked.

§ 4. 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 215 and 216), shewing these fluctuations from 1860 to 1906, both for the States and the Commonwealth. The facts are very significant from the national point of view and call for serious consideration. To properly appreciate the situation it should be remembered that, normally, the increases 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 216), it shews a recovery in 1894, and, with the exception of a small fall for 1903, it has continually advanced. The same characteristic is not seen in the curve of births, which discloses a recovering tendency only in 1904.

ACTUAL BIRTHS, DEATHS AND MARRIAGES EXPERIENCED IN THE COMMONWEALTH DURING THE YEARS 1890 TO 1906, 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	121,002	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	23,939	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	132,662	46,330	54,271	27,753	28,975
1902	102,776	134,873	48,078	55,175	27,926	29,458
1903	98,443	136,478	47,293	55,832	25,977	29,808
1904	104,113	138,305	43,572	56,579	27,682	30,207
1905	104,941	140,511	43,514	57,482	29,004	30,689
1906	107,890	142,908	44,333	58,462	30,410	31,213

The table on previous page shews 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, 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 questions concerning the extent to which it is desirable to promote immigration.

2. Graphs of Annual Births, Commonwealth and States (page 215).—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 throughout.

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.

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, with 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 onwards.

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 was recorded. The South Australian graph is crossed by that of Queensland at the year 1885. From 1890 onwards the number of births has fluctuated somewhat, but has, 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.

The South Australian graph, a slow but practically continuous rise from 1860 to 1885, exhibits the steady increase in the total number of births. This rise is followed by a slow but fluctuating decline to 1903, and a slight recovery to 1906.

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, *viz.*, 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 onwards, a period of steady recovery.

The Western Australian curve indicates that an increase, which was practically continuous but very slow, took place from 1850 to 1884, and that a somewhat quicker rate of increase, experienced from 1834 to 1836, was succeeded by a still more rapid and very satisfactory rate of increase from 1896 onwards.

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	... 1906	1893	1890	1885	1906	1906	1891

3. Graphs of Annual Marriages, Commonwealth and States (page 216).—The Commonwealth marriage graph from 1850 to 1895 reveals a moderate but somewhat fluctuating increase in the annual number of marriages between 1850 and 1871, a more rapid increase between 1871 and 1879, and a still more rapid increase between 1879 and 1895. From 1885 to 1891 the numbers continued to increase, but with marked fluctuations in rate. 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 were 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 1906 was greater than in any preceding year.

4. Graphs of Annual Deaths, Commonwealth and States (page 217).—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:—(1) 1886-7, (2) 1875-6, (3) 1884-5, (4) 1839-1831, (5) 1833, (6) 1898, and (7) 1902-3. It is remarkable that in each of the periods specified the phenomenon of a relatively high number of deaths was experienced in a 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 1839 all except Western Australia and South Australia; in 1891 all except Queensland; whilst in 1893 and 1898, and in 1902-3, all were affected. 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.

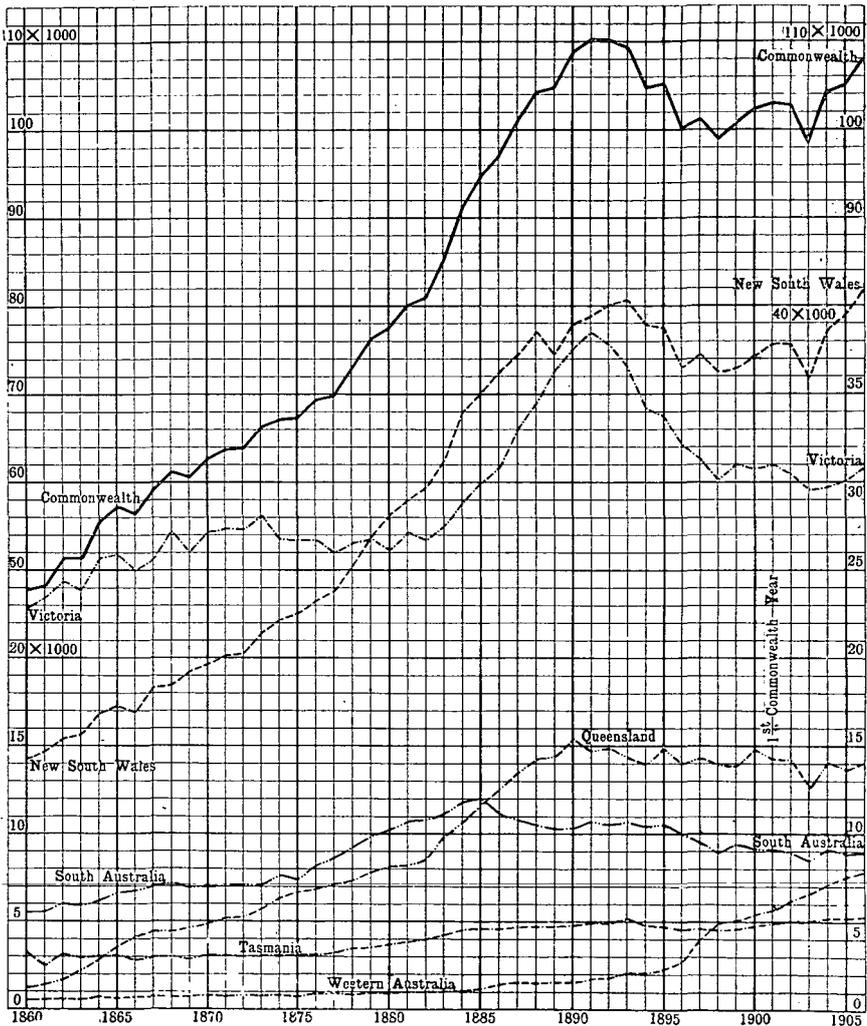
It may be noted as curious that periods of heavy mortality have occurred at intervals of approximately nine years, viz.:—1835-7, 1875-6, 1884-5, 1893, and 1902-3. There are, however, two marked increases between the third and fourth dates, and one between the fourth and fifth. Thus there is no real indication of the periodicity in the death rate.

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, and 1904-5.

5. Graph of Phthisis, Cancer, Suicide, and Plague.—The graphs on page 218 shew the relative position occupied by the Commonwealth in regard to deaths from cancer and phthisis as compared with various countries, and the fluctuations during a series of years in the Commonwealth of the death rate from phthisis, cancer, and suicide. The convergence of the lines shewing the death rates from phthisis and cancer is almost regular

enough to warrant the statement that in the Commonwealth during recent years cancer has increased at the same ratio as phthisis has decreased. The comparative graphs shew the exceptionally favourable position occupied by the Commonwealth in regard to deaths from phthisis, and they also shew that, in so far as deaths from cancer are concerned, the position of the Commonwealth is exactly in the middle of the scale. The suicide line shews but little fluctuation, and does not call for any comment. While the three lines relating to phthisis, cancer, and suicide shew the deaths per 10,000 of population, the line marked "Plague" shews actual deaths in hundreds, as to shew deaths per 10,000 of population would have made the line practically identical with the base-line. Even at the time of the most serious outbreak of plague, in 1900, the deaths attributable to it were only one-third of the number of suicides; in 1902 they were about one-sixth; in 1905, less than one-tenth; in 1901 and 1903, less than one-twentieth; and in 1904, not more than one-twenty-sixth.

GRAPHS SHEWING TOTAL ANNUAL BIRTHS IN THE COMMONWEALTH AND STATES OF AUSTRALIA, 1860-1906.



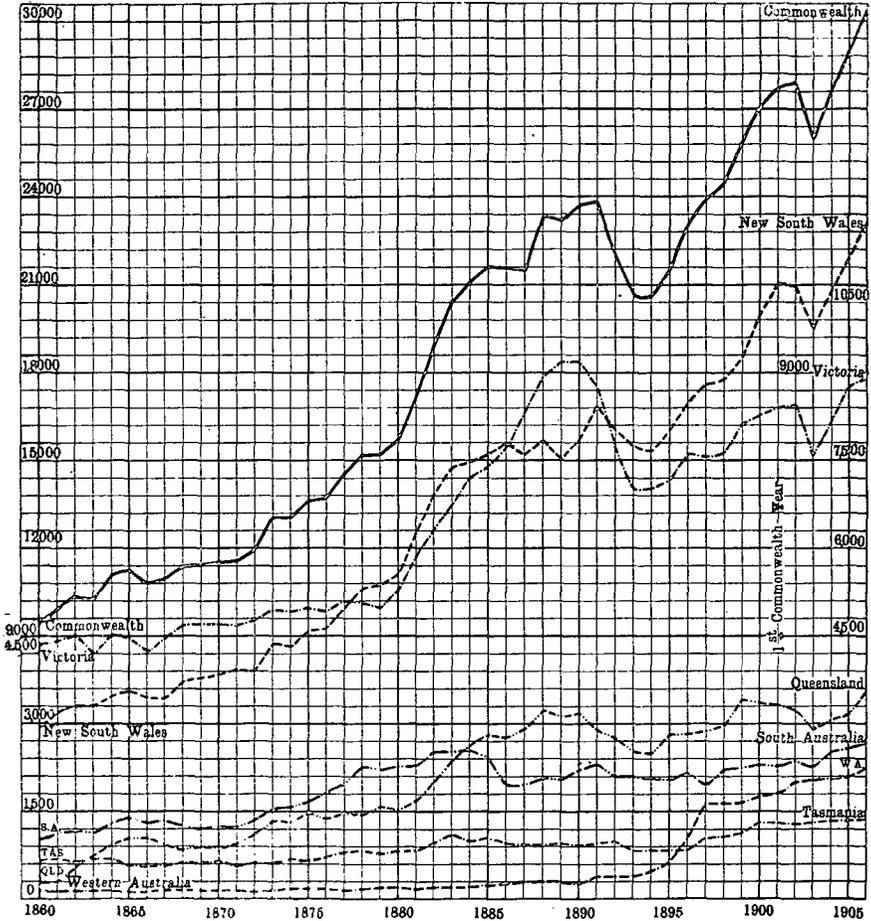
EXPLANATION OF GRAPHS.—The base of each small square represents an interval of one year for both Commonwealth and States, and the vertical height represents 2000 persons of the Commonwealth, and 1000 for the States.

The scale running from 0 to 20 on the left and that from 0 to 40 on the right relate to the States, while those from 50 to 110 on the left and from 90 to 110 on the right refer to the Commonwealth.

The distances upwards 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, an unbroken line; New South Wales, - - - - -; Victoria, - - - - -; Queensland, - - - - -; South Australia, - - - - -; Western Australia, - - - - -; Tasmania, - - - - -.

GRAPHS SHEWING TOTAL ANNUAL MARRIAGES IN THE COMMONWEALTH AND STATES OF AUSTRALIA, 1860-1906.



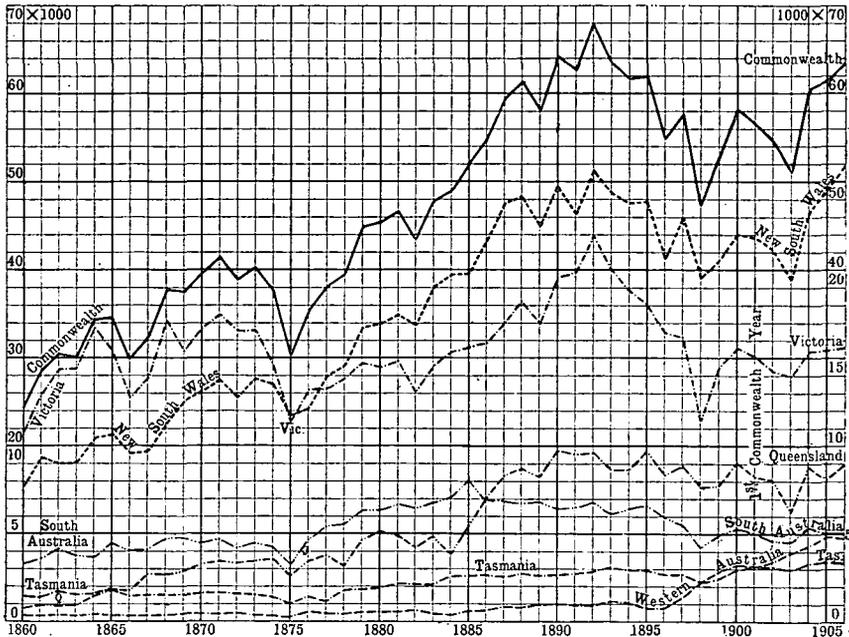
EXPLANATION OF GRAPHS.—The base of each small square represents an interval of one year for both Commonwealth and States, and the vertical height represents 600 marriages for the Commonwealth and 300 for the States.

The scale running from 0 to 4500 on the left and that from 0 to 10,500 on the right relate to the States, while that from 9000 to 30,000 on the left refers to the Commonwealth.

The distances upwards 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 215.

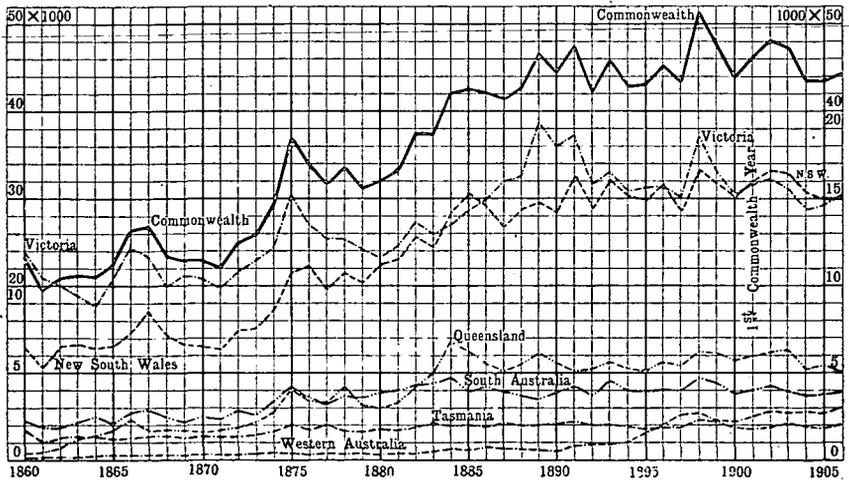
GRAPHS OF NATURAL INCREASE OF THE POPULATION OF THE COMMONWEALTH AND STATES OF AUSTRALIA, 1860-1906.



EXPLANATION OF GRAPHS.—The base of each small square represents one year for both States and Commonwealth, and the vertical height 1000 persons for the States or 2000 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 smaller scale running 0.5 1.0 1.5 2.0 relates to the States, while the larger running 20. 30. 40. 50. 60. 70. relates to the Commonwealth curve. 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 —.

GRAPHS SHEWING TOTAL ANNUAL DEATHS IN THE COMMONWEALTH AND STATES OF AUSTRALIA, 1860-1906.



(For Explanation see next page.)

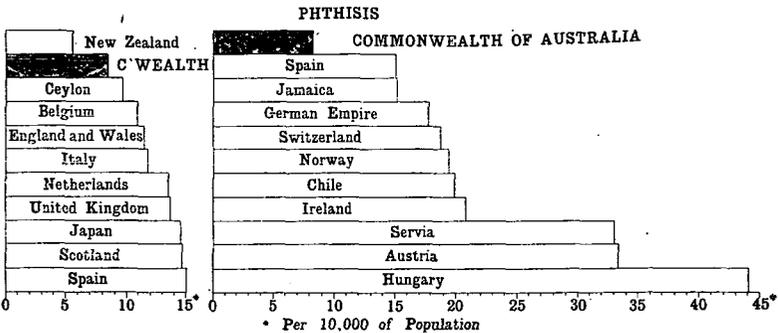
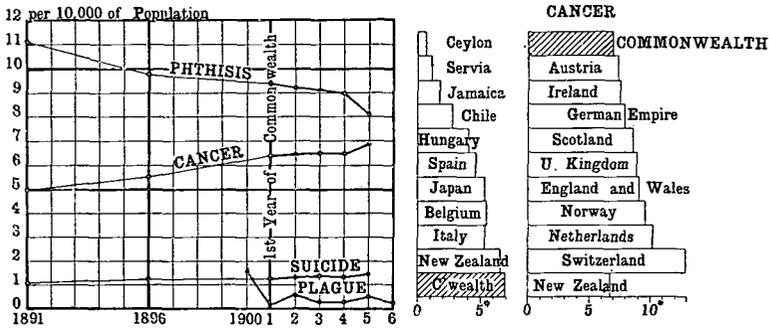
EXPLANATION OF GRAPH.—The base of each small square represents an interval of one year for both Commonwealth and States, and the vertical height represents 2000 persons for the Commonwealth, and 1000 for the States.

The scale running from 0 to 10 on the left of the diagram and that from 0 to 20 on the right relate to the States, while those from 20 to 50 on the left and 40 to 50 on the right refer to the Commonwealth.

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 215.

GRAPHS SHEWING TOTAL ANNUAL DEATHS FROM PHTHISIS, CANCER, SUICIDE AND PLAGUE.



EXPLANATION OF GRAPHS.—In the graph for plague the vertical side of the square denotes 100 persons, since the curve would be invisible on the scale adopted for phthisis and cancer.

In the graphs for phthisis, cancer, suicide, etc., the base of each square represents one year, and the vertical height one person per 10,000 of total population in the Commonwealth of Australia.

If plague were represented on the same scale the height of the curve would be reduced to about one-fourth of the height shewn.