SECTION V.

VITAL STATISTICS.

NOTE.—The rates quoted throughout this Section for the years 1902 to 1911 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, 1901 to 1910.**—The total number of male and female births registered in the Commonwealth during the years 1901 to 1910 is as shewn in the two tables hereunder :—

TOTAL MALE BIRTHS, COMMONWEALTH, 1901 to 1910.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.[1]	W. Aust.	Tasmania.	C'wealth.
1901	19,149	15,876	7,281	4,687	2,946	2,570	52,509
1902	19,322	15,583	7,279	4,587	3,241	2,604	52,616
1903	18,377	15,115	6,427	4,484	3,433	2,570	50,406
1904	19,857	15,313	7,134	4,686	3,666	2,702	53,358
1905	20,206	15,523	6,978	4,514	3,862	2,812	53,895
1906	21,066	15,716	7,280	4,617	4,043	2,792	55,514
1907	21,604	15,986	7,451	4,689	3,962	2,797	56,489
1908	21,605	16,071	7,677	4,949	3,993	2,818	57,113
1909	22,464	16,096	7,954	5,235	3,884	2,849	58,482
1910	23,368	16,412	8,260	5,423	3,855	2,888	60,206

1. Including Northern Territory.

TOTAL FEMALE BIRTHS, COMMONWEALTH, 1901 to 1910.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.[1]	W. Aust.	Tasmania.	C'wealth.
1901	18,726	15,132	7,022	4,424	2,772	2,360	50,436
1902	18,513	14,878	6,937	4,360	2,991	2,481	50,160
1903	17,589	14,454	6,194	4,024	3,266	2,510	48,037
1904	18,810	14,450	6,948	4,447	3,510	2,590	50,755
1905	19,295	14,584	6,648	4,354	3,720	2,445	51,046
1906	19,882	15,128	6,739	4,329	3,757	2,541	52,376
1907	20,597	15,379	7,089	4,549	3,750	2,494	53,858
1908	20,853	15,026	7,153	4,841	3,762	2,797	54,432
1909	21,318	15,448	7,598	4,856	3,718	2,651	55,589
1910	22,076	15,025	7,909	5,157	3,730	2,698	56,595

1. Including Northern Territory.

2. **Total Births, 1901 to 1910.**—While the total number of births for the Commonwealth was higher in 1910 than in any of the preceding nine years, the following table of particulars discloses also the fact that apart from New South Wales, Queensland, and Western Australia, the excess of births in 1910 over those in 1901 was very small :—

TOTAL BIRTHS, COMMONWEALTH, 1901 to 1910.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.[1]	W. Aust.	Tas.	C'wealth.
1901	37,875	31,008	14,303	9,111	5,718	4,930	102,945
1902	37,835	30,461	14,216	8,947	6,232	5,085	102,776
1903	35,966	29,569	12,621	8,508	6,699	5,080	98,443
1904	38,667	29,763	14,082	9,133	7,176	5,292	104,113
1905	39,501	30,107	13,626	8,868	7,582	5,257	104,941
1906	40,948	30,844	14,019	8,946	7,800	5,333	107,890
1907	42,201	31,365	14,540	9,238	7,712	5,291	110,347
1908	42,458	31,097	14,830	9,790	7,755	5,615	111,545
1909	43,782	31,544	15,552	10,091	7,602	5,500	114,071
1910	45,444	31,437	16,169	10,580	7,585	5,586	116,801

1. Including Northern Territory.

3. **Birth Rates, 1901 to 1910.**—(i.) *Crude Birth Rate.* The birth rate for the whole Commonwealth was lower in 1910 than in 1901, and New South Wales, South Australia and Tasmania are the only States in which an 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 RATE,[1] COMMONWEALTH, 1901 to 1910.[2]

Year.	N.S.W.	Vic.	Qld.	S.A.[4]	W.A.	Tas.	Cwlth.
1901	27.78	25.77	28.52	25.16	30.39	28.58	27.16
1902	27.23	25.23	27.85	24.82	30.44	29.03	26.71
1903	25.44	24.53	24.53	23.65	30.50	28.16	25.29
1904	26.85	24.74	26.99	25.29	30.67	28.92	26.41
1905	26.85	24.96	25.76	24.36	30.74	28.50	26.23
1906	27.21	25.41	26.15	24.37	30.66	28.94	26.57
1907	27.34	25.59	26.79	24.86	30.18	28.63	26.76
1908	26.99	25.07	26.79	25.65	30.08	29.95	26.59
1909	27.40	25.01	27.29	25.74	28.87	28.91	26.69
1910	27.83	24.51	27.33	26.38	27.99	29.25	26.73
Density[3] (No. per square mile) ...	5.30	14.81	0.89	0.45	0.28	7.39	1.49

1. Number of Births per 1000 of the mean annual population.
2. Rates corrected in view of Census Returns, 1911.
3. On 31st December, 1910.
4. Including Northern Territory.

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, 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 Census of 1901. 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 the results of the Census of 1911 are available. The calculation has, however, been made for the last three 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:—Total births per 1000 women (married and unmarried) of ages 15 to 45 :—

Years 1880-82, 169.69; years 1890-92, 158.81; years 1900-02, 117.26. Nuptial births per 1000 married women of ages 15 to 45:—Years 1880-82, 320.96; 1890-92, 332.03; years 1900-02, 235.84.

4. **Birth Rates of Various Countries.**—A comparison with other countries shews 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 hereinafter in the section dealing with "Deaths."

CRUDE BIRTH RATE[1] OF VARIOUS COUNTRIES.[2]

Country.	Year.	Rate.	Country.	Year.	Rate.
Russia, European ...	1903	48.1	Western Australia ...	1910	28.0
Rumania	1909	41.7	New South Wales ...	1910	27.8
Bulgaria	1908	40.4	Queensland	1910	27.3
Chile	1909	38.8	Switzerland	1908	27.1
Jamaica	1909	37.8	Commonwealth ...	1910	26.7
Hungary	1909	37.0	South Australia ...	1910	26.4
Ceylon	1909	36.7	Scotland	1909	26.4
Servia	1909	36.5	United Kingdom ...	1908	26.3
Japan	1908	33.9	New Zealand ...	1910	26.2
Austria	1908	33.5	Norway	1909	26.1
Spain	1909	32.6	England and Wales ...	1909	25.6
Italy	1909	32.4	Sweden	1909	25.6
German Empire ...	1908	32.1	Canada (Ontario) ...	1908	24.9
Prussia	1909	31.8	Belgium	1908	24.9
Finland	1909	31.3	Victoria	1910	24.5
Tasmania	1910	29.3	Ireland	1909	23.5
Netherlands	1909	29.1	France	1909	19.6
Denmark	1909	28.0			

1. Number of births per 1000 of the mean population.
2. Rates corrected in view of Census Returns, 1911.

5. **Masculinity at Birth.**—The masculinity of births, *i.e.*, the number of males per 100 females, registered during the last ten years in the several States of the Commonwealth has varied from 100.75 in Tasmania in 1908 to 115.01 in Tasmania in 1905. The following table, which gives the values for the States and Commonwealth for 1901 to 1910, shews the remarkable fact that for the Commonwealth there was a steady increase of masculinity from 1901 to 1906, with a sharp decrease in 1907, a further increase in 1908 and 1909, and a sharp increase in 1910:—

MASCULINITY[1] OF BIRTHS REGISTERED, COMMONWEALTH, 1901 to 1910.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
1901 ...	102.26	104.92	103.69	105.94	106.28	108.90	104.11
1902 ...	104.37	104.74	104.93	105.21	108.36	104.96	104.90
1903 ...	104.48	104.57	103.76	111.43	105.11	102.39	104.93
1904 ...	105.57	105.97	102.68	105.37	104.44	104.32	105.13
1905 ...	104.72	106.44	104.96	103.67	103.82	115.01	105.58
1906 ...	105.96	103.89	108.03	106.65	107.61	109.88	105.99
1907 ...	104.89	103.95	105.11	103.08	105.65	112.15	104.89
1908 ...	103.61	106.95	107.33	102.23	106.14	100.75	104.93
1909 ...	105.38	104.19	104.69	107.80	104.46	107.47	105.20
1910 ...	105.85	109.23	104.44	105.16	103.35	107.04	106.39

1. Number of males to each 100 females.

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 108.3 to 103.6, and from 107.9 to 101.6 for total and ex-nuptial births respectively.

MASCULINITY OF BIRTHS IN VARIOUS COUNTRIES.

Country.	Masculinity of Births.[1]		Country.	Masculinity of Births.[1]	
	All Live Births.	Ex-nuptial Live Births.		All Live Births.	Ex-nuptial Live Births.
Spain	108.3	107.9	German Empire ...	105.2	104.7
Rumania	107.7	103.4	Finland	105.0	105.2
Portugal	107.5	106.4	Hungary	105.0	102.9
Austria	105.8	105.5	Sweden	105.0	104.3
Italy	105.8	104.4	Denmark	104.8	105.0
Norway	105.8	105.9	Servia	104.7	103.5
Ireland	105.5	104.8	France	104.6	102.9
Netherlands	105.5	104.7	Belgium	104.5	102.2
Scotland	105.5	105.9	Switzerland ...	104.5	101.6
Russia, European ...	105.4	104.5	England	103.6	104.4

1. Number of males to each 100 females.

The masculinity of ex-nuptial births in the Commonwealth was as follows:—

MASCULINITY[1] OF EX-NUPTIAL BIRTHS REGISTERED, COMMONWEALTH, 1901 TO 1910.

Year.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
1901 ...	108.46	102.22	107.84	100.56	100.00	102.07	105.50
1902 ...	103.67	106.78	100.23	106.91	111.11	93.17	103.96
1903 ...	97.79	114.83	95.22	100.00	114.29	122.66	104.10
1904 ...	100.80	108.68	95.77	83.50	107.28	93.71	100.98
1905 ...	102.50	102.52	105.63	96.94	98.75	102.80	102.44
1906 ...	103.10	102.23	104.17	116.97	118.13	124.92	105.44
1907 ...	104.91	105.59	100.90	113.56	115.94	100.00	105.11
1908 ...	108.60	105.38	96.83	97.30	89.33	108.51	104.00
1909 ...	105.46	102.16	103.90	104.81	129.14	129.01	106.25
1910 ...	104.96	103.59	100.39	102.62	89.70	106.94	103.05

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 ex-nuptial births, where in South Australia in 1904 the masculinity was only 83.50. On the other hand it rose as high as 129.14 in Western Australia in 1909. Little weight, however, can be attached to these results on account of the small totals on which they are based.

6. **Ex-nuptiality of Births.**—The total ex-nuptial births fell from 1901 to 1903, then rose rapidly to 1908 and remained almost stationary till 1909, when the number again decreased. The total for 1910 was the lowest number recorded since 1906. See the table on the following page.

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, 1901 to 1910.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
1901	2,712	1,729	848	361	222	293	6,165
1902	2,497	1,677	859	389	247	311	5,980
1903	2,413	1,695	857	354	315	285	5,919
1904	2,755	1,707	971	367	313	308	6,421
1905	2,912	1,689	950	386	318	290	6,545
1906	2,882	1,721	1,076	358	373	308	6,718
1907	2,920	1,764	1,117	378	298	306	6,783
1908	2,887	1,793	1,118	438	337	294	6,867
1909	2,821	1,870	1,097	426	346	300	6,860
1910	2,853	1,759	1,034	464	313	298	6,721

(i.) *Rate of Ex-nuptiality, 1901 to 1910.* The rate of ex-nuptiality, *i.e.*, the percentage of ex-nuptial to total births, shews on the whole a slight increase from 1901 to 1905, with a decrease during the last five years, as the subjoined table shews :—

PERCENTAGE OF EX-NUPTIAL ON TOTAL BIRTHS, COMMONWEALTH, 1901 to 1910.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth
	%	%	%	%	%	%	%
1901	7.16	5.58	5.93	3.96	3.88	5.94	5.99
1902	6.60	5.51	6.04	4.35	3.96	6.12	5.82
1903	6.71	5.73	6.79	4.16	4.70	5.61	6.01
1904	7.12	5.74	6.90	4.02	4.36	5.82	6.17
1905	7.37	5.61	6.97	4.35	4.19	5.52	6.24
1906	7.04	5.58	7.68	4.00	4.78	5.78	6.23
1907	6.92	5.62	7.68	4.09	3.86	5.78	6.15
1908	6.80	5.77	7.54	4.47	4.35	5.24	6.16
1909	6.44	5.94	7.05	4.22	3.95	5.45	6.01
1910	6.28	5.59	6.39	4.38	4.13	5.33	5.84

A comparison of greater significance would be 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, but until the Census of 1911 has once more shewn the composition of the population, such a calculation would be liable to considerable error, and will, therefore, be deferred. The calculation has, however, been made for the three last 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 1000 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.

(ii.) *Causes of Increase.* 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,[1] COMMONWEALTH, 1901 TO 1910.[2]

Births.	1901.	1902.	1903.	1904.	1905.	1906.	1907.	1908.	1909.	1910.
Ex-nuptial ...	1.63	1.55	1.52	1.63	1.64	1.65	1.64	1.64	1.60	1.54
Nuptial ...	25.53	25.16	23.77	24.78	24.59	24.92	25.12	24.95	25.09	25.19
Total ...	27.16	26.71	25.29	26.41	26.23	26.57	26.76	26.59	26.69	26.73

1 Number of births per 1000 of mean population.
2. Rates corrected in view of Census Returns, 1911.

(iii.) *Ex-nuptiality—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 shewn below refer to three triennial periods, 1880-2, 1890-2, and 1900-2, and are given per thousand of the unmarried and widowed female population:—

EX-NUPTIAL BIRTHS PER THOUSAND OF UNMARRIED AND WIDOWED FEMALE POPULATION IN VARIOUS COUNTRIES.

Country.	Rate.			Country.	Rate.		
	1880-2.	1890-2.	1900-2.		1880-2.	1890-2.	1900-2.
	%	%	%		%	%	%
Ireland	4.4	3.9	3.8	Belgium	20.0	20.6	17.8
Netherlands ...	9.7	9.0	6.8	France	17.6	17.7	19.1
England and Wales ...	14.1	10.5	8.5	Italy	25.4	...	19.4
New Zealand ...	13.4	9.0	8.9	Russia	25.8	25.1	23.7
Switzerland	10.8	10.0	9.8	Denmark	26.9	24.5	24.2
Commonwealth ...	14.5	15.9	13.3	Sweden	22.6	22.9	24.3
Scotland	21.4	17.1	13.4	German Empire ...	29.6	28.7	27.4
Spain	16.0	17.5	15.5	Austria	43.4	42.7	40.1
Norway	19.7	16.9	17.2				

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. **Multiple Births.**—Among the total number of 116,801 births registered in the Commonwealth in 1910 there were 114,420 single births, 2342 twins, and 39 triplets. The number of cases of twins was 1176, ten children being still-born, and the number of cases of triplets 13. The total number of mothers was, therefore, 115,609, the proportion of mothers of twins being one in every 98, and of mothers of triplets one in every 8893 of total mothers. The proportion of multiple births is a fairly constant one. In 1907 they numbered 1043 out of a total of 109,306, or one in 105; in 1908, 1065, or one in 104; in 1909, 1142, or one in 99; and in 1910, 1189, or one in 99. The number of cases of triplets is so small that a slight alteration in the total will completely change the proportion. Thus, there were 14 cases in 1907, or one in 7872 of total mothers, as compared with one in 18,415 in 1908; one in 8066 in 1909, and one in 8893 in 1910.

8. **Ages of Parents.**—The relative ages of the parents of children registered in 1910 have been tabulated, 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. 25; Vital Statistics of the Commonwealth for the Year 1910." 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 both of single and of twin births occurred where the ages of both father and mother were between 25 and 29. The largest number of mothers was found at ages 25 to 29.

(a) AGES OF PARENTS IN CASES OF SINGLE BIRTHS, COMMONWEALTH, 1910.

Age.	Total Fathers.	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 Upwds.	Not Stated.
Ages of Fathers.										
Under 20 ...	352	1	214	129	8	...	...	...	...	...
20 to 24 ...	10,827	5	2,090	7,087	1,457	160	18	7	...	3
25 to 29 ...	25,716	...	1,121	10,493	11,729	2,061	279	29	...	4
30 to 34 ...	25,771	...	298	4,463	10,679	8,777	1,428	115	5	6
35 to 39 ...	20,963	...	105	1,461	5,014	7,835	5,900	631	15	2
40 to 44 ...	13,870	...	39	487	1,680	3,821	5,267	2,498	74	4
45 to 49 ...	7,149	...	18	170	623	1,251	2,594	2,187	306	...
50 to 54 ...	2,296	...	4	51	134	393	690	823	200	1
55 to 59 ...	583	...	...	10	48	113	160	176	76	...
60 to 64 ...	168	...	...	6	19	38	46	49	10	...
65 & upwards	95	...	...	1	12	21	31	22	8	...
Not stated ...	13	...	...	1	1	4	6	...	...	1
Mothers of nuptial children ...	107,803	6	3,889	24,359	31,401	24,474	16,419	6,537	694	21
Mothers of ex-nuptial children	6,617	23	1,801	2,545	1,146	569	324	142	20	47
Total mothers	114,420	29	5,690	26,904	32,550	25,043	16,743	6,679	714	68

(b) AGES OF PARENTS OF TWINS, COMMONWEALTH, 1910.

Age.	Total Fathers.	Ages of Mothers.						
		Under 20.	20 to 24.	25 to 29.	30 to 34.	35 to 39.	40 to 44.	45 & upwards.
Ages of Fathers.								
Under 20	2	2	...	...	...	...	...	...
20 to 24	74	8	48	17	1	...	...	...
25 to 29	226	3	65	131	25	2	...	...
30 to 34	281	...	33	100	124	21	3	...
35 to 39	219	...	9	42	81	80	7	...
40 to 44	184	...	2	10	43	99	29	1
45 to 49	107	...	1	8	16	49	30	3
50 to 54	18	...	...	...	5	8	5	...
55 to 59	8	1	...	...	1	3	2	1
60 to 64	4	...	...	...	1	1	2	...
65 and upwards	1	...	...	...	...	...	1	...
Not stated	1	...	1	...	...	...	...	...
Mothers of nuptial twins ...	1,125	14	159	308	297	263	79	5
Mothers of ex-nuptial ,, ...	51	8	16	13	9	4	1	...
Total mothers	1,176	22	175	321	306	267	80	5

(c) AGES OF PARENTS OF TRIPLETS, COMMONWEALTH, 1910.

Age.	Total Fathers.	Ages of Mothers.				
		20 to 24.	25 to 29.	30 to 34.	35 to 39.	40 to 44.
Ages of Fathers.						
20 to 24	1	1	...	...	...	...
25 to 29	4	...	2	1	1	...
30 to 34	1	...	...	1	...	...
35 to 39	2	...	...	1	1	...
40 to 44	2	...	...	...	...	2
45 to 49	1	...	1	...	...	...
50 to 54	1	...	...	...	1	...
Mothers of nuptial triplets	12	1	3	3	3	2
Mothers of ex-nuptial triplets	1	1	...	...	...	...
Total mothers	13	2	3	3	3	2

9. **Birthplaces of Parents.**—The relative birthplaces of the parents of children whose births were registered during the year 1910 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, 1910.

Birthplaces.	Fathers.			Mothers of Nuptial Children.			Mothers of Ex-nuptial Children.		
	Single Births.	Twins.	Triplets.	Single Births.	Twins.	Triplets.	Single Births.	Twins.	Triplets.
New South Wales ...	33,520	322	5	36,396	369	4	2,608	17	...
Victoria	29,493	304	2	30,296	323	3	1,732	11	1
Queensland ...	8,693	75	...	11,147	87	...	880	9	...
South Australia ...	11,463	141	2	11,958	134	2	512	3	...
Western Australia ...	1,286	12	...	1,651	16	...	100	1	...
Tasmania	4,996	51	...	5,255	46	...	353	4	...
New Zealand ...	1,262	12	...	1,077	20	1	47	2	...
Austria-Hungary ...	86	1	...	34	1	...	4	...	...
Belgium	6	...	...	1	...	...	...	...	...
Bulgaria	1	...	...	...	...	...	...	...	...
Channel Islands ...	26	1	...	6	...	...	...	1	...
Denmark	212	1	...	67	...	...	3	1	...
England	8,911	122	1	5,473	69	1	188	2	...
Finland	24	...	...	6	...	...	...	...	...
France	56	...	...	19	...	...	...	...	...
Germany	995	15	...	541	8	...	12	...	...
Gibraltar	3	...	...	1	...	...	...	...	...
Greece	38	1	...	11	...	...	...	...	...
Iceland	2	...	...	...	...	...	...	...	...
Ireland	2,310	17	1	1,477	7	1	40	...	...
Isle of Man ...	23	1	...	15	...	...	...	...	...
Italy	243	1	...	145	1	...	5	...	...
Malta	7	...	...	2	...	...	1	...	...
Netherlands ...	13	...	...	1	...	...	...	...	...
Norway	100	1	...	27	1	...	2	...	...
Portugal	4	...	...	...	...	...	1	...	...
Rumania	8	...	...	3	...	...	...	...	...
Russia	109	2	...	60	2	...	...	...	...
Scotland	2,125	23	1	1,233	25	...	47	...	...
Spain	15	...	...	4	...	...	...	...	...
Sweden	210	3	...	28	2	...	1	...	...
Switzerland ...	34	...	...	17	...	...	1	...	...
Turkey	14	...	...	10	...	...	...	...	...
Wales	312	2	...	187	2	...	5	...	...
Canada	75	1	...	27	2	...	2	...	...
Mexico	1	...	...	1	...	...	...	...	...
Newfoundland ...	...	...	...	2	...	...	...	...	...
United States ...	218	4	...	91	4	...	3	...	...
Bermudas	3	...	...	2	...	...	...	...	...
Central America ...	...	...	...	1	...	...	...	...	...
West Indies ...	17	...	...	4	...	...	...	...	...
Argentine Republic ...	3	...	...	...	...	...	...	...	...
Brazil	1	...	...	...	...	...	...	...	...
Chile	2	...	...	4	...	...	...	...	...
S.America,so described	11	...	...	4	...	...	1	...	...
Uruguay	...	...	...	1	...	...	...	...	...

BIRTHPLACES OF PARENTS OF CHILDREN—Continued.

Birthplace.	Fathers.			Mothers of Nuptial Children.			Mothers of Ex-nuptial Children.		
	Single Births.	Twins.	Triplets.	Single Births.	Twins.	Triplets.	Single Births.	Twins.	Triplets.
Afghanistan ...	4	...	...	...	...	...	...	...	...
Arabia	3	...	...	1	...	...	...	...	...
Asia Minor ...	2	...	...	1	...	...	...	...	...
Baluchistan ...	1	...	...	...	...	...	...	...	...
Burmah	2	1	...	1	...	...	...	...	...
Ceylon	18	...	...	6	...	...	...	...	...
China	178	...	...	66	...	...	4	...	...
Cochin China ...	1	...	...	...	...	...	...	...	...
Cyprus	1	...	...	1	...	...	...	...	...
Dutch East Indies ...	5	...	...	3	...	...	...	...	...
India	167	5	...	89	...	...	3	...	...
Japan	20	...	...	7	...	...	3	...	...
Malay States ...	1	...	...	...	...	...	...	...	...
Persia	1	...	...	1	...	...	...	...	...
Philippine Islands ...	7	...	...	2	...	...	1	...	...
Siam	1	...	...	...	...	...	...	...	...
Straits Settlements ...	9	...	...	3	...	...	...	...	...
Syria	116	3	...	100	4	...	...	...	...
Africa, so described ...	...	...	...	2	...	...	...	...	...
Cape of Good Hope ...	11	...	...	12	...	...	1	...	...
Egypt	6	...	...	3	...	...	...	...	...
Madagascar ...	1	...	...	...	...	...	...	...	...
Madeira	1	...	...	...	...	...	...	...	...
Mauritius	21	...	...	7	...	...	...	...	...
Natal	2	...	...	5	...	...	...	...	...
St. Helena	2	...	...	...	...	...	...	...	...
S. Africa, so described	59	...	...	67	1	...	1	...	...
Transvaal	1	...	...	1	...	...	1	...	...
Fanning Islands ...	...	...	...	1	...	...	...	...	...
Fiji	22	...	...	19	...	...	1	...	...
Friendly Islands ...	1	...	...	...	...	...	...	...	...
Hawaii	2	...	...	...	...	...	...	...	...
New Caledonia ...	14	...	...	10	...	...	3	...	...
New Hebrides ...	4	...	...	...	...	...	...	...	...
Samoa	3	...	...	1	...	...	...	...	...
South Sea Islands, so described ...	19	...	...	1	...	...	...	...	...
Born at sea ...	139	2	...	81	...	...	4	...	...
Birthplace not stated	27	1	...	27	1	...	47	...	...
Total	107,803	1,125	12	107,803	1,125	12	6,617	51	1

10. **Occupations of Fathers.**—A summary of the occupations of the fathers of all nuptial children, whose births were registered in 1910, will be found in the following table. The figures include all the States of the Commonwealth :—

OCCUPATIONS OF FATHERS OF ALL NUPTIAL CHILDREN, COMMONWEALTH, 1910.

Occupations.	Number of Fathers.
CLASS I.—PROFESSIONAL.	
General Government	593
Local Government	109
Defence	114
Law and Order	1,146
Religion	339
Charities	3
Health	801
Literature	187
Science	112
Engineering, Architecture, and Surveying	401
Education	758
Fine Arts	148
Music	140
Amusements	224
Total Professional	5,075
CLASS II.—DOMESTIC.	
Hotelkeepers and Assistants	852
Others engaged in providing board and lodging	178
House Servants	211
Coachmen and Grooms	320
Hairdressers	568
Laundrymen	50
Others engaged domestic occupat'ns	210
Total Domestic	2,389
CLASS III.—COMMERCIAL.	
Banking and Finance	370
Insurance and Valuation	472
Land and Household Property	126
Property Rights not otherwise clsd.	1
Books, Publications, Advertising	141
Musical Instruments	10
Prints and Pictures	2
Ornaments and Small Wares	5
Designs, Medals, Types	1
Sports and Games	1
Watches, Clocks, Jewellery	6
Surgical Instruments	1
Machinery	43
Carriages and Vehicles	40
Harness and Saddlery	6
Ships, Boats, Marine Stores	8
Building Materials	6
Furniture	41
Chemicals	6
Paper and Stationery	65
Textile Fabrics	829
Dress	170
Fibrous Materials	10
Animal Food	2,209
Vegetable Food	697
Groceries, Drinks, Narcotics, and Stimulants	1,153
Living Animals	330
Manures	1
Leather	26
Wool and Tallow	63
Hay, Corn, etc.	255
Other Vegetable Matter	186
Wood and Coal	201
Glass and Earthenware	26
Gold, Silver, and Precious Stones	10
Ironmongery	243
Merchants, etc.	279
Shopkeepers and Assistants	1,080
Dealers and Hawkers	380
Agents and Brokers	504
Clerks, Bookkeepers, etc.	2,563
Commercial Travellers, Salesmen	1,194
Others engaged in Commercial Pursuits	704
Speculators on Chance Events	38
Storage	13
Total Commercial	14,515
CLASS IV.—TRANSPORT AND COMMUNICATION.	
Railway Traffic	3,346
Tramway Traffic	866
Road Traffic	4,324
Sea and River Traffic	1,546
Postal Service	422
Telegraph and Telephone Service	397
Messengers, etc.	8
Total Transport & Communication	10,909
CLASS V.—INDUSTRIAL.	
Books and Publications	828
Musical Instruments	47
Prints and Pictures	75
Ornaments and Small Wares	107
Equipment for Sports and Games	5
Designs, Medals, Type	26
Watches and Clocks	138
Surgical Instruments	7
Arms and Ammunition	12
Engines and Machinery	1,003
Carriages and Vehicles	810
Harness and Saddlery	458
Ships and Boats	120
Furniture	483
Building Materials	602
Chemicals	45
Textile Fabrics	54
Dress	1,941
Fibrous Materials	37
Animal Food	338
Vegetable Food	1,502
Groceries, Drinks, Narcotics, and Stimulants	451
Animal Matter	435
Workers in wood not elsewhere clsd.	70
Fodder	9
Paper	25
Stone, Clay, Glass	630

OCCUPATIONS OF FATHERS OF ALL NUPTIAL CHILDREN—Continued.

Occupations.	Number of Fathers.	Occupations.	Number of Fathers.
Jewellery and Precious Stones ...	206	CLASS VI.—AGRICULTURAL, PASTORAL, MINING, ETC.	
Metals, other than Gold & Silver	2,998	Agricultural	19,096
Gas, Electric Lighting ...	433	Pastoral	3,568
Building—		Dairying	1,256
Builders	348	Fisheries, Capture and Destruction of Wild Animals, or acquisition of Products yielded thereby	366
Stonemasons	250	Forestry	685
Bricklayers	517	Water Conservation and Supply	109
Carpenters	2,565	Mines and Quarries	7,787
Slaters	25	Total Primary Producers ...	32,867
Plasterers	216	CLASS VII.—INDEFINITE.	
Painters	1,211	Independent Means	140
Plumbers	705	Students	5
Others	77	Occupation not stated	30
Roads, Railways, Earthworks ...	248	Total Indefinite	175
Disposal of the Dead	38		
Disposal of Refuse	225		
Other Industrial Workers—			
Manufacturers	359		
Engineers, Firemen	2,639		
Contractors	1,152		
Labourers	18,353		
Others	187		
Total Industrial	43,010	Total all Occupations ...	108,940

11. **Mothers' 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 1910 was 108,940, viz., 107,803 single births, 1125 cases of twins, and 13 cases of triplets. From this number 349 mothers must be deducted, viz., 274 in whose case the necessary particulars either as to date of marriage or as to previous issue were not stated, while 75 registrations of births under the New South Wales Legitimation Act are also excluded. The tables refer, therefore, to a total of 108,591 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. 25; Vital Statistics of the Commonwealth for the Year 1910."

DURATION OF MARRIAGE AND ISSUE OF MOTHERS OF ALL AGES.

COMMONWEALTH, 1910.

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 ...	17,578	17,836	1.01	18-19 ...	1,450	10,905	7.52
1- 2 ...	7,663	8,545	1.12	19-20 ...	1,335	10,602	7.94
2- 3 ...	7,980	14,541	1.80	20-21 ...	1,159	9,701	8.37
3- 4 ...	9,620	20,268	2.11	21-22 ...	846	7,376	8.72
4- 5 ...	8,002	20,239	2.53	22-23 ...	654	6,063	9.27
5- 6 ...	7,191	20,998	2.92	23-24 ...	498	4,809	9.66
6- 7 ...	6,417	21,254	3.31	24-25 ...	398	4,044	10.16
7- 8 ...	5,299	19,230	3.63	25-26 ...	262	2,693	10.28
8- 9 ...	5,177	20,681	3.99	26-27 ...	173	1,872	10.82
9-10 ...	4,535	19,856	4.38	27-28 ...	98	1,025	10.46
10-11 ...	4,533	21,454	4.93	28-29 ...	67	751	11.21
11-12 ...	3,643	18,723	5.14	29-30 ...	30	350	11.67
12-13 ...	3,213	17,658	5.49	30-31 ...	13	153	10.77
13-14 ...	2,823	16,445	5.82	31-32 ...	6	67	11.16
14-15 ...	2,444	15,034	6.15	32-33 ...	4	49	12.25
15-16 ...	2,114	13,700	6.48				
16-17 ...	1,751	11,956	6.82	Total	108,591	370,536	3.41
17-18 ...	1,615	11,658	7.22				

AGES AND ISSUES OF MOTHERS, COMMONWEALTH, 1910.

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	3,864	4,665	1.21	40-44 years ...	6,602	46,725	7.08
20-24 years ...	24,442	43,488	1.78	45 yrs. and over	694	6,202	8.94
25-29 ,, ...	31,634	84,688	2.68				
30-34 ,, ...	24,707	95,994	3.88				
35-39 ,, ...	16,648	88,774	5.33	All ages ...	108,591	370,536	3.41

PREVIOUS ISSUE OF MOTHERS OF VARIOUS AGES, COMMONWEALTH, 1910.

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	3,150	12,045	8,357	3,235	1,156	252	16	28,211
1	648	7,612	8,139	4,007	1,376	291	11	22,084
2	61	3,441	6,664	4,446	1,927	434	21	16,994
3	3	1,058	4,673	4,204	2,298	536	31	12,803
4	2	222	2,368	3,551	2,378	641	45	9,207
5	...	54	979	2,432	2,191	705	45	6,406
6	...	7	334	1,551	1,885	782	50	4,609
7	...	3	95	758	1,406	702	78	3,042
8	...	...	12	324	962	714	92	2,104
9	...	...	9	125	602	607	70	1,413
10	...	...	3	52	263	402	78	798
11	...	...	...	12	120	262	40	434
12	...	...	1	4	51	146	53	255
13	...	...	...	2	26	69	36	133
14	...	...	...	3	6	36	14	59
15	...	...	...	1	...	20	7	28
16	...	...	...	...	1	2	4	7
17	...	...	...	...	...	1	3	4
Total Mothers	3,864	24,442	31,634	24,707	16,648	6,602	694	108,591

The tables shew a fairly regular increase in the number of children up to the period where the marriage has lasted twenty-one years, and it appears that the average interval between successive confinements up to that period was rather less than two and a half years. One mother of the age-group 40 to 44 years, had her seventeenth child in the twenty-fifth year of her marriage. The average number of children of all marriages was 3.41, the corresponding figure for 1909 having been 3.42.

A similar table has been prepared shewing the previous issue of mothers of twins and triplets, from which it appears that 241 mothers had twins at their first confinement; 173 at their second; 177 at their third; 154 at their fourth; 111 at their fifth; 77 at their sixth; 70 at their seventh; 40 at their eighth; 36 at their ninth; 19 at their tenth; 14 at their eleventh; 5 at their twelfth; 4 at their thirteenth; 1 at her fourteenth; 2 at their fifteenth; and one at her sixteenth.

Of the twelve cases of triplets 5 occurred at the first confinement; 1 at the third; 2 at the fourth; 1 at the fifth; 1 at the sixth; 1 at the seventh; and 1 at the tenth.

12. **Interval between Marriage and First Birth.**—The following table shews 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, 1910.

Interval.	Number of First Children.	Interval.	Number of First Children.	Interval.	Number of First Children.
Under 1 month	474	1 year	6,919	13 years	16
1 month	565	2 years	1,882	14 ,,	6
2 months	849	3 ,,	803	15 ,,	11
3 ,,	987	4 ,,	387	16 ,,	4
4 ,,	1,231	5 ,,	230	17 ,,	3
5 ,,	1,441	6 ,,	120	18 ,,	3
6 ,,	1,784	7 ,,	101	19 ,,	1
7 ,,	1,435	8 ,,	70	20 ,,	1
8 ,,	1,255	9 ,,	51	24 ,,	1
9 ,,	3,314	10 ,,	37	25 ,,	1
10 ,,	2,439	11 ,,	23		
11 ,,	1,747	12 ,,	20	Total	28,211

Of these 28,211 children 14,604 were males and 13,607 were females; the masculinity of first births was therefore 107.33 as compared with 106.39 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 shews 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 as 9 is to 10. At all ages up to 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, 1910.

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.
Years.						
12 ...	2	...	2	...	...	2
13 ...	6	1	7	...	1	7
14 ...	15	4	19	1	5	20
15 ...	64	15	79	1	16	80
16 ...	177	104	281	13	117	294
17 ...	353	358	711	63	421	774
18 ...	569	717	1,286	241	958	1,527
19 ...	646	1,077	1,723	555	1,632	2,278
20 ...	645	1,104	1,749	841	1,945	2,590
21 ...	627	1,310	1,937	1,106	2,416	3,043
22 ...	479	1,110	1,589	1,562	2,672	3,151
23 ...	448	942	1,390	1,734	2,676	3,124
24 ...	363	691	1,054	1,645	2,336	2,699
25 ...	316	616	932	1,667	2,283	2,599
26 ...	264	456	720	1,469	1,925	2,189
27 ...	195	330	525	1,292	1,622	1,817

AGES OF MOTHERS AND INTERVAL BETWEEN MARRIAGE AND FIRST BIRTH—Cont.

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.
Years.						
28 ...	210	266	476	1,128	1,394	1,604
29 ...	174	210	384	923	1,133	1,307
30 ...	184	166	350	874	1,040	1,224
31 ...	88	117	205	589	706	794
32 ...	118	88	206	512	600	718
33 ...	105	82	187	436	518	623
34 ...	83	61	144	310	371	454
35 ...	75	36	111	293	329	404
36 ...	68	44	112	229	273	341
37 ...	61	26	87	178	204	265
38 ...	72	26	98	162	188	260
39 ...	52	28	80	134	162	214
40 ...	58	14	72	89	103	161
41 ...	26	5	31	48	53	79
42 ...	31	8	39	41	49	80
43 ...	17	6	23	23	29	46
44 ...	11	1	12	17	18	29
45 ...	7	1	8	10	11	18
46 ...	7	...	7	1	1	8
47 ...	2	...	2	1	1	3
48 ...	1	...	1	...	...	1
49 ...	3	...	3	1	1	4
50 ...	...	1	1	1	2	2
Not stated	47	...	47	...	...	47
Total ...	6,669	10,021	16,690	18,190	28,211	34,880

§ 2. Marriages.

1. **Marriages, 1901 to 1910.**—The number of marriages registered in the Commonwealth in 1910 was 36,592, 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 until 1907, 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. In 1908 all the States, with the exception of New South Wales and Tasmania, had a lower marriage rate than in 1907, but the rate recovered in 1909 and 1910, and was considerably higher in the latter year than in 1907 in all the States with the exception of Western Australia. The number of marriages in each State since 1901 is shewn below. The rate for 1910 was the highest experienced since 1864.

TOTAL MARRIAGES, COMMONWEALTH, 1901 to 1910.

Year.	N.S.W.	Victoria.	Qld.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
1901 ...	10,538	8,406	3,341	2,309	1,821	1,338	27,753
1902 ...	10,486	8,477	3,243	2,383	2,024	1,313	27,926
1903 ...	9,759	7,605	2,933	2,272	2,064	1,344	25,977
1904 ...	10,424	8,210	3,078	2,534	2,088	1,350	27,684
1905 ...	10,970	8,774	3,173	2,599	2,123	1,365	29,004
1906 ...	11,551	8,930	3,588	2,681	2,261	1,399	30,410
1907 ...	12,187	9,575	4,105	3,079	2,114	1,410	32,470
1908 ...	12,641	9,335	4,009	3,122	2,012	1,432	32,551
1909 ...	13,025	9,431	4,543	3,285	1,997	1,494	33,775
1910 ...	14,307	10,239	4,768	3,678	2,107	1,493	36,592

2. **Marriage Rates, 1901 to 1910.**—The number of marriages registered per thousand of mean population is shewn in the following table for the same period :—

CRUDE MARRIAGE RATE,[1] COMMONWEALTH, 1901 to 1910.[2]

Year.	N.S.W.	Victoria.	Qld.	S. Aust.	W. Aust.	Tasmania	C wealth.
1901 ...	7.73	6.99	6.66	6.38	9.68	7.76	7.32
1902 ...	7.55	7.02	6.35	6.61	9.89	7.50	7.26
1903 ...	6.88	6.31	5.70	6.31	9.40	7.45	6.67
1904 ...	7.24	6.83	5.90	7.02	8.92	7.38	7.02
1905 ...	7.46	7.28	6.00	7.14	8.61	7.40	7.25
1906 ...	7.68	7.36	6.69	7.30	8.89	7.59	7.49
1907 ...	7.89	7.81	7.56	8.29	8.27	7.63	7.87
1908 ...	8.03	7.53	7.24	8.18	7.80	7.64	7.76
1909 ...	8.15	7.48	7.97	8.38	7.59	7.85	7.90
1910 ...	8.76	7.98	8.06	9.17	7.77	7.82	8.37

1. Number of marriages (not persons married) per 1000 of mean annual population.
2. Rates corrected in view of Census Returns, 1911.

As in some international tabulations the marriage rates are calculated per 1000 of the unmarried population of 15 years and over, the corresponding rates have been worked out for the Commonwealth for the three 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. These rates refer, of course, to persons married and not to marriages, as do the rates in the preceding table.

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, almost identical with those of Central and Western Europe, and higher than those of the North of Europe :—

CRUDE MARRIAGE RATES.—VARIOUS COUNTRIES.[1]

Country.	Year.	Crude Marriage Rate.	Country.	Year.	Crude Marriage Rate.
Canada (Ontario) ...	1908	9.45	Italy	1909	7.70
Rumania	1909	9.35	Austria	1908	7.60
Servia	1909	9.35	England and Wales ...	1909	7.30
Russia	1903	8.90	Denmark	1909	7.30
Bulgaria	1908	8.85	Netherlands ...	1909	7.05
Hungary	1909	8.50	Spain	1909	6.50
Commonwealth ...	1910	8.37	Finland	1909	6.40
New Zealand... ...	1910	8.30	Scotland	1909	6.15
German Empire ...	1908	7.95	Norway	1909	6.00
France	1909	7.85	Sweden	1909	5.95
Belgium	1908	7.80	Ireland	1909	5.20
Switzerland	1908	7.80			

1. Rates corrected in view of Census Returns, 1911.

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 1386 males were married during 1910 who were less than twenty-one years of age. The corresponding number of females was 7629, of whom six were widows and three were divorced. At the other extreme there were thirty men of sixty-five years and upwards, who described themselves as bachelors, and nine spinsters of corresponding ages.

AGES AND CONJUGAL CONDITION OF PERSONS MARRIED, 1910.

COMMONWEALTH.

Age at Marriage.	Bridegrooms.				Brides.			
	Bachelors	Widowers	Divorced.	Total.	Spinsters.	Widows.	Divorced.	Total.
14 years ...	...	...	...	...	7	...	...	7
15 ,, ...	1	...	...	1	64	...	...	64
16 ,, ...	4	...	...	4	275	...	...	275
17 ,, ...	26	...	...	26	828	1	1	830
18 ,, ...	143	...	...	143	1,625	1	...	1,626
19 ,, ...	401	...	...	401	2,273	2	...	2,275
20 ,, ...	811	...	...	811	2,548	2	2	2,552
21 ,, ...	2,137	1	...	2,138	3,859	7	3	3,869
22 ,, ...	2,406	...	...	2,406	3,477	16	8	3,501
23 ,, ...	2,896	7	1	2,904	3,126	8	5	3,139
24 ,, ...	2,901	6	1	2,908	2,727	26	4	2,757
25 ,, ...	2,999	24	3	3,026	2,471	36	9	2,516
26 ,, ...	2,767	26	4	2,797	2,198	44	11	2,253
27 ,, ...	2,410	25	4	2,439	1,611	36	7	1,654
28 ,, ...	2,229	42	6	2,277	1,332	52	13	1,397
29 ,, ...	1,842	33	8	1,883	1,140	48	12	1,200
30 ,, ...	1,620	55	4	1,679	939	56	14	1,009
31 ,, ...	1,165	43	7	1,215	649	51	17	717
32 ,, ...	1,144	51	7	1,202	581	63	9	653
33 ,, ...	851	62	6	919	457	65	14	536
34 ,, ...	748	48	6	802	374	73	18	465
35 ,, ...	679	60	15	754	341	70	12	423
36 ,, ...	532	73	4	609	272	80	12	364
37 ,, ...	490	50	9	549	221	83	14	318
38 ,, ...	496	81	9	586	192	86	12	290
39 ,, ...	389	87	15	491	173	80	6	259
40 ,, ...	340	82	5	427	121	83	5	209
41 ,, ...	222	62	3	287	102	39	6	147
42 ,, ...	236	72	15	323	95	48	7	150
43 ,, ...	169	79	9	257	69	68	3	140
44 ,, ...	162	63	4	229	58	51	6	115
45 ,, ...	142	76	9	227	43	72	9	124
46 ,, ...	134	75	2	211	36	55	4	95
47 ,, ...	109	63	5	177	35	49	1	85
48 ,, ...	82	77	7	166	21	41	5	67
49 ,, ...	87	65	...	152	23	38	...	61
50 ,, ...	71	57	7	135	18	50	4	72
51 ,, ...	45	53	5	103	6	32	2	40
52 ,, ...	42	56	3	101	14	25	...	39
53 ,, ...	31	53	...	84	3	32	2	37
54 ,, ...	29	44	5	78	11	21	...	32
55 ,, ...	22	50	1	73	5	19	1	25
56 ,, ...	29	39	...	68	5	25	...	30
57 ,, ...	7	23	1	31	...	14	...	14
58 ,, ...	20	34	...	54	3	14	...	17
59 ,, ...	10	32	...	42	1	8	...	9
60 ,, ...	13	35	1	49	2	17	...	19
61 ,, ...	6	26	...	32	1	9	...	10
62 ,, ...	9	31	...	40	5	8	...	13
63 ,, ...	6	19	...	25	2	9	...	11
64 ,, ...	2	22	...	24	1	7	...	8
65 ,, ...	3	31	2	36	2	15	1	18
66 ,, ...	4	18	...	22	5	7	...	12
67 ,, ...	2	18	1	21	...	7	...	7
68 ,, ...	7	20	2	29	...	7	...	7
69 ,, ...	1	11	...	12	1	3	...	4
70 ,, ...	1	19	1	21	...	5	...	5

AGES AND CONJUGAL CONDITION OF PERSONS MARRIED, 1910—Continued.
COMMONWEALTH.

Age at Marriage.	Bridegrooms.				Brides.			
	Bachelors	Widowers	Divorced.	Total.	Spinsters.	Widows.	Divorced.	Total.
71 years ...	2	9	...	11	...	...	...	...
72 „ ...	...	9	...	9	...	2	...	2
73 „ ...	2	11	...	13	...	3	...	3
74 „ ...	3	7	...	10	...	...	...	...
75 „ ...	1	6	...	7	1	3	...	4
76 „ ...	...	7	...	7	...	...	...	...
77 „ ...	2	2	...	4	...	...	...	...
78 „ ...	1	1	...	2	...	...	...	...
79 „ ...	...	2	...	2	...	...	...	...
80 „ ...	1	4	1	6	...	1	...	1
82 „ ...	...	2	...	2	...	2	...	2
83 „ ...	...	2	...	2	...	1	...	1
85 „ ...	...	1	...	1	...	...	...	...
95 „ ...	...	1	...	1	...	...	...	...
99 „ ...	1	...	...	1	...	...	...	...
Not stated ...	7	1	...	8	8	...	...	8
Total ...	34,150	2,244	198	36,592	34,457	1,876	259	36,592

(*b*) The relative ages of bridegrooms and brides are shewn for single years in "Bulletin of Population and Vital Statistics, No. 25"; a condensation into age-groups of five years is here given :—

RELATIVE AGES OF PERSONS MARRIED, COMMONWEALTH, 1910.

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 Upwds.	Not Stated.
Ages of Bridegrooms.	Under 20 ...	575	1	397	165	9	3	...	...	...	...
	20 to 24 ...	11,167	3	2,820	6,767	1,363	168	35	7	4	...
	25 to 29 ...	12,422	1	1,315	5,990	4,142	767	163	31	13	...
	30 to 34 ...	5,817	1	370	1,915	2,061	1,119	280	49	21	1
	35 to 39 ...	2,989	1	106	668	911	676	452	128	45	2
	40 to 44 ...	1,523	...	36	201	314	373	312	209	78	...
	45 to 49 ...	933	...	14	74	141	159	223	160	162	...
	50 to 54 ...	501	...	6	19	49	79	108	83	157	...
	55 to 59 ...	268	...	3	12	16	16	40	52	129	...
	60 to 64 ...	170	...	1	5	10	8	25	22	99	...
	65 and upwards	219	...	1	1	4	12	16	20	165	...
	Not stated ...	8	...	1	1	...	...	...	...	1	5
Total Brides ...		36,592	7	5,070	15,818	9,020	3,380	1,654	761	874	8

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 1910, was shewn. In the following table the relative conjugal condition of the contracting parties is given :—

RELATIVE CONJUGAL CONDITION OF PERSONS MARRIED, COMMONWEALTH, 1910.

Conjugal Condition.		Total Bridegrooms.	Brides.		
			Spinsters.	Widows.	Divorced.
Bridegrooms	Bachelors ...	34,150	32,786	1,168	196
	Widowers ...	2,244	1,531	666	47
	Divorced ...	198	140	42	16
Total Brides		36,592	34,457	1,876	259

6. **Birthplaces of Persons Married.**—Information as to the birthplaces of persons who were married in 1910 was not obtained in the State of Western Australia; the following figures refer, therefore, only to New South Wales, Victoria, Queensland, South Australia and Tasmania. As might be expected, there were more brides than bridegrooms who were natives of the Commonwealth. In "Bulletin No. 25 of Population and Vital Statistics" the relative birthplaces of bridegrooms and brides will be found tabulated.

BIRTHPLACES OF PERSONS MARRIED, 1910.

COMMONWEALTH.[1]

Birthplaces.	Bride-grooms.	Brides.	Birthplaces.	Bride-grooms.	Brides.
New South Wales ...	11,274	12,337	Argentine	1	...
Victoria	9,450	9,851	British Guiana ...	1	...
Queensland	3,162	3,967	Peru	1	...
South Australia ...	3,775	3,824	S. America, so described	2	1
Western Australia ...	36	19	Uruguay	...	1
Tasmania	1,504	1,611			
			Afghanistan ...	4	...
New Zealand	405	327	Asia Minor	1	...
			Ceylon	7	...
Austria-Hungary ...	23	7	China	49	10
Belgium	4	1	Dutch East Indies ...	5	1
Channel Islands ...	10	4	India	62	22
Denmark	68	14	Japan	14	4
England	2,634	1,459	Philippine Islands ...	5	1
Finland	6	2	Straits Settlements ...	2	1
France	19	20	Syria	22	9
Germany	241	99			
Greece	11	2	Cape of Good Hope ...	3	2
Ireland	500	347	Egypt	5	1
Isle of Man	4	...	Madagascar	1	1
Italy	53	19	Mauritius	7	2
Malta	2	...	S. Africa (so described)	33	14
Netherlands	11	1			
Norway	31	4	Fiji	11	4
Portugal	2	...	Friendly Islands ...	1	...
Rumania	1	1	New Caledonia ...	6	2
Russia	30	8	New Hebrides ...	2	...
Scotland	670	333	Norfolk Islands ...	1	...
Spain	7	1	Samoa	2	...
Sweden	37	8	Society Islands ...	1	...
Switzerland	9	4	Solomon Islands ...	2	...
Turkey	6	1	S. Sea Is. (so describ'd)	9	2
Wales	73	56			
			Born at sea ...	33	15
Canada	20	11			
Mexico	...	2	Birthplace not stated	11	17
Newfoundland ...	...	...			
United States	99	35			
West Indies	4	...	Total	34,485	34,485

1. 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 1907, 1908, 1909, and 1910. In "Bulletin No. 25" the 1910 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 28.29 in the Manufacturing class to 32.33 years in the Pastoral class. The averages, calculated on the basis of the 1907, 1908 and 1909 figures, have been added for the purposes of comparison. The figures for four years are, however, rather small to allow of definite conclusions being drawn. The results obtained are shewn in the following table:—

OCCUPATIONS AND AGES OF BRIDEGROOMS, COMMONWEALTH, 1910.

Ages at Marriage.	Professional.	Domestic.	Mercantile.	Transport and Communication.	Industrial.			Primary Producers.				Indefinite.
					Manufacturing.	Building and Construction.	Indefinite Industrial Workers.	Agricultural.	Pastoral.	Mines and Quarries.	Other Primary Producers.	
15 years	...	...	...	...	...	...	...	1	...	...	...	...
16 „	...	...	...	...	1	...	2	...	...	1	...	...
17 „	...	1	2	2	5	1	9	4	...	2	...	...
18 „	1	3	26	20	37	5	36	7	3	4	1	...
19 „	8	5	62	40	80	25	124	25	7	21	4	...
20 „	15	13	99	83	159	73	236	68	7	51	7	...
21 „	52	52	291	250	369	142	561	210	43	158	7	3
22 „	77	70	331	280	402	168	633	240	47	138	19	1
23 „	109	71	408	314	440	205	706	375	56	181	30	9
24 „	165	59	439	290	447	220	656	372	84	159	14	3
25 „	179	67	527	327	436	183	618	424	84	160	16	5
26 „	165	64	493	251	385	187	585	424	85	137	16	5
27 „	151	60	439	225	332	121	473	402	84	133	14	5
28 „	138	57	439	192	276	120	469	363	83	123	14	3
29 „	131	34	383	179	209	86	368	299	80	96	16	2
30 „	124	42	290	143	207	79	321	304	76	83	9	1
31 „	83	22	207	98	119	50	240	253	58	73	11	1
32 „	86	27	208	106	132	49	227	236	57	61	13	...
33 „	65	23	165	64	103	53	167	172	48	49	10	...
34 „	59	10	153	67	80	29	137	166	48	47	5	1
35 to 39 years	242	80	505	205	292	124	601	564	165	170	28	13
40 „ 44 „	119	41	251	108	137	87	304	294	92	80	6	4
45 „ 49 „	60	26	146	70	89	47	196	167	52	62	9	9
50 years and upwards ...	74	34	159	83	132	77	205	209	65	48	10	62
Not stated	2	...	3	...	1	...	...	1	...	...	...	1
Total ...	2,105	861	6,026	3,397	4,870	2,131	7,874	5,580	1,324	2,037	259	128
Average age—years (1910)	31.19	30.07	29.73	28.51	28.29	28.88	28.90	30.94	32.33	29.25	30.23	45.47
„ „ „ (1909)	31.25	30.09	29.80	28.61	28.40	29.12	28.86	31.07	33.10	28.78	28.89	39.88
„ „ „ (1908)	31.01	30.62	29.77	28.83	28.46	29.02	28.89	30.96	32.63	29.00	29.33	41.12
„ „ „ (1907)	31.26	30.12	29.74	28.90	28.01	29.71	28.76	30.93	32.55	29.03	29.19	38.26

The average age at marriage of brides has slowly risen from 25.56 years in 1907 to 25.77 years in 1910. The figures for the four years are:—1907, 25.56 years; 1908, 25.67 years; 1909, 25.74 years; and 1910, 25.77 years, while for the four years combined the average age was 25.69 years.

8. **Fertility of Marriages.**—The quotient obtained by division of the nuptial births registered, say during the five years 1906 to 1910, by the number of marriages registered during the five years 1901 to 1905; *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 4.05, or in other words, the number of children to be expected from every marriage in the Commonwealth is four. This method, while not professing any claim to accuracy, furnishes results which agree fairly well with those found by more elaborate and careful investigation.

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 percentage of marriages celebrated by ministers of religion has increased from 96.25 per cent. in 1901 to 97.18 per cent. in 1910. The figures for the individual States in 1910 were: New South Wales, 98.03 per cent.; Victoria, 98.41 per cent.; Queensland, 95.91 per cent.; South Australia, 96.03 per cent.; Western Australia, 89.75

per cent.; and Tasmania, 98.85 per cent. The registered ministers in 1910 belonged to forty 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." The figures for 1910 are shewn in the following table:—

MARRIAGES IN EACH DENOMINATION, COMMONWEALTH, 1910.

Denomination.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	C'wlth.
Church of England	5,883	2,517	1,214	807	807	525	11,753
Roman Catholic Church ...	2,619	1,720	937	394	356	227	6,253
Presbyterian Church of Australia	1,993	1,873	685	171	171	143	5,036
Free Presbyterian Church ...	...	...	...	3	...	...	3
Independent Presbyterian Church	...	219	...	...	...	...	219
Welsh Presbyterian Church ...	...	7	...	...	...	...	7
Methodist Church	1,772	1,569	872	1,238	377	263	6,091
Congregational Church ...	1,012	1,149	125	191	70	167	2,714
Baptist Church	226	432	246	239	47	128	1,318
German Baptist Church ...	...	...	10	...	...	...	10
Particular Baptist Church ...	2	...	...	...	...	...	2
Church of Christ	316	207	19	165	30	5	742
Christian Brethren	7	...	...	28	...	...	35
Lutheran Church	25	81	164	218	6	...	494
Evangelical Lutheran Church ...	4	...	3	...	...	...	7
German Lutheran Church ...	5	...	20	...	...	...	25
Greek Orthodox Church ...	1	4	...	...	...	...	5
Australian Church	...	29	...	...	...	...	29
Unitarian Church	10	4	...	7	...	...	21
Moravian Church	...	1	1	...	...	...	2
Apostolic Church	...	...	5	...	...	...	5
Catholic Apostolic Church ...	2	3	5	...	1	...	11
Christadelphians	7	...	...	...	...	...	7
Welsh Protestant Church ...	...	1	2	...	...	...	3
Salvation Army	71	43	33	31	18	7	203
Seventh-Day Adventists ...	9	7	2	10	5	3	36
Latter-Day Saints	14	5	...	5	...	...	24
New Church	...	1	1	...	...	...	2
Free Church	2	...	...	...	...	...	2
Free Christian Church... ...	...	89	...	...	...	...	89
United Christian Church ...	...	1	...	...	...	...	1
Christian Assembly	...	...	11	...	...	...	11
Society of Friends	...	...	...	...	...	1	1
City Mission	...	...	...	23	...	...	23
Ballarat Town Mission ...	...	78	...	...	...	...	78
Joyful News Mission	...	...	191	...	...	...	191
Helping Hand Mission ...	...	...	...	...	...	7	7
Aboriginal Mission	5	...	...	...	...	...	5
West End Mission	...	...	9	...	...	...	9
Jewish	37	37	3	2	3	...	82
Registrar's Office	285	162	205	146	216	17	1,031
Not stated	...	...	5	...	...	...	5
Total	14,307	10,239	4,768	3,678	2,107	1,493	36,592

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, 1901 to 1910.* For a number of years, with the exception of 1905, 1908 and 1910, mark signatures by males have been slightly more numerous than those by females, the percentages for the Commonwealth during the past ten years having been as follows :—

PERCENTAGE OF MARK SIGNATURES AT MARRIAGE, COMMONWEALTH, 1901 to 1910.

Year. ...	1901.	1902.	1903.	1904.	1905.	1906.	1907.	1908.	1909.	1910.
Male...	1.35	1.21	1.17	0.95	0.91	0.92	0.81	0.71	0.65	0.56
Female	1.29	1.11	1.02	0.91	0.93	0.86	0.70	0.73	0.62	0.59

(ii.) *Mark Signatures in Commonwealth States, 1901 to 1910.* The following table shews that while the Tasmanian percentage has been the highest, and the Victorian the lowest, in each of the ten years under review, there has been a marked decrease in every State :—

PERCENTAGE OF MARK SIGNATURES AT MARRIAGE, COMMONWEALTH, 1901 to 1910.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
1901 ...	1.34	0.53	2.56	0.95	0.99	4.11	1.32
1902 ...	1.22	0.61	1.93	1.15	0.69	3.12	1.16
1903 ...	1.10	0.60	1.86	1.32	0.75	2.38	1.10
1904 ...	0.90	0.54	1.72	0.65	0.53	2.85	0.93
1905 ...	1.12	0.44	1.39	0.83	0.57	2.12	0.92
1906 ...	0.94	0.43	1.67	0.67	0.66	2.18	0.89
1907 ...	0.87	0.36	1.14	0.55	0.64	2.02	0.76
1908 ...	0.79	0.33	1.20	0.56	0.82	1.57	0.72
1909 ...	0.60	0.22	1.16	0.64	0.68	2.07	0.64
1910 ...	0.61	0.29	0.92	0.57	0.52	1.17	0.58

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 1910.**—The total number of deaths registered in the Commonwealth from 1901 to 1910 inclusive, gives an annual average of 26,209 males and 19,252 females, the details being as follows :—

MALE DEATHS, COMMONWEALTH, 1901 to 1910.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
1901	9,327	9,035	3,838	2,289	1,653	1,001	27,143
1902	9,535	9,152	3,924	2,389	1,832	1,044	27,876
1903	9,428	8,626	3,951	2,242	1,829	1,136	27,212
1904	8,733	7,992	3,259	2,071	1,823	1,061	24,939
1905	8,709	8,273	3,499	2,041	1,728	1,061	25,311
1906	8,715	8,342	3,212	2,109	1,878	1,118	25,374
1907	9,444	7,977	3,482	2,087	1,866	1,083	25,939
1908	9,298	8,816	3,500	2,106	1,800	1,112	26,632
1909	9,184	8,070	3,419	2,140	1,671	1,030	25,514
1910	9,339	8,128	3,594	2,235	1,760	1,098	26,154
Rate,* 1910 ...	10.94	12.81	11.15	10.95	11.39	11.26	11.54

* Number of deaths per 1000 of mean population.

FEMALE DEATHS, COMMONWEALTH, 1901 to 1910.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
1901	6,694	6,869	2,169	1,776	866	813	19,187
1902	7,111	7,025	2,280	1,925	991	870	20,202
1903	7,069	6,969	2,395	1,709	959	980	20,081
1904	6,627	6,401	1,991	1,707	994	913	18,633
1905	6,269	6,403	2,004	1,763	981	783	18,203
1906	6,260	6,895	1,883	1,822	1,206	893	18,959
1907	6,967	6,562	2,116	1,741	1,065	915	19,366
1908	6,757	6,950	2,180	1,811	1,079	1,017	19,794
1909	6,626	6,366	2,111	1,710	1,033	812	18,658
1910	6,819	6,604	2,150	1,861	980	1,022	19,436
Rate,* 1910 ...	8.75	10.19	7.98	9.45	8.41	10.94	9.24

* Number of deaths per 1000 of mean population.

2. **Male and Female Death Rates, 1910.**—The crude male and female death rates for 1910 only are given, viz., in the last line of the preceding tables. Victoria has the highest rate for males and Tasmania for the females, while New South Wales has the lowest male and Queensland the lowest female death rate.

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 198) 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. The following table gives particulars of the death rates of various countries for the latest available years:—

DEATH RATES* OF VARIOUS COUNTRIES.

Country.	Year.	Crude Death Rate.	Country.	Year.	Crude Death Rate.
New Zealand	1910	9.7	German Empire ...	1908	18.1
Commonwealth ...	**1910**	**10.4**	France	1909	19.3
Denmark	1909	13.1	Japan	1908	21.0
Norway	1909	13.5	Italy	1909	21.4
Sweden	1909	13.7	Jamaica	1909	21.7
Netherlands	1909	13.7	Austria	1908	22.3
Canada (Ontario) ...	1908	13.9	Spain	1909	23.4
England and Wales ...	1909	14.5	Bulgaria	1908	24.3
United Kingdom ...	1908	15.1	Hungary	1909	25.1
Scotland	1909	15.3	Rumania	1909	27.8
Switzerland	1908	16.2	Servia	1909	29.3
Belgium	1908	16.5	Russia, European ...	1903	30.0
Finland	1909	16.7	Ceylon	1909	30.3
Ireland	1909	17.2	Chile	1909	31.5

* Number of deaths per 1000 of mean population.

4. **Total Deaths, 1901 to 1910.**—The total number of deaths in each of the Commonwealth States during the ten years 1901 to 1910, is shewn below:—

TOTAL DEATHS, COMMONWEALTH, 1901 to 1910.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
1901 ...	16,021	15,904	6,007	4,065	2,519	1,814	46,330
1902 ...	16,646	16,177	6,204	4,314	2,823	1,914	48,078
1903 ...	16,497	15,595	6,346	3,951	2,788	2,116	47,293
1904 ...	15,360	14,393	5,250	3,778	2,817	1,974	43,572
1905 ...	14,978	14,676	5,503	3,804	2,709	1,844	43,514
1906 ...	14,975	15,237	5,095	3,931	3,084	2,011	44,333
1907 ...	16,411	14,539	5,598	3,828	2,931	1,998	45,305
1908 ...	16,055	15,766	5,680	3,917	2,879	2,129	46,426
1909 ...	15,810	14,436	5,530	3,850	2,704	1,842	44,172
1910 ...	16,158	14,732	5,744	4,096	2,740	2,120	45,590

5. **Crude Death Rates, 1901 to 1910.**—The death rate for 1910 showed an increase on that for 1909 in four States, New South Wales and Western Australia being the exceptions. The rates, with the exception of that for Tasmania, are, however, considerably lower than those experienced during the early years of the decade. The Commonwealth rate for 1910 was considerably lower than in any of the other years of the period under review excepting the year 1909.

CRUDE DEATH RATES[1] COMMONWEALTH, 1901 to 1910.[2]

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
1901 ...	11.75	13.22	11.98	11.23	13.39	10.51	12.22
1902 ...	11.98	13.40	12.15	11.97	13.79	10.93	12.49
1903 ...	11.67	12.94	12.33	10.98	12.69	11.73	12.15
1904 ...	10.67	11.97	10.06	10.46	12.04	10.79	11.05
1905 ...	10.18	12.17	10.40	10.45	10.98	10.00	10.88
1906 ...	9.95	12.55	9.50	10.71	12.12	10.91	10.92
1907 ...	10.63	11.86	10.31	10.30	11.47	10.81	10.99
1908 ...	10.20	12.71	10.26	10.26	11.17	11.36	11.07
1909 ...	9.89	11.45	9.70	9.82	10.27	9.68	10.33
1910 ...	9.89	11.49	9.71	10.21	10.11	11.10	10.43

1. Number of deaths per thousand of mean population for year.
2. Rates corrected in view of Census Returns.

6. **Male and Female Death Rates, 1901 to 1910.**—The rise in the Commonwealth rate from 1905 to 1907 was due to an increase in the female death rate, while the increase in 1908 was practically limited to the male death rate, as the subjoined table shews. The decrease from 1908 to 1909 was fairly equal for the male and female rates:—

MALE AND FEMALE DEATH RATES,[1] COMMONWEALTH, 1901 to 1910.[2]

Year.	1901.	1902.	1903.	1904.	1905.	1906.	1907.	1908.	1909.	1910.
Male rate ...	13.66	13.83	13.37	12.12	12.14	12.01	12.11	12.24	11.51	11.54
Female rate ...	10.64	11.02	10.80	9.88	9.50	9.73	9.77	9.81	9.06	9.24
Crude total rate ...	12.22	12.49	12.15	11.05	10.88	10.92	10.99	11.07	10.33	10.43

1. Number of deaths per thousand of mean population.
2. Rates corrected in view of Census Returns.

7. **Infantile Death Rate.**—(i.) *Deaths and Death Rates of Male and Female Infants, 1901 to 1910.* 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 1909 it had fallen to 71.56 per thousand, a rate lower than that experienced in any previous year. In 1910, however, the rate rose to 74.81 per thousand, every State except Queensland shewing an increased rate. 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 550,588 male infants born from 1901 to 1910, 51,896 died during their first year of life, while of 523,284 female infants the number who died was only 41,343:—

NUMBER OF INFANTILE DEATHS AND RATE OF INFANTILE MORTALITY, COMMONWEALTH, 1901 to 1910.

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	6,003	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
1907	4,993	3,952	8,945	88.39	73.38	81.06
1908	4,885	3,791	8,676	85.53	69.65	77.78
1909	4,604	3,559	8,163	78.73	64.02	71.56
1910	4,916	3,822	8,738	81.65	67.53	74.81

1. Number of deaths under 1 year per 1000 births registered.

(ii.) *Infantile Mortality, 1901 to 1910.* Divided among the six States, the rate of infantile mortality during the last ten years was as follows:—

RATE[1] OF INFANTILE MORTALITY, COMMONWEALTH, 1901 to 1910.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
1901	103.74	102.94	101.94	99.99	128.89	89.05	103.61
1902	109.74	108.60	100.17	94.00	142.01	79.06	107.15
1903	110.35	106.40	119.88	97.09	141.22	110.83	111.36
1904	82.42	77.92	76.13	70.51	113.02	90.70	81.77
1905	80.55	83.30	75.52	72.96	104.19	80.65	81.76
1906	74.53	92.92	74.68	75.90	110.00	90.19	83.26
1907	88.46	72.60	77.65	66.57	97.51	82.97	81.06
1908	75.20	86.05	70.67	69.46	84.72	75.16	77.78
1909	73.87	71.36	71.50	61.04	78.01	64.91	71.56
1910	74.73	76.88	62.90	70.70	78.18	101.68	74.81

1. Number of deaths under 1 year per 1000 births registered.

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 1909 rate was lower than that for 1901 in every State. The regrettable increase in the Victorian rate for 1908 over that of 1907 was wholly due to the large mortality caused by the phenomenal heat of January, 1908. With the exception of Queensland, where the 1908 rate was exceptionally low, the 1909 rate was the lowest ever experienced in any of the States. A further rise occurred in every State in 1910, with the exception of Queensland, in which State the rate has fallen to the remarkably low proportion of 62.90 per thousand births. Infantile diarrhœa was largely responsible for the great increase in the Tasmanian rate in 1910.

(iii.) *Infantile Mortality in Various Countries and Cities.* Compared with European countries the cities and 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 tables relate to the latest years for which returns are available:—

RATE[1] OF INFANTILE MORTALITY IN VARIOUS COUNTRIES.

Country.	Year.	Rate of Infantile Mortality.[1]	Crude Birth Rate.[2]	Country.	Year.	Rate of Infantile Mortality.[1]	Crude Birth Rate.[2]
New Zealand ...	1910	68	26.2	Belgium	1908	147	24.9
Commonwealth ...	**1910**	**75**	**26.7**	Italy	1908	153	33.4
Norway	1908	76	26.2	Japan	1908	157	33.9
Sweden	1908	85	25.7	Servia	1908	158	36.8
Ireland	1909	92	23.5	Bulgaria	1908	170	40.4
Netherlands ...	1909	99	29.1	Spain	1906	173	33.4
Switzerland ...	1908	108	27.1	Jamaica	1909	174	37.8
England and Wales	1909	109	25.6	German Empire ...	1907	176	32.3
Finland	1909	111	31.3	Rumania	1899	198	42.0
United Kingdom ...	1908	118	26.3	Ceylon	1909	202	36.7
Scotland	1908	121	27.2	Austria	1907	204	33.8
Denmark	1908	123	28.3	Hungary	1909	212	37.0
Canada (Ontario) ...	1908	124	24.9	Russia, European	1903	256	48.1
France	1907	135	19.7	Chile	1908	320	39.3

1. Number of deaths under 1 year per 1000 births registered. 2. Number of births per 1000 of mean population.

RATE[1] OF INFANTILE MORTALITY IN VARIOUS CITIES.

City.	Year.	Rate of Infantile Mortality.[1]	Crude Birth Rate.[2]	City.	Year.	Rate of Infantile Mortality.[1]	Crude Birth Rate.[2]
Adelaide	1910	78	25.8	Glasgow ...	1910	121	25.1
Amsterdam ...	,,	78	23.6	Dresden	,,	129	21.6
Perth (W.A.) ...	,,	79	28.9	Dublin (Registration area) ...	,,	142	28.3
Christiania ...	,,	83	23.5	Belfast	,,	143	27.8
Sydney	,,	84	26.5	Budapest	,,	148	26.5
Brisbane	,,	84	28.3	Hamburg	,,	149	23.2
Stockholm	,,	92	23.2	Berlin	,,	157	21.5
Melbourne	,,	93	23.3	Prague	,,	164	19.2
The Hague... ...	,,	93	25.4	Munich	,,	166	23.4
Rotterdam	,,	94	29.6	Rio de Janeiro ...	,,	166	27.8
London	,,	103	23.6	Vienna	,,	176	19.9
Edinburgh	,,	111	19.6	Breslau	,,	188	27.5
Milan	,,	113	23.3	Trieste	,,	190	32.9
Paris	,,	118	18.0	St. Petersburg ...	,,	262	27.8
Copenhagen ...	,,	118	26.1	Moscow	,,	297	35.9
Hobart	,,	119	28.9				

1. Number of deaths under 1 year per 1000 births registered. 2. Number of births per 1000 of mean population.

(iv.) *The Effect of Infantile Mortality on Birth Rate.* It has been contended by certain investigators that the birth-rate question is intimately related to that of infantile mortality, and that in many cases a declining birth rate may be to a large extent accounted for by a decline in the infantile death rate, since, in the case in which an infant has survived, the period elapsing before the birth of the next child is likely to be longer than in the case in which the infant has died. It may indeed be readily admitted that in any community the birth rate may be affected in a definite way by variations of infantile mortality, but careful investigation of the question serves to shew that, whether considered from the theoretical aspect with a view to determining the *maximum* and the *probable* effects which a given change in the rate of infantile mortality would produce in the birth rate, or from the practical point of view by observing the fluctuations in the birth rates of various countries which have been collateral with changes in their rates of infantile mortality, there is little ground for the contention that the rate of infantile mortality is an important factor in determining the variations in the birth rate. One calculation which has been made on the basis of normal Australian conditions indicates that the *maximum* effect of increasing the rate of infantile mortality 100 per cent. would, in the absence of other disturbing causes, be to increase the birth rate by only $3\frac{1}{4}$ per cent., whilst the *probable* effect would be considerably less than this. In other words, the *maximum* effect of an increase in the rate of infantile mortality from 100 to 200 per 1000 births would be to increase the birth rate from say 30 to 31 per 1000 of population. It may be noted too, that although in some countries an increase in birth-rate accompanies an increase in the rate of infantile mortality, in others the birth rate would appear to be quite unaffected by such an increase, while in the case of England and Wales, Scotland, and Ireland, the tendency apparently exhibited is for an increase in the rate of infantile mortality to be associated with a decrease in the birth rate. The conclusion which these results appear to warrant is that although infantile mortality undoubtedly tends on the whole to increase the birth rate, the practical effect produced is so slight that the existence of such a relation may in any instance be quite masked by more important causes of variation.

8. **Deaths in Age-Groups, 1901 to 1910.**—A distribution into age-groups has been made of the 454,613 deaths which occurred in the Commonwealth from 1901 to 1910, 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, COMMONWEALTH, 1901 to 1910.

Ages.	Males.	Females.	Total.	Percentage of Total Males.	Percentage of Total Females.	Percentage of Total.
Under 1 year	51,897	41,342	93,239	19.80	21.47	20.51
1 year and under 5 ...	15,302	14,013	29,315	5.84	7.28	6.45
5 years and under 20 ...	15,316	13,628	28,944	5.84	7.08	6.37
20 years and under 40 ...	36,299	31,834	68,133	13.85	16.54	14.99
40 years and under 60 ...	51,633	30,161	81,794	19.70	15.67	17.99
60 years and under 65 ...	14,967	9,183	24,150	5.71	4.77	5.31
65 years and over ...	76,204	52,274	128,478	29.08	27.15	28.26
Age not stated	476	84	560	0.18	0.04	0.12
Total	262,094	192,519	454,613	100.00	100.00	100.00

9. **Deaths at Single Ages and in Age-Groups, 1910.**—The 45,590 deaths which were registered in the Commonwealth in the year 1910 will be found tabulated under single years, and in groups of five years for each State, in "Bulletin No. 25, Population and Vital Statistics, 1910." It has been thought advisable to tabulate the deaths during the first year of life in greater detail. The first month has, therefore, been shewn in weeks, and the remainder of the year in months. This tabulation shews a great number of children dying during the first week, the number gradually diminishing towards the end of the year. The particulars relating to the Commonwealth are given in the following table:—

DEATHS AT SINGLE AGES AND IN AGE-GROUPS, 1910.

COMMONWEALTH.

Ages.	Males.	Females.	Total.
Under 1 week ...	1,417	1,004	2,421
1 week and under 2	290	220	510
2 weeks " " 3	182	151	333
3 " " " 4	165	116	281
Total under one month ...	2,054	1,491	3,545
1 month and under 2	480	350	830
2 months " " 3	380	287	667
3 " " " 4	366	287	653
4 " " " 5	278	257	535
5 " " " 6	253	207	460
6 " " " 7	247	187	434
7 " " " 8	206	161	367
8 " " " 9	168	186	354
9 " " " 10	190	158	348
10 " " " 11	151	128	279
11 " " " 12	143	123	266
Total under 1 year ...	4,916	3,822	8,738
1 year	828	714	1,542
2 years	310	277	587
3 "	182	183	365
4 "	168	123	291
Total under 5 years ...	6,404	5,119	11,523
5 years	109	107	216
6 "	114	104	218
7 "	96	66	162
8 "	71	61	132
9 "	76	63	139
Total 5 years and under 10	466	401	867
10 years	71	51	122
11 "	69	67	136
12 "	80	60	140
13 "	73	51	124
14 "	68	80	148
Total 10 years and under 15	361	309	670
15 years	97	67	164
16 "	93	94	187
17 "	116	91	207
18 "	129	112	241
19 "	143	135	278
Total 15 years and under 20	578	499	1,077
20 years	144	106	250
21 "	148	135	283
22 "	147	160	307
23 "	159	153	312
24 "	157	156	313
Total 20 years and under 25	755	710	1,465
25 years	154	163	317
26 "	166	180	346
27 "	176	153	329
28 "	139	168	307
29 "	149	145	294
Total 25 years and under 30	784	809	1,593
30 years	171	160	331
31 "	126	129	255
32 "	175	136	311
33 "	161	151	312
34 "	150	149	299
Total 30 years and under 35	783	725	1,508
35 years	194	164	358
36 "	189	155	344
37 "	167	137	304
38 "	220	177	397
39 "	180	174	354
Total 35 years and under 40	950	807	1,757

DEATHS AT SINGLE AGES AND IN AGE-GROUPS, 1910—Continued.

Ages.	Males.	Females.	Total.	Ages.	Males.	Females.	Total
40 years	281	160	441	75 years	474	346	820
41 „	177	106	283	76 „	411	305	716
42 „	282	194	476	77 „	374	266	640
43 „	212	149	361	78 „	419	312	731
44 „	216	155	371	79 „	338	230	568
Total 40 years and under 45	1,168	764	1,932	Total 75 years and under 80	2,016	1,459	3,475
45 years	360	178	538	80 years	407	280	687
46 „	266	146	412	81 „	242	168	410
47 „	283	142	425	82 „	252	216	468
48 „	314	176	490	83 „	233	170	403
49 „	305	175	480	84 „	251	199	450
Total 45 years and under 50	1,528	817	2,345	Total 80 years and under 85	1,385	1,033	2,418
50 years	357	206	563	85 years	183	127	310
51 „	219	133	352	86 „	158	129	287
52 „	310	185	495	87 „	116	105	221
53 „	283	160	443	88 „	93	99	192
54 „	301	171	472	89 „	79	63	142
Total 50 years and under 55	1,470	855	2,325	Total 85 years and under 90	629	523	1,152
55 years	310	161	471	90 years	65	76	141
56 „	316	183	499	91 „	54	49	103
57 „	257	124	381	92 „	36	39	75
58 „	301	173	474	93 „	19	27	46
59 „	257	156	413	94 „	13	19	32
Total 55 years and under 60	1,441	797	2,238	Total 90 years and under 95	187	210	397
60 years	342	178	520	95 years	19	14	33
61 „	227	138	365	96 „	12	11	23
62 „	291	154	445	97 „	8	11	19
63 „	264	206	470	98 „	9	10	19
64 „	304	175	479	99 „	7	3	10
Total 60 years and under 65	1,428	851	2,279	Total 95 yrs. and under 100	55	49	104
65 years	372	242	614	100 years	1	4	5
66 „	320	248	568	101 „	6	4	10
67 „	313	257	570	102 „	2	3	5
68 „	384	246	630	103 „	...	1	1
69 „	364	272	636	104 „	2	...	2
				105 „	1	1	2
Total 65 years and under 70	1,753	1,265	3,018	107 „	2	...	2
				108 „	1	...	1
70 years	452	311	763	109 „	1	...	1
71 „	279	219	498	113 „	...	1	1
72 „	358	300	658	Total 100 years and over...	16	14	30
73 „	397	283	680				
74 „	441	293	734	Age not stated	70	14	84
Total 70 years and under 75	1,927	1,406	3,333	Total all ages	26,154	19,436	45,590

10. **Deaths of Centenarians, 1910.**—Particulars as to the thirty persons who died in 1910, 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. The fact must not be lost sight of in connection 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, 1910.

COMMONWEALTH.

Age	Locality where Death occurred.	State.	Cause of Death.	Occupation.	Birth-place.	Length of Residence in Commonwealth.
			MALES.			
Yrs.						
109	Cootamundra ...	N.S.W. ...	Senile decay	Gold miner	Ireland ...	80 years
108	Hospital, Geelong	Victoria ...	"	Labourer	Scotland ...	51 "
107	Romsey	" ...	"	Independ't	Ireland ...	57 "
107	Benevolent Asyl., Ballarat ...	" ...	"	Tailor ...	" ...	92 "
105	Randwick	N.S.W. ...	"	Labourer...	England ...	88 "
104	Beenleigh	Queensland	Arterio sclerosis ...	" ...	Ireland ...	22 "
104	Richmond ...	Tasmania...	Senile decay	" ...	England ...	Not stated
102	Norwood	S. Australia	"	" ...	" ...	64 years
102	Zeehan	Tasmania...	Bronchitis	" ...	Ireland ...	Not stated
101	Rookwood Asyl'm	N.S.W. ...	Senile decay	Storek'per	England ...	77 years
101	Oberon	" ...	Acute bronchitis ...	Farmer ...	Ireland ...	70 "
101	Bombala	" ...	Senile decay	" ...	Scotland ...	52 "
101	Mt. Korong ...	Victoria ...	"	Gold miner	England ...	75 "
101	Benevolent Asyl., Ballarat ...	" ...	"	Labourer...	Ireland ...	Not stated
101	Ballarat	" ...	"	" ...	" ...	"
100	Brunswick ...	" ...	Pneumonia	Farmer ...	Scotland ...	58 years
			FEMALES.			
113	Cowes	Victoria ...	Senile decay	...	Ireland ...	60 years
105	Colac	" ...	Hemiplegia	...	" ...	56 "
103	Manly	N.S.W. ...	Bronchitis	...	England ...	62 "
102	Blayney	" ...	Senile decay	...	" ...	32 "
102	Elaine	Victoria ...	"	...	Ireland ...	70 "
102	Hamilton	Tasmania...	"	...	" ...	Not stated
101	Murrurundi ...	N.S.W. ...	"	...	" ...	80 years
101	Byron Bay ...	" ...	"	...	" ...	26 "
101	Townsville ...	Queensland	"	...	" ...	70 "
101	Woodside	S. Australia	Fractured femur ...	...	England ...	57 "
100	Stroud	N.S.W. ...	Bronchitis	...	N.S.W. ...	Native
100	Coburg	Victoria ...	Influenza	...	Scotland ...	50 years
100	Caulfield	" ...	Senile decay	...	Ireland ...	Not stated
100	Creswick	" ...	"	...	England ...	48 years

11. **Length of Residence in the Commonwealth of Persons who Died in 1910.**—The length of residence in the Commonwealth of all persons whose deaths were registered in the year 1910 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 1910.

Length of Residence.	Male Deaths.	Female Deaths.	Total Deaths.	Length of Residence.	Male Deaths.	Female Deaths.	Total Deaths.
Born in the C'wealth...	14,113	12,099	26,212	Resident 25 to 29 years	861	504	1,365
Resident under 1 year	211	62	273	" 30 to 34 "	873	371	1,244
" 1 year ...	93	26	119	" 35 to 39 "	479	290	769
" 2 years ...	73	17	90	" 40 to 44 "	789	512	1,301
" 3 " ...	44	15	59	" 45 to 49 "	967	669	1,636
" 4 " ...	39	16	55	" 50 to 54 "	1,594	1,205	2,799
" 5 " ...	45	8	53	" 55 to 59 "	1,508	1,321	2,829
" 6 " ...	27	8	35	" 60 to 64 "	604	544	1,148
" 7 " ...	35	10	45	" 65 yrs. & over	387	424	811
" 8 " ...	40	5	45	Length of residence not stated... ...	2,171	737	2,908
" 9 " ...	27	18	45				
" 10 to 14 years...	216	73	289				
" 15 to 19 " ...	247	114	361				
" 20 to 24 " ...	711	388	1,099	Total	26,154	19,436	45,590

12. **Birthplaces of Persons who Died in 1910.**—In the following table are shewn the birthplaces of persons whose deaths were registered in 1910:—

BIRTHPLACES OF PERSONS WHO DIED IN 1910.

COMMONWEALTH

Birthplaces.	Males.	Females.	Total.
New South Wales ...	5,384	4,577	9,961
Victoria	4,342	3,719	8,061
Queensland ...	1,362	1,151	2,513
South Australia ...	1,447	1,200	2,647
Western Australia ...	595	509	1,104
Tasmania	983	943	1,926
New Zealand ...	110	83	193
Austria-Hungary ...	30	3	33
Belgium	6	1	7
Channel Islands ...	16	13	29
Denmark	77	20	97
England	5,122	3,077	8,199
Finland	20	1	21
France	59	17	76
Germany	597	272	869
Gibraltar	1	1	2
Greece	12	1	13
Ireland	2,531	2,397	4,928
Iceland	1	...	1
Isle of Man ...	12	5	17
Italy	57	8	65
Malta	6	2	8
Netherlands ...	10	1	11
Norway	54	5	59
Portugal	7	3	10
Rumania	2	...	2
Russia	33	11	44
Scotland	1,467	994	2,461
Spain	7	3	10
Sweden	102	7	109
Switzerland ...	54	5	59
Turkey	1	1	2
Wales	127	73	200
Canada	46	10	56
Mexico	1	...	1
Newfoundland ...	4	1	5
United States ...	103	26	129
West Indies ...	28	4	32
Brazil	4	2	6
Chile	1	1	2
S. America (so desc'bd)	1	1	2

Birthplaces.	Males.	Females	Total.
Afghanistan ...	2	...	2
Arabia	1	...	1
Ceylon	5	...	5
China	303	2	305
Dutch East Indies ...	22	1	23
India	67	30	97
Japan	58	1	59
Malay States ...	7	...	7
Philippine Islands ...	9	...	9
Straits Settlements ...	7	1	8
Syria	10	6	16
Africa (so described)	1	...	1
Azores	1	...	1
Canary Islands ...	...	1	1
Cape of Good Hope ...	3	7	10
Cape Verde Islands ...	1	...	1
Egypt	1	...	1
Mauritius	14	4	18
Natal	...	1	1
Reunion	2	1	3
Seychelles	1	...	1
S. Africa (so described)	17	9	26
St. Helena ...	1	2	3
Transvaal	...	1	1
Zanzibar	1	...	1
Fiji	4	2	6
Hawaii	1	...	1
Loyalty Islands ...	1	...	1
New Caledonia ...	5	...	5
New Guinea ...	27	1	28
New Hebrides ...	2	1	3
Samoa	1	1	2
Solomon Islands ...	1	1	2
S. Sea Is. (so described)	39	3	42
At Sea	45	39	84
Not stated... ...	672	173	845
Total Deaths ...	26,154	19,436	45,590

18. **Occupations of Male Persons who Died in 1910.**—Information as to the occupations of the 26,154 males who died in the Commonwealth in 1910, is contained in the following statement:—

OCCUPATIONS OF DECEASED MALES, 1910.

COMMONWEALTH.

Occupation.	No. of Deaths.
CLASS I.—PROFESSIONAL.	
General Government	102
Local Government	18
Defence	41
Law and order	168
Religion	91
Charity	1
Health	128
Literature	35
Science	10
Civil and mechanical engineering, architecture and surveying	69
Education	104
Fine arts	30
Music	28
Amusements	65
Total Professional	890
CLASS II.—DOMESTIC.	
Hotelkeepers and assistants	264
Others engaged in providing board and lodging	34
House servants	134
Coachmen and grooms	79
Hairdressers	47
Laundrymen	8
Others engaged in domestic occupations	95
Total Domestic	661
CLASS III.—COMMERCIAL.	
Banking and finance	59
Insurance and valuation	53
Land and household property	25
Books, publications and advertising	22
Musical instruments	2
Ornaments and small wares	1
Surgical instruments	1
Machines, tools, and implements	4
Carriages and vehicles	1
Ships and boats	2
Furniture	7
Chemicals	2
Paper and stationery	5
Textile fabrics	113
Dress	13
Animal food	203
Vegetable food	61
Groceries, drinks, narcotics, and stimulants	166
Living animals	48
Leather, hides, etc.	3
Wool and tallow	11
Hay, corn, etc.	32
Timber	19
Wood and coal	21
Glass and earthenware	2
Gold, silver, and precious stones	1
Ironmongery	23
Merchants, etc.	175
Dealers and hawkers	100
Agents and brokers	97
Clerks, bookkeepers, etc.	440
Commercial travellers and salesmen	155
Others engaged in commercial pursuits	64
Speculators on chance events	6
Storage	—
Total Commercial	1,937
CLASS IV.—TRANSPORT AND COMMUNICATION.	
Railway traffic	293
Tramway traffic	29
Road traffic	419
Sea and river traffic	454
Postal service	42
Telegraph and telephone service	27
Messengers, etc.	14
Total Transport & Communication	1,278
CLASS V.—INDUSTRIAL.	
Books and publications	126
Musical instruments	11
Prints, pictures, and art materials	14
Ornaments and small wares	13
Sports and games	1
Watches and clocks	31
Surgical instruments	1
Arms and ammunition	3
Engines, machines, tools, etc.	110
Carriages and vehicles	91
Harness, saddlery, and leatherware	78
Ships, boats, and equipment	65
Furniture	69
Building material	67
Chemicals	7

OCCUPATIONS OF DECEASED MALES, 1910—Continued.

Occupation.	No. of Deaths.
Textile fabrics	10
Dress	362
Fibrous materials	3
Animal food	15
Vegetable food	140
Groceries, drinks, narcotics, and stimulants	49
Wool-scouring, soap, and candles	68
Workers in wood not elsewhere classed	8
Fodder	2
Stone, clay, glass	46
Jewellery and precious stones ...	36
Metals, other than gold and silver	334
Gas, electric lighting	30
Buildings—	
Builders	90
Stonemasons...	94
Bricklayers	75
Carpenters	466
Plasterers	35
Painters and glaziers	183
Plumbers	66
Others	2
Roads, railways, and earthworks...	34
Disposal of the dead	11
Disposal of refuse	25
Other industrial workers—	
Manufacturers	16
Engineers, firemen	317
Machinists	16
Contractors	143
Labourers, undefined	3,532
Total Industrial	6,895

Occupation.	No. of Deaths.
CLASS VI.—AGRICULTURAL, PASTORAL, MINING PURSUITS, ETC.	
Agricultural	2,617
Pastoral	663
Dairying	100
Fisheries, capture or destruction of wild animals, or acquisition of products yielded thereby ...	176
Forestry	64
Water conservation and supply ...	20
Mines and quarries	1,598
Total Primary Producers ...	5,238
CLASS VII.—INDEFINITE.	
Independent means, etc. ...	1,018
Undefined or unknown	638
Total Indefinite	1,656
CLASS VIII.—DEPENDENTS.	
Dependent relatives (including persons under 20 years of age with no specified occupation) ...	7,399
Dependent upon the State or upon public or private support ...	200
Total Dependents	7,599
Total Male Deaths	26,154

14. **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 1910 is shewn below for each of the six States and for the Commonwealth, the distribution of the mean population of 1910 into age-groups being in accordance with the distribution as found at the Census of 1911:—

INDEX OF MORTALITY, 1910.—(STATES AND COMMONWEALTH.)

Age-Group.	Mean Population, 1910, distributed according to Results of Census of 1911.	Number of Deaths, 1910.	No. of Deaths per 1000 of Mean Population, 1910, in each Age-Group.	Age Distribution per 1000 of Standard Population.	Index of Mortality.
NEW SOUTH WALES.					
Under 1 year	44,886	3,396	75.66	25.5	1.93
1 year and under 20	643,092	2,068	3.21	398.0	1.28
20 years „ 40	547,062	2,188	4.00	269.6	1.08
40 „ „ 60	295,397	3,064	10.37	192.3	1.99
60 „ and upwards	102,553	5,442	53.07	114.6	6.08
Total	1,632,990	16,158	9.89	1,000.0	12.36
VICTORIA.					
Under 1 year	30,342	2,417	79.66	25.5	2.03
1 year and under 20	493,645	1,487	3.01	398.0	1.20
20 years „ 40	405,973	1,832	4.51	269.6	1.22
40 „ „ 60	258,451	2,738	10.59	192.3	2.04
60 „ and upwards	94,066	6,258	66.53	114.6	7.62
Total	1,282,477	14,732	11.49	1,000.0	14.11
QUEENSLAND.					
Under 1 year	15,997	1,017	63.57	25.5	1.62
1 year and under 20	242,351	752	3.10	398.0	1.23
20 years „ 40	193,829	931	4.80	269.6	1.29
40 „ „ 60	105,092	1,238	11.78	192.3	2.27
60 „ and upwards	34,322	1,806	52.62	114.6	6.03
Total	591,591	5,744	9.71	1,000.0	12.44
SOUTH AUSTRALIA.					
Under 1 year	10,276	748	72.79	25.5	1.86
1 year and under 20	156,407	419	2.68	398.0	1.07
20 years „ 40	131,962	604	4.58	269.6	1.23
40 „ „ 60	74,174	818	11.03	192.3	2.12
60 „ and upwards	28,284	1,507	53.28	114.6	6.11
Total	401,103	4,096	10.21	1,000.0	12.39
WESTERN AUSTRALIA.					
Under 1 year	7,255	593	81.74	25.5	2.08
1 year and under 20	99,249	413	4.16	398.0	1.66
20 years „ 40	99,517	519	5.22	269.6	1.41
40 „ „ 60	54,126	665	12.29	192.3	2.36
60 „ and upwards	10,872	550	50.59	114.6	5.80
Total	271,019	2,740	10.11	1,000.0	13.31
TASMANIA.					
Under 1 year	5,369	568	105.79	25.5	2.78
1 year and under 20	81,325	296	3.64	398.0	1.45
20 years „ 40	58,422	278	4.76	269.6	1.28
40 „ „ 60	33,951	331	9.75	192.3	1.87
60 „ and upwards	11,938	647	54.20	114.6	6.21
Total	191,005	2,120	11.10	1,000.0	13.59
COMMONWEALTH.					
Under 1 year	114,125	8,739	76.57	25.5	1.95
1 year and under 20	1,716,069	5,435	3.17	398.0	1.26
20 years „ 40	1,436,765	6,352	4.42	269.6	1.19
40 „ „ 60	821,191	8,854	10.78	192.3	2.07
60 „ and upwards	282,035	16,210	57.48	114.6	6.59
Total	4,370,185	45,590	10.43	1,000.0	13.06

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 84 persons who died in 1910, and whose ages were not stated in the certificates of death.

It will be seen that Victoria and Tasmania have, respectively, the highest and second highest index and crude rates, while New South Wales has the lowest index and second lowest crude rate. Queensland with the lowest crude rate has fallen to the third place in the index of mortality. The range of the indexes is slightly less than that of the crude death rates, thus, while the latter in 1910 rose from 9.71 per thousand in Queensland to 11.49 per thousand in Victoria, a range of 1.78 per thousand, the indexes varied from 12.36 per thousand in New South Wales to 14.11 per thousand in Victoria, a range of 1.75 per thousand.

The tabulated Indexes of Mortality for the years 1902 to 1909, which appeared in Year Book No. 4, p. 198, have been omitted. They will, if possible, be given in the Appendix of this Volume, or, failing this, in the next issue of the Year Book, with the proper corrections for ages according to the census of 1911.

It may here be mentioned that, in a series of papers recently communicated to the Australasian Medical Congress of 1911,* which met in Sydney in September last, the following diseases were specially considered in various aspects, viz.:—Infantile mortality, pulmonary tuberculosis and cancer—the two diseases combined, and the age incidence of both; typhoid fever and whooping cough; diarrhœa, diphtheria, and croup; measles and scarlet fever. The fluctuation for cancer, pulmonary tuberculosis, typhoid, whooping cough, diarrhœa, diphtheria, croup, etc., for the various months of the year was also ascertained, as well as the number of persons dying at different ages in the case of diarrhœa, dysentery, enteritis, and pulmonary tuberculosis; and the frequency, according to age of deaths, from pulmonary tuberculosis. These various matters will be dealt with hereinafter *seriatim*.

15. **Causes of Death.**—(i.) *Changes in Classification from 1903 to 1906.* 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, 1905, and 1906 is, therefore, a matter of extreme difficulty. The differences in tabulation will be seen in the following statement:—

TABULATION OF CAUSES OF DEATH.

State.	1902.	1903.	1904.	1905.	1906.	State.	1902.	1903.	1904.	1905.	1906.
N.S.W. ...	Old	Old	Old	New	International	S. Australia	Old	Old	Old	Old	Old
Victoria ...	Old	Old	Old	Old	Old	W. Australia	Old	Old	Old	Old	Old
Queensland	Old	New	New	New	New	Tasmania ...	Old	New	New	New	New

Old= Farr-Ogle classification. New= New classification by Registrar-General of England. International—See next paragraph.

(ii.) *The Classification of the International Institute of Statistics.* At a conference held in Melbourne in November and December, 1906, the Commonwealth Statistician

* By the Commonwealth Statistician, in his capacity as honorary member. The papers *in extenso* will appear in the transactions of the Congress itself, to which reference should be made for detailed information.

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 also the one now 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 200,000,000. Commencing with 1910, the statistics of the United Kingdom will also be compiled in accordance with this system. Provision is made for a decennial revision of the classification, as it has been recognised that finality is impossible in the present state of medical science. The committee charged with the first revision met in Paris in July, 1909, and, in accordance with a resolution of the Australasian Medical Congress, held in Melbourne in October, 1908, a number of recommendations were made to it, dealing particularly with tropical diseases occurring in the northern parts of Australia. Most of these recommendations, together with many others, have been adopted. The number of categories is the same as in the 1900 nomenclature, but these have been subdivided into 189 causes instead of 179, the ten additional causes being obtained by shewing deaths from violence in greater detail than formerly.

The detailed classification groups causes of death under 179 (increased to 189 by the revised classification) different headings, in fourteen categories, as follows:—

i. General Diseases.
ii. Diseases of the Nervous System and Organs of Special Sense.
iii. Diseases of the Circulatory System.
iv. Diseases of the Respiratory System.
v. Diseases of the Digestive System.
vi. Diseases of the Genito-urinary System and Adnexa.
vii. Puerperal Condition.
viii. Diseases of the Skin and Cellular Tissue.
ix. Diseases of the Organs of Locomotion.
x. Malformations.
xi. Infancy.
xii. Old Age.
xiii. Violence.
xiv. Ill-defined Diseases.

(iii.) *Compilation of Vital Statistics for 1907, 1908, 1909 and 1910 in Commonwealth Bureau.* The vital statistics of the six Commonwealth States for 1907, 1908, 1909 and 1910 have been 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, 1907 to 1910, according to Abridged Bertillon Index.* An abridged classification, which enumerates thirty-five diseases and groups of diseases (increased to thirty-eight by the revised classification), is in use in many European and American States, while the Commonwealth Statistics for 1907, 1908, and 1909 have been compiled on the detailed classification of 179 headings and 1910 for 189 headings. A table has been compiled shewing 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 1907, 1908, 1909, and 1910 will be found in full in "Bulletins Nos. 8, 14, 20, and 25 of Population and Vital Statistics"; here it will suffice to give the abridged classification under thirty-eight headings for the year 1910:—

CAUSES OF DEATH—COMMONWEALTH, 1910.

(*a*) MALES.

Cause.	N.S.W.	Vic.	Q'land.	S.Aust.	W.Aus.	Tas.	C'wlth.
1 Typhoid Fever	193	86	63	17	32	23	414
2 Typhus	—	—	—	—	—	—	—
3 Intermittent Fever and Malarial Cachexia	2	—	23	12	11	—	48
4 Small-pox	1	1	—	—	—	—	2
5 Measles	42	15	7	—	2	—	66
6 Scarlet Fever	13	10	1	1	1	1	27
7 Whooping Cough	92	40	42	16	22	26	238
8 Diphtheria and Croup	118	62	34	24	31	12	281
9 Influenza	61	54	36	19	11	4	185
10 Asiatic Cholera	—	—	—	—	—	—	—
11 Cholera Nostras	—	—	—	1	—	—	1
12 Other Epidemic Diseases ...	19	17	52	7	18	—	113
13 Tuberculosis of the Lungs ...	588	551	212	162	145	53	1,711
14 Tuberculosis of the Meninges ...	37	46	3	13	6	2	107
15 Other forms of Tuberculosis ...	61	71	25	19	8	10	194
16 Cancer and other Malignant Tumours	617	555	230	158	74	62	1,696
17 Simple Meningitis	135	77	54	34	18	12	330
18 Congestion, Hæmorrhage, and Softening of the Brain	301	292	125	67	38	41	864
19 Organic Diseases of the Heart ...	848	780	337	217	116	71	2,369
20 Acute Bronchitis	109	45	27	27	16	12	236
21 Chronic Bronchitis	176	204	40	41	18	11	490
22 Pneumonia	356	333	110	76	51	60	986
23 Other Diseases of the Respiratory System (Tuberculosis excepted)	279	382	138	52	58	17	926
24 Diseases of the Stomach (Cancer excepted)	35	51	33	14	13	6	152
25 Diarrhœa and Enteritis (children under two years only) ...	660	540	161	132	116	104	1,713
26 Appendicitis and Typhlitis ...	65	56	24	15	15	6	181
27 Hernia, Intestinal Obstructions ...	81	81	27	17	19	8	233
28 Cirrhosis of the Liver	77	68	41	21	20	7	234
29 Nephritis and Bright's Disease ...	394	349	156	98	60	20	1,077
30 Non-cancerous Tumours and other Diseases of the Female Genital Organs	—	—	—	—	—	—	—
31 Puerperal Septicæmia (Puerperal Fever, Puerperal Peritonitis, Puerperal Phlebitis)	—	—	—	—	—	—	—
32 Other Puerperal Accidents of Pregnancy and Confinement ...	—	—	—	—	—	—	—
33 Congenital Debility and Malformations	713	524	201	169	121	121	1,849
34 Senile Debility...	666	694	188	156	86	115	1,905
35 Violence	761	506	404	201	187	69	2,128
36 Suicide	132	100	100	27	63	10	432
37 Other Diseases...	1,562	1,474	678	376	327	173	4,590
38 Unspecified or Ill-defined Diseases	145	64	22	46	57	42	376
Total—Males	9,339	8,128	3,594	2,235	1,760	1,098	26,154

CAUSES OF DEATH—COMMONWEALTH, 1910.

(*b*) FEMALES.

Cause.	N.S.W.	Vic.	Q'land.	S. Aus.	W.Aus.	Tas.	C'wlth.
1 Typhoid Fever	98	55	36	8	19	18	234
2 Typhus	—	—	—	—	—	—	—
3 Intermittent Fever and Malarial Cachexia	—	—	1	4	2	—	7
4 Small-pox	—	2	—	—	—	—	2
5 Measles	41	12	5	—	—	—	58
6 Scarlet Fever	10	17	—	1	1	2	31
7 Whooping Cough	80	33	42	26	28	29	238
8 Diphtheria and Croup	120	52	36	22	37	7	274
9 Influenza	54	46	21	7	7	4	139
10 Asiatic Cholera	—	—	—	—	—	—	—
11 Cholera Nostras	—	—	—	—	—	—	—
12 Other Epidemic Diseases ...	17	16	22	6	7	3	71
13 Tuberculosis of the Lungs ...	456	489	91	170	65	77	1,348
14 Tuberculosis of the Meninges ...	42	33	8	13	3	9	108
15 Other forms of Tuberculosis ...	48	61	9	21	6	4	149
16 Cancer and other Malignant Tumours	549	516	160	164	61	59	1,509
17 Simple Meningitis	79	66	36	25	14	17	237
18 Congestion, Hæmorrhage, and Softening of the Brain ...	287	330	84	80	26	33	840
19 Organic Diseases of the Heart ...	648	774	210	237	68	72	2,009
20 Acute Bronchitis	95	36	22	15	10	6	184
21 Chronic Bronchitis	126	152	38	31	6	16	369
22 Pneumonia	202	230	50	49	35	60	626
23 Other Diseases of the Respiratory System (Tuberculosis excepted)	236	217	75	37	37	16	618
24 Diseases of the Stomach (Cancer excepted)	48	45	18	23	8	3	145
25 Diarrhœa and Enteritis (children under two years only) ...	553	428	148	103	104	96	1,432
26 Appendicitis and Typhlitis ...	44	49	12	14	7	8	134
27 Hernia, Intestinal Obstructions ...	57	56	15	22	13	2	165
28 Cirrhosis of the Liver	38	60	21	4	4	7	134
29 Nephritis and Bright's Disease ...	238	252	87	62	21	34	694
30 Non-cancerous Tumours and other Diseases of the Female Genital Organs	52	55	15	13	12	2	149
31 Puerperal Septicæmia (Puerperal Fever, Puerperal Peritonitis, Puerperal Phlebitis)	104	49	23	19	14	9	218
32 Other Puerperal Accidents of Pregnancy and Confinement ...	126	102	73	32	19	21	373
33 Congenital Debility and Malformations	502	394	170	120	89	97	1,372
34 Senile Debility	428	589	110	180	35	106	1,448
35 Violence	208	201	80	49	51	21	610
36 Suicide	24	30	14	6	7	3	84
37 Other Diseases...	1,130	1,108	403	270	146	148	3,205
38 Non-specified or Ill-defined Diseases	79	49	15	28	18	33	222
Total—Females	6,819	6,604	2,150	1,861	980	1,022	19,436

CAUSES OF DEATH—COMMONWEALTH, 1910.

(c) TOTAL, MALES AND FEMALES.

Cause.	N.S.W.	Vic.	Q'land.	S. Aust.	W.Aust.	Tas.	C'wlth.
1 Typhoid Fever	291	141	99	25	51	41	648
2 Typhus	—	—	—	—	—	—	—
3 Intermittent Fever and Malarial Cachexia	2	—	24	16	13	—	55
4 Small-pox	1	3	—	—	—	—	4
5 Measles	83	27	12	—	2	—	124
6 Scarlet Fever	23	27	1	2	2	3	58
7 Whooping Cough	172	73	84	42	50	55	476
8 Diphtheria and Croup ...	238	114	70	46	68	19	555
9 Influenza	115	100	57	26	18	8	324
10 Asiatic Cholera	—	—	—	—	—	—	—
11 Cholera Nostras	—	—	—	1	—	—	1
12 Other Epidemic Diseases ...	36	33	74	13	25	3	184
13 Tuberculosis of the Lungs	1,044	1,040	303	332	210	130	3,059
14 Tuberculosis of the Meninges	79	79	11	26	9	11	215
15 Other forms of Tuberculosis	109	132	34	40	14	14	343
16 Cancer and other Malignant Tumours	1,166	1,071	390	322	135	121	3,205
17 Simple Meningitis	214	143	90	59	32	29	567
18 Congestion, Hæmorrhage, and Softening of the Brain ...	588	622	209	147	64	74	1,704
19 Organic Diseases of the Heart	1,496	1,554	547	454	184	143	4,378
20 Acute Bronchitis	204	81	49	42	26	18	420
21 Chronic Bronchitis... ...	302	356	78	72	24	27	859
22 Pneumonia	558	563	160	125	86	120	1,612
23 Other Diseases of the Respiratory System (Phthisis excepted)	515	599	213	89	95	33	1,544
24 Diseases of the Stomach (Cancer excepted)	83	96	51	37	21	9	297
25 Diarrhœa and Enteritis (children under two years only)	1,213	968	309	235	220	200	3,145
26 Appendicitis and Typhlitis ...	109	105	36	29	22	14	315
27 Hernia, Intestinal Obstructions	138	137	42	39	32	10	398
28 Cirrhosis of the Liver ...	115	128	62	25	24	14	368
29 Nephritis and Bright's Disease	632	601	243	160	81	54	1,771
30 Non-cancerous Tumours and other Diseases of the Female Genital Organs	52	55	15	13	12	2	149
31 Puerperal Septicæmia (Puerperal Fever, Puerperal Peritonitis, Puerperal Phlebitis)	104	49	23	19	14	9	218
32 Other Puerperal Accidents of Pregnancy and Confinement	126	102	73	32	19	21	373
33 Congenital Debility and Malformations	1,215	918	371	289	210	218	3,221
34 Senile Debility	1,094	1,283	298	336	121	221	3,353
35 Violence	969	707	484	250	238	90	2,738
36 Suicide	156	130	114	33	70	13	516
37 Other Diseases	2,692	2,582	1,081	646	473	321	7,795
38 Non-specified or Ill-defined Diseases	224	113	37	74	75	75	598
Total—Males and Females...	16,158	14,732	5,744	4,096	2,740	2,120	45,590

(d) The classification for the years 1907, 1908, and 1909 is shewn for the Commonwealth in the following table, and for purposes of comparison the figures for the year 1910 have been repeated from the preceding table. Male and female deaths for 1905,

1906, and 1907 are shewn separately on page 237 of the second issue, those for 1908 on pages 211 and 212 of the third issue, and for 1909 on pages 200 and 201 of the fourth issue of this Year Book, while the figures for 1910 are given on the two preceding pages.

The figures for 1907, 1908, and 1909, which were compiled under thirty-five headings, have here been distributed among the corresponding headings of the revised classification.

CAUSES OF DEATH—COMMONWEALTH, 1907 to 1910.

MALES AND FEMALES.

Cause.	1907.	1908.	1909.	1910.
1 Typhoid Fever	564	736	661	648
2 Typhus	...	...	...	...
3 Intermittent Fever & Malarial Cachexia	42	52	59	55
4 Small-pox	...	...	1	4
5 Measles	147	125	31	124
6 Scarlet Fever	37	63	74	58
7 Whooping Cough	1,070	249	257	476
8 Diphtheria and Croup	403	421	435	555
9 Influenza	902	588	326	324
10 Asiatic Cholera	...	...	...	...
11 Cholera Nostras	5	4	1	1
12 Other Epidemic Diseases	276	268	221	184
13 Tuberculosis of the Lungs	3,206	3,409	3,169	3,059
14 Tuberculosis of the Meninges	237	205	220	215
15 Other forms of Tuberculosis	415	352	332	343
16 Cancer and other Malignant Tumours	2,940	2,921	3,112	3,205
17 Simple Meningitis	648	676	616	567
18 Congestion, Hæmorrhage, and Softening of the Brain	1,901	1,867	1,665	1,704
19 Organic Diseases of the Heart	3,801	4,066	3,940	4,378
20 Acute Bronchitis	514	412	422	420
21 Chronic Bronchitis	844	818	897	859
22 Pneumonia	1,788	1,871	1,752	1,612
23 Other Diseases of the Respiratory System (Tuberculosis excepted)	1,689	1,569	1,565	1,544
24 Diseases of the Stomach (Cancer excepted)	334	308	272	297
25 Diarrhœa and Enteritis (Children under two years only)	2,733	3,236	2,803	3,145
26 Appendicitis and Typhlitis	305	293	344	315
27 Hernia, Intestinal Obstructions	411	389	396	398
28 Cirrhosis of the Liver	325	362	331	368
29 Nephritis and Bright's Disease	1,760	1,864	1,799	1,771
30 Non-cancerous Tumours and other Diseases of the Female Genital Organs	128	159	130	149
31 Puerperal Septicæmia (Puerperal Fever, Puerperal Peritonitis, Puerperal Phlebitis)	179	202	201	218
32 Other Puerperal Accidents of Pregnancy and Confinement	435	404	376	373
33 Congenital Debility and Malformations	3,038	2,973	2,905	3,221
34 Senile Debility	3,136	3,466	3,194	3,353
35 Violence	2,679	2,922	2,664	2,738
36 Suicide	461	497	495	516
37 Other Diseases	6,677	7,417	7,419	7,795
38 Unspecified or Ill-defined Diseases	1,275	1,262	1,087	598
Total	45,305	46,426	44,172	45,590

16. **Certification of Deaths.**—Information was obtained in 1910 as to the persons by whom the 45,590 deaths which occurred in the Commonwealth were certified. The

result of the enquiry shews that approximately 88.1 per cent. (in 1909, 87.7 per cent.) were certified by medical practitioners, and 11.1 per cent. (in 1909, 11.5 per cent.) by coroners after inquests, or magisterial enquiries, while in 0.8 per cent. (in 1909, 0.8 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. 25; a short summary will therefore suffice here:—

CERTIFICATION OF DEATHS, COMMONWEALTH, 1910.

Death Certified by—	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Cwlth.
Medical practitioner ...	14,200	12,908	5,094	3,666	2,324	1,960	40,152
Coroner	1,942	1,804	410	397	366	157	5,076
Not certified or not stated ...	16	20	240	33	50	3	362
Total Deaths	16,158	14,732	5,744	4,096	2,740	2,120	45,590

Of the cases certified by coroners, violent deaths numbered 2477, ill-defined causes 302, organic heart disease 419, senile decay 352, congenital debility 189, diarrhœa and enteritis 135, Bright's disease 65, congestion and hæmorrhage of brain 114, tuberculosis of lungs 80, pneumonia 107, infantile convulsions 74, broncho-pneumonia 28, diseases of arteries, aneurisms, etc. 58, and acute and chronic alcoholism 36; a total of 4436 out of 5076.

Of uncertified causes of death, violent deaths numbered 56, senile debility 46, ill-defined causes 32, infantile convulsions 19, congenital debility 51, diarrhœa and enteritis 11, tuberculosis of the lungs 8, organic heart disease 14, and pneumonia 8; a total of 245 out of 362.

17. **Deaths from Special Causes.**—The table on p. 205 furnishes comparisons for the last four years only, and comparisons will, therefore, be restricted to that period.

(i.) *Typhoid Fever.* Deaths from typhoid fever were more numerous in 1908 than in 1907, numbering 736, against 564 in 1907. In 1909 the number fell to 661, and to 648 in 1910, of which 291 occurred in New South Wales, 141 in Victoria, 99 in Queensland, 25 in South Australia, 51 in Western Australia, and 41 in Tasmania.

(ii.) *Typhus.* The death of one woman was registered in 1906 in Victoria as being due to typhus, but this registration may have been due to an error in the death certificate, and the death may possibly have been one of typhoid (enteric) fever.

(iii.) *Intermittent Fever and Malarial Cachexia.* Deaths from malarial diseases are practically confined to the tropical districts of Northern Queensland and Western Australia, and to the Northern Territory, 24 out of 55 deaths registered in 1910 having occurred in Queensland, and 16 in the Northern Territory.

(iv.) *Small-pox.* No deaths from small-pox occurred during the two years 1907 and 1908, but in 1909 one death was registered in Western Australia. In 1910 one death was registered in New South Wales, and three in Victoria.

(v.) *Measles.* No serious epidemic of measles has occurred for several years; the deaths in 1908 were less numerous than in 1907, numbering 125, against 147. In 1909 the deaths numbered 31, while 124 were registered in 1910.

(vi.) *Scarlet Fever.* 58 deaths were registered in 1910, 23 of which occurred in New South Wales, and 27 in Victoria.

(vii.) *Whooping Cough.* A rather severe epidemic of whooping cough visited New South Wales in the early part of 1907, causing 592 deaths out of a total of 1070 registered in the Commonwealth. The deaths in 1908 fell to 249, with a slight increase to 257 in 1909, and a much greater increase to 476 in 1910.

(viii.) *Diphtheria and Croup.* Deaths in 1907, 403; in 1908, 421; in 1909, 435, and in 1910, 555, of which 238 occurred in New South Wales, 114 in Victoria, 70 in Queensland, and 68 in Western Australia.

(ix.) *Influenza.* This disease was rather more prevalent in 1907 than in the two previous years, the deaths numbering 902, against 428 and 539. Of the deaths occurring in 1907. 309 were registered in New South Wales, 275 in Victoria, and 209 in Queensland. The deaths in 1908 were 588; in 1909, 326, and 324 in 1910, of which 115 occurred in New South Wales, 100 in Victoria, and 57 in Queensland.

(x.) *Asiatic Cholera.* No cases of Asiatic cholera have ever occurred in the Commonwealth.

(xi.) *Cholera Nostras.* Isolated cases only of choleriform diarrhœa occurred in each of the four years.

(xii.) *Other Epidemic Diesases.* The number of deaths registered under this heading was 276 in 1907, 268 in 1908, 221 in 1909, and 184 in 1910. The list in 1910 includes the following diseases:—Dysentery 97, erysipelas 56, leprosy 13, of which 10 occurred in Queensland, other epidemic diseases, 18. Prior to 1910 beri beri was included in other epidemic diseases. The sixty cases occurring in 1910 have been included in No. 37 of the revised classification. Of the 41 deaths from leprosy in the years 1907 to 1910, 33 occured in Queensland. There were no deaths from plague in the Commonwealth during 1910. In 1907, 48 deaths were registered; in 1908, 14 deaths; and in 1909, 13 deaths.

(xiii.) *Tuberculosis of the Lungs.* The deaths in 1910 numbered 3059, viz., 1711 males and 1348 females. The figures for 1907, 1908, and 1909 were 3206, 3409, and 3169 respectively. Of the deaths in 1910, 1044 occurred in New South Wales, 1040 in Victoria, 303 in Queensland, 332 in South Australia, 210 in Western Australia, and 130 in Tasmania. In accordance with the revised classification, 50 deaths from tuberculosis of the larynx have been included with tuberculosis of the lungs in 1910, instead of in class 15 in previous years. In the table on page 205 deaths from tuberculosis of the larynx have been included with tuberculosis of the lungs, so that the figures allow of correct comparison.

(xiii.*a*) *Tuberculosis of the Respiratory System.* Of the various forms of tuberculosis prevalent in the Commonwealth, that which has probably 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, shewing the frequency of deaths at successive ages in England and Wales during 1906 (Fig. 1), and in the Commonwealth during 1907 (Fig. 2). These are now superseded and a fuller reference based on later results is made hereinafter to this and other diseases. The results given depended upon intercensal estimates of population, and these having now been adjusted to agree with the Census of 3rd April, 1911, some slight amendmen of the figures is necessary.

The figures dealt with furnish the following death-rates from tuberculosis of the respiratory system for the years specified:—

Particulars.	Males.	Females.	Total.
ENGLAND AND WALES, 1906—			
Population	16,689,707	17,857,309	34,547,016*
Deaths from tuberculosis of the respiratory system	22,645	17,101	39,746
Death-rate per 100,000 of population ...	135.68	95.76	115.05
COMMONWEALTH OF AUSTRALIA, 1907— ...			
Population	2,141,727	1,982,002	4,123,729
Deaths from tuberculosis of the respiratory system	1,891	1,477	3,368
Death-rate per 100,000 of population ...	88.29	74.52	81.67

* Not corrected to Census.

(xiv.) *Tuberculosis of the Meninges.* The number of deaths registered in 1907, 237; in 1908, 205; in 1909, 220; and in 1910, 215.

(xv.) *Other Forms of Tuberculosis.* Deaths numbered in 1907, 415; in 1908, 352; in 1909, 332; and in 1910, 343. The deaths in 1910 include the following forms of tuberculosis:—Tuberculosis of the peritonæum, 143; Pott's disease, 50; tuberculosis of other organs, 90; and disseminated tuberculosis, 60. Tuberculosis of the larynx (see paragraph xiii.)

(xv.*a*) *All Forms of Tuberculosis.* A complete tabulation of all the different tubercular diseases from which deaths occurred in 1910, will be found in Bulletin No. 25 of Population and Vital Statistics. Here it will suffice to show a few of the features of the tabulation mentioned. The total number of deaths due to tubercular diseases was 3617, viz., 2012 males and 1605 females. The following table shews the ages of these 3617 persons:—

AGES OF PERSONS WHO DIED FROM TUBERCULAR DISEASES, 1910.

COMMONWEALTH.

Ages.	Male.	Female	Total.	Ages.	Male.	Female	Total.
Under 5 years ...	137	104	241	55 years and under 60	110	56	166
5 years and under 10	33	22	55	60 ,, ,, 65	85	36	121
10 ,, ,, 15	32	40	72	65 ,, ,, 70	51	27	78
15 ,, ,, 20	93	151	244	70 ,, ,, 75	37	15	52
20 ,, ,, 25	159	221	380	75 ,, ,, 80	17	8	25
25 ,, ,, 30	210	272	482	80 ,, ,, 85	6	3	9
30 ,, ,, 35	205	185	390	Age not stated ...	3	2	5
35 ,, ,, 40	205	169	374				
40 ,, ,, 45	197	132	329				
45 ,, ,, 50	242	99	341	Total Deaths ...	2,012	1,605	3,617
50 ,, ,, 55	190	63	253				

The length of residence in the Commonwealth of persons who died from tubercular diseases has been tabulated for the year 1910 for all the Commonwealth States, with the following results :—

LENGTH OF RESIDENCE IN COMMONWEALTH

OF PERSONS WHO DIED FROM TUBERCULAR DISEASES, 1910.

Length of Residence in Commonwealth.	Male.	Fem.	Total	Length of Residence in Commonwealth.	Male.	Fem.	Total.
Born in Commonwealth ...	1,286	1,353	2,639	Resident 10 yrs. & under 15	29	10	39
Resident under 1 year ...	26	3	29	" 15 " " 20	30	9	39
" 1 year	22	5	27	" 20 " over ...	412	170	582
" 2 years	19	2	21	Length of resid'ce not stated	132	43	175
" 3 "	8	2	10				
" 4 "	9	4	13				
" 5 " & under 10	39	4	43	Total Deaths ...	2,012	1,605	3,617

There would not appear, therefore, to be much ground for the statement sometimes heard that many persons arrive in Australia in the last stages of consumption.

In order to shew the prevalence of tuberculosis in the several States, the death rates from tubercular diseases are shewn in the following table, together with the percentage which deaths from tuberculosis bear on the total number of deaths registered :—

DEATH RATES FROM TUBERCULOSIS AND PERCENTAGE ON TOTAL DEATHS

COMMONWEALTH.

State.	Death Rates* from Tuberculosis.			Percentage on Total Deaths.		
	Males.	Females.	Total.	Males.	Females.	Total.
New South Wales	0.80	0.70	0.75	7.34	8.01	7.62
Victoria ...	1.05	0.90	0.97	8.22	8.83	8.49
Queensland ...	0.74	0.40	0.59	6.68	5.02	6.06
South Australia ...	0.95	1.04	0.99	8.68	10.96	9.72
Western Australia	1.03	0.63	0.86	9.03	7.55	8.50
Tasmania ...	0.67	0.96	0.81	5.92	8.81	7.31
Commonwealth	0.89	0.76	0.83	7.69	8.26	7.93

* Number of deaths from tuberculosis per 1000 of mean population.

In the first issue of this book a series of figures was given shewing the rates of mortality from phthisis in various countries, and it was shewn that these ranged from 570 per million in New Zealand to 4415 per million in Hungary, with a rate of 808 for the Commonwealth. It is not considered necessary to repeat those figures here in detail, and it may suffice to state that while deaths from all tubercular diseases in the Commonwealth were 0.83 per thousand in 1910, they were 1.40 per thousand in Belgium in 1904; 1.65 per thousand in England and Wales in 1906; 1.80 per thousand in the Netherlands in 1906; 2.04 per thousand in the German Empire in 1905; and 2.72 per thousand in Switzerland in 1905. The Commonwealth occupies, therefore, a very enviable position in regard to tubercular diseases, when compared with European countries.

(xvi.) *Cancer and other Malignant Tumours.* Deaths from cancer shew a tendency to increase, the figures for 1907 being 2940 deaths; for 1908, 2921 deaths; for 1909,

3112 deaths; and 1910, 3205 deaths. Of the deaths registered in 1910, 1696 were those of males, viz., 617 in New South Wales, 555 in Victoria, 230 in Queensland, 158 in South Australia, 74 in Western Australia, and 62 in Tasmania; while 1509 were those of females; viz., 549 in New South Wales, 516 in Victoria, 160 in Queensland, 164 in South Australia, 61 in Western Australia, and 59 in Tasmania. Bulletin No. 25 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, 1910.

Seat of Disease.	Male.	Female	Total.
Cancer, etc., of the buccal cavity	238	24	262
,, ,, the stomach and liver	746	481	1,227
,, ,, the peritonæum, the intestines, and the rectum ...	186	184	370
,, ,, the female genital organs	...	305	305
,, ,, the breast	...	210	210
,, ,, the skin	64	34	98
,, ,, other organs	462	271	733
Total Deaths	1,696	1,509	3,205

Of these deaths 1016 were described as cancer, 1309 as carcinoma, 158 as epithelioma, 388 as "malignant disease," 73 as "malignant tumour," 4 as neoplasm, 29 as "rodent ulcer," 211 as sarcoma, and 17 as scirrhus.

The ages of the 3205 persons who died from cancer in 1910, 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 65 to 70.

AGES OF PERSONS WHO DIED FROM CANCER, 1910.

COMMONWEALTH.

Ages.	Males.	Female	Total.	Ages.	Males.	Female	Total.
Under 15 years ...	25	17	42	65 years and under 70	250	204	454
15 years and under 20	5	5	10	70 ,, ,, 75	218	160	378
20 ,, ,, 25	9	9	18	75 ,, ,, 80	173	140	313
25 ,, ,, 30	11	14	25	80 ,, ,, 85	85	62	147
30 ,, ,, 35	13	35	48	85 years and over ...	34	31	65
35 ,, ,, 40	34	60	94	Age not stated ...	2	...	2
40 ,, ,, 45	74	123	197				
45 ,, ,, 50	142	140	282				
50 ,, ,, 55	182	179	361	Total Deaths ...	1,696	1,509	3,205
55 ,, ,, 60	227	165	392				
60 ,, ,, 65	212	165	377				

A tabulation has been made of the occupations of the males who died from cancer, which the following is a summary:—

OCCUPATION OF MALES WHO DIED FROM CANCER, 1910.

COMMONWEALTH.

Occupation.	No. of Deaths.	Occupation.	No. of Deaths.
Professional class	79	Pastoral class	81
Domestic class	51	Working in mines and quarries...	95
Mercantile class	162	Other primary producers ...	19
Engaged in transport and communication	95	Independent means	82
Manufacturing class	169	Dependents	55
Engaged in building and construction	122	Occupation not stated... ...	48
Indefinite industrial workers ...	341	Total Male Deaths ...	1,696
Agricultural class	297		

As the following tables shew, the death rates from cancer are below those for tubercular diseases in all the States (with the exception, however, of the female death rates in New South Wales and Queensland), but while the latter have a general tendency to decrease, the former have, on the contrary, shewn an increase in nearly every recent year.

DEATH RATES* FROM CANCER AND PERCENTAGE ON TOTAL DEATHS, 1910.

COMMONWEALTH.

State.	Death Rates* from Cancer.			Percentage on Total Deaths.		
	Males.	Females.	Total.	Males.	Females.	Total.
New South Wales	0.72	0.70	0.71	6.61	8.05	7.22
Victoria ...	0.87	0.80	0.83	6.83	7.81	7.27
Queensland ...	0.71	0.59	0.66	6.40	7.44	6.79
South Australia ...	0.77	0.83	0.80	7.07	8.81	7.86
Western Australia	0.48	0.52	0.50	4.20	6.22	4.93
Tasmania ...	0.64	0.63	0.63	5.65	5.77	5.71
Commonwealth	0.75	0.72	0.73	6.48	7.76	7.03

* Number of deaths from Cancer per 1000 of mean population.

The table shewing the death rates from cancer in various countries, which was given in the first issue of this work, is not here repeated. It may, however, be stated that while the death rate of the Commonwealth from cancer in 1910 was 0.73 per thousand, that of Belgium in 1908 was 0.54; that of the German Empire in 1905, 0.80; that of England and Wales in 1909, 0.95; that of the Netherlands in 1909, 0.90; and that of Switzerland in 1908, 1.11 per thousand.

(xvii.) *Simple Meningitis.* The table shews 648 deaths in 1907, 676 deaths in 1908, 616 deaths in 1909, and 567 in 1910.

(xviii.) *Congestion, Hæmorrhage, and Softening of the Brain.* The deaths registered under this heading in 1907 were 1901, viz., 1038 males and 863 females; in 1908, 1867, viz., 991 males and 876 females; in 1909, 1665, viz., 869 males and 796 females; and in 1910, 1704, viz., 864 males and 840 females. The 1910 figures are made up of congestion and hæmorrhage of the brain—803 males, 778 females, total 1581; and softening of the brain—61 males, 62 females, total 123.

(xix.) *Organic Diseases of the Heart.* The number of deaths registered in 1910 was 4378, viz., 2369 males and 2009 females. Of these deaths, New South Wales was responsible for 848 males and 648 females; Victoria for 780 males and 774 females; Queensland for 337 males and 210 females; South Australia for 217 males and 237 females; Western Australia for 116 males and 68 females; and Tasmania for 71 males and 72 females. To the figures for 1910 correspond the following death rates and percentages to total deaths:—

DEATH RATES* FROM ORGANIC HEART DISEASE AND PERCENTAGE ON TOTAL DEATHS, COMMONWEALTH, 1910.

State.	Death Rates* from Organic Heart Disease.			Percentage on Total Deaths.		
	Males.	Females.	Total.	Males.	Females.	Total.
New South Wales	0.99	0.83	0.92	9.08	9.50	9.26
Victoria ...	1.23	1.19	1.21	9.59	11.72	10.55
Queensland ...	1.04	0.78	0.92	9.38	9.77	9.52
South Australia ...	1.06	1.20	1.13	9.71	12.74	11 09
Western Australia	0.75	0.58	0.68	6.59	6.94	6.71
Tasmania ...	0.73	0.77	0.75	6.46	7.04	6.75
Commonwealth ...	1.04	0.96	1.00	9.06	10.34	9.60

* Number of deaths from Organic Heart Disease per 1000 of mean population.

(xx.) *Acute Bronchitis.* The classification of causes of deaths 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 1907, 1908, 1909, and 1910, with the result that acute bronchitis is credited with 514 deaths in 1907, 412 deaths in 1908, 422 deaths in 1909, and 420 in 1910, viz., 236 males and 184 females.

(xxi.) *Chronic Bronchitis.* The adjustment mentioned in the preceding paragraph gives a total of 844 deaths in 1907, 818 deaths in 1908, 897 deaths in 1909, and 859 in 1910, viz., 490 males and 369 females.

(xxii.) *Pneumonia.* The 1910 figures were 986 males and 626 females, a total of 1612 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 1907 numbered 1689; in 1908, 1569; in 1909, 1565, and in 1910, 1544. The total for 1910 is made up as follows, viz.:—Diseases of the nasal fossæ, 12 deaths; diseases of the larynx, 90 deaths; diseases of the thyroid body, 19 deaths; broncho-pneumonia, 701 deaths, pleurisy, 168 deaths; pulmonary congestion and apoplexy, 150 deaths; gangrene of the lung, 30 deaths; asthma, 148 deaths; pulmonary emphysema, 12 deaths; fibroid phthisis, miners' complaint, 129 deaths; other diseases of the respiratory system (tuberculosis excepted), 85 deaths.

(xxiv.) *Diseases of the Stomach (Cancer excepted).* In 1910 this heading includes: Ulcer of the stomach, 48 males, 59 females; and other diseases of the stomach (cancer excepted), 104 males, 86 females; a total of 297 deaths. The corresponding figures for 1907, 1908, and 1909, were 334, 308, and 272 respectively.

(xxv.) *Diarrhœa and Enteritis (Children under two years only).* In 1907, deaths numbered 2733, viz., 1513 boys and 1220 girls; in 1908, 3236, viz., 1814 boys and 1422 girls; in 1909, 2803, viz., 1544 boys and 1259 girls; and in 1910, 3145, viz., 1713 boys and 1432 girls. The 1910 deaths were distributed amongst the six States as follows:—New South Wales, 660 males, 553 females, total 1213; Victoria, 540 males, 428 females, total 968; Queensland, 161 males, 148 females, total 309; South Australia, 132 males, 103 females, total 235; Western Australia, 116 males, 104 females, total 220; and Tasmania, 101 males, 96 females, total 200.

The following are the death rates and percentages on total deaths due to infantile diarrhœa and enteritis in the six States for the year 1910:—

DEATH RATES* FROM INFANTILE DIARRHŒA AND ENTERITIS, AND PERCENTAGE ON TOTAL DEATHS, COMMONWEALTH, 1910.

State.	Death Rate* from Infantile Diarrhœa and Enteritis.			Percentage on Total Deaths.		
	Males.	Females.	Total.	Males.	Females.	Total.
New South Wales	0.77	0.71	0.74	7.06	8.11	7.51
Victoria ...	0.85	0.66	0.75	6.64	6.48	6.57
Queensland ...	0.50	0.55	0.52	4.48	6.88	5.39
South Australia ...	0.65	0.52	0.59	5.91	5.53	5.74
Western Australia	0.75	0.89	0.81	6.59	10.61	8.03
Tasmania ...	1.07	1.03	1.05	9.47	9.39	9.43
Commonwealth	0.76	0.68	0.72	6.55	7.37	6.89

* Number of deaths from these diseases per 1000 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. The death rates for the three States named were 0.83, 0.61, and 0.71 per 1000 respectively in 1908, compared with 0.55, 0.45 and 0.48 in 1907, and with 0.75, 0.59 and 1.05 in 1910.

(xxvi.) *Appendicitis and Typhlitis.* Prior to 1910 deaths from these causes were included in Other Diseases, paragraph xxxvii. Deaths numbered 305 in 1907, 293 in 1908, 344 in 1909, and 315 in 1910, viz., 181 males and 134 females.

(xxvii.) *Hernia, Intestinal Obstructions.* The number of deaths has not varied much from year to year, the number registered in 1907 being 411; in 1908, 389; in 1909, 396; and in 1910, 398, viz., 233 males and 165 females.

(xxviii.) *Cirrhosis of the Liver.* The deaths in 1907 numbered 325; in 1908, 362; in 1909, 331; and in 1910, 368, viz., 234 males and 134 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 1907 there were registered the deaths of 1065 males and 695 females; in 1908, those of 1140 males and 724 females; in 1909, those of 1076 males and 728 females; and in 1910, 1771, 1077 males and 694 females. Of the deaths registered in 1910, those of 82 males and 78 females

were ascribed to acute nephritis, and those of 995 males and 616 females to Bright's disease. New South Wales was responsible for 632 deaths; Victoria for 601; Queensland for 243; South Australia for 160; Western Australia for 81; and Tasmania for 54; making a total of 1771.

(xxx.) *Non-cancerous Tumours and other Diseases of the Female Genital Organs.* Deaths in 1907 numbered 128; in 1908, 159; in 1909, 130; and in 1910, 149. Included in the 149 deaths registered in 1910 were the following:—Non-puerperal uterine hæmorrhage, 3; non-cancerous uterine tumours, 35; other diseases of the uterus, 24; cysts and other ovarian tumours, 31; other diseases of the female genital organs, 56.

(xxxi.) *Puerperal Septicæmia (Puerperal Fever, Puerperal Peritonitis, Puerperal Phlebitis).* Deaths in 1907 were 179; in 1908, 202; in 1909, 201; and in 1910, 218.

(xxxii.) *Other Puerperal Accidents of Pregnancy and Confinement.* The deaths in 1907 numbered 435; in 1908, 404; in 1909, 376; and in 1910, 373. Included in the 373 deaths registered in 1910 were the following:—Accidents of pregnancy, 112; puerperal hæmorrhage, 76; other accidents of childbirth, 31; puerperal albuminuria and convulsions, 77; puerperal phlegmasia alba dolens, embolus, sudden death, 29; death following childbirth, 48.

(xxxii.*a*) *All Puerperal Diseases.* The 591 deaths registered in 1910 under the two preceding headings will be found tabulated in "Bulletin No. 25 of Population and Vital Statistics" under various aspects. It will suffice to repeat here the following facts:—

Of the 591 mothers who died in childbirth during the year 1910, 533 were married and 58 were single. As the total number of nuptial confinements was 108,940, and of ex-nuptial confinements 6619, it follows that one in 204 of married mothers, and one in 114 of single mothers, died of puerperal disease, the general proportion being one in 196, as against one in 195 in 1909, one in 181 in 1908, and one in 178 in 1907.

The ages of the mothers who died varied from 14 to 47 years, and are shewn in the following table:—

AGES OF MOTHERS WHO DIED IN CHILDBIRTH, COMMONWEALTH, 1910.

Age at Death.	Married Women.	Single Women.	Total.	Age at Death.	Married Women.	Single Women	Total.
14 years ...	...	1	1	33 years ...	25	...	25
16 ,, ...	...	4	4	34 ,, ...	24	1	25
17 ,, ...	1	2	3	35 ,, ...	22	...	22
18 ,, ...	5	2	7	36 ,, ...	27	...	27
19 ,, ...	5	5	10	37 ,, ...	21	...	21
20 ,, ...	2	4	6	38 ,, ...	28	1	29
21 ,, ...	13	9	22	39 ,, ...	21	...	21
22 ,, ...	13	4	17	40 ,, ...	17	1	18
23 ,, ...	25	4	29	41 ,, ...	9	...	9
24 ,, ...	31	1	32	42 ,, ...	17	1	18
25 ,, ...	20	3	23	43 ,, ...	8	...	8
26 ,, ...	28	4	32	44 ,, ...	6	...	6
27 ,, ...	21	1	22	45 ,, ...	1	...	1
28 ,, ...	32	3	35	46 ,, ...	2	...	2
29 ,, ...	27	2	29	47 ,, ...	2	...	2
30 ,, ...	27	2	29	Not stated	1	...	1
31 ,, ...	24	2	26				
32 ,, ...	28	1	29	Total deaths	533	58	591

Of the 533 married women shewn in the above table, 28 died in Tasmania; in regard to these no information is available as to previous issue and as to duration of marriage.

Of the remaining 505 women, 160 died at their first confinement, 80 at their second, 54 at their third, 53 at their fourth, 49 at their fifth, 29 at their sixth, 28 at their seventh, 17 at their eighth, 11 at their ninth, 9 at their tenth, 9 at their eleventh, 3 at their twelfth, 1 at her thirteenth, 1 at her fourteenth, and 1 at her fifteenth confinement. The total number of children of the 505 mothers was 1618.

Twenty-four of the mothers who died had been married less than one year, 79 between one and two years, 41 between two and three years, the duration of marriage ranging up to 27 years. This tabulation will be found in detail, and distinguishing the ages at marriage, in "Bulletin No. 25 of Population and Vital Statistics," as will a further tabulation shewing the duration of marriage and previous issue in combination. These tables shew, for instance, that one mother, who had been married at the age of 23 years, died at the age of 45, in the 22nd year of her marriage, at her fourteenth confinement. The mother who died at her fifteenth confinement had been married for 21 years, and was at the time of her death 40 years old.

(xxxiii.) *Congenital Debility and Malformations.* The figures for 1910 include children under one year of age, of whom 2772 were under three months. The 1910 figures include:—Malformations, 220 males, 149 females, total 369; and congenital debility, icterus, and sclerema of children under one year of age, 1629 males and 1223 females, total 2852; or a grand total of 3221. Of these deaths, 1215 were registered in New South Wales, viz., 713 males and 502 females; 918 in Victoria, viz., 524 males and 394 females; 371 in Queensland, viz., 201 males and 170 females; 289 in South Australia, viz., 169 males and 120 females; 210 in Western Australia, viz., 121 males and 89 females; and 218 in Tasmania, viz., 121 males and 97 females.

(xxxiv.) *Senile Debility.* The deaths ascribed to "old age" form a large group, and are slightly in excess of those due to infantile debility. In 1907 they numbered 3136, viz., 1721 males and 1415 females; in 1908, 3466, viz., 2027 males and 1439 females; in 1909, 3194, viz., 1829 males and 1365 females; and in 1910, 3353, viz., 1905 males and 1448 females. Of the deaths registered in 1910, 1094 occurred in New South Wales, viz., 666 males and 428 females; 1283 in Victoria, viz., 694 males and 589 females; 298 in Queensland, viz., 188 males and 110 females; 336 in South Australia, viz., 156 males and 180 females; 121 in Western Australia, viz., 86 males and 35 females; and 221 in Tasmania, viz., 115 males and 106 females.

Of the males whose death was described as due to senility, 1 was aged between 40 and 44; 3 were between 50 and 54; 9 were between 55 and 59; 34 between 60 and 64; 105 between 65 and 69; 320 between 70 and 74; 472 between 75 and 79; 490 between 80 and 84; 302 between 85 and 89; 121 between 90 and 94; 35 between 95 and 99; while 12 were 100 years old and upwards; and of one the age was not stated.

Of the females, 2 were between 50 and 54; 2 between 55 and 59; 23 between 60 and 64; 70 between 65 and 69; 209 between 70 and 74; 331 between 75 and 79; 384 between 80 and 84; 256 between 85 and 89; 129 between 90 and 94; 33 between 95 and 99; while 9 were 100 years old and upwards.

(xxxv.) *Violence.* A very large number of deaths is every year due 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 1907, 2679, viz., 2038 males and 641 females; in 1908, 2922, viz., 2187 males and 735 females; in 1909, 2664, viz., 2050 males and 614 females; and in 1910, 2738, viz., 2128 males and 610 females. Of the deaths registered in 1910, those of 761 males and 208 females occurred in New South Wales; those of 506 males and 201 females in Victoria; those of 404 males and 80 females in Queensland; those of 201

males and 49 females in South Australia; those of 187 males and 51 females in Western Australia; and those of 69 males and 21 females in Tasmania.

The following table shews the various kinds of accidental deaths which occurred in 1910, distinguishing males and females:—

DEATHS FROM VIOLENCE, COMMONWEALTH, 1910.

Cause of Death.	Males.	Females.	Total.
Poisoning by food	13	19	32
Venomous bites and stings	8	4	12
Other acute poisonings	28	24	52
Conflagration	6	4	10
Burns (conflagration excepted)	106	183	289
Absorption of deleterious gases	12	9	21
Accidental drowning	470	77	547
Traumatism by firearms	70	13	83
Traumatism by cutting or piercing instruments	5	...	5
Traumatism by fall	341	74	415
Traumatism in mines or quarries	128	...	128
Traumatism by machines	29	...	29
Traumatism by other crushing (vehicles, railways, etc.)	303	46	349
Injuries by animals	52	6	58
Starvation, thirst, fatigue	26	5	31
Excessive cold	4	...	4
Effects of heat	77	32	109
Lightning	5	...	5
Electricity (lightning excepted)	6	...	6
Homicide by firearms	12	10	22
Homicide by cutting or piercing instruments...	2	5	7
Homicide by other means	43	24	67
Fractures (cause not specified)	84	20	104
Other external violence	298	55	353
Total Deaths	2,128	610	2,738

In every kind of accidental death there was, therefore, a large excess of males, with the exception of burning accidents, in which female deaths largely predominated, poisoning by food, and homicide by cutting or piercing instruments.

The excessive heat of January, 1908, was responsible for an increase in the number of deaths caused by insolation, i.e., sunstroke and heat apoplexy, from 64 in 1907 to 246 in 1908, distributed as follows:—New South Wales, 46; Victoria, 130; Queensland, 14; South Australia, 39; Western Australia, 15; Tasmania, 2. In 1910, as the preceding table shews, the deaths fell to 109.

(xxxvi.) *Suicide.** Although their number in 1908, 1909, and 1910 was greater than it was in 1907, it may be said that suicides have shewn a tendency to decrease during recent years, the number in 1905 having been 520, viz., 431 males and 89 females; while in 1906 it was 499, viz., 403 males and 96 females; in 1907, 461, viz., 385 males and 76 females; in 1908, 497, viz., 413 males and 84 females; in 1909, 495, viz., 398 males and 97 females; and in 1910, 516, viz., 432 males and 84 females. Of the last named, those of 132 males and 24 females happened in New South Wales; those of 100 males and 30 females in Victoria; those of 100 males and 14 females in Queensland; those of 27 males and 6 females in South Australia; those of 63 males and 7 females in Western Australia; and those of 10 males and 3 females in Tasmania.

The modes adopted by persons who committed suicide in the years 1907 to 1910 were as follows:—

* See also Appendix to this section, page 240.

NUMBER OF MALE AND FEMALE SUICIDES, COMMONWEALTH, 1907 to 1910.

	Males.				Females.				Total.			
	1907.	1908.	1909.	1910.	1907.	1908.	1909.	1910.	1907.	1908.	1909.	1910.
Population in millions	2.14	2.18	2.22	2.27	1.98	2.01	2.05	2.10	4.12	4.19	4.27	4.37
Mode of Death.												
Poisoning	57	88	70	79	32	35	54	34	89	123	124	113
Asphyxia	2	1	2	...	...	...	...	...	2	1	2	...
Hanging or Strangulation	71	68	67	72	12	15	9	10	83	83	76	82
Drowning	37	31	24	42	19	14	19	19	56	45	43	61
Firearms	129	146	138	134	3	7	6	6	132	153	144	140
Cutting instruments ...	61	54	74	79	5	6	5	13	66	60	79	92
Precipitation from a height	6	4	7	3	1	2	...	...	7	6	7	3
Crushing	3	6	5	8	2	2	1	...	5	8	6	8
Other modes ...	19	15	11	15	2	3	3	2	21	18	14	17
Total ...	385	413	398	432	76	84	97	84	461	497	495	516

The death rates from suicides and the percentage on total deaths borne by suicides are shewn in the following table :—

DEATH RATES* FROM SUICIDES AND PERCENTAGE ON TOTAL DEATHS, 1910.

COMMONWEALTH.

State.	Death Rates* from Suicides.			Percentage on Total Deaths.		
	Males.	Females.	Total.	Males.	Females.	Total.
New South Wales	0.15	0.03	0.09	1.41	0.35	0.97
Victoria ...	0.16	0.05	0.10	1.23	0.45	0.88
Queensland ...	0.31	0.05	0.19	2.78	0.65	1.98
South Australia ...	0.13	0.03	0.08	1.21	0.32	0.81
Western Australia	0.41	0.06	0.26	3.58	0.71	2.55
Tasmania ...	0.10	0.03	0.07	0.91	0.29	0.61
Commonwealth	0.19	0.04	0.12	1.65	0.43	1.13

* Number of deaths from suicide per 1000 of mean population.

From the following table, which shews the ages of the persons who committed suicide in 1910, it will be seen that both extreme youth and extreme old age are represented :—

AGES OF PERSONS WHO COMMITTED SUICIDE, COMMONWEALTH, 1910.

Ages.	M.	F.	Total.	Ages.	M.	F.	Total.
10 years and under 15	1	3	4	60 years and under 65	37	2	39
15 ,, ,, 20	6	8	14	65 ,, ,, 70	17	2	19
20 ,, ,, 25	24	10	34	70 ,, ,, 75	9	2	11
25 ,, ,, 30	34	10	44	75 ,, ,, 80	5	...	5
30 ,, ,, 35	41	7	48	80 ,, ,, 85	4	...	4
35 ,, ,, 40	45	8	53	85 ,, ,, 90	3	...	3
40 ,, ,, 45	59	4	63	Age not stated ...	3	...	3
45 ,, ,, 50	57	9	66				
50 ,, ,, 55	49	14	63				
55 ,, ,, 60	38	5	43	Total Deaths ...	432	84	516

The birthplaces of persons who committed suicide are shewn in the following table:—

BIRTHPLACES OF PERSONS WHO COMMITTED SUICIDE, COMMONWEALTH, 1910.

Birthplaces.	M.	F.	Total.	Birthplaces.	M.	F.	Total.
New South Wales ...	60	15	75	Sweden	3	...	3
Victoria	88	25	113	Wales	5	...	5
Queensland ...	20	7	27	Canada	1	...	1
South Australia ...	12	7	19	United States ...	3	...	3
Tasmania	8	2	10	China	13	...	13
New Zealand ...	4	3	7	Dutch East Indies ...	1	...	1
Denmark	2	...	2	India	4	...	4
England	86	11	97	Japan	2	...	2
Germany	11	...	11	Philippine Islands ...	1	...	1
Ireland ...	34	5	39	Fiji	...	...	...
Italy ...	4	1	5	Birthplace not stated	49	2	51
Norway ...	2	...	2				
Scotland	15	5	20				
Austria-Hungary ...	2	...	2	Total Deaths ...	432	84	516
France	2	1	3				

The following table shews the occupations of the 432 males who committed suicide:—

OCCUPATIONS OF MALE PERSONS WHO COMMITTED SUICIDE, 1910.

COMMONWEALTH.

Occupations.	Deaths.	Occupations.	Deaths.
Professional class	17	Pastoral class	22
Domestic class	31	Working in mines and quarries ...	33
Mercantile class	63	Other primary producers ...	9
Engaged in transport and communication	29	Independent means	6
Manufacturing class	39	Dependents	3
Engaged in building and construction	18	Occupation not stated ...	14
Indefinite industrial workers ...	106	Total Deaths	432
Agricultural class	42		

The assertion has been made that suicide has become more frequent during recent years, but an examination of the figures from the year 1871 onwards hardly bears this out. The absolute figures have certainly increased, but proportionately to the population the figures for 1906-10 are practically the same as those for 1886-90. No particulars are available for Western Australia prior to 1886, and from 1886 to 1895 the sexes are not distinguished. All figures for the first five periods are, therefore, exclusive of Western Australia:—

SUICIDES, COMMONWEALTH, 1871-75 to 1906-10.

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	[1]1,686	179.20	43.97	[3]116.92	20 95	24.51
1891-95	1,574	337	[2]1,911	181.34	44.09	[4]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

1. 1705 inclusive of Western Australian figures. 2. 1984 inclusive of Western Australian figures. 3. 116.49 inclusive of Western Australian figures. 4. 119.11 inclusive of Western Australian figures.

(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 shewn in the detailed classification, and deaths were recorded under every one of these with the exception of the following six:—Glanders and farcy, rabies, pellagra, diseases of the eyes, and non-venereal diseases of the male genital organs. The total number of deaths under "other diseases" in 1907 was 6677, viz., 3933 males and 2744 females; in 1908, 7417, viz., 4351 males and 3066 females; in 1909, 7419, viz., 4344 males and 3075 females; and in 1910, 7794, viz., 4590 males and 3204 females. Following the revised edition of the classification the following changes have been made in this heading during 1910: beri-beri (60 deaths) is now included under this heading instead of under xii., "Other Epidemic Diseases." Other diseases of the respiratory system (1544 deaths) are now shewn under a new head (xxiii.), and appendicitis and typhlitis (315 deaths) under head xxvi. Some of the diseases included here account for very considerable numbers of deaths. Thus there were 846 deaths ascribed to diarrhœa and enteritis of children over two years of age and of adults, 485 to convulsions of children under five years of age; 420 to diabetes; 374 to paralysis without indicated cause; and 491 to diseases of the arteries, atheroma, and aneurism. Particulars of the deaths included in 1910 are shewn in the following table:—

CAUSES OF DEATH INCLUDED UNDER "OTHER DISEASES," COMMONWEALTH, 1910.

Causes.	M.	F.	T'tal.	Causes.	M.	F.	T'tal.
Purulent Infection and Septicæmia	59	61	120	Diseases of the Lymphatic System	2	2	4
Anthrax	3	1	4	Hæmorrhages, Other Diseases of Circulatory System	26	24	50
Tetanus	74	28	102	Diseases of the Mouth and its Associated Organs	9	11	20
Mycosis	2	1	3	Diseases of the Pharynx	30	11	41
Beri beri	59	1	60	Diseases of the Oesophagus	13	4	17
Rickets	3	4	7	Diarrhœa and Enteritis of Children over two years of age and Adults	427	419	846
Syphilis	87	66	153	Ankylostomiasis	2	3	5
Gonococcus Infection	2	...	2	Intestinal Parasites	1	...	1
Other Tumours (Tumours of the female genital organs excepted)	34	33	67	Other Diseases of the Intestin's	33	28	61
Acute Articular Rheumatism	66	70	136	Acute Yellow Atrophy of the Liver	1	5	6
Chronic Rheumatism & Gout	51	69	120	Hydatid Tumours of the Liver	24	25	49
Scurvy	7	3	10	Biliary Calculi	34	58	92
Diabetes	185	235	420	Other Diseases of the Liver	102	99	201
Exophthalmic Goitre	5	48	53	Diseases of the Spleen	2	2	4
Addison's Disease	16	13	29	Simple Peritonitis (non-puerperal)	90	98	188
Leucæmia	42	26	68	Other Diseases of the Digestive System	15	9	24
Anæmia, Chlorosis	117	126	243	Chyluria	...	1	1
Other General Diseases	14	12	26	Other Diseases of the Kidneys and their Adnexa	70	25	95
Acute and Chronic Alcoholism	144	29	173	Calculi of Urinary Passages	22	8	30
Chronic Lead Poisoning	14	1	15	Diseases of the Bladder	174	30	204
Other Chronic Poisonings due to occupations	1	...	1	Other Diseases of the Urethra, Urinary Abscess, etc.	31	...	31
Other Chronic Poisonings	11	4	15	Diseases of the Prostate	152	...	152
Encephalitis	24	15	39	Non-puerperal Diseases of the Breast (cancer excepted)	...	1	1
Progressive Locomotor Ataxia	42	6	48	Gangrene	61	41	102
Other Diseases of the Spinal Cord	146	78	224	Furuncle	10	8	18
Paralysis without indicated cause	225	149	374	Acute Abscess	16	12	28
General Paralysis	134	28	162	Other Diseases of the Skin and Adnexa	62	59	121
Other Forms of Mental Alienation	20	34	54	Non-tubercular Diseases of the Bones	23	20	43
Epilepsy	80	62	142	Other Diseases of the Joints (Tuberculosis & Rheumatism excepted)	15	8	23
Convulsions (non-puerperal)	14	26	40	Amputation	...	1	1
Convulsions of Children under five years of age	277	208	485	Other Diseases of the Organs of Locomotion	1	...	1
Chorea	1	6	7	Other Diseases peculiar to Infancy	277	207	484
Neuralgia and Neuritis	10	16	26	Want of Care (Infants)	15	7	22
Other Diseases of the Nervous System	159	98	257				
Diseases of the Ear	5	5	10	Total Deaths	4,590	3,205	7,795
Pericarditis	16	14	30				
Acute Endocarditis	115	90	205				
Angina Pectoris	65	27	92				
Diseases of the Arteries, Atheroma, Aneurism	368	123	491				
Embolism and Thrombosis	145	152	297				
Diseases of the Veins (Varices, Varicose Ulcers, Hæmorrhoids)	8	11	19				

(xxxviii.) *Unspecified or Ill-defined Diseases.* The number of cases which has to be included here is a considerable one from year to year, having numbered 1275 in 1907, 1262 in 1908, 1087 in 1909, and 598, viz., 376 males and 222 females, in 1910. The detailed classification distinguishes these ill-defined diseases under three headings:—Dropsy, including such definitions as anasarca, ascites, general œdema, etc.; sudden death, including syncope; and unspecified or ill-defined causes, of which the following are specimens:—Asthenia, coma, dentition, exhaustion, heart failure, etc. In 1910 the number of cases of death which would have to be classed under the first of these categories was 17; those belonging to the second, 39; and those belonging to the third, 542. 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.

18. **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 compiler 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*, AND PERCENTAGES ON TOTAL DEATHS IN CLASSES, 1910.

COMMONWEALTH.

Class.	Total Deaths.			Death Rate.*			Percentage on Total Deaths.		
	M.	F.	Total.	M.	F.	Total	M.	F.	Total.
1. General diseases	6,079	4,999	11,078	2.68	2.38	2.53	23.24	25.70	24.30
2. Diseases of the Nervous System & of the Organs of Special Sense...	2,331	1,808	4,139	1.03	0.86	0.95	8.91	9.31	9.08
3. Diseases of the Circulatory System	3,114	2,452	5,566	1.37	1.17	1.27	11.91	12.62	12.21
4. Diseases of the Respiratory System	2,638	1,797	4,435	1.16	0.85	1.01	10.09	9.25	9.73
5. Diseases of the Digestive Organs...	3,296	2,782	6,078	1.45	1.32	1.39	12.60	14.32	13.33
6. Diseases of the Genito-Urinary System and Adnexa	1,526	908	2,434	0.67	0.43	0.56	5.83	4.68	5.34
7. Puerperal Condition	...	591	591	...	0.28	0.14	...	3.04	1.30
8. Diseases of the Skin and of the Cellular Tissue...	149	120	269	0.07	0.06	0.06	0.57	0.62	0.59
9. Diseases of the Organs of Locomotion	39	29	68	0.02	0.01	0.02	0.15	0.15	0.15
10 Malformations	220	149	369	0.10	0.07	0.08	0.84	0.77	0.81
11. Infancy	1,921	1,437	3,358	0.85	0.68	0.77	7.34	7.39	7.36
12. Old Age	1,905	1,448	3.353	0.84	0.69	0.77	7.29	7.45	7.35
13. Violence	2,560	694	3,254	1.13	0.33	0.74	9.79	3.57	7.14
14. Ill-defined Diseases	376	222	598	0.17	0.11	0.14	1.44	1.13	1.31
Total	26,154	19,436	45,590	11.54	9.24	10.43	100.00	100.00	100.00

* Number of deaths per 1000 of mean population.

19. **Deaths of Children under 1 Year.**—"Bulletin No. 25 of Population and Vital Statistics" contains tables for the first time for the year 1910 shewing the age at death of children dying during the first year of life from nineteen causes. In the Bulletin mentioned the particulars are published for the States and Commonwealth, but the totals for the Commonwealth only are here shewn.

The figures for death from lack of care and other diseases peculiar to early infancy include children under four months of age only.

DEATHS OF CHILDREN UNDER 1 YEAR, COMMONWEALTH, 1910.

(*a*) MALES.

Age at Death.	Whooping Cough.	Pulmonary Tuberculosis.	Tubercular Meningitis.	Abdominal Tuberculosis.	Tuberculosis of other Organs.	Disseminated Tuberculosis.	Syphilis.	Meningitis.	Convulsions.	Acute Bronchitis.
Under 1 week ...	1	...	...	...	...	...	4	3	72	2
1 week and under 2	...	...	...	...	...	...	3	3	32	6
2 weeks „ 3	4	...	...	...	...	...	...	1	13	3
3 „ „ 4	5	...	...	...	...	...	5	1	10	15
1 month „ 2	27	1	...	2	1	...	9	7	17	40
2 months „ 3	27	...	1	1	1	...	17	9	13	17
3 „ „ 4	27	1	...	3	...	2	6	12	18	11
4 „ „ 5	14	...	3	...	...	...	3	8	9	15
5 „ „ 6	10	...	3	1	...	...	5	9	6	6
6 „ „ 7	9	1	2	1	...	...	3	7	12	5
7 „ „ 8	11	2	2	1	...	...	1	5	7	4
8 „ „ 9	4	...	3	1	1	...	1	12	7	2
9 „ „ 10	5	...	...	...	...	1	...	7	6	6
10 „ „ 11	6	...	4	...	...	...	...	8	6	7
11 „ „ 12	6	...	3	3	1	...	1	6	3	3
Total under 1 year	156	5	21	13	4	3	58	98	231	142

Age at Death.	Broncho-Pneumonia.	Pneumonia.	Diarrhœa and Enteritis.	Hernia and Intestinal Obstruction.	Malformations.	Congenital Debility.	Other Diseases peculiar to Early Infancy.	Lack of Care.	Other External Violence.
Under 1 week ...	6	5	13	3	90	939	227	10	12
1 week and under 2 ...	4	3	22	1	31	134	26	...	3
2 weeks „ 3 ...	2	5	21	...	15	82	9	...	1
3 „ „ 4 ...	4	4	32	...	5	59	7	...	2
1 month „ 2 ...	25	14	122	2	21	144	6	3	6
2 months „ 3 ...	18	9	150	3	12	72	2	1	4
3 „ „ 4 ...	8	11	179	5	9	52	...	1	2
4 „ „ 5 ...	11	15	143	5	3	36	...	...	1
5 „ „ 6 ...	9	6	135	8	3	31	...	...	2
6 „ „ 7 ...	16	8	123	6	5	28	...	...	1
7 „ „ 8 ...	8	7	118	4	2	22	...	...	...
8 „ „ 9 ...	13	7	87	3	3	9	...	...	1
9 „ „ 10 ...	6	8	109	3	2	7	...	...	1
10 „ „ 11 ...	10	7	77	...	1	7	...	...	...
11 „ „ 12 ...	5	3	78	4	2	7	...	...	1
Total under 1 year	145	112	1,409	47	204	1,629	277	15	37

DEATHS OF CHILDREN UNDER 1 YEAR, COMMONWEALTH, 1910.

(*b*) FEMALES

Age at Death.	Whooping Cough.	Pulmonary Tuberculosis.	Tubercular Meningitis.	Abdominal Tuberculosis.	Tuberculosis of other Organs.	Disseminated Tuberculosis.	Syphilis.	Meningitis.	Convulsions.	Acute Bronchitis.
Under 1 week	...	...	...	...	...	...	...	3	43	1
1 week and under 2 ...	...	...	...	...	...	...	...	1	20	6
2 weeks ,, 3 ...	3	...	...	...	...	...	5	4	8	8
3 ,, ,, 4 ...	5	...	...	...	...	...	3	3	5	5
1 month ,, 2 ...	25	1	...	1	...	...	10	2	13	22
2 months ,, 3 ...	29	...	1	1	...	...	3	5	5	16
3 ,, ,, 4 ...	14	...	1	1	...	1	9	4	10	8
4 ,, ,, 5 ...	10	1	2	1	...	...	3	7	6	14
5 ,, ,, 6 ...	7	2	2	1	...	...	3	4	4	4
6 ,, ,, 7 ...	14	...	3	2	...	...	4	8	7	1
7 ,, ,, 8 ...	13	1	3	...	...	...	...	2	3	4
8 ,, ,, 9 ...	11	1	2	3	...	...	1	9	8	8
9 ,, ,, 10 ...	4	1	...	2	...	...	3	9	7	2
10 ,, ,, 11 ...	7	...	2	2	...	...	1	5	5	4
11 ,, ,, 12 ...	7	...	6	...	...	...	1	10	3	2
Total under 1 year ...	149	7	22	14	...	1	46	76	147	105

Age at Death.	Broncho-Pneumonia.	Pneumonia.	Diarrhœa and Enteritis.	Hernia and Intestinal Obstruction.	Malformations.	Congenital Debility.	Other Diseases peculiar to Early Infancy.	Lack of Care.	Other External Violence.
Under 1 week ...	3	1	4	...	57	695	166	5	1
1 week and under 2 ...	4	3	17	3	10	112	26	...	1
2 weeks ,, 3 ...	6	6	17	...	15	58	5	...	...
3 ,, ,, 4 ...	5	3	23	1	7	49	3	...	2
1 month ,, 2 ...	26	6	99	1	14	90	6	...	2
2 months ,, 3 ...	11	5	134	1	5	56	1	1	3
3 ,, ,, 4 ...	9	5	150	3	3	43	...	1	3
4 ,, ,, 5 ...	9	4	148	3	8	32	...	...	1
5 ,, ,, 6 ...	5	8	122	3	8	25	...	...	1
6 ,, ,, 7 ...	9	7	100	2	7	14	...	...	...
7 ,, ,, 8 ...	9	7	74	5	3	19	...	...	1
8 ,, ,, 9 ...	11	5	94	2	...	12	...	...	2
9 ,, ,, 10 ...	10	5	88	3	3	7	...	...	1
10 ,, ,, 11 ...	8	12	59	2	1	6	...	...	...
11 ,, ,, 12 ...	7	5	54	...	2	5	...	...	...
Total under 1 year	132	82	1,183	29	143	1,223	207	7	18

DEATHS OF CHILDREN UNDER 1 YEAR, COMMONWEALTH, 1910.

(c) MALES AND FEMALES.

Age at Death.	Whooping Cough.	Pulmonary Tuberculosis.	Tubercular Meningitis.	Abdominal Tuberculosis.	Tuberculosis of other Organs.	Disseminated Tuberculosis.	Syphilis.	Meningitis.	Convulsions.	Acute Bronchitis.
Under 1 week ...	1	...	...	...	...	...	4	6	115	3
1 week and under 2	...	...	...	...	...	...	3	4	52	12
2 weeks " 3	7	...	...	...	...	...	5	5	21	11
3 " " 4	10	...	...	...	...	...	8	4	15	20
1 month " 2	52	2	...	3	1	...	19	9	30	62
2 months " 3	56	...	2	2	1	...	20	14	18	33
3 " " 4	41	1	1	4	...	3	15	16	28	19
4 " " 5	24	1	5	1	...	...	6	15	15	29
5 " " 6	17	2	5	2	...	...	8	13	10	10
6 " " 7	23	1	5	3	...	...	7	15	19	6
7 " " 8	24	3	5	1	...	...	1	7	10	8
8 " " 9	15	1	5	4	1	...	2	21	15	10
9 " " 10	9	1	...	2	...	1	3	16	13	8
10 " " 11	13	...	6	2	...	...	1	13	11	11
11 " " 12	13	...	9	3	1	...	2	16	6	5
Total under 1 year ...	305	12	43	27	4	4	104	174	378	247

Age at Death.	Broncho-Pneumonia.	Pneumonia.	Diarrhœa and Enteritis.	Hernia and Intestinal Obstruction.	Malformations.	Congenital Debility.	Other Diseases peculiar to Early Infancy.	Lack of Care.	Other External Violence.
Under 1 week ...	9	6	17	3	147	1,634	393	15	13
1 week and under 2 ...	8	6	39	4	41	246	52	...	4
2 weeks " 3 ...	8	11	38	...	30	140	14	...	1
3 " " 4 ...	9	7	55	1	12	108	10	...	4
1 month " 2 ...	51	20	221	3	35	234	12	3	8
2 months " 3 ...	29	14	284	4	17	128	3	2	7
3 " " 4 ...	17	16	329	8	12	95	...	2	5
4 " " 5 ...	20	19	291	8	11	68	...	...	2
5 " " 6 ...	14	14	257	11	11	56	...	...	3
6 " " 7 ...	25	15	223	8	12	42	...	...	1
7 " " 8 ...	17	14	192	9	5	41	...	...	1
8 " " 9 ...	24	12	181	5	3	21	...	...	3
9 " " 10 ...	16	13	197	6	5	14	...	...	2
10 " " 11 ...	18	19	136	2	2	13	...	...	...
11 " " 12 ...	12	8	132	4	4	12	...	...	1
Total under 1 year	277	194	2,592	76	347	2,852	484	22	55

It will be seen that the maximum number of deaths from convulsions, 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

and broncho-pneumonia were most fatal during the second month. Diarrhœa and enteritis carried off more children in the fourth month than in any other, the numbers gradually decreasing toward the end of the year. Whooping cough and syphilis reached their maxima during the third month of life.

20. **Age at Death of Married Males and Females, and Issue.**—"Bulletin No. 25 of Population and Vital Statistics" contains a number of tables, for the Commonwealth, exclusive of Tasmania, 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 1910. A short summary of the tables mentioned is given hereunder. Deaths of married males in 1910 numbered 10,771, and of married females, 10,159. The ages at death of the males ranged from 18 to 109 years, and those of the females, from 17 to 105 years. The total number of children in the families of the 10,771 males was 58,817, the maximum in one family being 23; and of the 10,159 females, 54,188, with a maximum of 22. The average number of children is shewn for various age-groups in the following table:—

AGE AT DEATH OF MARRIED MALES AND FEMALES, AND AVERAGE ISSUE.

COMMONWEALTH (EXCLUSIVE OF TASMANIA), 1910.

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 ...	0.50	0.78	70 to 74 years ...	6.50	6.55
20 to 24 years ...	1.06	1.12	75 ,, 79 ,, ...	6.75	6.69
25 ,, 29 ,, ...	1.53	1.74	80 ,, 84 ,, ...	6.54	6.01
30 ,, 34 ,, ...	2.02	2.64	85 ,, 89 ,, ...	6.58	5.66
35 ,, 39 ,, ...	2.72	3.72	90 ,, 94 ,, ...	6.67	5.66
40 ,, 44 ,, ...	3.65	4.31	95 ,, 99 ,, ...	6.66	4.74
45 ,, 49 ,, ...	4.30	4.75	100 years and upwards	5.22	6.00
50 ,, 54 ,, ...	4.89	5.37	Age not stated ...	6.20	2.62
55 ,, 59 ,, ...	5.45	5.81			
60 ,, 64 ,, ...	5.62	6.00			
65 ,, 69 ,, ...	6.33	6.42	All ages	5.46	5.33

The figures shewn in the preceding table include the issue both living and dead; the proportion between the two, taking deceased males and females together, was about as 1000 to 326, or, roughly speaking, as three to one. The totals are shewn in the following table:—

ISSUE OF MARRIED MALES AND FEMALES.

COMMONWEALTH (EXCLUSIVE OF TASMANIA), 1910.

Issue of Married Males.	Males.	Females.	Total.	Issue of Married Females.	Males.	Females.	Total.
Living ...	23,127	22,427	45,554	Living ...	20,135	19,595	39,730
Dead	7,173	6,090	13,263	Dead ...	7,539	6,919	14,458
Total ...	30,300	28,517	58,817	Total ...	27,674	26,514	54,188

These figures shew a masculinity in the births of 105.35, which agrees fairly well with the experience of the birth statistics, the masculinity of the births in the Commonwealth from 1901 to 1910 having ranged from 104.11 to 106.39.

As a matter of curiosity it may be mentioned that the family of twenty-three belonged to a father who died at the age of 82, and that it had originally comprised twelve sons and eleven daughters, of whom nine sons and eight daughters survived their father.

21. **Age 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:—

AGE AT MARRIAGE OF MALES AND FEMALES, AND AVERAGE ISSUE.

COMMONWEALTH (EXCLUSIVE OF TASMANIA), 1910.

Age at Marriage.	Average Family of Males.	Average Family of Females.	Age at Marriage.	Average Family of Males.	Average Family of Females.
Under 20 years ...	6.91	7.13	55 to 59 years ...	2.49	...
20 to 24 years ...	6.43	5.75	60 „ 64 „ ...	1.86	...
25 „ 29 „ ...	5.69	4.35	65 years and upwards	0.76	...
30 „ 34 „ ...	4.99	3.01	Age not stated ...	4.64	4.79
35 „ 39 „ ...	4.31	1.85			
40 „ 44 „ ...	3.46	0.68			
45 „ 49 „ ...	3.25	0.22			
50 „ 54 „ ...	1.70	...	All ages ...	5.46	5.33

It will be seen that of women who were married at ages from 40 to 44 years, seven in every ten gave birth to a child, while in the case of women who were married at ages from 45 to 49 years, the proportion fell to about one in every five.

22. **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. 25 of Population and Vital Statistics," pages 142 to 147.

23. **Birthplaces of Married Males and Females, and Issue.**—The following table shews the birthplaces of married males and females whose deaths were registered in 1910, 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, with the exception of Tasmania, it must be borne in mind that the vast majority of deaths of natives of any one State are registered in that particular State. For the whole Commonwealth the average family of deceased males was 4.81, and of deceased females, 4.55.

BIRTHPLACES OF MARRIED MALES AND FEMALES, AND AVERAGE ISSUE.

COMMONWEALTH (EXCLUSIVE OF TASMANIA), 1910.

Birthplaces.	Married Males.		Married Females.		Birthplaces.	Married Males.		Married Females.	
	Deaths.	Average Family.	Deaths.	Average Family.		Deaths.	Average Family.	Deaths.	Average Family.
New South Wales ...	1,427	5.32	1,674	5 30	United States	63	4.08	19	4.79
Victoria	1,140	4.11	1,343	3.83	West Indies	10	2.40	5	5.80
Queensland	152	3.80	250	3.30	Brazil	1	...	2	4.50
South Australia ...	457	4.86	531	4.46	Chili	1	3.00	1	4.00
Western Australia ...	55	4.74	74	4.81	Mexico	1	1.00	...	...
Tasmania	127	6.30	136	4.93	Sth. America (so descd.)	1	...	1	7.00
New Zealand... ...	50	3.30	49	3.33	Afghanistan	1	3.00	...	...
Austria-Hungary ...	12	3.83	3	3.33	Ceylon	3	2.66	...	...
Belgium	3	4.00	1	...	China	37	3.10	...	...
Channel Islands ...	7	4.57	13	6.54	Dutch East Indies ...	2	3.50	1	8.00
Denmark	52	4.63	18	4.67	India	25	4.20	20	4.55
England	3,686	5.85	2,660	5.91	Japan	5	1.00	...	...
Finland	8	3.75	1	6.00	Philippine Islands ...	2	0.50	...	...
France	31	4.51	11	3.82	Straits Settlements ...	...	...	1	8.00
Germany	410	5.97	249	6.47	Syria	7	3.28	6	4.33
Gibraltar	...	...	1	6.00	Azores	1	7.00	...	...
Greece	5	4.60	1	...	Canary Islands ...	...	...	1	2.00
Ireland	1,591	6.12	1,996	5.88	Cape Colony	3	3.66	5	5.80
Isle of Man	7	1.71	4	5.00	Mauritius	8	5.12	3	9.67
Italy	38	4.92	8	6.87	Reunion	1	6.00	1	10.00
Malta	4	4.00	1	4.00	South Africa (so descd.)	8	2.75	8	5.75
Netherlands	8	4.87	1	7.00	St. Helena	...	...	2	8.50
Norway	21	4.81	4	6.00	Fiji	1	10.00	2	5.50
Portugal	4	5.00	2	4.50	New Caledonia ...	2	3.50	...	...
Russia	19	5.63	10	7.00	New Guinea	...	...	1	4.00
Scotland	978	5.74	862	5.78	New Hebrides... ...	2	0.50	1	1.00
Spain	4	6.75	2	5.00	S. Sea Islands (so descd.)	7	2.28	1	5.00
Sweden	48	4.71	4	5.00	At Sea...	34	6.17	31	4.81
Switzerland	33	5.06	4	5.75	Not stated	48	3.85	57	4.81
Turkey	...	...	1	...					
Wales	90	5.40	67	5.34					
Canada	28	3.96	8	6.25					
Newfoundland ...	2	3.00	1	13.00	Total	10,771	5.46	10,159	5.33

24.—**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.

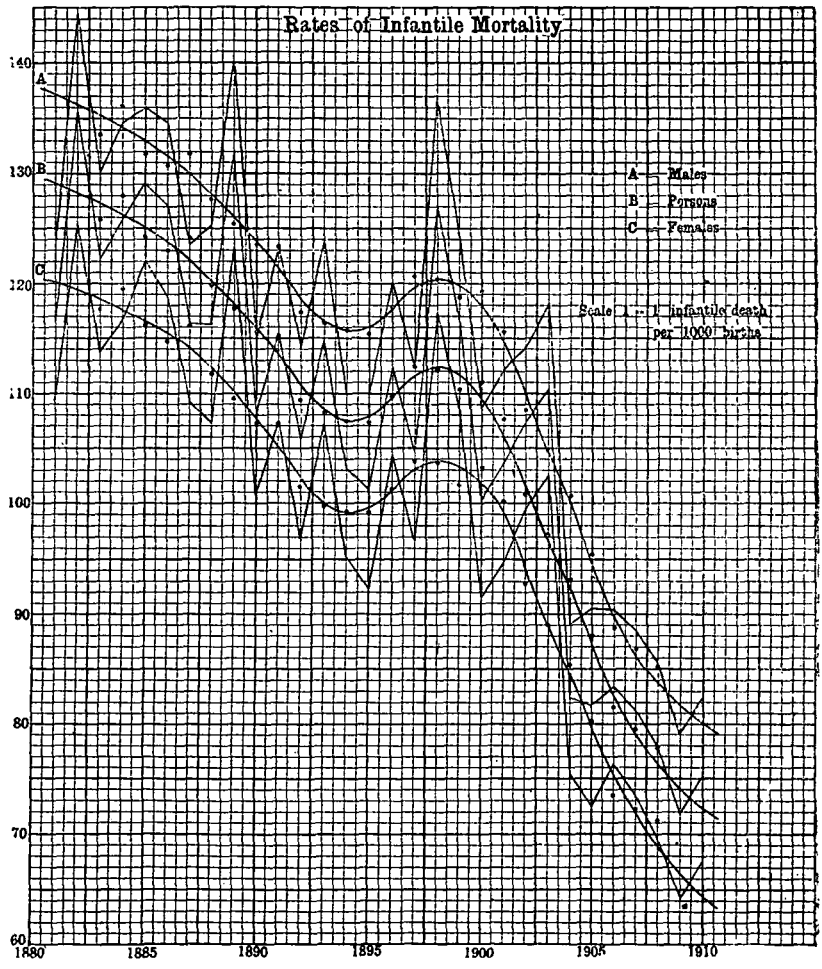
OCCUPATIONS OF MARRIED MALES, AND AVERAGE ISSUE.

COMMONWEALTH (EXCLUSIVE OF TASMANIA), 1910.

Occupations.	Deaths of Married Males.	Average Family.
Professional class	589	4.96
Domestic class	362	4.15
Mercantile class...	1,203	4.66
Engaged in transport and communication	777	4.94
Manufacturing class	1,216	5.11
Engaged in building and construction	723	5.23
Indefinite industrial workers	1,652	5.24
Agricultural class	1,836	6.82
Pastoral class	461	6.23
Working in mines and quarries	847	5.44
Other primary producers	77	5.12
Independent means	709	5.69
Dependents	21	3.33
Occupation not stated	298	6.01
Total	10,771	5.46

25. **Commonwealth Rates of Infantile Mortality.**—In the diagram hereunder the rates of infantile mortality, as they actually occurred for the years 1881 to 1910, are shewn for males, for females, and for persons by the three series of zig-zag lines in the figure (see curves A, C, and B respectively). These hardly shew what may be called the general trend of this rate, but in order to discover it quinquennial means for successive quinquennia, differing only one year, were calculated. These means are shewn by black dots, then freehand curves were drawn following what may be called the mean position of these dots. These freehand curves, then, represent the general drift of the rates of

COMMONWEALTH OF AUSTRALIA.—RATES OF INFANTILE MORTALITY, 1881 TO 1910.



EXPLANATION OF GRAPHS.—The base of each small square represents an interval of half a year, while the vertical height represents an increment in infantile death rate of one per 1000 births, an infantile death rate of sixty per 1000 births being taken as base line for the diagram. The figures on the left hand margin of the diagram represent rates of infantile mortality per 1000 births, while those on the lower margin denote calendar years. The black dots represent a yearly succession of quinquennial means, from which the general trend of the rate of infantile mortality has been ascertained; the upper curve (A) shewing the trend for males, the lower (C) for females, and the middle curve (B) for persons (both sexes combined).

infantile mortality during the period above referred to, unaffected by specially favourable or specially unfavourable years. They prove to be substantially identical in form for males and females, but shew that the death rate for males is about 15 per 1000 greater than that for females throughout. In considering the significance of this result we may, therefore, confine our attention solely to the infantile rate for persons, that is, for both sexes combined.

It will thus be seen that the general improvement in the conditions of infantile life continued from 1881 down to 1894-5, when, however, there was a slight retrogression till 1896, from which date onward there was again continued and marked improvement, that is to say, a rapid falling-off in the rate of infantile mortality. The great significance of this decrease is seen in the fact that the general trend of infantile mortality was about 129 in 1880, and only about 72 in 1910 per 1000 births.

The large differences between the results for individual years shewn by the zigzag lines, and the general trend shewn by curved lines, enable one to discern what year or series of years were specially favourable or specially unfavourable. Thus, it will be seen that the infantile mortality was high in the years 1882, 1889, 1898, and 1903.

It is somewhat remarkable that with the great decrease in infantile mortality there seems to be increasing difficulty in saving male infants as compared with females, and this can be expressed very accurately by a formula giving the number of males per 1000 females. Thus, the number of male infants dying under twelve months of age per 1000 female infants so dying is found to increase as the square of the elapsed time, and may be expressed by the formula: $M = 1136 + 0.09\ (T - 1880)^2$, in which T denotes the date-year.

It is evident from the above results that the care of infantile life is comparatively in a very satisfactory position in the Commonwealth.

26. **Progressive Diminution of Deaths of Infants during First Twelve Months of Life.**—During the first few days of life the rate of infantile mortality is very high indeed, but falls off at the end of one month after birth, and then, relatively, is fairly steady. In the first few days of life the mode of decrease of the death rate presents certain somewhat remarkable features, which can be fairly well made out for the Commonwealth.* The results, shewing in 100,000 births the number who die in successive days for the first thirty days of life, is given for Australia by curve 1, for Sweden by curve 2, and Saxony by curve 3. For child-life, Australia furnishes more favourable results than Saxony for each day in the whole period of thirty days; but Sweden, however, shews more favourable results for the first five days, after which the results are distinctly more favourable in Australia than in Sweden. At the end of thirty days the mortality is, in 100,000 births, somewhat under twenty-eight in Australia per diem, somewhat over forty-one for Sweden, and about 134 in Saxony. In Australia the infantile mortality falls off very rapidly for about seven or eight days, and then slowly for the balance of the period. In Saxony there is a sharp recrudescence of mortality, the maximum occurring at fifteen or sixteen days after birth, and the minimum being at eight days after birth. There is also a slight recrudescence in Sweden, occurring at about twelve or thirteen days after birth; but there is no sign of this in the Australian results. In Saxony, the falling-off is again very sharp after the recrudescence attains its maximum.

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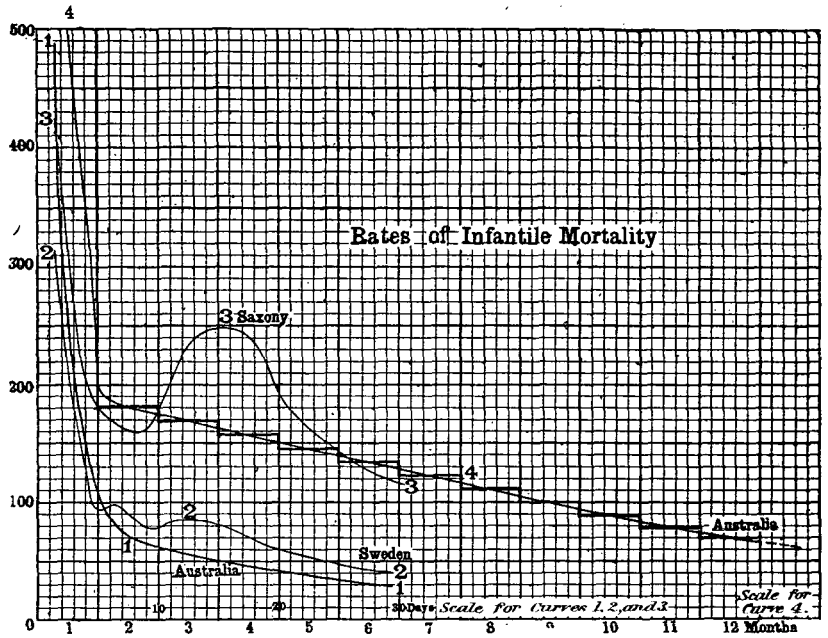
* Unfortunately, the registration records give clear indications that the number of days of life are only approximately stated, and a certain amount of redistribution has preliminarily to be undertaken.

Curve 4, in the diagram, shews how rapidly the rate of infantile mortality diminishes for about the first thirty-three days of life, and how slowly, relatively, the rate diminishes afterwards. Hence, any great change in the preservation of infant life means supreme care for the first month.

RATES OF INFANT MORTALITY.—AUSTRALIA, SWEDEN, AND SAXONY.



EXPLANATION OF GRAPHS.—For curves 1, 2, and 3, the base of each small square represents one day, while the height represents ten infantile deaths per day from 100,000 births. For these curves the left hand marginal marking represents the number of infantile deaths in successive days from 100,000 births.

For curve 4, the base of each large square (comprising twenty-five small squares) represents one month, while the height of each of the component small squares represents ten infantile deaths per day from 1,000,000 births. For this curve the left-hand marginal marking represents number of infantile deaths per day from 1,000,000 births.

The following table exhibits the phenomena of infantile mortality for quinquennial periods:—

INFANTILE MORTALITY IN AUSTRALIA, 1881 to 1910.

Period.	Masculinity of Births.	Average Mortality per 10,000 Births.			Mean Masculinity for Period.	Average Values derived from Curves of General Trend.		
		Males.	Females.	Persons.		Males.	Females.	Persons.
1881-85 ...	1,050	1,338	1,177	1,259	1,136	1,352	1,181	1,278
1886-90 ...	1,049	1,277	1,119	1,200	1,142	1,279	1,119	1,201
1891-95 ...	1,053	1,164	998	1,081	1,167	1,177	1,013	1,097
1896-1900 ...	1,048	1,205	1,037	1,123	1,162	1,191	1,027	1,110
1901-05 ...	1,049	1,049	890	971	1,183	1,050	894	969
1906-1910 ...	1,055	852	704	780	1,211	844	695	770

27. **Pulmonary Tuberculosis and Cancer in Australia, 1881-1910.**—In examining the characteristics of various diseases in Australia, perhaps the most striking feature that presents itself is the remarkable diminution during the past thirty years in the death rates from pulmonary tuberculosis, and the equally remarkable rise in the death rate from cancer. In fact, the advantage in the former case is so well counterbalanced by the disadvantage in the latter, that the combined diseases indicate very little reduction in the death rate.

DEATH RATES FROM PULMONARY TUBERCULOSIS AND CANCER IN AUSTRALIA FOR THE PAST THIRTY YEARS (1881-1910) PER 100,000 OF THE CORRESPONDING SEX AND POPULATION.

Period.	Pulmonary Tuberculosis.			Cancer.			Pulmonary Tuberculosis and Cancer Together.		
	Males.	Females.	Persons.	Males.	Females.	Persons.	Males.	Females.	Persons.
1881-1885	146	113	131	35	36	36	181	149	166
1886-1890	139	101	121	42	43	42	181	144	164
1891-1895	124	88	107	51	48	50	176	136	157
1896-1900	106	81	95	59	58	58	165	140	153
1901-1905	100	77	89	64	61	63	164	139	152
1906-1910	81	69	75	71	70	70	152	139	146

The general results can be seen most strikingly in the diagram hereunder, in which the upper (dotted zigzag) line shews the rates for individual years of pulmonary tuberculosis, and the lower firm (zigzag) line the similar rates for cancer. The middle (zigzag) line, consisting of dots and dashes, shews the rates for the two diseases combined, also for individual years. The death rate for males from pulmonary tuberculosis is, roughly, 36 per cent. greater than for females, while for cancer it is only 3 per cent. greater for males than for females. It has been found that the death rates can be very accurately expressed by a simple formula based upon the lapse of time since 1880. These are given in the note hereunder.*

It will be observed that for the two diseases combined there is still a decrease in the rate of mortality, but it is only very slight; in other words, the advantages arising from advances in medicine, hygiene, etc., so far as tuberculosis is concerned, are nearly masked by the development of cancer.

The masculinity of pulmonary tuberculosis is diminishing as time advances; in other words, death from this disease, at present striking at male life more forcibly than at female life, is tending towards equality of incidence.

It is proper here to observe it does not follow that it is unimportant, from the economical standpoint, which disease preponderates, for the reason that the incidence of cancer is more marked at a late period of life, when life's economic value is diminishing; while the marked incidence of tuberculosis is in the earlier periods of life, viz., before the human being has recouped the economic expenditure involved in his rearing and education.

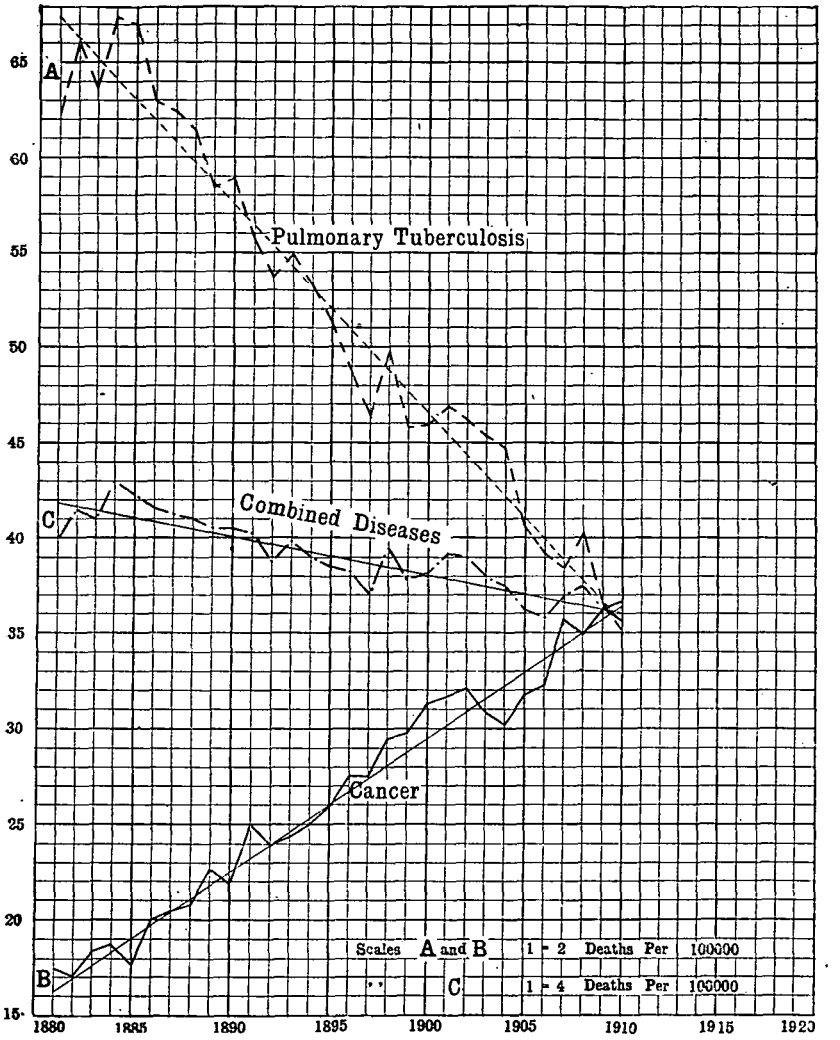
* P denotes deaths from pulmonary tuberculosis in a population of 100,000 persons of same sex, or of both sexes combined, as the case may be; and the subscript letter m, f, or p denotes males, females, persons; T denotes the date year.

Pulmonary Tuberculosis.	Cancer.
$P_m = 157 - 2.6\ (T - 1880)$	$C_m = 32 + 1.4\ (T - 1880)$
$P_f = 115 - 1.7\ (T - 1880)$	$C_f = 31 + 1.4\ (T - 1880)$
$P_p = 137 - 2.2\ (T - 1880)$	$C_p = 31 + 1.4\ (T - 1880)$

For both diseases combined, the formula may be found by adding the constants and coefficients, *i.e.*, $P_p + C_p = 168 - 0.8\ (T - 1880)$.

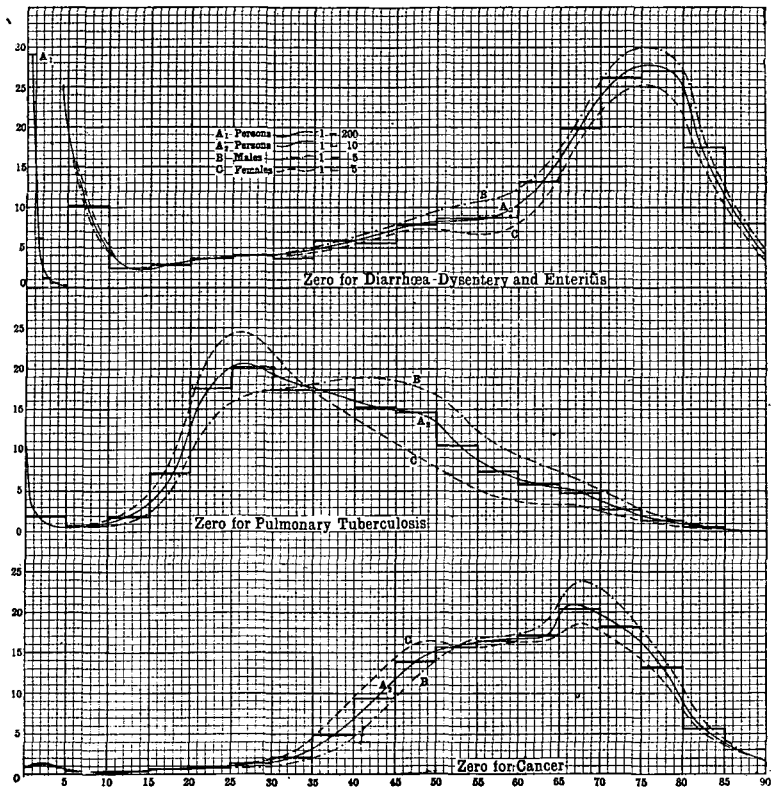
In order to make this point quite clear the two lower curves (see the diagram hereunder) are given, the upper (or middle) curve shewing the number of persons dying at each age from pulmonary tuberculosis, the lower one shewing the number dying from cancer in a population of 10,000,000. Restricting the consideration to both sexes combined (persons) it will be seen that the heaviest incidence of pulmonary tuberculosis is at the age of twenty-six or twenty-seven, while that for cancer is at the age of sixty-seven.

COMMONWEALTH OF AUSTRALIA.—DEATH RATES FOR PULMONARY TUBERCULOSIS AND CANCER, 1881 TO 1910.



EXPLANATION OF GRAPHS.—The base of each small square represents an interval of one year, while the height in the cases of curves A and B represents one death per 50,000 of population; and in the case of C, one death per 25,000 of population. In the cases of A and B, the base line (15) represents thirty deaths per 100,000; and in the case of C, it represents sixty deaths per 100,000. Thus, for curves A and B, the numbers on the left-hand column have to be doubled; and in the case of curve C, have to be quadrupled to give the number per 100,000. These curves indicate the linearity of trend of the diseases, and the fact that this trend is in opposite directions.

COMMONWEALTH OF AUSTRALIA.—DEATHS AT VARIOUS AGES, FOR VARIOUS DISEASES.

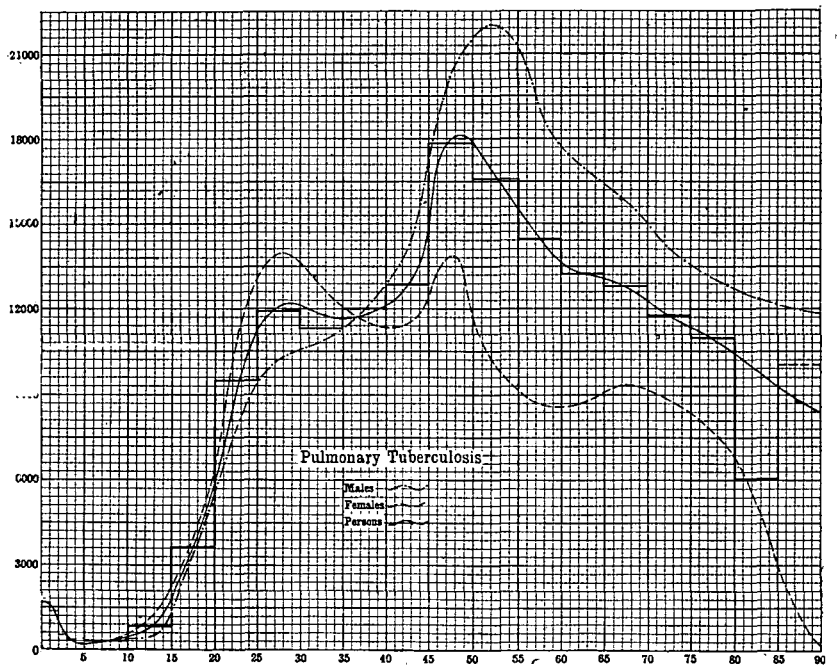


EXPLANATION OF GRAPHS.—The curves represent the number of deaths per annum at each age in a total population of 10,000,000, corresponding to the Australian experience for the four years 1907-10, the population of 10,000,000 being assumed to be distributed according to sex and age in the same proportions as the mean Australian population for 1907-10. In each case the continuous line represents persons, the broken line represents females, and the dot and dash line represents males. The base of each small square represents one year of age, while the height represents 200 deaths in a total population of 10,000,000 in the case of curve A 1, ten deaths in the case of curve A 2, and five deaths in the case of curves B and C.

In the above diagrams the curve marked "A" indicates the result for persons, while the curves marked "B" and "C" represent the similar results for males and females respectively.

28. **Frequency of Pulmonary Tuberculosis and Cancer according to Age.**—If the death rates be based on the actual number of persons living at each age, that is, if they be deduced from the number who die from the diseases in question in various age-groups and the number of persons of the same age actually living, then we find for those affected with pulmonary tuberculosis that the lowest incidence occurs at about five years of age. Then the rate quickly increases till the age twenty-eight or twenty-nine is reached. The death rate then falls off slightly, and increases again until the maximum is reached at about forty-eight or forty-nine years of age, after which the death rate of the number at risk again fairly rapidly falls off. These results are shewn on the diagram hereunder.

COMMONWEALTH OF AUSTRALIA.—DEATH RATES OF PERSONS OF DIFFERENT AGES, PULMONARY TUBERCULOSIS, 1907 TO 1910.

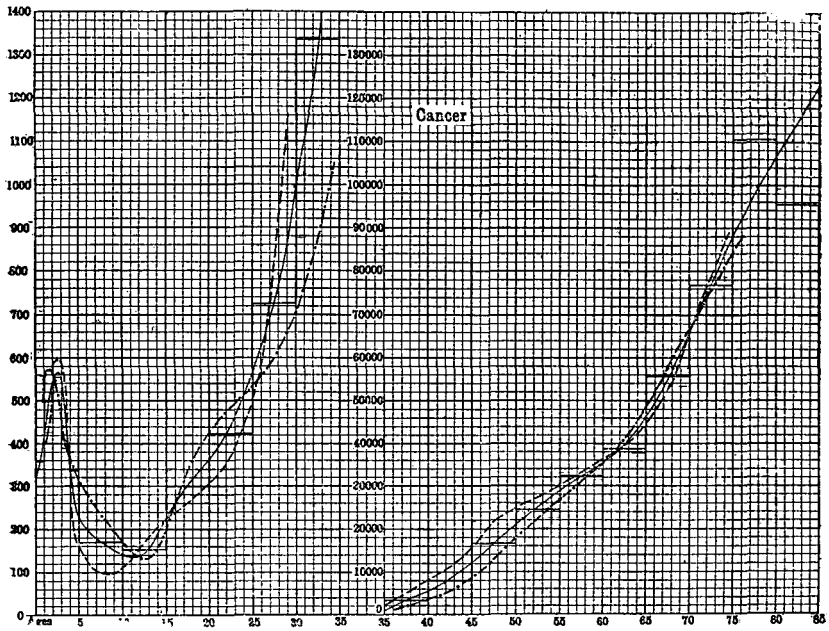


EXPLANATION OF GRAPHS.—The curves represent the number of deaths per 10,000,000 of population at each age, the continuous line representing the number of deaths per 10,000,000 of total population, the broken line representing the number of female deaths per 10,000,000 of female population, and the dot and dash line representing the number of male deaths per 10,000,000 of male population. The base of each small square represents one year of age, and the vertical height a death rate of 300 per 10,000,000. The figures on the left-hand margin represents the death rate per 10,000,000, those on the lower margin represent years of age.

The death rate for cancer, based on the total number living of the corresponding age, shews quite different characteristics. Thus, it attains its maximum value at the age of about two, falls to a minimum at about age eleven or twelve, and then continually and very rapidly increases for all later ages, as is evident in the following diagram on page 234.

Of the two diseases it will thus be seen that, economically, pulmonary tuberculosis is the more serious. Thus, although cancer is so increasing as nearly to obliterate the effect of decrease in death from tuberculosis, it is still a matter for congratulation that the ravages of tuberculosis have been greatly reduced. In other words, pulmonary tuberculosis strikes at the race at a period of life when its promise lies in the future, and before the heavy expenses of rearing and education have borne fruit in the various economic activities. Cancer, on the other hand, strikes at life later, after the period of highest economic activity, in fact when that activity is declining.

COMMONWEALTH OF AUSTRALIA.—DEATH RATES OF PERSONS OF DIFFERENT AGES, CANCER, 1907 TO 1910.



EXPLANATION OF GRAPHS.—The broken line with dots — · — — · — — · — denotes the results for males; the plain broken line — — — — — denotes those for females, and the continuous line those for persons (both sexes combined).

The base of each small square represents one year of age, while the height represents a death rate of twenty per 1,000,000 of population in the curve on the left of the diagram, and a death rate of 2000 per 1,000,000 of population in the curves on the right. The marginal figures on the left of the respective curves denote rates of mortality per 1,000,000 of population at the respective ages which are indicated in the lower margin of the diagram.

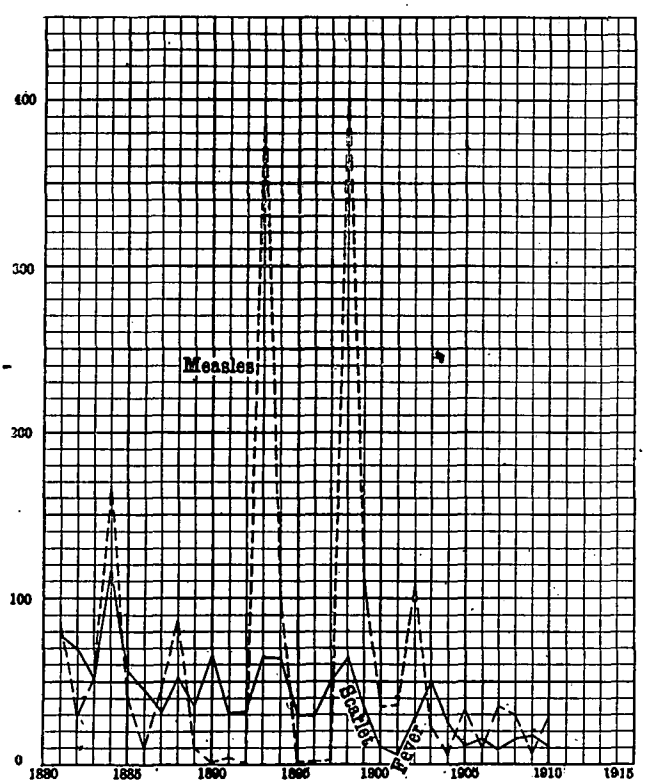
29. **The Incidence of Scarlet Fever, Measles, Whooping Cough, Diphtheria and Croup, Typhoid, Diarrhœa, Enteritis, and Dysentery.**—In the following table is shewn the average quinquennial incidence of these diseases from 1881 to 1910 inclusive:—

DEATHS PER MILLION OF THE CORRESPONDING SEX PER ANNUM FOR VARIOUS DISEASES, AUSTRALIA, 1881-1910.

Period.	Masculinity of Population.	Scarlet Fever.		Measles.		Whooping Cough.		Diphtheria and Croup.		Typhoid.		Diarrhœa, Enteritis, and Dysentery.	
		M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
1881-1885	1177	68	85	68	83	125	201	414	463	544	564	1355	1184
1886-1890	1172	40	53	30	34	127	203	492	535	548	489	950	919
1891-1895	1136	36	51	98	99	140	200	325	375	278	222	631	561
1896-1900	1117	32	45	108	112	107	150	146	158	401	277	557	498
1901-1905	1095	21	27	39	44	90	121	101	105	252	176	372	306
1906-1910	1084	12	16	22	23	102	124	100	106	190	127	838	734

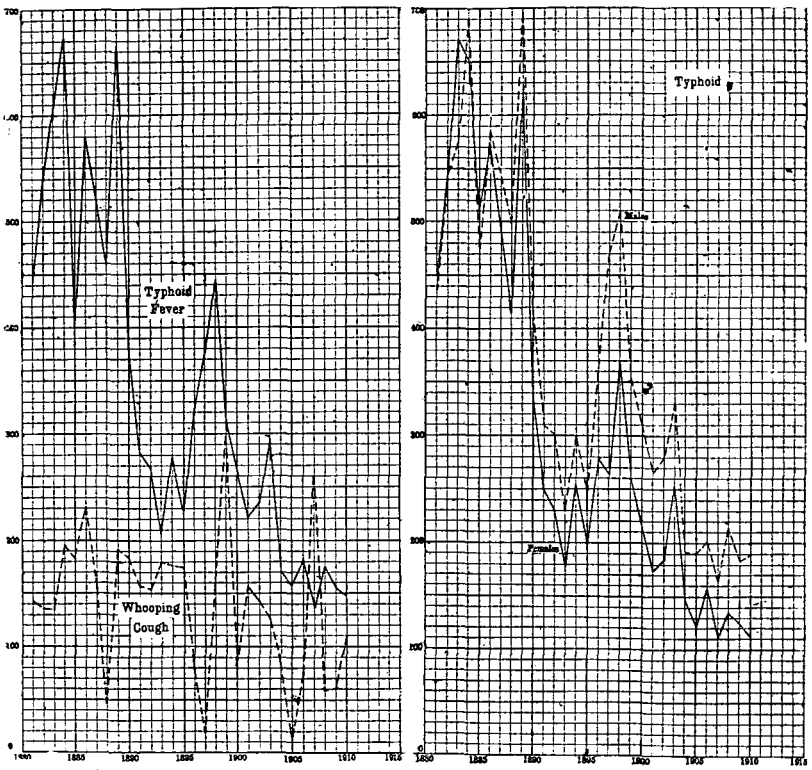
These figures shew in general a very decided decrease in death rates. In the diagram, which gives yearly rates for measles and scarlet fever from 1881 to 1910, one can recognise how sharp were the epidemics of the former disease in 1893 and 1898. Scarlet fever shews less marked fluctuations, which in general synchronise with those of measles. The next two diagrams shew the annual incidence of typhoid, whooping cough, diarrhœa, with enteritis and dysentery, and of diphtheria and croup. Although there are striking fluctuations in the death rate from typhoid it is at once evident, both from the left-hand diagram for "persons" and the right-hand one for each sex, that the incidence of the disease has been enormously diminished. This has been brought about by improvement in water supply and sewerage, and also by a purer milk supply. The death rate for whooping cough gives no decided indications, and its incidence is very irregular, but, as shewn in the diagram on page 237 (right-hand side), its incidence in the case of males and in the case of females, while by no means identical, shews some general correspondence.

COMMONWEALTH OF AUSTRALIA.—DEATH RATES FOR MEASLES AND SCARLET FEVER, 1881 TO 1910.



EXPLANATION OF GRAPH.—The base of each small square represents one calendar year, and the vertical height a death rate of ten persons per 1,000,000 of population. The continuous line relates to scarlet fever, and the broken line to measles. The figures on the left margin represent number of deaths per 1,000,000 of population; those on the lower margin calendar years. The diagram shews very strikingly the intensity of the epidemics of measles for the years 1884, 1893, and 1898.

COMMONWEALTH OF AUSTRALIA.—DEATH RATES FOR TYPHOID FEVER AND WHOOPING COUGH, 1881 TO 1910.



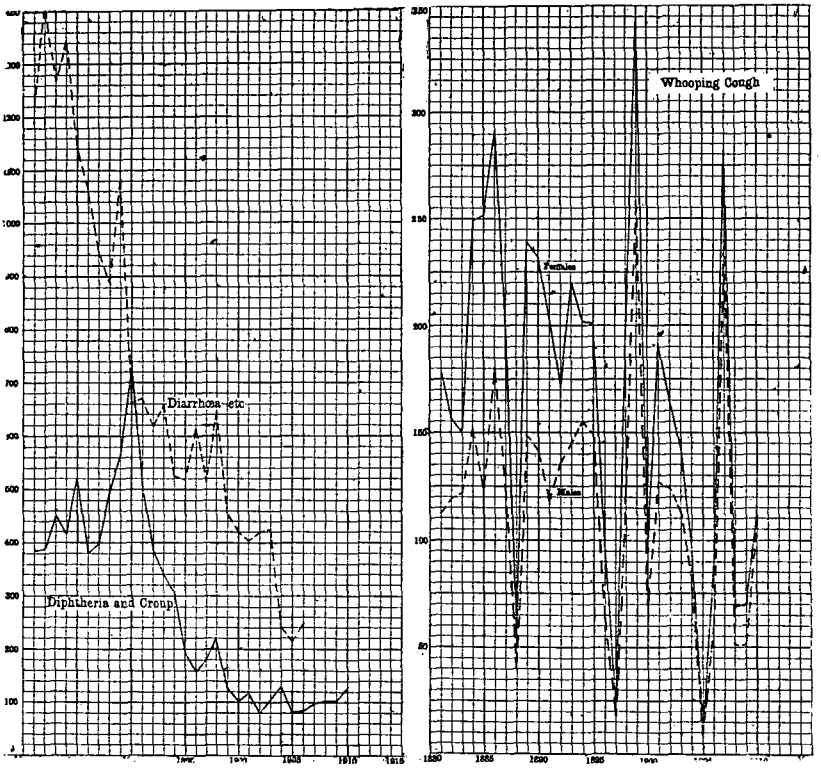
EXPLANATION OF GRAPHS.—In the diagram to the left, both results are for persons (both sexes combined), the upper or firm line denoting the mortality for typhoid fever; the lower or broken line, the mortality for whooping cough. In the diagram to the right, the results shewn by broken lines indicate the mortality from typhoid for males; and the firm line shews the mortality for typhoid for females.

The base of each small square represents one calendar year, while the height represents a death rate of ten per 1,000,000 of mean population. The left hand marginal marking represents death rates per 1,000,000 of population in each case; while the figures on the lower margin are the calendar years at quinquennial intervals.

The changes in the death rate for diphtheria and croup, as shewn in the diagram on page 237, are very striking. Attaining a high maximum in 1890, it has, on the whole, been steadily dropping ever since. In severity of its incidence there is no synchronism with diarrhœa.

The numbers dying at different ages from diarrhœa, dysentery, and enteritis are shewn in the diagram on page 232, which indicates that death is very frequent in early infancy, reaches a minimum at the age of about thirteen years, then steadily progresses till about sixty, when it sharply increases till about seventy-six, at which age it again falls off in frequency.

COMMONWEALTH OF AUSTRALIA.—DEATH RATES FOR DIARRHŒA, &c., FOR DIPHTHERIA AND CROUP, AND FOR WHOOPING COUGH, 1881 TO 1910.



EXPLANATION OF GRAPHS.—The diagram on the left relates to death rates of persons (males and females combined) from diarrhœa, etc., shewn by a broken line, and from diphtheria and croup, shewn by a continuous line; and that on the right relates to the male and female death rates (separately shewn) from whooping cough, the broken line denoting results for males and the continuous line those for females. In both cases the base of each small square represents one calendar year, while the vertical height in the diagram on the left represents a death rate of twenty per 1,000,000 of population, and in that on the right a death rate of five per 1,000,000 of male and female population, respectively. The figures on the left margin of each diagram are death rates per 1,000,000 of population, those on the lower margins are calendar years.

30. **Masculinity of Death from Various Diseases.**—The mean quinquennial results given in the table hereunder furnish information as to the relative frequency of death through particular diseases in the two sexes, the number of deaths of males per 1000 deaths of females being shewn.

FREQUENCY OF DEATHS OF MALES FROM VARIOUS DISEASES, PER 1000 FEMALES, WHEN THE NUMBERS OF EACH SEX ARE EQUAL IN THE GENERAL POPULATION—AUSTRALIA, 1881-1910.

Period.	Scarlet Fever.	Measles.	Whooping Cough.	Diphtheria and Croup.	Typhoid.	Diarrhœa, Enteritis, & Dysentery.
1881-1885 ...	808	868	636	913	966	1,143
1886-1890 ...	761	866	625	921	1,121	1,034
1891-1895 ...	750	992	704	866	1,248	1,126
1896-1900 ...	711	970	711	921	1,446	1,119
1901-1905 ...	778	891	745	964	1,430	1,214
1906-1910 ...	762	982	818	939	1,493	1,142
Mean of quinquennial values	762	928	706	921	1,284	1,130

It will be seen that, except in the case of whooping cough and typhoid, there is no definite evidence of any change in the relative frequency of death for the several diseases in the two sexes. Hence, with the exception mentioned, the mean of the quinquennial means may be taken as the constant probability of the death of males, the probability of the death of females being taken as 1000.

In the case of whooping cough and typhoid this probability, shewn in the last line, is a mean one for the period 1881 to 1910, but is at the present time too small, and appears to change nearly linearly with the lapse of time.*

31. **The Monthly Variations in the Frequency of Deaths from Various Causes.**—The seasonal variation in several causes of death dealt with has been deduced from the number of deaths recorded in each month during the period of four years 1907 to 1910. Those recorded were so corrected as to relate to months of equal length and a constant population. These corrected results are expressed as the number of deaths per month per 10,000,000 of population, and are as follows:—

MONTHLY VARIATION IN DEATHS FROM VARIOUS CAUSES, ADJUSTED FOR EQUALISED MONTHS AND CONSTANT POPULATION.

DEATHS PER MONTH PER 10,000,000 OF POPULATION.

Month.	Pulmonary Tuberculosis.	Cancer.	Diarrhœa etc.	Whooping Cough.	Typhoid.	Measles.	Scarlet Fever.	Diphtheria and Croup.
January ...	609	612	1,444	85	200	21	7	50
February ...	561	634	1,293	98	217	9	9	57
March ...	584	606	1,137	72	241	8	10	78
April ...	563	607	996	74	216	12	11	108
May ...	626	610	659	99	140	12	17	122
June ...	618	593	376	92	118	10	16	133
July ...	675	568	293	124	56	12	11	123
August ...	699	581	239	139	48	22	12	98
September ...	671	614	262	130	47	36	13	96
October ...	712	584	417	105	36	36	11	63
November ...	594	581	861	99	80	46	8	73
December ...	601	620	1,246	95	133	27	11	72

From these results have been deduced† the curves shewn on the diagram hereunder, from which it will be observed that the time of the deadliest activity of any one disease is by no means generally coincident with that of any other. Thus, the sharpest incidence of particular diseases during the year is as follows:—

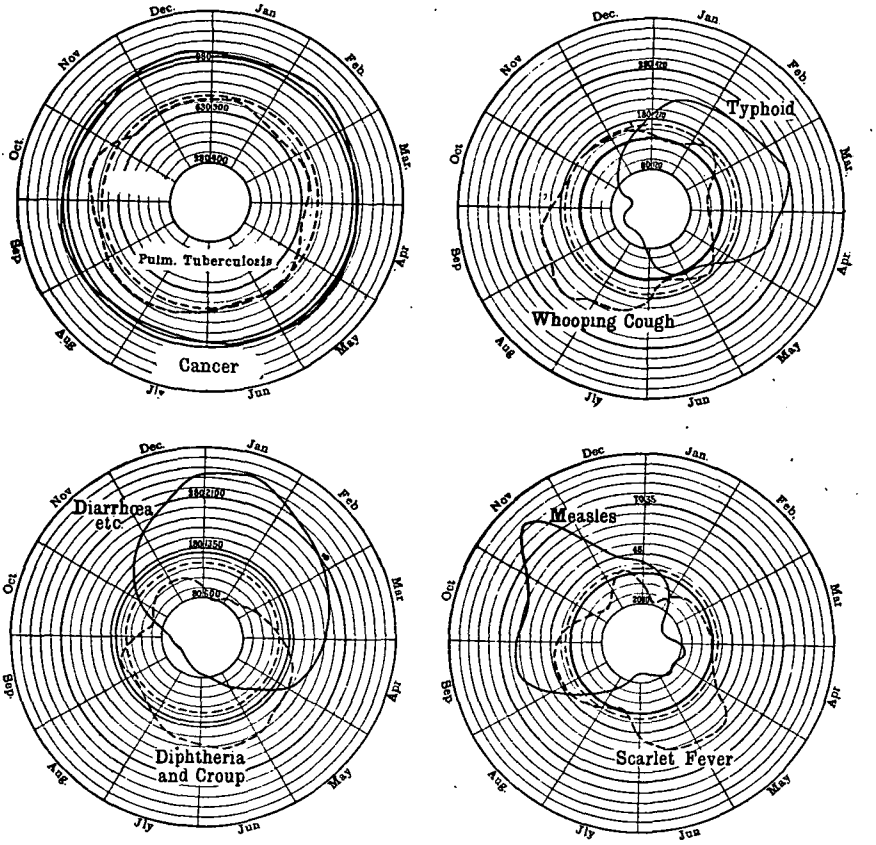
Pulmonary tuberculosis	middle October‡	Diarrhœa, etc. ...	middle January
Cancer	„ February‡	Diphtheria, etc. ...	„ June
Typhoid	„ March	Measles	„ November
Whooping cough ...	„ August	Scarlet fever ...	„ May

* The masculinity in these cases can be expressed very accurately by a formula. Assuming that a linear change represents the results with sufficient accuracy, we have for whooping cough $M = 593 + 7.3\,(T - 1880)$; for typhoid, $M = 951 + 21.5\,(T - 1880)$, in which M is the masculinity or number of males dying per 1000 females dying, when the number of the sexes is equal.

† See a paper entitled "Studies in Statistical Representation: Statistical Applications of the Fourier Series," by G. H. Knibbs, C.M.G., etc., Journ. Royal Society N.S.W., Vol., XLV., pp. 76-110.

‡ Doubtful.

COMMONWEALTH OF AUSTRALIA, 1907 TO 1910.



EXPLANATION OF GRAPHS.—The graphs based on the monthly totals of deaths over the period 1907-10 shew at any moment the relative frequency of the following diseases, viz., pulmonary tuberculosis and cancer; typhoid and whooping cough; diarrhœa, dysentery and enteritis, and diphtheria and croup; and measles and scarlet fever. For each disease a circle is drawn (a continuous or a broken line as the disease is represented by a continuous or broken curve) shewing the position corresponding to a uniform distribution throughout the year, and this indicates whether the value at any particular time is above or below the average for the disease. The numbers on the diagram denote the aggregate per month per quadrennium, and the intervals between each small circle represent the following numbers respectively where A denotes Arabic figures and E Egyptian figures.

Cancer	A:	1 interval represents		70	deaths.
Pulmonary Tuberculosis	E:	,,	,,	100	,,
Whooping Cough ...	A:	,,	,,	20	,,
Typhoid...	E:	,,	,,	30	,,
Measles	A:	,,	,,	5	,,
Scarlet Fever	E:	,,	,,	2.5	,,
Diphtheria and Croup ...	A:	,,	,,	20	
Diarrhœa, etc.	E:	,,	,,	150	

APPENDIX.—SUICIDES.

1. **Suicide in Australia.**[1]—The course of suicide in Australia presents certain features which call for special comment, viz.:—(i.) the constancy of the measure of the suicidal tendency; (ii.) its constancy in respect of the relative numbers of each sex; and (iii.) its periodicity according to seasons or months.

Suicide does not prominently figure among the causes of death, being only 1.166 per 10,000 of the population, and 1.13 per cent. of deaths from all causes. The suicide rate from 1858 to the present time was as follows:—

ANNUAL RATE OF SUICIDES PER 10,000,000 PERSONS IN THE COMMONWEALTH, 1858 to 1910.

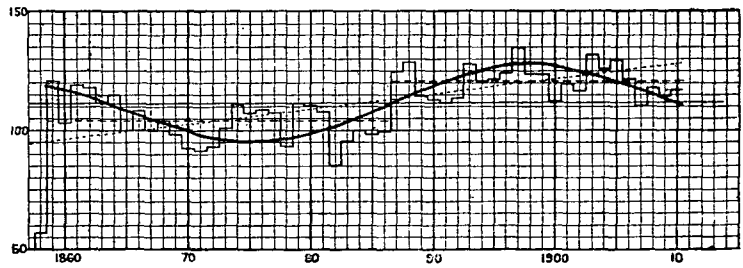
Year.	No. per 10 million.	Year.	No. per 10 million.	Year.	No. per 10 million.	Year.	No. per 10 million.	Year.	No. per 10 million.
1858	575*	1870	926	1880	1,107	1890	1,133	1900	1,125
1859	1,207	1871	917	1881	1,076	1891	1,117	1901	1,192
1860	1,037	1872	933	1882	859	1892	1,140	1902	1,170
1861	1,188	1873	1,010	1883	952	1893	1,275	1903	1,315
1862	1,179	1874	1,108	1884	995	1894	1,202	1904	1,260
1863	1,117	1875	1,077	1885	983	1895	1,217	1905	1,292
1864	1,148	1876	1,084	1886	995	1896	1,241	1906	1,214
1865	1,003	1877	1,078	1887	1,245	1897	1,350	1907	1,109
1866	1,082	1878	934	1888	1,283	1898	1,239	1908	1,174
1867	1,002	1879	1,110	1889	1,148	1899	1,233	1909	1,145
1868	1,041	1880	1,107	1890	1,133	1900	1,125	1910	1,166
1869	981								
Mean	for whole	period	...	...	...	...	...	...	1117.6

1. The information is obtained from an article with the title "Suicide in Australia: a Statistical Analysis of the Facts." By G. H. Knibbs, C.M.G., etc. Journal Royal Society N.S.W., volume xlv., pp. 225-246, to which reference should be made for details.

NOTES.—1858-9, State of Victoria only; 1860 to 1866, States of New South Wales and Victoria; 1867 to 1872, States of New South Wales, Victoria, and South Australia; 1873 to 1886, Queensland and Tasmania also included; 1887 to 1910, All the States of the Commonwealth. * The result for 1858 is abnormal.

This change of frequency is indicated in the following diagram:—

SECULAR FREQUENCY OF SUICIDE IN AUSTRALIA.



EXPLANATION OF GRAPH.—Each vertical division represents five suicides per annum per million of the general population, and each horizontal division denotes one year. The rectangular lines shew the actual observed group-rate of suicide for the years 1858 to 1910. The general mean is shewn by a firm horizontal line, and the two horizontal broken lines shew the averages for the period 1859 to 1886 and for the period 1887 to 1910. The fine inclined dotted line shews the general trend of the frequency for the period 1889 to 1910, if that trend be regarded as linear in character. The heavy curved line shews the general trend on the assumption that it tends to be periodic, which assumption agrees more closely with the observed frequency than the assumption of a linear trend.

The aggregate number of suicides in the whole period 1859 to 1910 inclusive was 15,242, and since the sum of the annual populations was 133,136 millions, the actual mean rate of suicide *for the whole period* was 114.48 per million per annum. The average of the annual numbers per million is only 111.76, hence this is the mean tendency to commit suicide about which fluctuations take place from year to year. In respect of differences from the curve shewn in the diagram representing the probable general trend of the phenomena, it may be noted that the relatively large increase which characterised 1887 and 1888 synchronised approximately with a period of excessive speculation, viz., the days of the silver and land booms. The large value for 1893 corresponded to the bank failures and collapse of the land boom. The high value for 1897 to some extent followed the incidence of drought conditions, viz., in 1895 and subsequent years.

The low value for 1900 synchronised with the South African war, when many men were drawn from Australia for military service in South Africa. The high values for 1903, 1904, and 1905, corresponded to the period of the most serious drought in Australia.

Practically the frequency of suicide for the whole of the period 1859 to 1886 was under the general average frequency, and for the whole of the period 1887 to 1910 it was above the average for Australia. The mean frequency per 1,000,000 population for 1859 to 1886 inclusive was 104.04 and from 1887 to 1910 inclusive was 120.78. But a reference to the figure will shew that the assumption of a slow linear progression* does not really satisfactorily accord with the facts. The general trend is, however, well exhibited by the curve shewn by the heavy firm line. This has a 46-year period, and can be expressed by a formula† showing a fluctuation reaching a maximum of only 15%.

It is perhaps remarkable that the rate for Australia should exceed that for England and Wales, and greatly exceed that for the United Kingdom taken as a whole; and, seeing that the race element is identical, since Australia is almost wholly of British origin, the fact seems worthy of further investigation.

From 1881 to the present time (1910), the countries whose suicide rates most closely approximate to that of Australia, are Sweden and Belgium.

The great range of frequency, viz., from Ireland, with only 34 per million, to Switzerland, with, say, 230—nearly seven times the frequency for Ireland—is worthy of note; also that Australia occupies approximately the mean position between these extremes. Mere geographical position on the earth's surface, or average annual temperature, etc., has apparently no marked influence on the suicidal frequency, and it would seem also that the influence of race is negligible. Probably social and economic conditions are the most potent factors governing the phenomena of suicide.

Respecting the question whether the suicidal tendency is or is not growing, it may be pointed out that it is clear, from the table on the following page, that there is a fairly steady increase in the frequency of suicide in the civilised world. The general result, given in the last line of the table, shews that suicide is decidedly on the increase, but also that the rate of increase is steadily diminishing. The result can be expressed by a formula.‡

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* Such a progression would be represented by the formula $S = 111{\cdot}8 + 0{\cdot}65\ (T-1884)$, and is shewn in the figure by the dotted straight line.

† Viz.:
$$S = 111.8 + 16.7 \sin 2\pi \frac{T - 1886}{46}$$
In the formulæ S is the number of persons annually committing suicide for an Australian population of 1,000,000, and T is the year in question.

‡ The number of suicides per million per annum (S) for the civilised world generally would appear to be roughly given for any year by the expression
$$(3) \ldots S = 112 + 2.2\ (T - 1873) - 0.022\ (T - 1873)^2$$
in which T is the year in question. This would imply that the rate per million per annum (dS/dT) is increasing, as expressed by the following formula, viz.:—
$$(4) \ldots dS/dT = 2.2 - 0.044\ (T - 1873);$$
which gives for the rate of increase per million per annum for 1873, 2.20, and for 1910 only 0.57—a very considerable reduction of the rate of increase, and one which indicates that there is some likelihood of the increase ceasing altogether.

The average rate of suicide for the period 1859 to 1910 of 111.8 per million does not exceed very greatly the rate for England and Wales. For comparison the results are given for various countries for successive quinquennia from 1871 onwards, and are as follows:—

SUICIDE RATES PER MILLION INHABITANTS FOR VARIOUS COUNTRIES.[1]

Country.	Period.							
	1871 to 1875	1876 to 1880	1881 to 1885	1886 to 1890	1891 to 1895	1896 to 1900	1901 to 1905	1906 to 1910
Bosnia and Herzegovina ...	...	...	...	6	19	37	40	...
Ireland	18	18	22	24	29	29	33	34*e*
Italy	35	41	49	50	57	63	63	...
Scotland	33	47	53	58	60	60	60	57*e*
Finland	29	33	39	40	48	47	55	...
Servia	...	...	38	37	36	40	51	...
Netherlands	36	44	53	56	61	55	64	...
Norway	75	72	67	67	65	55	64	...
Rumania	...	...	...	42	55	70	...	...
England and Wales ...	66	74	75	79	89	89	103	102*f*
Australia	100.9	106.3	97.3	116.1	119.0	123.7	124.5	116.2
Belgium	70	94	107	119	129	119	124	...
Sweden	81	92	97	118	144	119*a*	124	...
Austria	106	162	162	160	159	158	173	...
Hungary, Kingdom... ...	...	...	84	102*b*	123*c*	163	176	179*e*
Hungary, proper	...	76*d*	89	108*b*	132*c*	177	191	192*e*
Japan	...	110*d*	146	159	179	185	201	189*e*
German Empire	...	...	211	205	211	202	212	...
Denmark	243	267	248	261	250	221	227	194*f*
France	144	168	194	216	241	232	228	...
Switzerland	...	227	233	221	222	222	232	227*f*
General result	112	122	133	139	151	152	160	158 ?

1. See Statistik und Gesellschaftslehre. Prof. G. v. Mayr, Bd. III., p. 279.

a This sudden decrease is due to the fact that cases of death by poisons self-administered for purposes of abortion have been excluded.

b For 1886-7. *c* For 1892-5. *d* For 1878-80. *e* For 1906-08. *f* For 1906-09.

It is a remarkable fact that in the western world the frequency of suicide among men ranges from double to quintuple the frequency among women, while in India and Burmah the relation is reversed, that is, suicide is more frequent there among women than men.

For Australia, for the four decennia between 1871 and 1909 inclusive (omitting West Australian suicides, for which figures are not available till 1896), the results are as follows:—

SUICIDES IN THE COMMONWEALTH, 1871-1909.

Years.	Males.	Females.	Total.	Males. (Per 1000 of Total Suicides.)	Females. (Per 1000 of Total Suicides.)
1871-1909 ...	11,051	2,250	13,301	831	169
1900-1909 ...	3,992	811	4,803	831	169

This constancy of relation of 83.1% males and 16.9% females, approximately true for each decennium, shews that in the Commonwealth of Australia 4.92 males commit suicide for each female who commits that act, a ratio that is exceeded by only one country—Switzerland. The relative number of males and females has, however, varied. If allowance be made for this we have—

Years 1871-1909	...	825 males	175 females	per 1000
1900-1909	...	830 ,,	170 ,,	,,

For comparison, the crude ratios are given in the following table:—

TABLE SHEWING CRUDE RATIO OF MALE TO FEMALE SUICIDES IN VARIOUS COUNTRIES.

Country.	Period	Ratio.	Country.	Period.	Ratio.
Japan	1881 - 1905	1.65	Prussia ...	1881 - 1905	3.80
Servia	1881 - 1905	2.06	German Empire	1881 - 1905	3.85
Scotland ...	1881 - 1905	2.52	Norway ...	1881 - 1905	3.85
Rumania ...	1891 - 1900	2.68	Sweden ...	1881 - 1905	3.91
Bulgaria ...	1896 - 1905	2.96	Netherlands ...	1881 - 1905	4.05
England & Wales	1881 - 1905	2.98	Italy... ...	1881 - 1905	4.05
Scotland ...	1896 - 1905	3.00	Spain ...	1881 - 1905	4.22
Ireland ...	1881 - 1905	3.00	Finland ...	1881 - 1905	4.31
Russia... ...	1881 - 1890	3.38	Sweden ...	1901 - 1905	4.59
France ...	1881 - 1905	3.55	Belgium ...	1881 - 1905	4.93
Austria ...	1881 - 1905	3.58	**Australia** ...	1881 - 1905	4.95
Denmark ...	1881 - 1905	3.62	Switzerland ...	1881 - 1905	5.22

INDIA, &c., 1907.

Country.	Ratio.	Country.	Ratio.
Burmah	1.16	East Bengal and Assam ...	0.67
Central Provinces	1.00	Eastern Territory	0.59
Bombay	0.92	Bengal	0.57
Punjab	0.79	North West Provinces	0.55
Madras	0.74	Agra and Oudh	0.34

The figures in the lower table above are for India and Burmah, where generally there are more female than male suicides. This fact illustrates the great difference between the social condition in the two civilisations.

Since the relative number of males and females differs in each country, the crude rates are not *quite* satisfactory.* The comparisons of the suicides within the various age-groups shew the progression of suicidal tendency through the different stages of life.

* What has been called the corrected frequency relation, does not yield very different results. (See Op. cit. pp. 233, 234.)

NUMBER OF PERSONS PER MILLION OF EACH AGE-GROUP AND EACH SEX COMMITTING SUICIDE—VARIOUS COUNTRIES.*

MALES.

Age-group.	Austria, 1896-1901.	Baden, 1891-1905.	Buenos Ayres, †1899-1908.	Denmark, 1886-1905.	France, 1893-1906.	Italy, 1901-1905.	Massachusetts, 1876-1885.	Prussia, 1891-1905, 1908.	Saxony, 1903-1907.	Sweden, 1891-1907.	Australia, 1891-1910.	†Simple Mean including Australia.
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
10-14 ...	2	20	4	36	28	5	2	31	53	—	5	18
15-19 ...	165	161	175	144	161	71	35	186	341	42	32	134
20-24 ...	330	317	233	291	277	166	103	331	442	170	119	255
25-29 ...	384	376	264	313	374	138	136	315	482	238	190	295
30-39 ...	313	380	212	431	364	126	159	396	505	313	272	326
40-49 ...	423	594	276	700	537	165	230	654	929	442	403	508
50-59 ...	566	870	193	1112	726	208	365	880	1297	574	563	716
60-69 ...	585	987	187	1183	869	223	445	951	1589	588	602	802
70-79 ...	621	1086	187	1284	909	210	551	942	1664	554	556	838
80 ...	621	1408	187	1210	954	202	264	1105	2780	468	443	946

FEMALES.

10-14 ...	1	11	4	6	21	1	2	8	26		4	8
15-19 ...	92	57	235	82	131	34	16	98	192	20	40	76
20-24 ...	130	74	206	127	170	48	31	115	177	52	68	99
25-29 ...	122	80	120	94	244	40	43	90	160	54	53	98
30-39 ...	82	120	78	89	338	37	53	97	149	56	76	100
40-49 ...	86	149	56	178	342	37	56	134	243	84	86	140
50-59 ...	99	139	25	226	444	43	64	175	338	114	88	173
60-69 ...	99	184	25	279	515	42	82	193	302	115	87	190
70-79 ...	147	171	25	270	528	46	55	215	437	91	91	205
80 ...	147	171	25	386	526	38	24	259	557	89	57	225

* The results, excepting for Australia, are computed from the data furnished in the work of Prof. G. v. Mayr, of Munich. Op. cit. Bd. III., pp. 313-316.

† Buenos Ayres not included in mean.

The suicidal frequency per million for each five-year group in Australia, based on the records of the last two decades,[1] is as follows:—

SUICIDES PER MILLION IN EACH AGE GROUP AND SEX—AUSTRALIA,

1891 TO 1910.

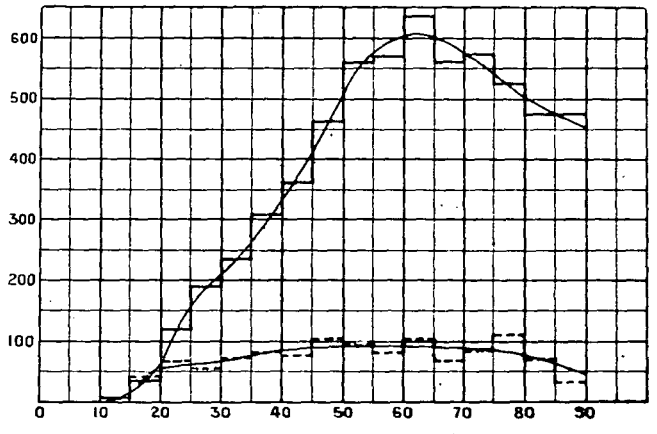
Age-group.	Males.	Females.	Age-group.	Males.	Females.
10-14	5	4	50-54	559	94
15-19	32	40	55-59	569	81
20-24	119	67	60-64	637	102
25-29	190	53	65-69	560	69
30-34	235	71	70-74	573	82
35-39	309	81	75-79	524	109
40-44	361	76	80-84	474	70
45-49	461	102	85	475	32

[1] These are computed on the basis of the age constitution at the 1901 Census, which is sufficiently accurate for the purpose in view.

These numbers disclose the frequency of suicide at different ages, and thus the age at which the tendency is most strongly expressed. Since the total number of persons in any age-group ordinarily diminishes with increase of age, and differs both from period to period as well as from country to country, the absolute numbers of suicides at various ages are of little interest; it is the relative numbers which are significant. The absolute numbers have therefore not been given.

The characteristic difference between the suicidal tendency in males and in females is shewn in the following diagram:—

FREQUENCY OF SUICIDE ACCORDING TO AGE.
UPPER CURVE, MALES. LOWER CURVE, FEMALES.



EXPLANATION OF GRAPH.—Each horizontal division denotes five years of age, and each vertical division denotes fifty suicides per annum per million of the population of the corresponding sex and age. The upper rectangles denote the observed frequency per annum per million males of each quinquennial age-group, and the lower rectangles denote the observed frequency per annum per million females of each quinquennial group. The two curves denote the probable instantaneous values for any age between the limits 0 to 90, the upper being for the male sex, the lower for the female sex, the ordinates thereto being per million per annum of the corresponding sex.

For males the increase of frequency is almost linear from fifteen to fifty-five years of age. The maximum frequency is about sixty-two, after which the frequency decreases decidedly, but not as quickly as it increases for earlier ages. Italy and Sweden shew a similar decrease of frequency, the maximum being between the ages sixty and seventy, so also do Massachusetts and Buenos Ayres.

It would appear that the measure of the stress of life is special to each country, and that, measured against the capacity to endure this stress, it falls off in Australia at the age of about sixty to sixty-five for men, becoming even at ninety as small as it was at forty-seven for that sex. It also distinctly decreases for the later years of life, for women. It is further worthy of note that the average frequency among Australian women never reaches, at any period of life, the average frequency at the age of twenty-three among men.

There is a well marked seasonal fluctuation of suicide. This fluctuation is perhaps best shewn by computing for a period of years how many persons commit suicide per month, correcting the crude results so as to equalise the months in respect of their duration and total population. The results are:—

MONTHLY FREQUENCY OF SUICIDE, AUSTRALIA.

Month.	Numbers per 100,000,000 of Population.				Numbers per 10,000 Suicides.			
	N.S.W. and Queensl'd 1890-1899. Persons.	All States of Australia, 1900-1910.			N.S.W. and Queensl'd 1890-1899 Persons.	All States of Australia, 1900-1910.		
		Males.	Females.	Persons.		Males.	Females.	Persons *
January ...	1,163	1,797	357	1,108	859	935	842	920
February ...	1,053	1,636	421	1,057	777	853	994	878
March ...	1,019	1,661	366	1,041	752	866	864	865
April ...	956	1,540	413	1,002	706	803	975	832
May ...	1,072	1,520	352	962	792	792	831	799
June ...	1,002	1,398	265	857	740	729	625	712
July ...	954	1,476	321	922	704	769	758	766
August ...	1,221	1,548	380	990	902	807	897	822
September ...	1,080	1,502	318	936	798	783	751	778
October ...	1,284	1,698	393	1,074	948	885	928	892
November ...	1,227	1,622	307	992	906	845	725	824
December ...	1,512	1,790	343	1,098	1,116	933	810	912
	13,543	19,188	4,236	12,039	10,000	10,000	10,000	10,000

* For result for 1890 to 1910 see table hereinafter.

There is a distinct seasonal fluctuation; it is, however, apparently not identical from decade to decade, and from the last three columns it is evident that the curve is by no means identical for the sexes. For the purpose of comparison the result for a long series of observations in various European countries, and the corresponding results for Australia for 1890 to 1910, are given. These shew in a general way that the seasonal relationship of the maximum frequency is identical in Australia with that of the Northern Hemisphere, the absolute difference between approximately 6 months.

The Australian figures for the last 21 years are based on two States for the first ten years and on all for the last eleven years. All results are corrected to equalise the months, etc.

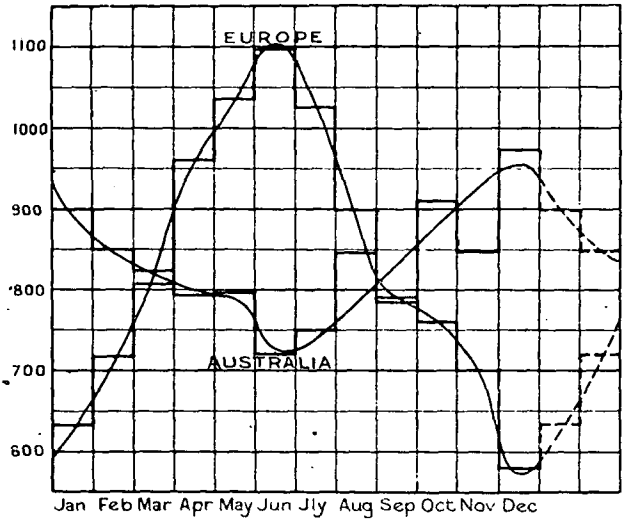
NUMBER OF SUICIDES OCCURRING IN EACH EQUALISED MONTH IN 10,000 SUICIDES.

	France*	Prussia.	Saxony	Württemberg.		Baden.	Switzerland.	Italy.	Denmark.	Simple Mean.	Australia.†	
	1827 to 1876	1885 to 1900	1875 to 1889	1846 to 1879	1889 to 1893	1881 to 1900	1884 to 1893	1864 to 1876	1896 to 1905			1890 to 1910
January...	690	625	629	547	658	676	637	610	618	632	July ...	749
February	719	688	696	805	742	664	744	771	629	718	August	846
March ...	851	803	817	848	800	864	749	827	713	808	Sept. ...	784
April ...	955	982	987	896	983	903	973	995	964	960	Oct. ...	910
May ...	1,018	1,016	1,040	998	1,009	972	1,025	1,121	1,135	1,037	Nov. ...	848
June ...	1,092	1,053	1,088	1,134	950	1,059	1,078	1,216	1,207	1,097	Dec. ...	973
July ...	1,053	997	1,010	1,063	993	991	1,039	1,023	1,072	1,026	Jan. ...	900
August ...	871	907	927	961	892	896	871	868	893	898	Feb. ...	849
Sept. ...	757	836	813	769	833	805	832	714	740	789	March...	832
October ...	744	787	758	742	775	803	810	641	762	758	April ...	793
November	643	692	664	717	867	730	659	610	688	697	May ...	796
December	607	612	571	520	508	637	583	604	579	580	June ...	720
	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000		10,000

* Computed approximately from results given in Prof. v. Mayr's work (*Op. cit.* p. 282.)

† New South Wales and Queensland only for 1890 to 1899, and all States of Australia from 1900 to 1910 inclusive.

ANNUAL FLUCTUATION IN THE FREQUENCY OF SUICIDE.



EXPLANATION OF GRAPHS.—The horizontal divisions denote not calendar but equalised months and the vertical divisions denote 50 suicides per month out of an assumed total of 10,000 per annum (833⅓ per month). The rectangular lines denote the group results for the equalised months on the basis assumed. The upper curve denotes the probable instantaneous values for the whole of Europe, the lower the probable instantaneous values for the whole of Australia. The results are so corrected as to correspond to a population constant throughout the year.

In the diagram the rectangular lines shew the rates for the various months for Australia and Europe generally, and the curves give the most probable form of the fluctuation.

If the monthly mean temperatures of the capital cities of Australia be weighted in proportion to the populations, the resultant mean is as follows:—

Month	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
Temp. Fahr. ...	71.1	70.7	68.4	63.5	57.7	53.6	51.8	54.1	57.7	61.8	65.6	69.0

These results may be regarded as approximately representing the temperature conditions influencing the rate of suicides owing to the fact that the populations of the cities have a preponderating influence. The frequency of suicide can be expressed by a formula depending on this average temperature.*

The remarkable correlation between temperature and suicide frequency is best seen by combining the results for pairs of months. In this way we obtain the two upper lines in the following table†:—

–	Dec. Jan.	Feb. Mar.	April. May.	June. July.	Aug. Sept.	Oct. Nov.
Temperature, Fahr. ...	70.0	69.5	60.6	52.7	55.9	63.7
Suicides per 10,000 ...	1,832	1,743	1,631	1,478	1,600	1,716
Calculated	1,805	1,796	1,645	1,511	1,565	1,698

* See Journal Royal Society N.S.W., volume xlv., p. 109. The frequency (q) of suicide per million per diem in Australia can be put in the form

$$q = 0.33 + 0.003\ t$$

where t is the temperature above 62° Fahr.

† This correlation is very approximately expressed by $615 + 17t$ (where t is the temperature Fahrenheit), a formula which gives results in the last line.

It may be pointed out that Australia differs very remarkably from Europe in this respect, viz., that the range of temperature throughout the year is decidedly smaller in Australia. Thus a mean for the various countries of Europe gives the range between the averaged hottest and coldest months of the year about 33° Fahr., while for Australia the range is only about 19°, *i.e.*, but little more than half. We thus have:—

Ranges	In Temperature.	In Suicide Frequency.
In Europe	33° Fahr.	517
In Australia	19° ,,	253

That is to say, the variation in the suicide frequency on the whole corresponds very closely to the range in temperature, being strongly marked where the temperature differences are strongly marked. It is evident from this that large temperature fluctuations tend to bring about large changes in the frequency of suicide.

7. *Mode of Suicide.* In a relatively small population the number of suicides for individual years by any particular mode of self-destruction is naturally variable, nevertheless there is a greater uniformity than might have been anticipated *a priori*. The statistics have been computed for the years 1907 to 1910 inclusive.

These results shew that the mode of suicide is very regular. The relative frequency of any particular mode is best seen by the number represented by each class in a given aggregate, say, 100, 1000, or 10,000.

RELATIVE NUMBER PER 10,000 SUICIDES OF EACH SEX, AND OF BOTH SEXES,

DYING BY PARTICULAR MODES IN AUSTRALIA DURING THE PERIOD 1907 TO 1910.

Mode.	Males.	Females	Persons.	Mode.	Males.	Females	Persons.
Poisoning	1,806	4,545	2,280	Precipitation from height	123	89	117
Asphyxia	31	...	25	Crushing	135	147	137
Hanging	1,707	1,349	1,646	Other modes ...	369	293	356
Drowning	823	2,082	1,041				
Firearms	3,360	645	2,890				
Cutting, etc. ...	1,646	850	1,508	Total	10,000	10,000	10,000

In Australia poison and drowning are resorted to two and a-half times more frequently by women than by men; suicide by cutting is resorted to twice as often, and by shoooting five times as often, by men as by women.

The preceding results may be compared with those of a few other countries. For example:—

RELATIVE NUMBER OF PERSONS IN 1000 OF EACH SEX RESORTING TO PARTICULAR MODES OF SUICIDE.

Country.	Period.	Hanging.		Drowning.		Shooting.		Poisoning.		Cutting.	
		M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
Russia	1904-1908	573	396	122	312	194	32	52	166	?	?
Japan	1902-1907	623	444	184	430	24	3	27	25	39	27
Servia	1902-1906	341	619	98	71	415	239	73	9	49	53
Australia ...	1907-1910	171	135	82	208	336	64	181	455	165	85

The comparison discloses for each sex the great diversity of frequency in resorting to particular modes of self-destruction. The results are equally diversified when the total number of suicides is considered (irrespective of sex). These total results may be compared with those of a number of other countries for several forms of suicide, viz., by hanging, drowning, shooting, and cutting. The following table furnishes the relative numbers:—

RELATIVE NUMBER OUT OF A TOTAL OF 1000 SUICIDES DYING BY HANGING, DROWNING, SHOOTING, OR CUTTING.

VARIOUS COUNTRIES.

Country.	Period.	Mode of Suicide.			
		Hanging.	Drowning.	Shooting.	Cutting.
Australia	1907-1910	165	104	289	151
Austria	1887-1891	444	259	173	?
Bavaria	1887-1890	536	203	208	?
Belgium	1889-1893	492	249	155	19
Denmark	1896-1900	749	130	54	13
England	1889-1893	277	227	93	182
France	1887-1891	435	260	125	24
Italy	1889-1893	167	232	254	41
Norway	1888-1890	656	172	78	47
Prussia	1891-1900	586	184	129	23
Saxony	1891-1900	598	196	117	20
Sweden	1889-1893	495	154	140	56
Württemberg	1890-1899	589	158	152	27

It is remarkable in cases of suicide that what would *a priori* seem to be negligible factors should really have weight. Thus it is shewn that cold acts as a well-defined deterrent in respect of suicide by drowning.

The following conclusions are indicated by the results:—

(i.) The relative frequency of suicide in Australia is very constant.

(ii.) There is apparently a secular oscillation of 46 years period and of relatively small amplitude, viz., 15 per cent. The existence of this cannot be decisively determined till another half century has elapsed.

(iii.) While economic conditions express themselves in the frequency of suicide, their effects are relatively small, and are comparable in magnitude only with the regular annual fluctuation. In a half century's experience the greatest deviations from the mean are − 15 per cent. to + 21 per cent., and from the oscillation of 46 years-period less than 14 per cent. either way.

(iv.) Australia occupies a medium place in a list of frequency of suicides for all countries.

(v.) The annual fluctuation in Australia (fluctuation from month to month) is well marked, but is only about half of that in Europe. It ranges between − 14 per cent. to +10 per cent.

(vi.) In Europe the mean temperature range, between the hottest and coldest months, is about 33° Fahr. and in Australia it is only 19° Fahr., say 57 per cent. of that of Europe; the range of suicide frequency during the year is similarly only about 50 per cent. of that of Europe.

(vii.) The annual fluctuation stands in the same relation to the seasons, *i.e.*, the maximum and minimum frequencies in Europe are in the months June and December respectively, and in Australia in the months December and June.

(viii.) It would appear from this that the annual temperature fluctuation or some unknown phenomenon associated therewith has a profound influence on the frequency of suicide.

(ix.) Suicide is on the increase for the world generally, but the rate of increase is diminishing.

(x.) It may be stated that there is a fairly well marked increase in the frequency of suicide in Prussia for the ages 15 to 25, viz., the intensive educational period of life.

(xi.) In Australia, frequency of suicide at first increases with age, attaining with men a maximum at about age 62, after which it declines. With women it never attains in the western civilised world or in Australia a comparable magnitude to the frequency in the case of men, but exhibits in a less marked way the tendency to increase with age to a limit and then to decline.

(xii.) The western civilised world stands in startling contrast with the east, and especially with India in this respect, where female suicide preponderates. Even in Japan the frequency of female suicides is large compared with any European country.

(xiii.) The mode of suicide shews considerable constancy, and is apparently influenced by physical conditions.

§ 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 253 and 254), shewing these fluctuations from 1860 to 1910, 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 254), 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.

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

ACTUAL BIRTHS, DEATHS, AND MARRIAGES,

EXPERIENCED IN THE COMMONWEALTH DURING THE YEARS 1890 TO 1910, 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	132,599	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	33,388

2. **Graphs of Annual Births, Commonwealth and States** (page 253).—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 to 1907, and a slight fall in 1908, followed by a recovery in 1909.

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, with a further fall in 1905 and a continuous rise since 1906.

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 1910.

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 onwards, a period of steady recovery.

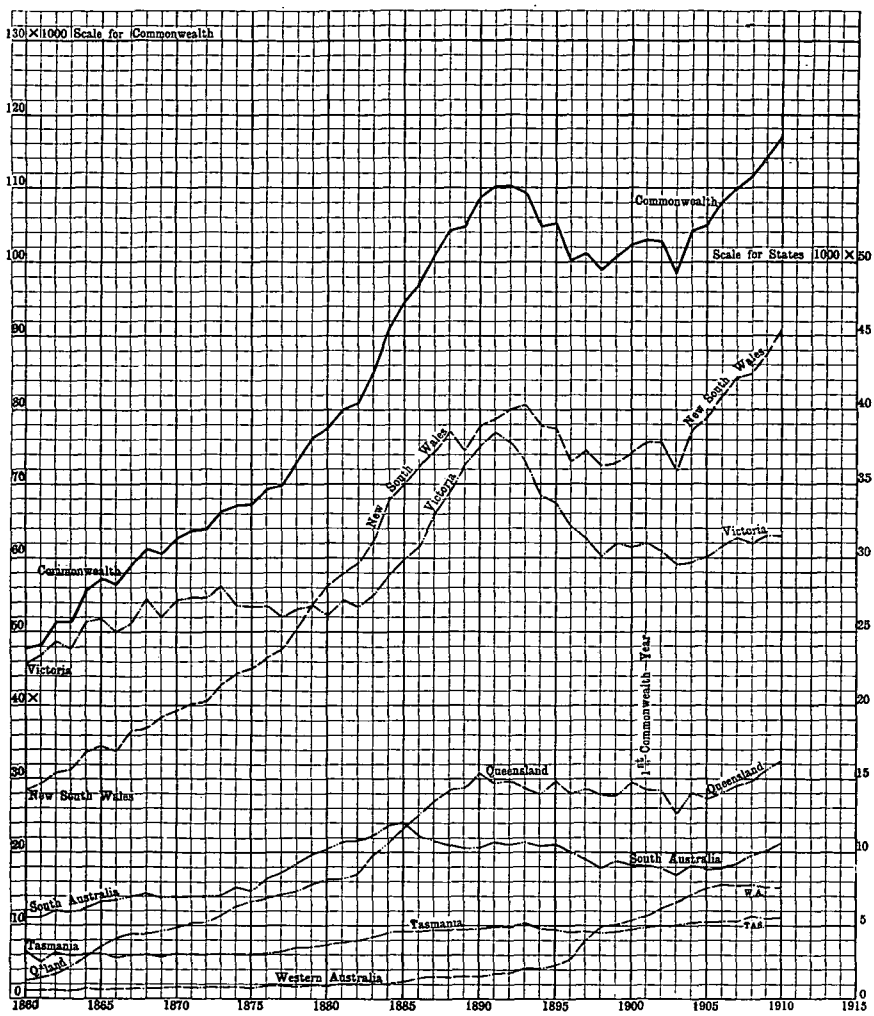
The Western Australian curve indicates that an increase, which was practically continuous but very slow, took place from 1860 to 1884, and that a somewhat quicker rate of increase, experienced from 1884 to 1896, was succeeded by a still more rapid and very satisfactory rate of increase from 1896 onwards.

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 ...	1910	1891	1910	1885	1906	1908	1910

3. **Graphs of Annual Marriages, Commonwealth and States** (page 254).—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, a still more rapid increase between 1879 and 1885. 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 1910 was greater than in any preceding year.

GRAPHS SHEWING TOTAL ANNUAL BIRTHS IN THE COMMONWEALTH AND STATES OF AUSTRALIA, 1860-1910.



(See Table page 168.)

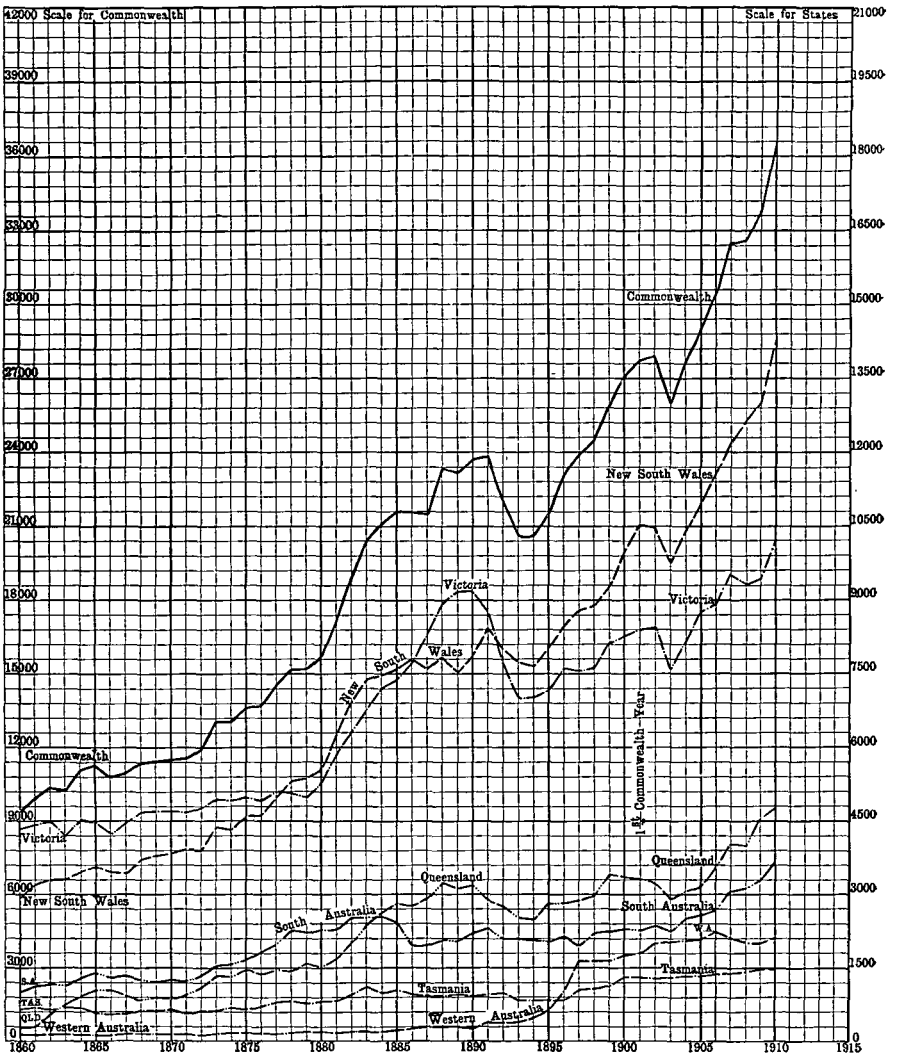
EXPLANATION OF GRAPHS.—The base of each small square represents an interval of one year for both Commonwealth and States, and the vertical height represents 2000 persons for the Commonwealth, and 1000 for the States.

The scale on the left relates to the Commonwealth, and that on the right to the States.

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, ——————; New South Wales, — — — — —; Victoria, — · — · — · —; Queensland, — — · — · — · — ·; South Australia, — — · — · — · —; Western Australia, — — — · — · — · — ·; Tasmania, — — · — · — · — · —.

GRAPHS SHEWING TOTAL ANNUAL MARRIAGES IN THE COMMONWEALTH AND STATES OF AUSTRALIA, 1860-1910.



(See Table page 180.)

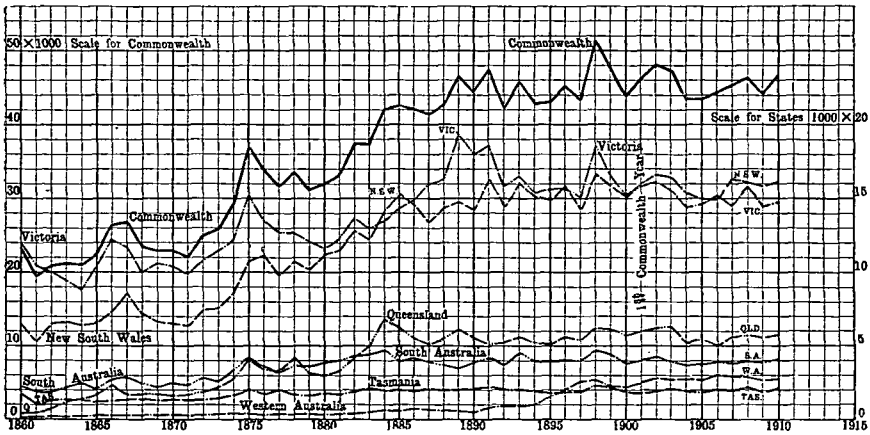
EXPLANATION OF GRAPHS.—The base of each small square represents an interval of one year for both Commonwealth and States, and the vertical height represents 600 marriages for the Commonwealth and 300 for the States.

The scale on the left relates to the Commonwealth, and that on the right relates to the States.

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 253.

GRAPHS SHEWING TOTAL ANNUAL DEATHS IN THE COMMONWEALTH AND STATES OF AUSTRALIA, 1860-1910.



(See Table page 189.)

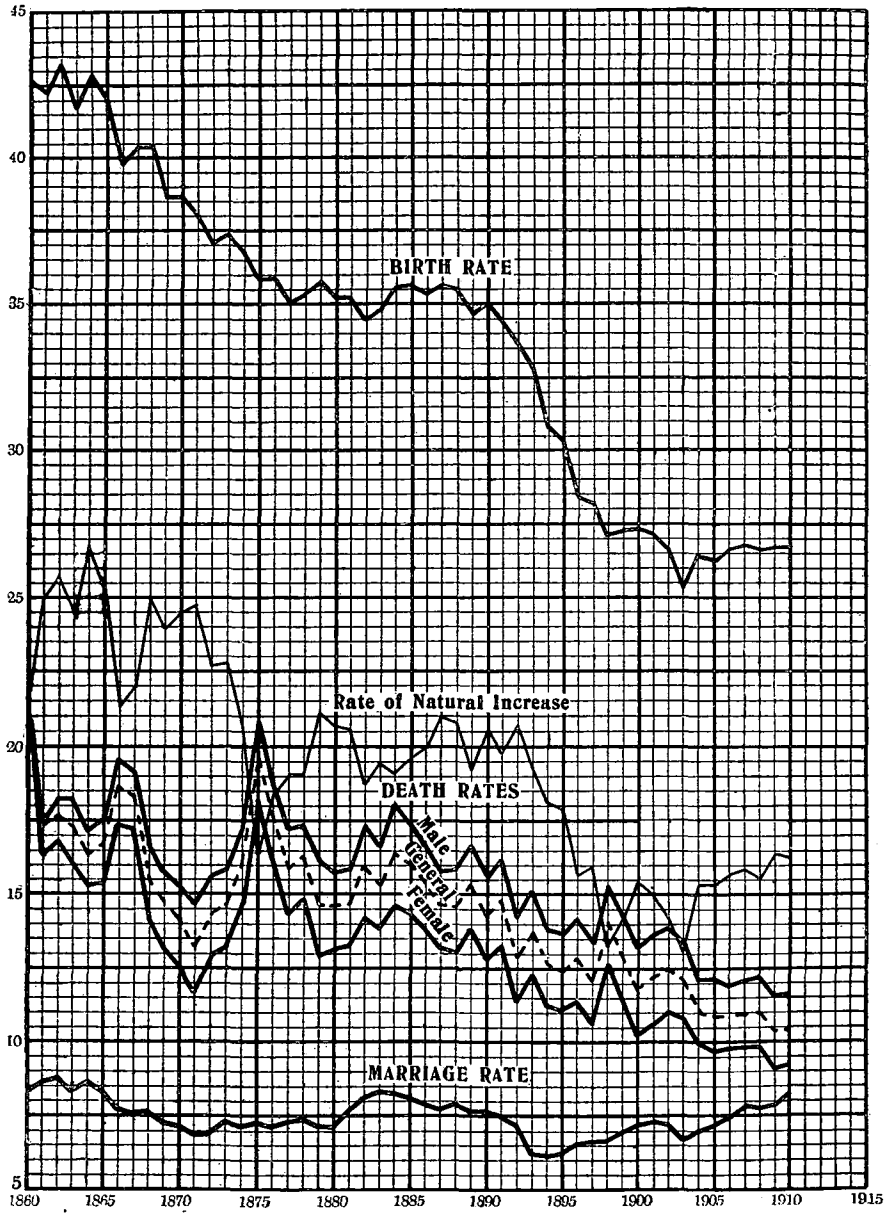
EXPLANATION OF GRAPHS.—The base of each small square represents an interval of one year for both Commonwealth and States, and the vertical height represents 2000 persons for the Commonwealth and 1000 for the States.

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 253.

GRAPHS SHEWING GENERAL BIRTH, NATURAL INCREASE, DEATH (MALE, GENERAL AND FEMALE), AND MARRIAGE RATES IN THE COMMONWEALTH OF AUSTRALIA, 1860-1910.



(See pages 168, 181, 189 and 262.)

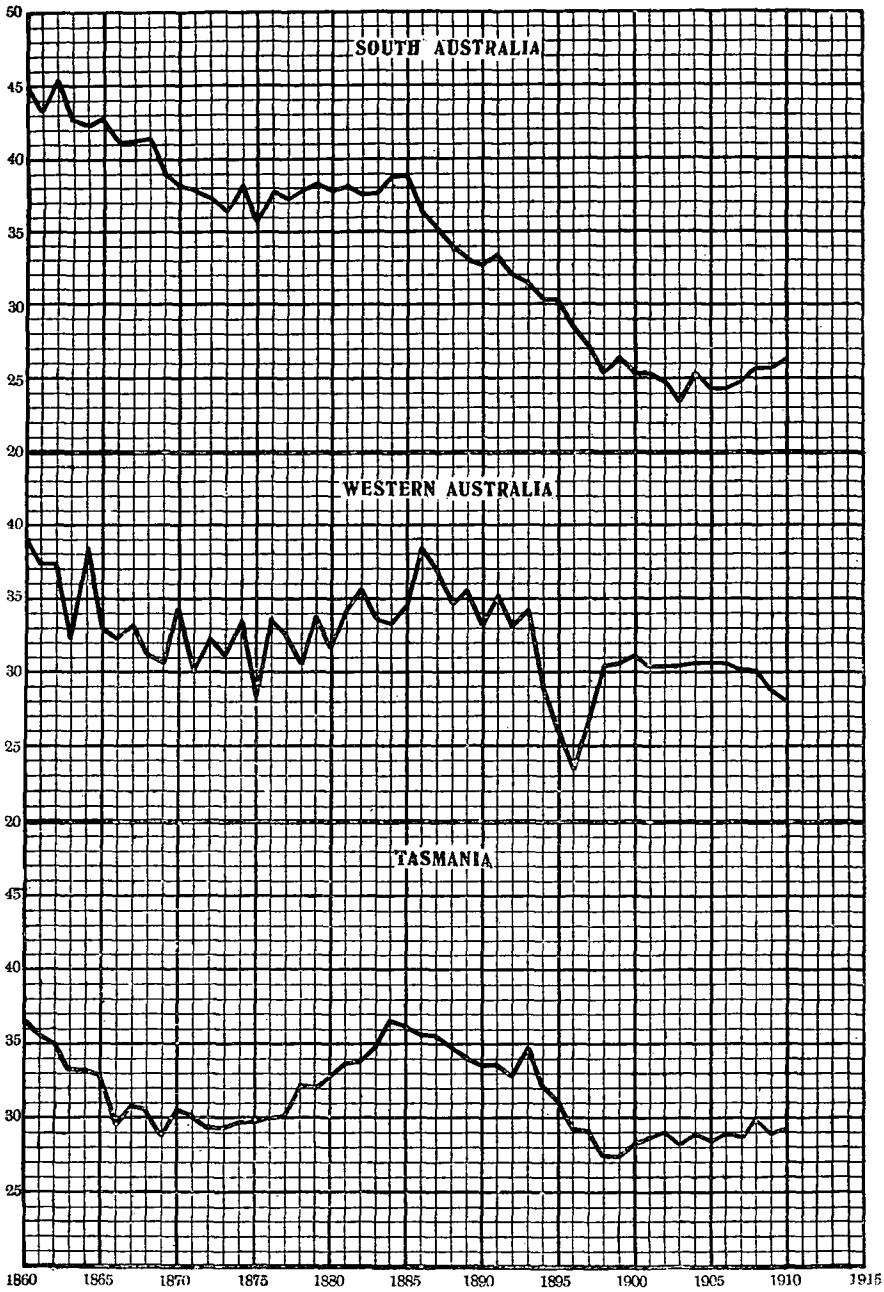
EXPLANATION OF GRAPHS.—The base of each small square represents one year's interval, and the vertical height, according to the character of the curve, one half per thousand of the population– the basic line being five per thousand of the population.

GRAPHS SHEWING BIRTH RATES IN THE STATES OF NEW SOUTH WALES, VICTORIA, AND QUEENSLAND, 1860-1910.

(See Table page 168.)

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.

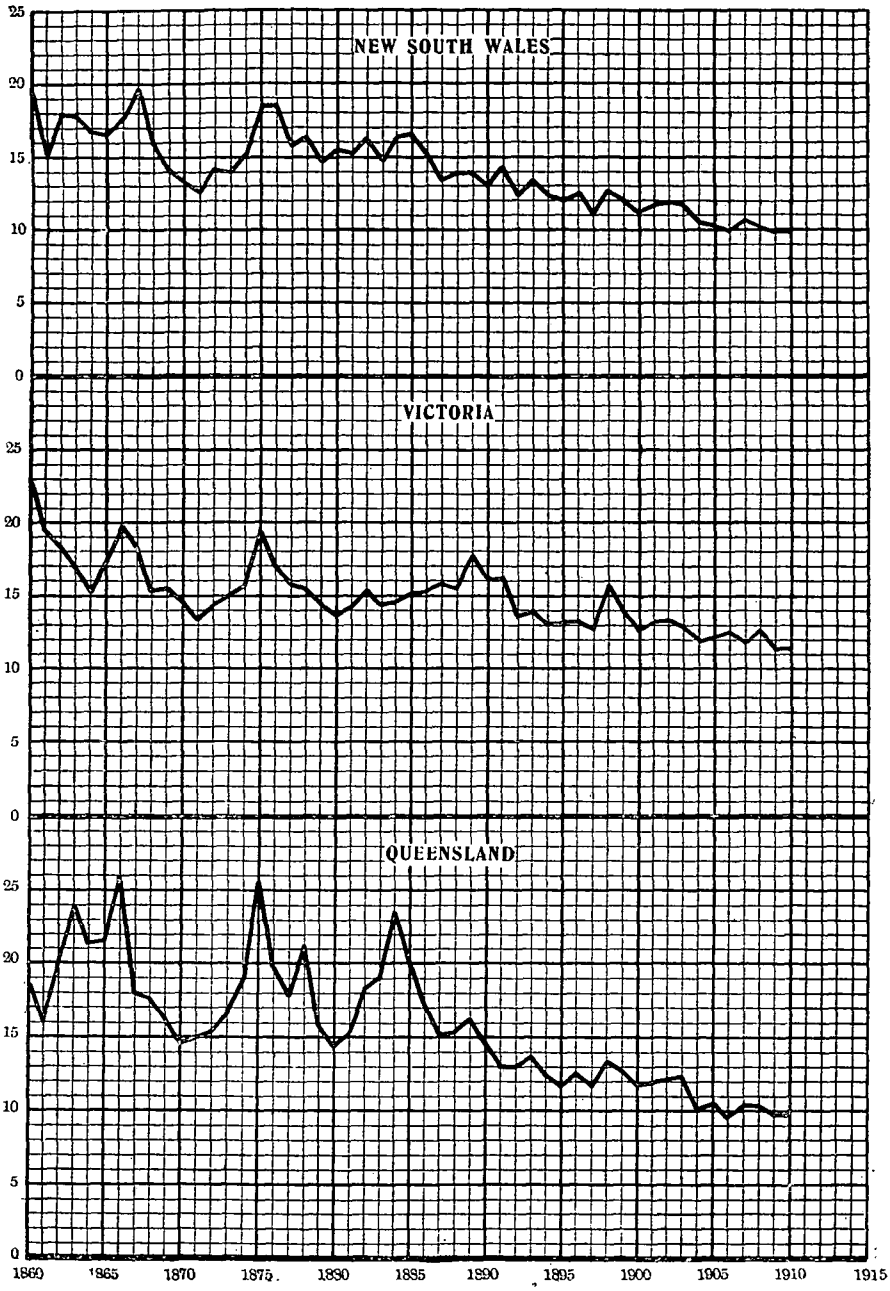
GRAPHS SHEWING BIRTH RATES IN THE STATES OF SOUTH AUSTRALIA, WESTERN AUSTRALIA, AND TASMANIA, 1860-1910.



(See Table page 168.)

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.

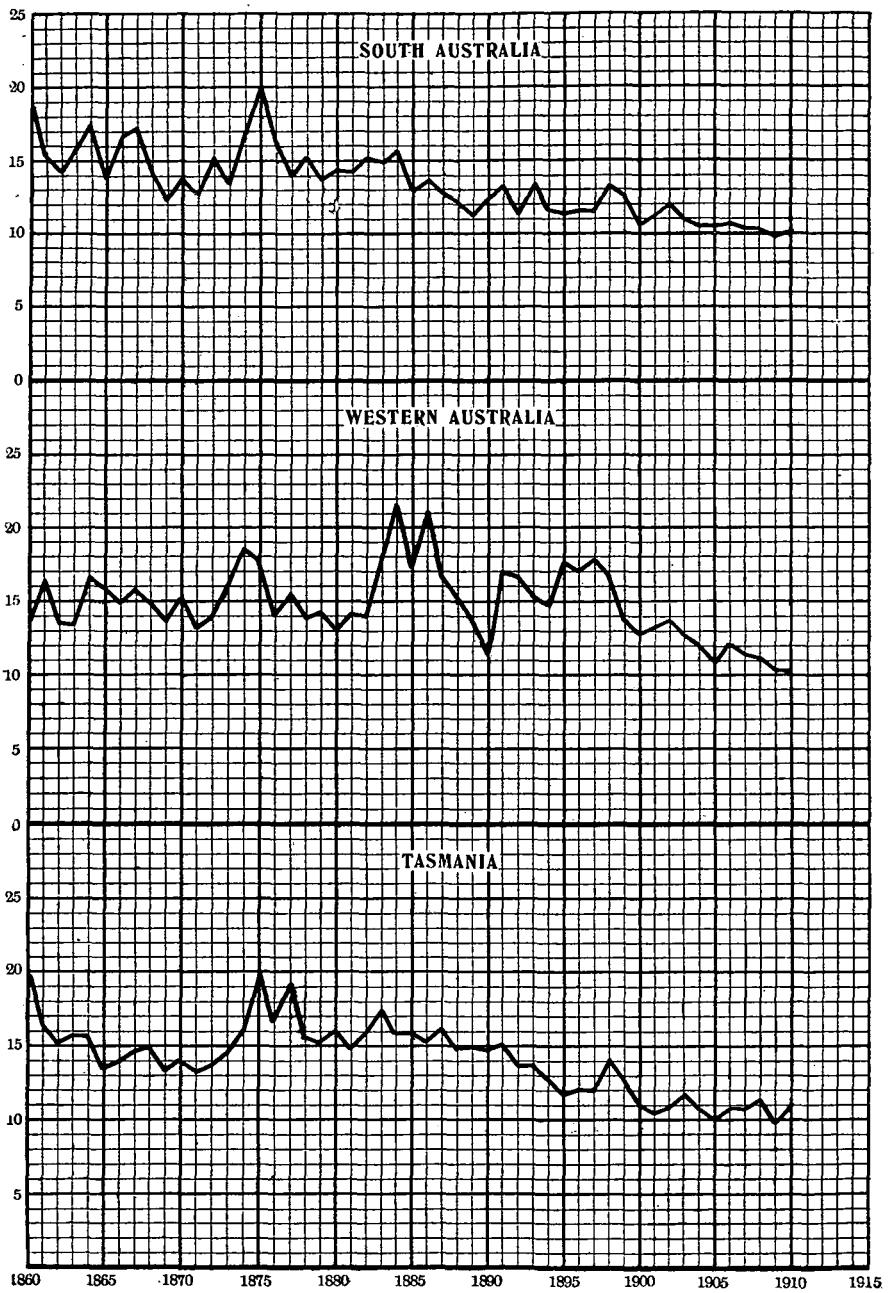
GRAPHS SHEWING DEATH RATES IN THE STATES OF NEW SOUTH WALES, VICTORIA, AND QUEENSLAND, 1860-1910.



(See Table page 189.)

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 shewn by a thickened line

GRAPHS SHEWING DEATH RATES IN THE STATES OF SOUTH AUSTRALIA, WESTERN AUSTRALIA, AND TASMANIA, 1860-1910.



(See Table page 189.)

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 shewn by a thickened line.

4. **Graphs of Annual Deaths, Commonwealth and States** (page 255).—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, and (*g*) 1902-3. 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 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.:—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. 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, 1904-5, 1909.

5. **Graphs of Annual Birth, Death, and Marriage Rates and of Rate of Natural Increase—Commonwealth** (page 256).—(i.) *General.* These graphs represent the number of births, deaths, and marriages, and the excess of births over deaths (natural increase) per 1000 of the population of the Commonwealth, for each of the years 1860 to 1910.

(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 26.73 per 1000 in 1910. 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 26.73 in 1910. The lowest point reached, viz., 25.29, was attained in 1903, the year in which the Commonwealth suffered severely from the worst drought it has ever experienced. Since then a small but well defined advance in the birth rate has been in evidence. 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.

(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 death rate of the Commonwealth, a fall having taken place from 20.86 in 1860 to 10.43 in 1910. The graphical representation of the death rates brings into prominence five years in which the rates were exceptionally high when compared with those of adjacent years. These years are 1860, 1866, 1875, 1884, and 1898. 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 11.51 in 1909. For females the highest was 20.71 in 1860, and the lowest 9.06 in 1909. The difference between the male and female rates has, since 1869, been fairly constant, and has ranged between 1.97 and 3.44, 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 1910, the final year of the period, viz., 8.37, 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 the present time 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.

(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 a 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 13.03 in 1898.

6. **Graphs of Annual Birth Rates—States** (pages 257 and 258).—These graphs furnish for the several States information similar to that supplied in the graph on page 256 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 the very low rate accompanying the drought in 1903, the variations in any of the States since 1901 have not been very marked, and in some cases a slight tendency to increase is in evidence.

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 (1903), 25.44; Victoria (1910), 24.51; Queensland (1903), 24.53; South Australia (1903), 23.65; Western Australia (1896), 23.44; Tasmania (1899), 27.43.

7. **Graphs of Annual Death Rates—States** (pages 259 and 260).—These graphs furnish for the several States similar information to that given for the Commonwealth as a whole in the diagram on page 256, 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 (1909 and 1910), 9.89; Victoria (1909), 11.45; Queensland (1906), 9.50; South Australia (1909), 9.82; Western Australia (1910), 10.11; and Tasmania (1909), 9.68.