

VITAL STATISTICS.

**Registration
of Births,
Deaths, and
Marriages.**

The present official system of compulsory registration of births, deaths, and marriages in Victoria has been in force since 1853, and the registers—framed on the best models—are replete with all necessary information bearing on the family history of the people. The statutory duties under the Registration Acts are performed by the Government Statist, who has control over the local registrars of births and deaths, and (so far as regards their registration duties) over the officiating clergymen and registrars of marriages. Copies of entries certified by him or by the Assistant Government Statist are *prima facie* evidence in the Courts of Australia of the facts to which they relate. At the head office in Melbourne there is kept for reference a complete collection of all registrations effected since 1st July, 1853, as well as originals or certified copies of all existing church records relating to earlier periods, as far back as 1837.

Applicants for searches or certificates of births, deaths, or marriages should, in applying to the Government Statist, furnish particulars of the date and place of the event; also the names of the parties in the case of a marriage, and the name, age (if a death), and parentage in the case of a birth or death. The fee for a search in the Official Records, or an extract of an entry, is 2s. 6d., and that for a certificate 7s. 6d. (except where the case appears in the records of the current quarter, when 5s. only is charged). For a search in the early church records, prior to 1st July, 1853, the fee is only 1s., or 2s. if a certificate is required.

The *Year-Book* for 1916-17 contains on pages 301 to 303 a statement of the law as to marriages and the registration of births and deaths in Victoria.

MARRIAGES.

Marriages. Marriages in Victoria in 1919 numbered 11,706, which was 2,550 more than in the preceding year, and 2,200 more

than in 1917. The figures for each of the last twenty years are as follows :—

MARRIAGES IN EACH YEAR, 1900 TO 1919.

Year.	No. of Marriages.	Year.	No. of Marriages.
1900	8,308	1910	10,240
1901	8,406	1911	11,088
1902	8,477	1912	11,738
1903	7,605	1913	11,324
1904	8,210	1914	11,830
1905	8,774	1915	12,832
1906	8,930	1916	11,341
1907	9,575	1917	9,506
1908	9,334	1918	9,156
1909	9,431	1919	11,706

The marriages in Australia for 1919 numbered 40,551 as against 33,152 in the previous year, 33,674 in 1917, 40,292 in 1916, and 45,264 in 1915. Of the total for 1919, 11,706 took place in Victoria, 15,818 in New South Wales, 5,431 in Queensland, 3,855 in South Australia, 2,194 in Western Australia, 1,513 in Tasmania, 25 in the Northern Territory, and 9 in the Federal Capital Territory.

The increase in 1919 was due to marriages of discharged soldiers and the relatively small numbers of marriages in 1917 and 1918 were attributable to the absence from the State of a large number of marriageable men owing to the war. In all the States there was a substantial increase in marriages in 1919.

The ordinary marriage rate—per 1,000 of the total population—like birth and death rates similarly estimated, is somewhat unreliable in comparatively newly settled countries like Australia, especially in earlier periods, but, as it affords a ready and approximate comparison between years not widely separated, the figures relating to Victoria are shown in the following table for the last ten years :—

Marriage rates.

MARRIAGE RATES, 1910 TO 1919.

Year.	Marriage Rate.	Year.	Marriage Rate.
1910	7·83	1915	9·00
1911	8·40	1916	8·05
1912	8·65	1917	6·76
1913	8·13	1918	6·46
1914	8·31	1919	7·98

The rates in the other States, New Zealand, and England and Wales in 1919 were as follows :—New South Wales, 8·06; Queensland, 7·62; South Australia, 8·46; Western Australia, 6·78; Tasmania, 7·15; New Zealand, 8·38; and England and Wales, 9·85.

The marriage rate for 1919 was 24 per cent. higher than that for the previous year, but it was slightly lower than the average rate of the three years preceding the war. In view of the great shortage of houses, especially in the metropolitan area, and its adverse effect upon the marriage rate, the increase in the rate for 1919 was fairly satisfactory.

Marriages to marriageable men and women.

The marriages in proportion to the population, to the unmarried men and widowers aged 21 to 55, and to the unmarried women and widows aged 18 to 50 in each census year, 1857 to 1911, are given in the following table :—

MARRIAGES PER 1,000 OF POPULATION AND OF SINGLE MEN AND WOMEN, 1857 TO 1911.

Year of Census.	Exclusive of Chinese and Aborigines.						
	Enumerated Population.	Number of Unmarried and Widowed.		Marriages.	Proportion of Marriages per 1,000 of the—		
		Men (aged 21 to 55).	Women (aged 18 to 50).		Population.	Unmarried and Widowed Men (aged 21 to 55).	Unmarried and Widowed Women (aged 18 to 50).
1857 ..	383,668	88,456	18,128	4,465	11·64	50·48	246·30
1861 ..	513,896	98,665	24,009	4,528	8·81	45·89	188·60
1871 ..	712,263	77,078	40,836	4,715	6·62	61·17	115·46
1881 ..	849,438	77,250	75,098	5,732	6·75	74·20	76·33
1891 ..	1,130,463	133,576	113,276	9,007	7·97	67·43	79·51
1901 ..	1,193,340	123,691	137,267	8,468	7·10	68·46	61·69
1911 ..	1,309,950	132,642	158,556	10,984	8·39	82·81	69·28

NOTE.—The figures in this table relate to the twelve months of which the date of census is the central point.

Factors in marriage rates.

The marriage rate for men in the last census year was the highest ever recorded, and the marriages in proportion to population were more numerous than in the preceding four census years. An examination of the figures for the seven census periods shows how the crude marriage rate is affected by the proportion of marriageable persons in the community. The maximum marriage rate (per 1,000 of population), which occurred in 1857, was co-incident with the highest proportion of marriageable persons, while the minimum rate—in 1871—was associated with the lowest proportion of such persons. A further examination of the figures shows that the ordinary marriage rate is more directly affected by the proportion of eligible men than by that of eligible women in the population. Thus, the percentage of single women aged 18 to 50 rose from 4·7 in 1857 to 12·1 in 1911, whilst that of single men aged 21 to 55 fell from 23 to 10 in the same period. After allowing for the more

uniform distribution of males and females of marriageable ages in the later years, the decrease in the percentage of marriageable men coincides fairly closely with the decline in the ordinary marriage rate. The female marriage rates show that the chances of a woman marrying were very much smaller at the census dates in 1901 and 1911 than at any earlier period, the proportion entering wedlock each year having fallen from about 1 in 4 in 1857, and nearly 1 in 5 in 1861, to 1 in 16 in 1901, and 1 in 15 in 1911.

Marriages to marriageable persons in metropolis and country.

The extent to which the high crude marriage rates in Greater Melbourne, as compared with the country, are due to variations in age, sex, and conjugal condition may be ascertained by an examination of the results of the last census. The first striking fact disclosed is that, whether the comparison be made for all ages or for marriageable ages only, there is a great preponderance of women over men in the metropolis, whilst in the remainder of the State the men are in excess. In Greater Melbourne there were 55,347 unmarried men aged 21 to 55, as compared with 84,238 unmarried women aged 18 to 50. In the rest of the State the eligible men and women at the corresponding ages numbered 79,925 and 74,318 respectively. It is thus seen that, while there was a surplus of 28,891 marriageable females in the metropolis, there was a deficiency of 5,607 in the country. To obtain definite information regarding the frequency of marriage, the residents of these areas who entered into wedlock were compared with the marriageable population of each sex, and the resulting proportions for the average of the period 1910-12 are shown in the following statement:—

**YEARLY MARRIAGES PER 1,000 MARRIAGEABLE PERSONS
IN GREATER MELBOURNE AND THE REST OF THE
STATE, 1910-12.**

District.	Men.	Women.
Melbourne and Suburbs	95·8	66·6
Rest of the State	66·4	68·9

The results show that the chance of marrying within a year is slightly less for a woman residing in Greater Melbourne than for one living outside that area. On the other hand, the chance of a man marrying is 44 per cent. greater for a metropolitan than for a country resident.

The marriage rates amongst marriageable men and women at different periods of life have been computed for various age groups at each of four census periods, and are shown in the following table :—

MARRIAGES PER 1,000 MARRIAGEABLE MEN AND WOMEN
IN AGE GROUPS.

Age Group.	Men.				Women.			
	1881.	1891.	1901.	1911.	1881.	1891.	1901.	1911.
15-21 ..	..	..	..	..	24·6	23·6	18·8	23·3
21-25* ..	57·8	44·3	44·6	55·2	118·8	106·0	87·2	105·6
25-30 ..	114·2	85·9	90·5	118·6	105·7	100·5	84·7	112·1
30-35 ..	82·9	75·2	82·1	101·1	73·1	66·4	57·9	66·0
35-40 ..	56·4	51·1	62·6	72·9	53·8	46·4	37·2	43·0
40-45 ..	30·5	33·4	39·9	44·7	32·5	27·7	22·3	20·7
45-50 ..	21·8	25·9	29·8	34·9	22·1	17·8	14·3	15·5
50 and upwards	10·5	9·1	9·1	12·1	4·9	4·2	2·4	2·6

* In the case of men, 20-25.

In 1911 the proportion of marriages to marriageable men in each age group (except 20-25) was the highest experienced, and that of marriages to marriageable women was greater in every age group except 40-45 than in the preceding census year. The men aged 25-30, 30-35, and 35-40 who entered into wedlock during the year under review represented 119, 101, and 73 per 1,000 respectively of the marriageable males at these ages, as against 90, 82, and 63 in 1901. The numbers of women aged 21-25, 25-30, and 30-35 who contracted marriage in 1911 were equal to 106, 112, and 66 per 1,000 respectively of the single and widowed women, as compared with 87, 85, and 58 for the corresponding ages in 1901. It thus appears that the chances of women aged 21-25 and 25-30 marrying within a year increased by 21 and 32 per cent. in Victoria during the last intercensal period. It will be noted that in 1911 the highest marriage rate among women obtained at the age period 25-30, whilst in each of the three earlier census years the maximum rate occurred between the ages 21 and 25.

Marriage rates of bachelors, widowers, spinsters, and widows.

The probabilities of bachelors and spinsters marrying and of widowers and widows re-marrying were obtained by comparing their marriages at specified ages with the respective numbers in the community at these ages at the last census. The marriages per 1,000 of the above-mentioned persons are given in the following table for the year 1911 :—

MARRIAGES PER 1,000 BACHELORS, WIDOWERS, SPINSTERS, AND WIDOWS, 1911.

Age Group.				Marriages to every 1,000—			
				Bachelors.	Widowers.	Spinsters.	Widows.
15-21	..	..	..	..	..	22·3	40·0
21-25*	..	..	..	55·3	64·5	105·3	145·6
25-30	..	..	..	118·8	120·1	111·1	147·6
30-35	..	..	..	99·6	151·2	63·8	80·8
35-40	..	..	..	69·0	113·2	38·9	60·5
40-45	..	..	..	38·1	94·4	16·5	30·7
45-50	..	..	..	27·0	66·8	12·6	17·2
50 and upwards	..	..	..	7·4	16·8	3·7	2·3

* In the case of men 20-25.

The figures show that the probability of a widower marrying within a year is greater than that of a bachelor of similar age, and further, that the difference in favour of the former is much greater at ages over 30 than at earlier ages. Comparing the marriage rate for widows with that for spinsters it is seen that at every age under 50 the chance of a widow marrying is considerably greater than that of a spinster of the same age. As 76 per cent. of the widowers and 78 per cent. of the widows are over 50 years—a period of life when the chance of re-marrying is small—and the great majority of the bachelors and spinsters are under that age—a period when the probability of marrying is much greater—it was to be expected that the rate for each of the two

former sections would be much lower than that for each of the latter. In proportion to their respective numbers, the marriages of widowers were only slightly more than half as numerous as those of bachelors, and those of widows were only about one-fifth those of spinsters.

The ages of bridegrooms and brides who were married in 1919 are shown in combination for various groups in the table which follows:—

AGES OF BRIDEGROOMS AND BRIDES IN COMBINATION IN VICTORIA, 1919.

Ages of Bridegrooms,	Ages of Brides.													Total Bridegrooms.				
	15.	16.	17.	18.	19.	20.	21 to 25.	25 to 30.	30 to 35.	35 to 40.	40 to 45.	45 to 50.	50 to 55.		55 to 60.	60 to 65.	65 to 70.	70 and over
16	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
17	...	2	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	5
18	1	4	5	25	10	4	9	1	...	...	...	...	...	...	...	...	...	59
19	1	6	12	29	18	10	38	3	1	...	...	...	...	...	...	...	...	118
20	...	2	11	35	33	41	55	4	3	...	...	...	...	...	...	...	...	184
21 to 25	...	15	49	137	232	290	1,405	400	37	4	3	...	...	...	...	...	...	2,572
25 to 30	...	7	28	55	135	169	1,696	1,852	306	51	7	2	...	...	...	...	...	4,308
30 to 35	2	4	6	16	30	55	518	883	474	113	19	8	2	...	...	...	...	2,130
35 to 40	...	2	2	4	9	13	195	336	255	164	36	20	3	...	...	...	...	1,039
40 to 45	...	...	2	2	3	6	50	112	120	95	68	29	8	1	1	...	...	497
45 to 50	...	1	...	...	1	2	17	44	62	86	65	46	7	1	...	...	...	332
50 to 55	...	...	1	...	...	...	9	17	26	39	45	33	18	8	3	...	...	199
55 to 60	...	...	...	...	...	...	3	8	10	11	36	31	16	10	4	1	...	130
60 to 65	...	...	...	...	...	...	2	1	3	7	10	14	10	8	7	2	...	64
65 to 70	...	...	...	1	...	...	...	...	3	3	5	6	6	5	7	6	...	42
70 to 75	...	...	...	...	...	...	...	...	...	...	...	...	2	2	4	2	2	13
75 and over	...	...	...	...	...	...	...	1	...	...	...	2	1	...	3	3	1	13
Total Brides	4	43	120	304	471	590	3,997	3,662	1,301	573	296	190	72	38	29	12	4	11,706

Although age inequalities among contracting parties were relatively few, they were striking in degree. Thus two men between 45 and 50 married women aged 20, while four women between 35 and 40 were married to men who were their juniors by 15 years. The great majority of the parties were, however, of suitable ages. Of every 1,000 men married during the year, 706 were older and 190 younger than their brides, and 104 were of the same age as their partners.

Proportion of
marriages
at various
ages.

The proportions of both sexes marrying in the various age groups are shown in the succeeding table for the averages of the periods 1881-90 and 1901-10, also for the year 1919:—

PROPORTIONS OF MALES AND FEMALES MARRYING AT DIFFERENT AGES, 1881-90, 1901-10, AND 1919.

Age Group.	Proportion per 1,000 of total.					
	Bridegrooms.			Brides.		
	1881-90.	1901-10.	1919.	1881-90.	1901-10.	1919.
Under 15 ... ..	...	...	...	·15	·14	...
15 to 16 ... ..	...	...	...	1·17	1·12	·34
16 to 17	·03	·09	·08	6·53	5·16	3·67
17 to 18	·29	·34	·43	20·32	15·58	10·25
18 to 19	1·46	2·09	5·04	42·94	33·31	26·06
19 to 20	5·62	7·02	10·08	65·03	48·67	40·15
20 to 21	15·19	13·67	15·80	73·84	59·41	50·49
21 to 25	321·02	258·64	219·63	432·34	380·91	341·28
25 to 30	365·48	357·07	363·02	223·83	267·78	312·92
30 to 35	134·57	177·13	181·96	62·07	98·54	111·05
35 to 40	58·29	84·06	88·84	29·53	44·37	48·95
40 to 45	32·54	40·87	42·37	17·10	21·19	25·20
45 to 50	24·77	24·05	28·36	12·23	11·00	16·40
50 to 55	18·40	13·33	17·00	6·74	6·29	6·24
55 to 60	11·49	8·05	11·11	3·40	3·13	3·16
60 and over	10·85	13·59	11·28	2·78	3·40	3·84
Total	1,000·00	1,000·00	1,000·00	1,000·00	1,000·00	1,000·00

The age constitution of brides shows a very marked alteration in recent periods. Of every 1,000 women who were married during 1919 472 were under 25 years, and 313 were aged 25-30, as against 544 and 268 at corresponding ages in the years 1901 to 1910. As fertility is considerably less at older than at younger ages, it is evident that, owing to the altered age distribution of wives, the potential births to every 1,000 marriages in the year under review are fewer than to marriages contracted during the period 1901-1910.

Age at marriage. A high proportion of re-marriages has the effect of increasing the average marrying age of bridegrooms and brides. This is readily seen by comparing for 1919 the mean

age at marriage of bachelors, 29·09, with that of divorced men, and of widowers—38·57 and 46·64 respectively. The average age of spinsters marrying was 26·03, as against 34·71 for divorced women and 39·15 for widows. The average age of men marrying women under 45 and of their brides for certain periods since 1870 is shown in the following table :—

MEAN AGES AT MARRIAGE.

Period.	Average Age of—	
	Brides under 45.	Bridegrooms of Brides under 45.
	Years.	Years.
1870-4	24·13	29·93
1880-4	23·83	28·61
1890-4	24·66	28·66
1900-4	25·44	29·70
1905-9	25·88	29·80
1910	25·88	29·58
1911	25·81	29·46
1912	25·75	29·17
1913	25·66	29·01
1914	25·71	29·01
1915	25·68	28·75
1916	26·07	29·48
1917	26·03	29·69
1918	25·95	29·66
1919	26·14	29·64

The mean age of women under 45 who married in 1919 was above the average of the previous five years, and it was greater by nearly eighteen months than that of women who married in 1890-4. In Victoria in 1919 the mean marrying age of all brides was 26·90, as compared with 27·29 in England and Wales and 27·07 in New Zealand. The mean ages of all bridegrooms in the same countries were 30·38, 30·08, and 31·19 years respectively.

Marrying age according to occupation.

In the *Year-Book* for 1915-16 a table is given showing the average age at marriage of persons engaged in various occupations. This was based on 42,764 marriages for the period 1907-11, in connexion with which the records gave definite occupations.

Birthplaces of persons marrying.

Marriage records show that of the persons married in Victoria during 1918, the latest year for which particulars have been tabulated, 90·0 per cent. were born in Australia, 7·5 per cent. were born in the United Kingdom, and only small proportions, amounting to 2·0 per cent. of the bridegrooms and ·6 per cent. of the brides, were natives of foreign countries.

The numbers born in Australia and other countries are shown in the following table for the years 1913 and 1918 :—

BIRTHPLACES OF PERSONS MARRIED, 1913 AND 1918.

Where Born.	Bridegrooms.		Brides.	
	1913.	1918.	1913.	1918.
Australia	9,628	7,967	10,274	8,517
New Zealand	155	89	82	69
England and Wales	972	647	644	363
Scotland	213	139	141	76
Ireland	126	100	83	55
Other British Possessions	40	34	24	18
Germany	46	19	19	8
Russia	17	23	3	12
Italy	15	19	12	3
United States	30	19	14	7
Other Foreign Countries	82	100	28	28
Total	11,324	9,156	11,324	9,156

Marriages in quarters.

Victorian experience shows that the Autumn quarter is the most frequently selected season for marrying. In 1919, however, the greatest proportion took place in the Spring, when 3,529 marriages were solemnized, as against 3,172 in the Winter, 2,808 in the Autumn, and 2,197 in the Summer.

Conjugal condition of persons marrying.

The following statement shows the percentages of persons in each conjugal condition who married in different periods since 1870 :—

CONJUGAL CONDITION OF PERSONS MARRYING, 1871-1919.

Conjugal Condition.	Percentage of total Marriages.					
	1871-80.	1881-90.	1891-1900.	1901-10.	1911-18.	1919.
Bachelors and Spinsters..	80·59	85·84	87·22	88·46	90·45	89·47
Bachelors and Widows ..	7·10	4·72	4·23	3·66	3·00	3·75
Widowers and Spinsters..	7·75	6·17	6·07	5·70	4·86	4·76
Widowers and Widows ..	4·56	3·25	2·48	2·18	1·69	2·02

Of every 1,000 persons of each sex married in Victoria during last year, 68 were widowers and 58 were widows, as against 77 and 57 respectively in 1918, and 75 and 50 in 1917;

Divorced persons re-marrying. The number of divorced persons re-married during 1919 was 272, which was 71 per cent. above the number for the preceding year. Of the 109,082 persons married during the last five years, divorced persons numbered 1,058, or 1 in every 103 persons, as compared with 1 in every 124 in the preceding five-year period. The following are the numbers of divorced persons who have re-married since 1914 :—

DIVORCED PERSONS RE-MARRYING, 1915 TO 1919.

Year.	Males.	Females.	Total.
1915	88	119	207
1916	81	111	192
1917	111	117	228
1918	81	78	159
1919	121	151	272

The divorced persons in the State at the last census numbered 1,240 of whom 575 were men and 665 women. A comparison of the re-marriages of divorced males and females during 1911 with these numbers shows that, according to the experience of that year, 11·5 per cent. of the males and 15·8 per cent. of the females re-marry each year. As these proportions greatly exceed the rates for other sections of the community, it is evident that many divorces are obtained with the view of early re-marriage.

Marriages of minors. The proportions of bridegrooms and brides under 21 years of age are given in the subjoined table for the years 1915 to 1919 :—

Year.	Percentage under 21 years of age.	
	Bridegrooms.	Brides.
1915	3·02	14·46
1916	2·65	13·23
1917	2·90	14·06
1918	3·27	13·91
1919	3·14	13·09

Marriages in religious denominations.

The numbers and proportions of marriages solemnized according to the rites of the principal religious denominations and of those performed by registrars of marriages for the years 1918 and 1919 are shown in the following table :—

MARRIAGES IN VARIOUS DENOMINATIONS.

Denomination.	1918.		1919.	
	Number.	Percentage of Total Marriages.	Number.	Percentage of Total Marriages.
Church of England	2,534	27·67	3,369	28·78
Roman Catholic Church... ..	1,710	18·67	1,954	16·69
Presbyterian Church	1,696	18·52	2,186	18·68
Methodist Church	1,301	14·21	1,804	15·41
Congregational Church	766	8·37	870	7·43
Baptist Church... ..	441	4·82	549	4·69
Lutheran Church	54	·59	56	·47
Church of Christ	203	2·22	288	2·46
Salvation Army	33	·36	62	·53
Jews	51	·56	41	·35
Other Sects	85	·93	138	1·18
Registrars of Marriages... ..	282	3·08	389	3·33
Total	9,156	100·00	11,706	100·00

Marriages by Anglican clergymen represented 28·78 per cent. of the total in 1919 as compared with 27·67 in the previous year, 26·08 in 1917, 26·51 in 1916, 25·44 in 1911 and 21·18 in the period 1904-8. Excepting the ratios for the Presbyterian and Methodist churches, there were great disparities between the proportion of marriages celebrated according to the rites of each of the principal denominations and the proportionate number of adherents possessed by it in the community

In 1919, 3·3 per cent., in 1918, 3·1 per cent., in 1917, 3·4 per cent., and in 1914 and 1913, 2·6 per cent. of the total marriages in Victoria were celebrated by lay registrars, as against 1 per cent. in 1909, and about 7 per cent. in the decade ended 1890. The decrease which occurred between the earlier period and 1909 was due to the competition of matrimonial agencies which sprang up about 1894, and the increase since 1909 has probably been due to the provisions of the *Marriage Act* 1909 (now incorporated in the *Marriage Act* 1915—No. 2691) permitting the removal from the list of registered clergymen of the names of those who make a business of celebrating marriages. The proportion of civil marriages in Victoria is only about one-seventh of the proportions in New Zealand and England and Wales.

Registered clergymen.

The ministers qualified by registration to celebrate marriages in Victoria numbered 1,540 on 31st December,

1919. The number of these in each denomination (excepting Jews and Quakers) and of the lay registrars of marriages was as follows:—

REGISTERED MINISTERS OF EACH DENOMINATION.

Denomination.	Number of Registered Ministers.	Denomination.	Number of Registered Ministers.
Church of England ..	390	Australian Church ..	1
Roman Catholic ..	329	Ballarat Town Mission ..	1
Presbyterian ..	289	Free Christian ..	1
Methodist ..	257	New Church ..	1
Congregational ..	67	Greek Orthodox Church ..	1
Baptist ..	86		
Church of Christ ..	55	Total clergymen ..	1,540
Lutheran ..	22	Lay Registrars of Marriages ..	21
Salvation Army ..	27		
Latter Day Saints ..	4	Grand Total ..	1,561
Seventh Day Adventist ..	7		
Catholic Apostolic ..	2		

BIRTHS.

The number of births registered in Victoria during the year 1919 was 31,621, of which 16,227 were of males and 15,394 of females. This was 20 above the number recorded for the preceding year but 1,414 below that for 1917. Still births, which are excluded from both births and deaths, numbered 1,042, and corresponded to a ratio of 3·3 per 100 infants born alive in 1919. The ratio for the metropolitan area was 3·5 as against 3·0 for the remainder of the State. There were 1,054 male to every 1000 female births in 1919, as compared with 1,049 in the previous year, 1,089 in 1917, and 1,061 in 1916. The figures for each year since 1899 are as follows:—

BIRTHS IN VICTORIA, 1900 TO 1919.

Year.	Males.	Females.	Total.	Year.	Males.	Females.	Total.
1900 ..	15,834	14,945	30,779	1910 ..	16,411	15,026	31,437
1901 ..	15,876	15,132	31,008	1911 ..	16,944	16,100	33,044
1902 ..	15,583	14,878	30,461	1912 ..	18,244	17,573	35,817
1903 ..	15,115	14,454	29,569	1913 ..	18,436	17,542	35,978
1904 ..	15,313	14,450	29,763	1914 ..	18,549	17,676	36,225
1905 ..	15,523	14,584	30,107	1915 ..	17,821	17,189	35,010
1906 ..	15,716	15,128	30,844	1916 ..	17,625	16,614	34,239
1907 ..	15,989	15,380	31,369	1917 ..	17,222	15,813	33,035
1908 ..	16,073	15,028	31,101	1918 ..	16,176	15,425	31,601
1909 ..	16,092	15,457	31,549	1919 ..	16,227	15,394	31,621

The births in Australia were 15,676 fewer in 1919 than in 1914. The number for 1919 was 122,288, as compared with 125,758 in the previous year, 129,919 in 1917, 131,429 in 1916, 134,829 in 1915, and 137,964 in 1914. Of the total recorded for 1919, 31,621 occurred in Victoria, 48,528 in New South Wales, 18,699 in Queensland, 11,060 in South Australia, 6,937 in Western Australia, 5,310 in Tasmania, 106 in the Northern Territory, and 27 in the Federal Capital Territory.

Birth rates. In young communities, birth rates calculated per 1,000 of the population are to some extent unreliable and misleading. In the earlier periods, when, owing to immigration, the population consists for the most part of men and women at the reproductive period of life, the rates are obviously high. As time proceeds, however, notwithstanding that immigration of reproductive adults may be maintained, the proportion of such adults to the total population must diminish, and with it, of necessity, the birth rate. The following table shows the birth rates in Victoria from 1870 to 1919:—

BIRTH RATES IN VICTORIA PER 1,000 OF POPULATION,
1870 TO 1919.

Year.	Birth Rate.	Year.	Birth Rate.	Year.	Birth Rate.
1870 ..	38·07	1898 ..	25·51	1909 ..	24·62
1875 ..	33·94	1899 ..	26·14	1910 ..	24·20
1880 ..	30·75	1900 ..	25·79	1911 ..	25·03
1885 ..	31·33	1901 ..	25·72	1912 ..	26·41
1890 ..	33·60	1902 ..	25·05	1913 ..	25·82
1891 ..	33·57	1903 ..	24·28	1914 ..	25·45
1892 ..	32·51	1904 ..	24·42	1915 ..	24·55
1893 ..	31·18	1905 ..	24·57	1916 ..	24·30
1894 ..	29·05	1906 ..	24·91	1917 ..	23·50
1895 ..	28·46	1907 ..	25·03	1918 ..	22·29
1896 ..	27·19	1908 ..	24·56	1919 ..	21·57
1897 ..	26·49				

The birth rate for 1919 was the lowest ever experienced in the State. All the States had lower rates in 1919 than in the previous year. The births per 1,000 of the population in the other States, New Zealand, and England and Wales in 1919 were as follows:—New South Wales, 24·71; Queensland, 26·23; South Australia, 24·27; Western Australia, 21·44; Tasmania, 25·12; New Zealand, 21·54; and England and Wales, 18·5. Since 1913 the birth rate has declined by 15·8 per cent. in Australia and 23·2 per cent. in England and Wales.

The birth rate of a community is almost wholly dependent upon the proportion of wives at the reproductive period of life and their internal age distribution. As these elements, especially the former,

differ widely in certain Australian States, the crude rates of the different States are scarcely comparable. The figures for the last census showed that in every 1,000 of the population of each State and of the Commonwealth the married women aged 15 to 45 numbered 106·0 in Victoria, 115·4 in New South Wales, 107·2 in Queensland, 109·9 in South Australia, 123·6 in Western Australia, 110·5 in Tasmania, and 111·2 in Australia. In the case of Victoria, the deficiency in the proportion of wives at the ages mentioned was accentuated by their comparatively unfavorable internal age distribution, the proportion at the younger and more fertile ages being smaller than that of any other State. A computation shows that owing to these differences the legitimate births in Victoria to every 1,000 of the population in 1911 were fewer by 3·5 than in New South Wales, by 1·4 than in Queensland, by 1·8 than in South Australia, by 4·2 than in Western Australia, and by 2·5 than in Tasmania, also that they were 2·0 less than in the whole of Australia.

An accurate view of the alteration in the fertility of wives is obtained by comparing the ratio of legitimate births to wives at reproductive ages, and allowing for the difference in their age distribution at each period. The following table shows for Victoria the distribution of married women in six five-year groups in the last five census years :—

PROPORTION OF MARRIED WOMEN IN AGE GROUPS TO TOTAL BETWEEN 15 AND 45 IN THE LAST FIVE CENSUS YEARS.

Census Year.	Proportion in each Age Group to Every 1,000 Married Women between 15 and 45.					
	15-20.	20-25.	25-30.	30-35.	35-40.	40-45.
1871 ..	20·3	130·4	211·4	230·7	233·2	174·0
1881 ..	17·3	159·5	204·6	206·0	209·7	202·9
1891 ..	13·5	156·9	275·2	244·1	172·1	138·2
1901 ..	8·1	99·0	198·3	249·6	249·2	195·8
1911 ..	12·4	113·8	206·9	226·6	221·2	219·1

To estimate the effect which the alteration in age distribution had on the birth rate, the proportion in each of the above groups was multiplied by the average natality rate for the group according to a standard table—the standard used for this purpose being the Swedish table of 1891. The sum of the products for each census year represented the number of births which would have occurred in that year per 1,000 married women between 15 and 45 had the fertility of these

women remained unaltered, *i.e.*, the potential births. The year 1871 was used as a basis with which to compare the four subsequent census years, and corrections were applied to the actual births (per 1,000) occurring in those years, so as to make them conform to the age constitution in the first-mentioned year. The correction factors were obtained by taking the number of births per 1,000 married women aged 15-45 which would have occurred in 1871 had the standard natality rates prevailed, and dividing this number by the corresponding number of potential births for 1881, 1891, 1901, and 1911. The above method was applied to find what proportion of the alteration in the ratio of births to married women under 45 was due to causes other than varying age constitution. The last mentioned factor has been taken into account in the computation of the birth rates appearing in column 5 of the subjoined table:—

CORRECTED LEGITIMATE BIRTH RATES.

(1) Census Year.	(2) Married Women between 15 and 45 years of age.	(3) Legitimate Births.	(4) Legitimate Births per 1,000 Married Women 15-45.	(5) Corrected Legitimate Births per 1,000 Married Women 15-45.	(6) Factor for Correction of Rate in Column 4.
1871 ..	88,561	26,805	302·67	..	..
1881 ..	84,831	25,675	302·66	303·14	1·0016
1891 ..	120,700	35,853	297·04	281·98	0·9493
1901 ..	127,858	29,279	229·00	238·75	1·0426
1911 ..	139,398	31,080	222·96	231·50	1·0383

An inspection of the rates in column (5) shows that there was a fall of 7 per cent. in 1891 as compared with 1881, a further serious decline of over 15 per cent. in 1901 as compared with 1891, and a decrease of 3 per cent. in 1911 as compared with 1901, which were not due to variations in the age distribution of the married women between 15 and 45 in the community. A further examination of the corrected legitimate birth rates appearing in this column shows that the births in 1911 to every 1,000 married women of reproductive ages were 71 fewer than in 1881, 50 fewer than in 1891, and 7 fewer than in 1901.

Corrected
legitimate
birth rate
for Vic-
toria.

Legitimate birth rates (per 1,000 of the total population) for widely separated periods do not give a correct indication of the relative fertilities of those periods, unless the number of married women at reproductive ages in proportion to the population and the age constitution of such women have remained unchanged. In order to allow for the disturbance which may have been introduced through variations in these elements it is necessary

that corrections be made in the crude rates. The factor to correct the result of changes in the proportion of married women between 15 and 45 is obtained by comparing the number of such women in the community at the period of observation with the number in a standard population. The method of obtaining the correcting factor for the disturbance due to the second element was explained in a previous paragraph.

The following table shows the crude legitimate birth rates in five census years, the corrections to be applied thereto for the reasons mentioned above, the amended birth rates, and the difference between these and the crude rates. The standard used in the computation of the correction factors was the Victorian population of 1871. Corrected birth rates per 1,000 of the population in the years 1881, 1891, 1901, and 1911 are as follows :—

**CORRECTED LEGITIMATE BIRTH RATES PER 1,000 OF
POPULATION.**

Year.	Enumerated Population.	Legitimate Births.	Legitimate Births per 1,000 of population (crude rates).	Wives aged 15-45, per 1,000 of population.	Correction factor for variations in—		Corrected Birth Rate.	Difference between crude and corrected rates.
					Proportion of wives aged 15-45.	Age distribution of wives aged 15-45.		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1871	731,528	26,805	36·64	121·1	..	..	..	..
1881	862,346	25,675	29·77	98·4	1·2307	1·0016	36·69	6·92
1891	1,140,405	35,853	31·44	105·8	1·1446	0·9493	34·39	2·95
1901	1,201,341	29,279	24·37	106·4	1·1382	1·0426	28·77	4·40
1911	1,315,551	31,080	23·63	106·0	1·1425	1·0383	27·89	4·26

An inspection of the crude rates in the fourth column of the above table shows that legitimate births per 1,000 of population apparently declined by 6·87 in 1881, 5·20 in 1891, 12·27 in 1901, and 13·01 in 1911, as compared with the first census date. After making allowance for the disturbing elements known to exist, the apparent decline of 6·87 in 1881 is altered to an increase of ·05 per 1,000, while the decline of 1891 is reduced from 5·20 to 2·25, that of 1901 from 12·27 to 7·87, and that of 1911 from 13·01 to 8·75 per 1,000 as compared with 1871. Between 1891 and 1911 there was a reduction of nearly 19 per cent. in the rate due to other than normal causes.

**Births to
wives in
Australasia
and England.**

The next table shows the legitimate births per 1,000 married women under 45 (not allowing for their differing age distribution) in each State, New Zealand, and England and Wales in the three census years 1891, 1901, and 1911:—

LEGITIMATE BIRTHS PER 1,000 MARRIED WOMEN UNDER 45 YEARS OF AGE.

Country.	Legitimate Births per 1,000 Married Women aged 15 to 45.			Decrease per cent. in 20 years.
	1891.	1901.	1911.	
Victoria	297·0	229·0	223·0	24·9
New South Wales	298·9	235·6	235·4	21·2
Queensland	315·0	251·0	244·8	22·3
South Australia	311·1	235·0	235·9	24·2
Western Australia	352·8	244·0	221·8	37·1
Tasmania	315·9	254·6	244·8	22·5
New Zealand	279·1	246·1	211·7	24·2
England and Wales	268·8	234·2	196·2	27·0

It will be seen from these figures that between 1891 and 1911 there was a pronounced decline in the proportion of legitimate births to married women under 45 years of age in the different States, New Zealand, and England and Wales, varying from 37 per cent. in Western Australia to 27 per cent. in England and Wales, 25 per cent. in Victoria, 24 per cent. in South Australia and New Zealand, and 21 per cent. in New South Wales. Slightly more than one-fourth of the total decline in Victoria during the twenty years was due to the altered age distribution of married women under 45 years of age, and it is probable that this cause was also responsible for a portion of the decrease in each of the other States and New Zealand.

Birthplaces of parents of legitimate children. The birth records for 1919 show that 84 out of every 100 children were born to Australian parents, and 96 out of every 100 to one or both parents born in Australia. Of the total fathers, 80·8 per cent. were born in Victoria; 88·5 in Australia; ·9 in New Zealand; 6·5 in England and Wales; 1·4 in Scotland; ·9 in Ireland; ·2 in other British Possessions; and 1·6 per cent. in foreign countries. The corresponding percentages for mothers were: Victoria, 83·4; Australia, 91·7; New Zealand, ·8; England and Wales, 5·1; Scotland, 1·0; Ireland, ·6; other British Possessions, ·2; and foreign countries, ·6.

Chinese and half-caste Chinese births. During the past ten years the births to Chinese parents numbered 61, or 1 in every 5,226 legitimate births, and there were 299 Chinese half-caste births (fathers only Chinese), or 1 in every 1,066 legitimate births registered in the same period.

**Ages of
parents of
legitimate
children.**

The average ages of fathers and mothers of legitimate children whose births were recorded in 1919 were 34·28 and 30·32 years respectively, which were 4·64 and 4·18 years above the average ages of bridegrooms marrying brides under 45 years of age, and of such brides for the same period. The proportions of both parents in various age groups are shown in the following table for the year mentioned :—

PERCENTAGE OF PARENTS IN AGE GROUPS, 1919.

Father.		Mother.	
Age Group.	Proportion per 100 Births.	Age Group.	Proportion per 100 Births.
Under 20	·44	Under 20	2·23
20 to 25	7·81	20 to 25	17·99
25 to 30	24·68	25 to 30	31·02
30 to 35	26·16	30 to 35	25·86
35 to 40	19·59	35 to 40	16·46
40 to 45	11·61	40 to 45	5·89
45 to 50	6·25	45 and over	·55
50 and over	3·46		
Total	100·00	Total	100·00

It will be seen that, on the experience of 1919, 49·0 per cent. of the mothers were between ages 20 and 30, and 42·3 per cent. between ages 30 and 40. The proportions of fathers at these ages were 32·5 and 45·7 per cent. respectively. Of every 1,000 legitimate births, about 22 were due to mothers under 20 years, and 6 to mothers aged 45 years and upwards. The *Year-Book* for 1916-17 contains on page 326 information relating to the ages of mothers of first-born children.

**Birth rates
in town and
country.**

The subjoined table shows the number of births per 1,000 of the population in the metropolitan, the other urban, and the rural districts, for 1875 and each subsequent

fifth year, also the averages of the years 1901-5 and 1906-10, and the rates for each of the last nine years:—

BIRTH RATES IN METROPOLITAN, OTHER URBAN, AND RURAL DISTRICTS, 1875 TO 1919.

Year.	Births per 1,000 of the Population.			
	Metropolitan District.	Other Urban Districts.	Rural Districts.	Victoria.
1875	33·63	38·63	31·54	33·94
1880	31·19	34·21	28·72	30·75
1885	34·94	31·87	28·12	31·33
1890	37·71	34·43	28·93	33·60
1895	29·46	34·03	25·49	28·46
1900	24·54	32·29	24·26	25·79
1901-5	24·03	32·14	23·46	24·81
1906-10	23·59	32·47	22·88	24·66
1911	24·51	31·85	22·79	25·03
1912	27·48	33·24	22·46	26·41
1913	27·20	31·77	21·74	25·82
1914	26·82	31·36	21·34	25·45
1915	26·11	30·32	20·18	24·55
1916	25·51	30·56	20·10	24·30
1917	24·45	30·00	19·53	23·50
1918	23·11	28·70	18·49	22·29
1919	22·27	27·67	18·07	21·57

Birth rates in country towns.

The birth rates in the seven principal country towns are given below for the period 1910-14, and for each of the last five years:—

BIRTH RATES IN THE SEVEN PRINCIPAL COUNTRY TOWNS.

Period.	Births per 1,000 of the Population.						
	Ballarat and Suburbs.	Bendigo and Suburbs.	Geelong and Suburbs.	Castlemaine and Suburbs.	Maryborough.	Warrnambool.	Stawell.
1910-14 ...	26·00	32·32	27 17	28·95	32·68	41·23	38·61
1915 ...	24·73	28·99	28·17	28·16	26·67	44·11	34·22
1916 ...	24·16	27·38	27·58	27·40	32·00	41·22	37·87
1917 ...	22·94	27·75	25·33	22·67	29·60	42·03	35·37
1918 ...	21·24	25·91	23·77	21·00	29·90	39·73	32·65
1919 ...	22·04	25 45	26·61	18·43	39·39	45·33	28·80
Average 1915-19	23·02	27·10	26·29	23·53	31·51	42·48	33·78

The rates for Bendigo, Ballarat, Castlemaine and Stawell showed a considerable decline in 1915-19 as compared with those for the preceding five-year period.

Birth rates in metropolitan municipalities. The birth rates in metropolitan municipalities are shown in the following table :—

METROPOLITAN BIRTH RATES 1901, 1911, 1917, 1918, AND 1919.

Districts.	Births per 1,000 of the Population.				
	1901.	1911.	1917.	1918.	1919.
Melbourne City	21·15	19·90	19·33	18·52	16·91
Fitzroy City	22·58	24·40	23·12	22·54	20·49
Collingwood City	26·48	23·36	18·76	16·97	15·82
Richmond City	25·51	25·28	28·39	24·84	23·86
Brunswick City	26·71	24·81	25·39	24·56	22·80
Northcote City	24·40	26·00	29·36	27·99	26·91
Prahran City	22·69	23·77	27·34	25·30	24·47
South Melbourne City... ..	22·10	21·71	18·16	16·76	17·60
Port Melbourne City	25·26	24·59	22·29	19·38	19·77
St. Kilda City	18·59	21·10	15·73	14·56	13·29
Brighton City	22·39	22·48	21·14	18·08	21·11
Essendon City	23·77	21·32	23·56	21·95	20·77
Hawthorn City	22·67	20·16	18·91	18·38	18·31
Kew Town	21·54	23·43	24·72	23·14	21·05
Footscray City	28·21	30·05	31·66	31·62	28·76
Williamstown City	25·34	24·42	22·90	21·36	22·35
Oakleigh Borough	31·25	33·94	33·80	29·78	34·30
Caulfield City	18·72	20·15	25·80	24·22	23·47
Malvern City	21·98	20·25	19·14	16·18	16·00
Camberwell City	19·17	15·24	21·97	20·61	16·22
Preston Shire	26·76	24·06	20·57	18·92	17·70
Coburg Town... ..	20·58	22·75	22·61	24·47	25·27
Sandringham Town ... ..	...	...	15·24	13·89	15·39
Greater Melbourne :—					
Excluding Births in Institutions	23·03	22·32	22·43	21·06	20·16
Including Births in Institutions	24·85	24·51	24·45	23·11	22·27

Twin and triplet births. The numbers of cases of twin and triplet births in Victoria in the past five years were as follows :—

CASES OF TWINS AND TRIPLETS.

Year.	Cases of Twins.	Cases of Triplets.
1915	397	1
1916	365	6
1917	372	...
1918	333	2
1919	382	5

On the average of the five years 1 mother in every 88 gave birth to twins, and 1 in every 11,689 was delivered of three children at a birth. The proportions for the decennium ended 1912 were 1 in every 98 and 1 in every 7,949 respectively. There was one case of quadruplet births in 1917.

Children legitimized.

Under a section of an Act passed in 1903, an illegitimate child, whose parents subsequently married, might, provided there was no lawful impediment to the marriage of the parents at the time of the birth, be legitimized if registered for that purpose within six months after marriage. In December, 1912, this Act was repealed and another was passed, which provides that children born out of wedlock may be legitimized at any time after the marriage of the parents, on the application of the father, provided there was no lawful impediment to the marriage of the parents at the time of the birth. In November, 1916, an Act was passed which allowed legitimation to be effected on the application of the mother if the father were absent on war service or dead. Up to the end of 1919 advantage was taken of these Acts to legitimize 1,626 children, of whom 14 were registered in 1903, 19 in 1904, 34 in 1905, 43 in 1906, 58 in 1907, 60 in 1908, 51 in 1909, 71 in 1910, 126 in 1911, 106 in 1912, 157 in 1913, 149 in 1914, 141 in 1915, 140 in 1916, 136 in 1917, 162 in 1918, and 159 in 1919.

Legitimation Acts are in force in all the States and New Zealand, but there are marked differences in the numbers of legitimations resulting therefrom. Of every 100 children born out of wedlock, the numbers legitimized in the various States and New Zealand during 1919 were as follows:—Western Australia, 22·6; New South Wales, 15·5; South Australia, 15·1; New Zealand, 14·6; Queensland, 14·2; Victoria, 8·7; and Tasmania, 7·5.

Illegitimate births in Victoria.

The number of illegitimate births in Victoria during the year 1919 was 1,825, which gives a proportion of 5·77 to every 100 births registered, as against 5·84 in the previous year, 5·51 in 1917, 5·15 in 1916, 5·75 in 1915, 5·57 in 1914, 6·03 in 1913, 5·72 in 1912, 5·94 in 1911, and 5·59 in 1910.

Illegitimate births to unmarried women in Victoria.

While the percentage of illegitimate to total births in Victoria increased from 5·36 in 1891 to 5·94 in 1911, the illegitimate births in proportion to single women were fewer in the later year. It is thus seen that the higher ratio of illegitimate to total births in 1911, as compared with 1891, was not due to greater laxity of morals, but to the smaller number of legitimate births. The proportion of infants born out of wedlock to the unmarried and widowed women between 15 and 45 years of age in Victoria are shown in the subjoined table for the census years 1891, 1901, and 1911, when the conjugal condition of the population was known:—

ILLEGITIMATE BIRTHS PER 1,000 SINGLE WOMEN.

Year.	Single Women aged 15 to 45.	Illegitimate Births.	Illegitimate Births per 1,000 Single Women.
1891	142,443	2,064	14·5
1901	167,760	1,729	10·3
1911	187,488	1,964	10·5

The number of infants born out of wedlock per 1,000 unmarried and widowed women in Victoria was 10·5 in 1911. This was considerably lower than the corresponding figures for most European countries. The proportions ranged from 27·4 in Germany, 24·3 in Sweden, 24·2 in Denmark, 19·4 in Italy, 19·1 in France and 17·8 in Belgium to 13·4 in Scotland, 8·0 in England, 6·8 in Holland and 3·8 in Ireland.

Illegitimacy in town and country. A larger proportion of illegitimacy prevails in Melbourne and suburbs than in the other urban and the rural districts of Victoria, the proportion in the country districts being the smallest of all. During the year 1919, in the metropolitan area, 1 birth in every 12, in other urban districts 1 in 26, and in the rural districts only 1 in 45, was registered as illegitimate. The proportions in 1907-12 were 1 in 11, 1 in 21, and 1 in 42 respectively.

DEATHS.

Deaths. The following return shows the number of deaths—male and female—also the quarters in which they were registered and the proportion per 1,000 of the population since 1899 :—

DEATHS IN EACH QUARTER, 1900 TO 1919.

Period.	Annual Deaths.	Sex.		Quarter of Registration.				Death Rate per 1,000 of the Population.
		Males.	Females.	March.	June.	September.	December.	
1900-4 ..	15,457	8,686	6,771	3,921	3,750	3,992	3,794	12·84
1905-9 ..	14,932	8,296	6,636	3,805	3,539	3,917	3,671	11·93
1910 ..	14,736	8,132	6,604	3,820	3,693	3,661	3,562	11·34
1911 ..	15,217	8,356	6,861	3,519	3,774	4,132	3,792	11·52
1912 ..	16,595	9,077	7,518	4,000	4,199	4,498	3,898	12·23
1913 ..	15,475	8,496	6,979	4,075	3,678	4,137	3,585	11·11
1914 ..	16,503	9,017	7,486	3,953	4,030	4,257	4,263	11·59
1915 ..	15,823	8,860	6,963	3,524	3,788	4,380	4,131	11·10
1916 ..	16,489	8,901	7,588	4,111	4,140	4,509	3,729	11·70
1917 ..	14,555	7,952	6,603	3,430	3,585	3,831	3,709	10·36
1918 ..	15,177	8,079	7,098	3,537	3,563	4,144	3,933	10·70
1919 ..	19,370	10,508	8,862	4,303	5,784	5,469	3,814	13·21
Average 1915-19	16,283	8,860	7,423	3,781	4,172	4,467	3,863	11·41

The number of deaths in 1919 was 19,370, which was 3,661 above the average of the preceding five years. The increase was almost wholly due to the heavy mortality from influenza, which accounted

for 3,530 deaths as against a yearly average of 124 for the period 1914-18.

The deaths in Australia in 1919 numbered 65,975, as against 50,280 in the preceding year, 48,040 in 1917, 54,205 in 1916, 52,808 in 1915, and 51,778 in 1914. Of the total deaths in the year under review 19,370 occurred in Victoria, 26,385 in New South Wales, 8,860 in Queensland, 5,475 in South Australia, 3,590 in Western Australia, 2,192 in Tasmania, 85 in the Northern Territory, and 18 in the Federal Capital Territory. The death rates per 1,000 of the population for each of the Australian States and New Zealand are shown in the following statement for the periods 1902-6 and 1907-11, and for each of the last eight years :—

DEATH RATES IN THE AUSTRALIAN STATES AND NEW ZEALAND

Period.	Victoria.	New South Wales.	Queensland.	South Australia.	Western Australia.	Tasmania.	Australia.	New Zealand.
1902-6	12·55	10·84	10·92	10·67	12·17	11·04	11·44	9·81
1907-11	11·64	10·20	10·12	9·89	10·47	10·83	10·64	9·77
1912 ..	12·23	10·86	10·96	10·28	11·07	10·73	11·23	8·87
1913 ..	11·11	10·91	10·39	10·82	9·35	10·87	10·78	9·47
1914 ..	11·59	10·13	9·97	10·71	9·39	9·67	10·53	9·31
1915 ..	11·10	10·50	11·00	10·67	9·28	10·11	10·67	9·06
1916 ..	11·70	10·68	10·98	11·69	9·80	10·38	11·04	9·64
1917 ..	10·36	9·61	9·63	10·10	8·97	8·89	9·80	9·58
1918 ..	10·70	9·86	10·40	9·97	9·11	8·84	10·09	14·84
1919 ..	13·21	13·44	12·43	12·01	11·10	10·37	12·82	9·51

The rate in Victoria, taking the average of the last five years, was higher than in any other State, but this result was chiefly due to the larger proportion of elderly persons, amongst whom the mortality rate is very high. The comparatively high rate in Australia in 1919 and the abnormal rate in New Zealand in the previous year were due to the heavy mortality from influenza.

Comparisons of the crude death rates of a country for different periods, or of different countries for the same period, are frequently misleading, as they do not allow for variations in the age distributions of the population. In European countries, the proportion of elderly people, among whom the death rate is heavy, is higher than in the Commonwealth or any of the Australian States, and it is greater in Victoria, and lower in Western Australia, than in any of the other States. The proportions living at various age groups at the last census in each division of the Commonwealth and New Zealand, and those in 1890 in Sweden—a

Age distribution and crude death rates.

country which fairly represents European conditions—are shown in the following table :—

PROPORTIONS LIVING AT FIVE AGE GROUPS IN AUSTRALIAN STATES, NEW ZEALAND, AND SWEDEN.

Country.	Proportion per 10,000 of Population living at the Age Group—					Total.
	Under 1 Year.	1 to 20.	20 to 40.	40 to 60.	60 and over.	
Victoria	235	3,837	3,173	2,020	735	10,000
New South Wales	274	3,926	3,358	1,813	629	10,000
Queensland	269	4,083	3,285	1,782	581	10,000
South Australia	256	3,901	3,304	1,833	706	10,000
Western Australia	266	3,646	3,682	2,004	402	10,000
Tasmania	279	4,243	3,069	1,783	626	10,000
Australia	260	3,914	3,297	1,882	647	10,000
New Zealand	241	3,763	3,600	1,691	705	10,000
Sweden	255	3,980	2,696	1,923	1,146	10,000

The figures show that the characteristic features of Australian populations, as compared with those of European countries, are a large preponderance of persons at the age group 20-40, and a relatively small number aged 60 and over. Among the Australian States, Victoria and Western Australia have, as mentioned previously, the highest and lowest proportions respectively of persons aged 60 years and upwards—a point which should be kept in view when comparing their crude death rates.

The differences shown in the preceding table in the age constitutions of the populations of the six States have been taken into account in computing their respective indexes of mortality. The results for each are based upon an age distribution corresponding to that of Sweden in 1890, which has been adopted by statisticians as a standard for this purpose. Mortality indexes for each State for the undermentioned years, as compiled by the Commonwealth Statistician, are as follows :—

INDEX OF MORTALITY FOR THE AUSTRALIAN STATES.

Year.	Index of Mortality.						Commonwealth.
	Victoria.	New South Wales.	Queensland.	South Australia.	Western Australia.	Tasmania.	
1915	13·54	13·24	14·30	13·09	12·79	13·04	13·47
1916	14·28	13·48	14·37	14·45	14·15	13·43	13·99
1917	12·81	12·45	12·64	12·65	12·93	11·78	12·63
1918	13·23	12·86	13·94	12·53	13·69	11·70	13·07
1919	15·51	16·48	15·97	14·59	15·50	13·29	15·75

In four of the last five years the crude death rate was higher in Victoria than in any other Australian State, but the figures in the above table show that one State in 1915 and 1917, and two States in the other years under review had a higher index of mortality than Victoria.

A reliable estimate of the improvement in the health of the community is obtained by comparing the death rates for groups of ages at different periods. Such rates for Victoria are given in the subjoined table for the decennial periods 1881-1890, 1891-1900, and 1902-1911 :—

DEATH RATES AT CERTAIN AGE GROUPS IN VICTORIA.

Age Group.				Deaths per 1,000 at each Age.		
				1881-1890.	1891-1900.	1902-1911.
<i>Males.</i>						
Under 5	...	...	...	44·79	39·29	26·73
5 to 10	...	...	...	4·06	3·36	2·16
10 to 15	...	...	...	2·65	2·20	1·87
15 to 20	...	...	...	4·03	3·28	2·72
20 to 25	...	...	...	6·35	4·79	3·51
25 to 35	...	...	...	7·72	6·60	4·75
35 to 45	...	...	...	11·23	9·03	7·81
45 to 55	...	...	...	19·28	15·32	13·48
55 to 65	...	...	...	33·25	32·90	25·38
65 to 75	...	...	...	61·13	62·99	59·04
75 and upwards	...	...	...	137·18	145·05	157·26
All ages	...	...	...	16·55	15·47	13·30
<i>Females.</i>						
Under 5	...	...	...	39·46	34·09	22·35
5 to 10	...	...	...	3·92	3·12	2·03
10 to 15	...	...	...	2·56	2·06	1·78
15 to 20	...	...	...	4·17	3·43	2·80
20 to 25	...	...	...	5·81	4·81	3·59
25 to 35	...	...	...	7·90	6·89	5·01
35 to 45	...	...	...	10·93	8·68	7·16
45 to 55	...	...	...	14·84	12·12	9·96
55 to 65	...	...	...	23·49	23·64	18·80
65 to 75	...	...	...	50·32	45·87	46·71
75 and upwards	...	...	...	129·00	124·33	131·77
All ages	...	...	...	13·56	12·36	10·66

The figures show that at all ages, excepting 75 and over for males, and 65 and over for females, very much lower death rates were experienced during the last decennium than in the preceding one. Compared with 1891-1900, the mortality rate for the period 1902-11 for the two sexes combined was lower by 33 per cent. for the age group 0-10, by 14 per cent. at ages 10-15, by 18 per cent. at 15-20, by 26 per cent. at 20-25, by 27 per cent. at 25-35, by 15 per cent. at 35-45

and 45-55, and by 20 per cent. at 55-65. The rates, up to age 65 and probably to age 75, are comparable, and the marked decrease at successive periods points to a general improvement in hygienic conditions.

Death rates at various ages in Australian States.

In the next table the annual deaths in Victoria per 1,000 persons of each sex in successive age groups are compared with those in the other Australian States, and in the Commonwealth, for the period 1909-11 :-

ANNUAL DEATH RATES AT VARIOUS AGES IN EACH AUSTRALIAN STATE, 1909-11.

Age Group.	Annual Deaths per 1,000 of Population.						
	Victoria.	New South Wales.	Queensland.	South Australia.	Western Australia.	Tasmania.	Commonwealth.
<i>Males.</i>							
0-5 ..	24.04	23.76	21.53	20.31	26.78	24.05	23.40
5-10 ..	2.01	2.03	2.15	1.90	3.09	2.36	2.13
10-15 ..	1.68	1.75	1.92	1.34	1.84	1.49	1.71
15-20 ..	2.53	2.47	3.14	2.46	2.54	2.63	2.58
20-25 ..	3.14	3.22	4.38	3.05	4.42	3.63	3.43
25-30 ..	3.94	3.74	4.94	3.90	5.07	4.11	4.09
30-35 ..	4.72	4.35	5.42	4.79	5.91	4.44	4.76
35-40 ..	6.30	5.63	7.32	6.90	7.20	6.73	6.34
40-45 ..	7.97	8.13	9.30	7.86	10.64	6.86	8.40
45-50 ..	10.89	10.64	13.55	10.77	14.48	9.00	11.35
50-55 ..	14.63	13.28	17.15	14.91	16.12	13.28	14.49
55-60 ..	20.49	20.41	22.55	18.98	23.98	15.70	20.52
60-65 ..	32.04	27.94	29.16	29.95	30.21	23.33	29.28
65-70 ..	50.53	44.50	50.32	40.11	45.43	36.89	46.25
70-75 ..	76.20	70.60	65.82	59.63	78.10	53.49	70.20
75-80 ..	120.16	108.32	98.99	102.64	116.27	99.52	111.19
80-85 ..	171.92	158.63	152.59	155.53	155.88	158.83	163.58
85 and over	269.56	283.16	231.29	250.80	281.66	355.33	273.85
All ages—Males..	12.82	11.15	11.46	10.79	11.42	10.84	11.60
<i>Females.</i>							
0-5 ..	18.89	20.05	19.08	16.24	21.66	20.91	19.39
5-10 ..	1.94	1.69	2.11	1.46	3.05	1.91	1.89
10-15 ..	1.51	1.34	1.34	1.47	1.86	1.97	1.46
15-20 ..	2.44	2.04	2.20	2.35	2.10	3.43	2.28
20-25 ..	3.46	3.15	3.44	3.45	3.76	4.23	3.40
25-30 ..	4.33	3.92	4.41	5.02	4.52	4.54	4.28
30-35 ..	4.92	4.40	4.68	6.05	5.15	6.47	4.69
35-40 ..	6.20	5.79	5.90	8.04	6.62	7.43	6.04
40-45 ..	6.58	6.06	6.94	8.04	6.62	7.43	6.36
45-50 ..	8.22	7.66	7.79	9.60	7.44	9.93	7.87
50-55 ..	9.90	9.98	10.13	12.88	11.58	14.19	9.93
55-60 ..	14.49	14.45	13.51	19.19	13.13	18.18	14.12
60-65 ..	21.62	20.67	21.89	32.19	17.72	18.18	20.73
65-70 ..	35.12	37.10	33.48	48.98	34.43	34.43	35.30
70-75 ..	59.07	54.55	50.18	88.86	55.53	52.95	55.22
75-80 ..	97.13	91.45	88.41	88.86	98.36	86.75	92.80
80-85 ..	133.47	133.49	137.53	128.76	130.53	138.35	133.94
85 and over	239.69	211.64	223.23	228.03	190.19	258.01	229.05
All ages—Females	10.17	8.83	8.34	9.20	8.55	9.71	9.23

A comparison shows that for the period 1909-11 the Victorian death rate for males in every age group between 5 and 50 was below that of the Commonwealth. For men aged 50 to 60 the rates were

very similar, but for the five age periods between 60 and 85 they were lower in Australia, as a whole, than in Victoria. Among females, the mortality rates in the State were lower for four, and higher for fourteen age periods than those for the corresponding ages in the Commonwealth.

Victorian
and English
death rates
compared.

The death rates of each sex at various ages in Victoria and Australia for the period 1909-11, and in England and Wales for 1906-10, are shown in the table which follows:—

DEATH RATES AT VARIOUS AGES IN VICTORIA,
AUSTRALIA, AND ENGLAND.

Age Group.	Annual Deaths per 1,000 of Each Sex.					
	Males.			Females.		
	Victoria. 1909-11.	Australia. 1909-11.	England and Wales. 1906-10.	Victoria. 1909-11.	Australia. 1909-11.	England and Wales. 1906-10.
0-5 ..	24·0	23·4	45·4	18·9	19·4	38·0
5-10 ..	2·0	2·1	3·3	1·9	1·9	3·4
10-15 ..	1·7	1·7	2·0	1·5	1·5	2·1
15-20 ..	2·5	2·6	3·0	2·4	2·3	2·8
20-25 ..	3·1	3·4	4·0	3·5	3·4	3·3
25-35 ..	4·3	4·3	5·3	4·6	4·5	4·5
35-45 ..	7·1	7·3	8·6	6·4	6·2	7·1
45-55 ..	12·5	12·8	15·5	8·9	8·8	12·0
55-65 ..	25·3	25·2	31·2	17·6	17·0	24·3
65-75 ..	62·1	56·2	64·4	45·7	43·6	53·1
75-85 ..	138·2	127·8	137·7	109·1	105·8	119·6
85 and upwards	269·6	273·8	283·0	239·7	229·0	250·9
All ages ..	12·8	11·6	15·6	10·2	9·2	13·8

The low mortality rate at nearly every age in Victoria, by comparison with that in England and Wales, evidences the healthy climate and the favorable social and industrial conditions of the State. A striking feature of the Victorian and Commonwealth mortalities is the light rate among infants and young children. The superiority of the Victorian over the English rate is very pronounced at the age periods 0-5 and 5-10, but it is less marked in the next ten years of life. For the age groups 20-25 and 25-35, the rates for males are lower, while those for females are slightly higher, in Victoria than in England. For each age period after 35, except 75-85 for males, the death rates for both sexes in Victoria are lighter, and at some ages considerably lighter, than in England.

The deaths of residents of metropolitan municipalities and their proportions to population are shown in the following table for the period 1910-12 and for the years 1918 and 1919. The method adopted in the compilation of the table is given on pages 338 and 339 of the *Year-Book* for 1916-17:—

DEATH RATES IN METROPOLITAN MUNICIPALITIES,
1910-12, 1918 AND 1919.

Municipality.	Annual Deaths.			Annual Deaths per 1,000 Residents.		
	1910-12.	1918.	1919.	1910-12.	1918.	1919.
Richmond City ...	594	498	705	14·71	12·15	17·01
Port Melbourne City ...	196	141	193	14·56	10·85	14·51
Melbourne City ...	1,469	1,425	1,837	14·44	13·47	17·30
Fitzroy City ...	493	513	671	14·41	14·62	18·97
Collingwood City ...	462	391	538	13·44	10·95	15·09
Brighton City ...	161	191	227	13·02	9·67	10·94
Oakleigh Borough ...	40	54	91	12·90	10·65	17·64
Prahran City ...	587	632	695	12·89	12·87	13·97
South Melbourne City ...	591	511	734	12·83	10·55	15·07
Williamstown City ...	198	228	277	12·80	12·21	14·67
St. Kilda City ...	326	346	469	12·65	10·47	13·55
Preston Shire ...	65	77	101	12·63	9·65	12·33
Footscray City ...	290	313	456	12·15	10·26	14·72
Brunswick City ...	383	381	601	11·75	9·65	17·01
Coburg Town ...	111	154	236	11·49	10·29	15·10
Essendon City ...	269	306	438	11·12	9·20	12·51
Hawthorn City ...	265	274	360	10·64	9·74	12·75
Kew Town ...	105	143	200	10·47	10·99	14·57
Camberwell City ...	131	198	243	10·21	10·25	11·95
Caulfield City ...	157	320	333	9·68	11·47	11·10
Malvern City ...	151	262	322	9·29	9·27	10·73
Northcote City ...	165	266	338	9·22	10·25	12·69
Sandringham Town ...		74	112	..	9·01	13·37
Remainder of Metropolis	218	284	391	9·22	11·34	14·67
Whole Metropolis ...	7,427	7,982	10,568	12·61	11·15	14·41
Remainder of State ...	8,089	7,195	8,802	10·99	10·25	12·01

The outstanding features of the above figures are the high death rates prevailing in some of the old centres of population, of which Melbourne City, Fitzroy, Richmond, Collingwood, and Port Melbourne are examples, and the low rates in comparatively recently settled areas, such as Northcote, Malvern, Caulfield, Camberwell, and Kew. In the former group the deaths for 1919 were 17·00 per 1,000 as against 11·90 in the latter. Slight differences in the age distribution of the populations of these two divisions may exist, but they can account for only a small portion of the great disparity in their mortality rates. It would appear that the standard of health, as indicated by death

rates, is much better in the outlying and less densely populated suburbs than in the central and more congested areas of the metropolis.

Metropolitan and country death rates compared.

The ages of the people, as disclosed at the last census, enable a comparison to be made between the death rates prevailing at that time in Greater Melbourne and in the remainder of the State. On the average of the years 1910-12, the deaths of metropolitan residents were in the ratio of 12·61 per 1,000 of population as against a ratio of 10·99 for residents of the rest of the State. The apparent difference in favour of the country is 1·62, but a computation shows that, when allowances are made for the unequal age and sex distribution of the people in these areas, the actual difference is greater—the deaths per 1,000 of population being fewer by 2·55 among country than among metropolitan residents.

Decrease in Metropolitan death rate.

In Greater Melbourne, in the decade 1910-19, there were 12·91 deaths per 1,000 of the population, as compared with 15·76 in the decennium 1892-1901. The reduction in the rate represents a saving of 19,200 lives in the past ten years. Many factors have contributed to this result, but it is probable that the introduction of the sewerage system, the notification of contagious diseases, the improvement in the conditions of labour, the increasing supervision of the manufacture and sale of articles of consumption, the greater proportion of females in the community, and the advance of medical science, have been the main causes of the decline. That the sanitary conditions of the metropolis have greatly improved is evidenced by a comparison of the death rates from typhoid fever and tubercular diseases for the period 1910-19 with those for the decennium 1892-1901. The following are the rates :—

Cause of Death.	Deaths per 1,000 of Population.		
	1892-1901.	1910-1919.	Total Decrease in 1910-19.
Pulmonary Tuberculosis ...	1·654	0·885	0·769
Other Tubercular Diseases ...	0·446	0·205	0·241
Typhoid Fever ...	0·293	0·045	0·248
Scarlet Fever ...	0·033	0·017	0·016
Measles ...	0·215	0·045	0·170
Diphtheria ...	0·196	0·183	0·013
Total ...	2·837	1·380	1·457

The figures show that the lower death rates from the six above-mentioned diseases in 1910-19 accounted for 51 per cent. of the total decline. It is impossible to state which municipalities have contributed most to this result, as their mortality rates from the diseases referred to are not available for the earlier period. A comparison, however, of the general death rates in each for the periods under review shows that all divisions of the metropolis have, in varying degrees, shared in the improvement.

Death rates in country towns. Prior to 1912 the death rates given for the chief country towns were based upon the deaths therein in relation to their respective populations. For reasons which have been given in previous editions of this work that method was discarded and the deaths of residents in proportion to population are now shown instead. Such deaths, and their rates per 1,000 of population, are given in the following statement for the periods 1910-12 and 1913-18, and the year 1919 :—

DEATHS PER 1,000 RESIDENTS IN COUNTRY TOWNS.

Town.	Annual Deaths of Residents.			Annual Deaths of Residents per 1,000 of Population.		
	1910-12.	1913-18.	1919.	1910-12.	1913-18.	1919.
Ballarat and Suburbs	639	617	608	15·07	14·91	15·26
Bendigo and Suburbs	690	589	598	17·51	15·88	17·19
Geelong and Suburbs	411	400	504	13·68	11·59	14·71
Castlemaine & Suburbs	92	92	89	13·11	12·47	11·47
Warrnambool ..	95	90	136	13·55	12·14	18·13
Maryborough ..	76	66	64	13·39	12·86	13·06
Stawell	82	64	66	18·60	14·20	14·97

Residents of different areas dying in hospitals. An examination of the particulars of residence of persons who have died in public hospitals of Victoria during recent years reveals interesting and definite information regarding the assistance rendered by these institutions to people in different divisions of the State. For the metropolitan municipalities, the seven principal country towns, and the remainder of the State, the percentages of the total deaths of

residents thereof which occurred in public hospitals during the period 1910-15 and the year 1919 were as follows :—

PROPORTION OF DEATHS OF RESIDENTS OCCURRING
IN HOSPITALS, 1910-15 AND 1919.

Area.	Percentage of Deaths of Residents occurring in Hospitals.		Area.	Percentage of Deaths of Residents occurring in Hospitals.	
	1910-15.	1919.		1910-15.	1919.
Port Melbourne City...	35·9	47·7	Oakleigh Borough ...	14·6	22·0
Fitzroy City ...	34·5	44·1	Brighton City ...	14·2	22·9
Melbourne City ...	34·4	46·5	Castlemaine ...	13·9	28·1
Collingwood City ...	28·0	39·8	Ballarat ...	13·9	20·2
Richmond City ...	26·6	39·1	Hawthorn City ...	13·2	22·5
South Melbourne City	26·5	39·5	Malvern City ...	12·8	19·6
Preston Shire ...	25·0	29·7	Kew Town... ..	12·6	23·5
Northcote City ...	24·4	32·2	Williamstown City ...	12·2	26·7
Brunswick City ...	23·9	34·8	Caulfield City ...	11·7	21·9
Warrnambool ...	23·0	30·9	Camberwell City ...	11·1	18·5
Maryborough ...	22·9	31·2	Sandringham Town...	...	17·9
Footscray City ...	22·6	35·7	Summary :—		
Prahran City ...	21·7	30·4	Greater Mel-		
Stawell ...	19·6	27·3	bourne ...	24·6	34·3
St. Kilda City ...	18·9	29·9	Seven Country		
Coburg Town ...	18·0	20·8	Towns ...	16·4	24·3
Bendigo ...	16·8	26·9	Remainder of		
Essendon City ...	16·5	28·8	State ...	17·8	24·5
Geelong ...	16·3	22·2	Whole State	20·9	29·8

Of the total deaths in the State 29·8 per cent. occurred in public hospitals in 1919, as against 24·2 in the previous year and 20·9 in 1910-15. The high proportion in 1919 was due to an outbreak of influenza. The disparities in the proportions for different areas are very significant. Of the total cases of fatal illness which occurred amongst residents of the districts mentioned in 1919, the percentage treated in public hospitals varied from 47·7 for Port Melbourne, 46·5 for Melbourne City, 44·1 for Fitzroy, and 39·8 for Collingwood, to 18·5 for Camberwell, and 17·9 for Sandringham. For the metropolitan area the percentage was 34·3 as compared with 24·4 for the rest of the State. Taking the proportion for fatal cases as an index of all cases dealt with, it would appear that, relatively to population, the assistance rendered by public hospitals to the residents of Greater Melbourne exceeds by about 40 per cent. that given to people residing elsewhere.

Deaths in public institutions in Greater Melbourne.

In 1919 the deaths in public institutions were 43·2 per cent. of the total in Greater Melbourne, 23·2 per cent. of the total in extra metropolitan districts, and 35·0 per cent. of the total in the State as a whole. The number of deaths in each public institution in the metropolis in 1919 is given in the subjoined table :—

DEATHS IN PUBLIC INSTITUTIONS IN GREATER MELBOURNE, 1919.

Institution.	No. of Deaths.	Institution.	No. of Deaths.
Hospitals—		Other Public Institutions—	
Melbourne	974	Victorian Homes for Aged and Infirm	75
Alfred	353	Benevolent Asylum	222
St. Vincent's	195	Heatherton Sanatorium	76
Homeopathic	303	Convent of the Little Sisters of the Poor	74
Austin	236	Old Colonists' Homes	7
Children's	418	Foundling Hospital, Broadmeadows	8
Women's	221	Carlton Refuge	2
Infectious Diseases	266	Depôt for Neglected Children	57
Queen Victoria	14	Kew Lunatic Asylum	108
Eye and Ear	6	Yarra Bend Lunatic Asylum... ..	100
Williamstown	22	Mont Park Asylum	5
Military Base	24	Receiving House — Mental Hospital	30
Macleod Military... ..	18	Coode Island Quarantine Station	8
Caulfield Military	91		
Police	6		
Influenza Hospitals	1,013		
		Total Hospitals and other Institutions	4,932
Total Hospitals	4,160		

Of the 4,160 persons who died in public hospitals in Greater Melbourne during 1919, 414 were residents of places outside the metropolis.

The mortality of children under one year in proportion to births has been considerably less in recent than in earlier periods, but the necessity for reducing the risks to infant health and life, particularly amongst illegitimate children, is still apparent. The deaths of infants in 1919 numbered 2,150, and, as there were 31,621 births, it follows that of every 100 infants born approximately 6·80 died within twelve months. This proportion was the third lowest recorded for the State. The rates for Melbourne

and suburbs, the extra metropolitan area, and the whole State, for different periods since 1880, are shown in the subjoined table :—

INFANTILE DEATH RATES 1881 to 1919.

Period.	Deaths under One Year per 100 Births in—		
	Melbourne and Suburbs.	Remainder of the State.	Whole State.
1881-1890	17.14	9.50	12.68
1891-1900	13.36	9.60	11.11
1901-1905	11.26	8.45	9.58
1906-1910	9.47	6.95	8.00
1911	7.82	6.12	6.87
1912	9.02	6.05	7.45
1913	7.63	6.51	7.05
1914	8.45	7.24	7.83
1915	7.99	5.77	6.88
1916	8.56	6.29	7.46
1917	6.55	4.72	5.67
1918	7.09	5.16	6.17
1919	7.87	5.65	6.80

On the average of the past five years the infantile death rate for the metropolis was 7.61 per 100 births, which was 26 per cent. below that for the decennium ended 1910, and 43 per cent. below the rate for the decennium 1891-1900.

The deaths of infants under 1 year of age per 100 births in Greater Melbourne, Ballarat, Bendigo, Geelong, and the rest of the State for each of the past thirteen years were as follows :—

INFANTILE DEATH RATES IN DIFFERENT DIVISIONS OF THE STATE.

Year.	Deaths under One Year per 100 Births.					
	Victoria.	Melbourne and Suburbs.	Ballarat and Suburbs.	Bendigo and Suburbs.	Geelong and Suburbs.	Rest of the State.
1907.. ..	7.26	8.57	8.69	9.03	8.49	5.80
1908.. ..	8.61	9.83	9.52	11.37	10.33	7.12
1909.. ..	7.13	8.39	11.31	9.54	8.94	5.40
1910.. ..	7.69	9.23	10.19	9.44	6.57	6.01
1911.. ..	6.87	7.82	7.70	8.41	6.11	5.82
1912.. ..	7.45	9.02	10.04	8.36	6.73	5.53
1913.. ..	7.05	7.63	8.95	9.10	7.10	6.09
1914.. ..	7.83	8.45	12.31	9.45	8.91	6.58
1915.. ..	6.88	7.99	8.51	7.71	7.04	5.30
1916.. ..	7.46	8.56	7.93	8.16	7.25	5.97
1917.. ..	5.67	6.55	7.01	5.62	4.76	4.49
1918.. ..	6.17	7.09	5.54	5.86	7.16	4.95
1919.. ..	6.80	7.87	6.04	6.78	8.00	5.38

The prejudicial effect of city surroundings on infant life is evidenced by the mortality being heavier in urban than in country districts. On the average of the past five years the deaths of children under 1 year of age to every 1,000 births were 76 in Melbourne, 70 in Ballarat, and 68 in Bendigo and Geelong, as against 52 in the rest of the State.

In issues of this work prior to 1913 the infantile death rate given for each metropolitan municipality was based upon the deaths therein exclusive of those occurring in public hospitals. This method necessarily understated the mortality for each district, the understatement being greatest in the case of the poorer and more congested areas, which contribute an undue proportion of the hospital cases. In order to ascertain the actual death rate for each area the deaths in hospitals are now allotted to the districts where the deceased had resided. For the period 1910-14 and the years 1918 and 1919 the deaths under 1 year per 100 births for each municipality of Greater Melbourne were as follows :—

INFANTILE DEATH RATES FOR METROPOLITAN MUNICIPALITIES.

Municipality.	Deaths under One Year per 100 Births.			Municipality.	Deaths under One Year per 100 Births.		
	1910-14.	1918.	1919.		1910-14.	1918.	1919.
Coburg Town ..	12.03	10.38	13.42	Oakleigh Borough	7.65	7.28	7.34
Port Melb. City ..	12.00	11.90	9.13	Prahran City ..	7.27	6.52	5.83
Fitzroy City ..	11.24	9.99	11.45	St. Kilda City ..	6.38	6.65	6.30
Richmond City ..	10.23	9.14	11.73	Caulfield City ..	5.87	6.95	4.40
Preston Shire ..	10.01	5.96	10.34	Essendon City ..	5.79	5.62	6.19
Collingwood City	9.89	9.90	10.99	Hawthorn City ..	5.72	6.38	6.00
Melbourne City ..	9.22	8.78	8.85	Camberwell City ..	5.58	5.53	4.85
South Melb. City ..	9.05	9.73	10.27	Malvern City ..	5.51	5.25	5.21
Brunswick City ..	8.50	8.14	10.10	Northcote City ..	5.47	8.40	8.09
Footscray City ..	8.11	5.80	8.19	Kew Town ..	4.76	4.98	3.11
Williamstown City	8.03	6.02	7.35	Sandringham Town	..	8.77	8.53
Brighton City ..	7.84	7.56	3.65				

It is noticeable that the centres having the lowest infantile death rates are residential areas which are not so thickly populated as nearly all of the other metropolitan districts.

Deaths of infants at different ages.

Of the deaths of infants under 1 year in 1919, 54 per cent. occurred in the first month and nearly 70 per cent. in the first three months of life. The annual deaths at ages under 1 month, from 1 to 3 months, from 3 to 6 months, and from 6 to 12 months, during the five years ended with 1918, and the numbers for the year 1919, are given in the following table, together with the percentage of deaths at each of those age-periods and the proportion of deaths to each 100 births :—

DEATHS OF INFANTS AT DIFFERENT AGES, 1914-18 AND 1919.

Age.	Average Annual Deaths of Infants under 1 year of Age.					
	Five Years—1914-18.			Year 1919.		
	Number.	Percentage at each Age.	Number per 100 Births.	Number.	Percentage at each Age.	Number per 100 Births.
<i>Boys.</i>						
Under 1 month	650	48.9	3.72	657	54.4	4.05
1 to 3 months	215	16.2	1.23	187	15.5	1.15
3 to 6 "	195	14.7	1.12	161	13.3	.99
6 to 12 "	268	20.2	1.53	203	16.8	1.25
Total ..	1,328	100.0	7.60	1,208	100.0	7.44
<i>Girls.</i>						
Under 1 month	471	47.2	2.85	506	53.7	3.29
1 to 3 months	149	14.9	.90	149	15.8	.97
3 to 6 "	161	16.2	.97	126	13.4	.82
6 to 12 "	216	21.7	1.31	161	17.1	1.04
Total ..	997	100.0	6.03	942	100.0	6.12

The outstanding feature of the figures for 1919 is the high death rate for infants under 1 month of age. In numerous instances mothers were suffering from influenza at the time of their confinement, and, as a result, an unduly large proportion of children were prematurely born.

The experience of the years 1914-19 shows that of every 20,000 newly-born boys and girls in equal numbers, 757 boys and 604 girls died within twelve months, and 9,243 of the former and 9,396 of the latter, or 18,639 of mixed sexes were living at the end of the year. The corresponding numbers surviving the first year in earlier periods were 17,765 in the ten years

Probable mortality of infants.

1891-1900 and 17,468 in 1881-1890. It is thus seen that of every 20,000 births comprising equal numbers of each sex there were 874 more survivors in 1914-19 than in 1891-1900, and 1,171 more than in 1881-1890.

An investigation of infantile mortalities would be incomplete unless the diseases which have proved fatal in different years were ascertained, and their incidence in each period compared. Information of this nature reveals the causes of high death rates, and, when a fairly early period is selected for comparison with recent years, it shows in what direction improvements have taken place. The chief preventable and non-preventable causes of death, grouped under certain headings, are shown in the subjoined table for the periods 1891-3, 1901-10, and 1911-18, and for the year 1919 :—

INFANTILE DEATH RATES FROM CERTAIN CAUSES, 1891-3, 1901-10, 1911-18, AND 1919.

Cause of Death.	Deaths under 1 year per 1,000 Births in—			
	1891-3.	1901-10.	1911-18.	1919.
Diarrhoeal Diseases, all forms	29·66	24·62	16·78	12·21
Wasting Diseases (Marasmus, Atrophy, &c.)	22·24	12·74	13·58	10·63
Prematurity	13·13	14·99	14·60	18·12
Bronchitis, Broncho-pneumonia, Pneumonia	11·37	8·13	6·98	6·10
Convulsions	6·83	3·10	1·74	1·33
Congenital Defects and Malformations ...	3·45	4·86	4·31	4·24
Violence	3·16	2·47	1·11	·63
Whooping Cough	2·60	2·52	1·83	·47
Other causes	24·49	14·46	8·29	14·26
Total, all causes	116·93	87·89	69·22	67·99

Of every 1,000 infants born 23 died from diarrhoeal and wasting diseases in 1919, as against 30 in 1911-18, 37 in 1901-10, and 52 in 1891-3—a decrease of nearly 56 per cent. in 27 years. In 1919 acute bronchitis, broncho-pneumonia and pneumonia were responsible for 6·1 deaths per 1,000 births, as compared with 11·4 in 1891-3—a decline of 46 per cent. between the two periods. Certain causes, which may be regarded as of a non-preventable nature, such as prematurity, congenital defects, and malformations, were responsible for 28 per cent. of the total infantile mortality during the past nine years.

Of the deaths from preventable causes 1 in every 3 is due to diarrhœal diseases, which are responsible for high death rates in December, January, February, March, and April. On the average of the last nine years, of every 1,000 children born 16 died from diarrhœal complaints within a year, a proportion which shows the necessity for preventive measures in this direction.

On the average of the past seven years, 165 in every 1,000 illegitimate infants died within a year, as against 62 in every 1,000 legitimate children. It is thus seen that the chance of an illegitimate child dying before the age of 1 year is slightly more than two and one-half times that of the legitimate infant. In the year 1919 the mortality rate for legitimate infants was 6·10 per 100 births. The children born out of wedlock during the same year numbered 1,825, and the deaths of illegitimate infants were 333, the death rate being thus 18·25 per 100 births. With the view of ascertaining the chief reasons for the marked disproportion in the mortality rates of the two classes the following table has been constructed, showing the deaths from certain causes per 1,000 legitimate and illegitimate births for the periods 1904-8 and 1913-18 and for the year 1919 :—

DEATH RATES OF LEGITIMATE AND ILLEGITIMATE INFANTS FROM CERTAIN CAUSES.

Cause of Death.	Deaths under 1 year per 1,000 Births.					
	Legitimate.			Illegitimate.		
	1904-8.	1913-18.	1919.	1904-8.	1913-18.	1919.
Diarrhœal Diseases	19·8	14·2	10·0	72·6	48·3	48·8
Prematurity, Congenital Defects, Marasmus, &c.	30·3	31·4	30·8	52·1	65·1	69·6
Bronchitis, Broncho-pneumonia, Pneumonia	6·9	6·1	5·6	18·6	12·3	13·7
Other causes	18·3	11·0	14·6	58·7	36·9	50·4
Total all causes	75·3	62·7	61·0	202·0	162·6	182·5

The rates for 1919 show that of every 1,000 children born out of wedlock 48·8 died from diarrhœal diseases within a year as compared with 10·0 deaths per 1,000 legitimate infants from the same cause. Owing to a larger proportion of the former children being deprived

of breast food a higher mortality from these diseases might be expected among them than among legitimate infants, but the striking differences in the death rates from this cause and from the chief respiratory diseases indicate considerable neglect in the rearing of illegitimate infants.

The influence of temperature on infantile mortality from the chief digestive and respiratory diseases is specially noticeable, whilst on deaths from other causes, particularly those of a developmental character, very little influence is apparent. The deaths in Melbourne and suburbs from the two former classes of complaint in each month during the past nine years are shown in the appended table :—

Infantile deaths in each month from certain causes.

INFANTILE DEATHS IN EACH MONTH FROM CERTAIN CAUSES.

Month.	Infantile Deaths in Greater Melbourne in 1911-19 from—					
	Diarrhœal Diseases.			Respiratory Diseases.		
	Males.	Females.	Total.	Males.	Females.	Total.
January	323	236	559	38	27	65
February	251	200	451	27	20	47
March	206	182	388	30	23	53
April	155	156	311	37	42	79
May	89	80	169	57	44	101
June	49	47	96	67	67	134
July	37	29	66	128	83	211
August	31	21	52	119	87	206
September	41	22	63	93	71	164
October	40	31	71	54	44	98
November	108	72	180	46	30	76
December	263	184	447	45	25	70
Total, 1911-19 ..	1,593	1,260	2,853	741	563	1,304

The experience of the last nine years shows that of the total infantile deaths in the metropolis from diarrhœal diseases 76 per cent. occur during the five months December to April, and of the deaths from respiratory diseases 55 per cent. occur in the four months June to September.

The deaths of infants under 1 year of age in the Commonwealth numbered 8,486 in 1919 as compared with 7,366 in the previous year, 7,302 in 1917, 9,282 in 1916, and 9,126 in 1915. The next table gives the proportion of such deaths to the total births in each Australian State and New Zealand for each of the last eight years, and for earlier periods back to 1891:—

INFANTILE MORTALITY IN AUSTRALASIA.

Period.	Deaths under 1 year per 100 Births.						
	Victoria.	New South Wales.	Queensland.	South Australia.	Western Australia.	Tasmania.	New Zealand.
1891-1900 ..	11.11	11.22	10.34	10.54	14.48	9.58	8.38
1902-6 ..	9.38	9.27	8.93	8.21	12.21	9.02	7.29
1907-11 ..	7.51	7.66	6.98	6.56	8.29	7.97	6.85
1912 ..	7.45	7.13	7.16	6.16	8.21	6.66	5.12
1913 ..	7.05	7.83	6.33	7.01	7.00	7.01	5.92
1914 ..	7.83	6.97	6.39	7.60	6.82	7.16	5.14
1915 ..	6.88	6.81	6.40	6.73	6.66	7.22	5.01
1916 ..	7.46	6.78	7.04	7.36	6.63	7.50	5.07
1917 ..	5.67	5.75	5.42	5.37	5.71	5.23	4.82
1918 ..	6.17	5.90	5.69	5.12	5.73	6.08	4.84
1919 ..	6.80	7.23	7.24	6.40	6.13	6.46	4.53

The infantile deaths per 100 births in the Australasian capitals in 1919 were as follows:—Melbourne 7.87, Sydney 7.94, Brisbane 9.46, Adelaide 6.66, Perth 6.63, Hobart 6.89 and Wellington 5.96.

In 1919 the deaths of male children under 5 years of age numbered 1,653, and the deaths of female children under that age, 1,312—the former being in the proportion of 15.73 per cent., and the latter of 14.80 per cent., to the total number of deaths of the respective sexes at all ages. The subjoined table gives the annual number of such deaths in the State at each year of

Deaths of children under 5.

age, and the proportion of the deaths under five years of age to the deaths at all ages in decennial periods from 1871 to 1910, and in the years 1911 to 1919.

MORTALITY OF CHILDREN UNDER FIVE YEARS.

Period.	Years of Age at Death.					Total under 5 Years.	
	0.	1.	2.	3.	4.	Number.	Proportion Per 100 Deaths at all Ages.
<i>Males.</i>							
1871-1880..	1,783	508	206	148	119	2,764	39.41
1881-1890..	2,158	464	161	114	92	2,989	34.28
1891-1900..	2,050	432	143	93	76	2,794	30.05
1901-1910..	1,504	249	83	59	41	1,936	22.93
1911 ..	1,309	201	71	58	42	1,681	20.12
1912 ..	1,515	266	96	66	51	1,994	21.97
1913 ..	1,419	241	83	55	41	1,839	21.65
1914 ..	1,634	291	110	70	43	2,148	23.82
1915 ..	1,401	200	82	60	46	1,789	20.19
1916 ..	1,403	246	100	77	57	1,883	21.15
1917 ..	1,099	176	71	59	38	1,443	18.15
1918 ..	1,102	188	85	51	52	1,478	18.29
1919 ..	1,208	223	101	63	58	1,653	15.73
<i>Females.</i>							
1871-1880..	1,482	482	198	139	106	2,407	46.06
1881-1890..	1,805	423	151	105	84	2,568	39.61
1891-1900..	1,702	385	129	82	68	2,366	33.61
1901-1910..	1,192	217	81	51	40	1,581	23.58
1911 ..	961	149	73	50	41	1,274	18.57
1912 ..	1,154	217	76	57	52	1,556	20.70
1913 ..	1,119	191	67	47	35	1,459	20.91
1914 ..	1,202	235	74	67	46	1,624	21.69
1915 ..	1,009	188	60	64	42	1,363	19.57
1916 ..	1,150	215	81	53	54	1,553	20.47
1917 ..	774	118	64	52	35	1,043	15.80
1918 ..	848	165	69	66	55	1,203	16.95
1919 ..	942	169	73	64	64	1,312	14.80

The figures show a marked reduction, from period to period, in the mortality of children under 5 years of age relatively to that of persons of all ages, the proportion being 40 per cent. lower in 1911-19 than in 1891-1900.

The ages of males and females who died in 1919 and in the two preceding years are shown in the following table :—

AGES AT DEATH IN VICTORIA, 1917 TO 1919.

Ages.	1917.			1918.			1919.		
	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.
Under 1 ..	1,099	774	1,873	1,102	848	1,950	1,208	942	2,150
1 to 2	176	118	294	188	165	353	223	169	392
2 ,, 3	71	64	135	85	69	154	101	73	174
3 ,, 4	59	52	111	51	66	117	63	64	127
4 ,, 5	38	35	73	52	55	107	58	64	122
5 ,, 10	144	118	262	171	152	323	197	170	367
10 ,, 15	110	105	215	104	82	186	129	118	247
15 ,, 20	119	134	253	126	121	247	239	203	442
20 ,, 25	152	206	358	158	213	371	360	364	724
25 ,, 30	159	223	382	156	258	414	587	511	1,098
30 ,, 35	191	250	441	188	246	434	641	488	1,129
35 ,, 40	258	260	518	246	263	509	552	465	1,017
40 ,, 45	285	247	532	280	251	531	515	393	908
45 ,, 50	432	286	718	410	297	707	576	457	1,033
50 ,, 55	534	331	865	540	384	924	684	522	1,206
55 ,, 60	651	376	1,027	665	452	1,117	697	540	1,237
60 ,, 65	612	434	1,046	697	443	1,140	693	553	1,246
65 ,, 70	522	472	994	523	440	963	680	497	1,177
70 ,, 75	558	521	1,079	584	544	1,128	612	508	1,120
75 ,, 80	639	597	1,236	639	640	1,279	650	633	1,283
80 ,, 85	615	543	1,158	596	595	1,191	504	603	1,107
85 ,, 90	410	318	728	363	358	721	410	358	768
90 ,, 95	88	109	197	118	118	236	107	129	236
95 ..	6	13	19	8	11	19	9	15	24
96 ..	6	4	10	13	7	20	8	6	14
97 ..	2	6	8	8	7	15	2	7	9
98 ..	7	3	10	6	6	12	1	4	5
99 ..	2	3	5	1	2	3	..	4	4
100 ..	2	..	2	..	1	1	1	1	2
101 ..	1	..	1	..	3	3	1	1	2
102 ..	1	..	1	..	..	..	..	..	..
103 ..	..	..	..	..	1	1	..	..	..
104 ..	1	..	1	..	..	..	..	..	..
105 ..	1	1	2	..	..	..	..	..	..
106 ..	..	..	..	1	..	1	..	..	..
108 ..	1	..	1	..	..	..	..	..	..
Total ..	7,952	6,603	14,555	8,079	7,098	15,177	10,508	8,862	19,370

Of the 49,102 persons who died in Victoria during the last three years, 6,537 were aged 80 years and upwards, and 18—ten males and eight females—had attained or passed the age of 100 years.

The highest age at death recorded in the period 1917-19 was 108 years, which was attained by one man. To every 100 female deaths there were 119 male deaths in 1919 as against 114 in the previous year and 120 in 1917.

The most striking features of the mortality in 1919 were the abnormally high death rate from influenza, the comparatively high rates from bronchitis, and broncho-pneumonia and pneumonia, and the very low rate from typhoid fever. The death rates from the chief diseases are shown in the appended table for the period 1908-12 and for the last five years:—

DEATHS PER MILLION FROM CERTAIN CAUSES.

Cause of Death.	Deaths per Million of the Population.					
	1908-1912.	1915.	1916.	1917.	1918.	1919.
Typhoid Fever	98	60	51	45	32	21
Scarlet Fever	16	8	21	23	28	24
Measles	33	22	13	11	5	17
Whooping Cough	77	68	84	51	47	24
Diphtheria and Croup	122	142	189	110	149	144
Influenza	109	67	70	47	148	2,407
Hydatids	22	18	21	14	21	18
Cancer	833	812	921	925	942	870
Phthisis	855	661	743	677	701	739
Other Tubercular Diseases	182	135	136	163	144	126
Syphilis	51	34	36	48	42	40
Diabetes	107	114	128	120	146	134
Anæmia, Chlorosis, Leucæmia	81	83	94	97	90	93
Simple Meningitis	133	84	67	51	52	42
Cerebro-Spinal Meningitis .. .. .	..	237	231	53	26	10
Infantile Paralysis .. .. .	..	1	3	4	15	2
Locomotor Ataxia and other diseases of Spinal Cord	71	58	70	58	88	78
Congestion and Hæmorrhage of the Brain	449	443	497	437	427	438
Epilepsy	35	30	54	42	40	38
Convulsions	76	60	55	43	49	55
Heart Disease (including Endocarditis, Pericarditis, and Angina Pectoris)	1,441	1,134	1,287	1,442	1,400	1,402
Acute and Chronic Bronchitis	348	263	313	201	233	284
Pneumonia and Broncho-pneumonia	834	865	767	656	694	904
Pleurisy	45	33	42	40	32	42
Congestion of Lungs and Pulmonary Apoplexy	63	59	82	57	56	51
Asthma and Pulmonary Emphysema	60	64	58	48	51	49
Enteritis, Gastro-enteritis, and Diarrhœal Diseases	833	590	731	408	504	501
Hernia, Intestinal Obstruction	113	109	107	104	115	111
Diseases of the Stomach (Cancer excepted)	99	78	84	83	83	98

DEATHS PER MILLION FROM CERTAIN CAUSES—*continued.*

Cause of Death.	Deaths per Million of the Population.					
	1908-1912.	1915.	1916.	1917.	1918.	1919.
Cirrhosis and other diseases of the Liver (Cancer excepted) ..	158	145	96	110	112	91
Biliary Calculi	27	26	27	27	32	27
Appendicitis	81	72	55	62	66	61
Simple Peritonitis (non-puerperal) ..	35	34	33	30	35	31
Acute and Chronic Nephritis, Uræmia, Bright's Disease	576	566	570	568	586	510
Diseases of the Bladder and Prostate ..	94	99	91	94	97	88
Calculi of the Urinary System	7	6	4	5	6	6
Old Age	1,030	1,183	1,208	1,056	1,002	1,082
Suicide	102	105	83	88	72	89
Accidental Violence	531	492	459	417	408	424
Homicide	19	17	14	13	13	18

The above and other causes of death are fully dealt with in subsequent paragraphs.

Vaccinations. The efficacy of vaccination in minimizing the risk of infection from small-pox is recognised in Victorian legislation, which requires parents, who do not make a statutory declaration of their conscientious objection to vaccination, to have their children vaccinated. The proportion of successful vaccinations to every 100 births for the period 1876-1899, and for each year since, is shown in the following table :—

SUCCESSFUL VACCINATIONS PER 100 BIRTHS.

Period.	Vaccinations per 100 births.	Period.	Vaccinations per 100 births.
1876-1899 ...	72	1910 ..	69
1900 ...	67	1911 ...	62
1901 ...	62	1912 ...	60
1902 ...	53	1913 ...	69
1903 ...	71	1914 ...	65
1904 ..	69	1915 ...	69
1905 ...	67	1916 ...	61
1906 ...	67	1917 ...	60
1907 ...	67	1918 ...	48
1908 ...	67	1919 ..	44
1909 ...	68		

In 1919 the vaccinations of children were equal to 44 per cent. of the births, as compared with 48 per cent. in the preceding year, 65 per cent. in 1900-1917, and 72 per cent. in 1876-1899.

**Small-pox—
Deaths from.**

Persons suffering from small-pox have arrived at Victorian ports on many occasions but, as they were at once quarantined, the disease never spread among the people of the State. There have been no deaths from the disease during the past nine years, but in 1910 three oversea arrivals—1 male and 2 females—died from small-pox in the Victorian Quarantine Station. Since 1853 only 28 deaths have occurred from this cause, and of that number only 5 took place in the thirty-five years ended 1919.

**Typhoid
fever.**

The reported cases of typhoid fever for the whole State declined from 288 per 100,000 of population in 1895-9 to 53 per 100,000 in 1914-18, and 18 in 1919, or by 94 per cent. in the intervening years. The death rate from the disease decreased by 93 per cent. during the same period. The deaths per 100 cases in 1919 were 11·8 as compared with 10·7 in 1914-18. The reported cases of, and deaths from typhoid fever and their proportions to the population, also the percentage of cases that ended fatally, are given in the next table for periods back to 1889:—

TYPHOID FEVER IN VICTORIA, 1890 TO 1919.

Period.	Annual Cases Reported.		Annual Deaths.		Deaths per 100 reported Cases.
	Number.	Per 100,000 of Population.	Number.	Per 100,000 of Population.	
1890-4	2,932	253·9	381	33·0	13·0
1895-9	3,397	288·4	355	30·1	10·4
1900-4	2,152	178·1	213	17·6	9·9
1905-9	1,569	125·4	135	10·8	8·6
1910	2,124	163·5	139	10·7	6·5
1911	1,303	98·6	95	7·2	7·3
1912	1,122	82·8	98	7·2	8·7
1913	1,127	80·9	95	6·8	8·4
1914	1,195	84·0	106	7·4	8·9
1915	958	67·2	86	6·0	9·0
1916	727	51·6	72	5·1	9·9
1917	511	36·4	64	4·5	12·5
1918	354	25·0	46	3·2	13·0
1919	263	17·9	31	2·1	11·8

The death rate from typhoid fever for Victoria is only about one-half of that for the Commonwealth.

The cases of, and deaths from typhoid fever in proportion to population, in Greater Melbourne, are given in the subjoined table for different periods during the past thirty years:—

TYPHOID FEVER IN THE METROPOLIS, 1890 TO 1919.

Period.	Annual Cases Reported.		Annual Deaths.	
	Number.	Per 100,000 of Population.	Number.	Per 100,000 of Population.
1890-4	1,645	349.3	205	43.5
1895-9	1,510	327.6	156	33.8
1900-4	701	140.0	74	14.8
1905-9	466	86.7	49	9.1
1910	689	118.5	52	8.9
1911	368	61.9	34	5.7
1912	272	44.3	29	4.7
1913	282	44.1	29	4.5
1914	312	47.1	38	5.7
1915	197	29.0	27	4.0
1916	162	23.5	23	3.3
1917	130	18.5	17	2.4
1918	87	12.2	16	2.2
1919	64	8.7	12	1.6

The cases of, and deaths from typhoid fever in proportion to population declined by 98 and 96 per cent. respectively in Greater Melbourne between 1890-9 and 1919. The introduction and extension of the sewerage system coincide closely with, and in a large measure account for this great improvement.

The number of cases of typhoid fever during each of the last six years in five divisions of the State, and their proportions to the respective populations for the period 1910-18 and the year 1919, are given in the following table:—

PREVALENCE OF TYPHOID FEVER.

Area.	Reported Cases of Typhoid Fever.						Annual Cases per 10,000 of Population.	
	1914.	1915.	1916.	1917.	1918.	1919	1910-18.	1919.
Greater Melbourne ..	312	197	162	130	87	64	4.5	.9
Ballarat and Suburbs	75	79	59	5	11	16	14.4	4.0
Bendigo and Suburbs	87	65	32	31	21	11	19.9	3.2
Geelong and Suburbs	49	10	22	8	3	5	9.8	1.5
Rest of the State ..	672	607	452	337	232	167	9.6	2.7

The cases in proportion to population were fewer by 80 per cent. in Greater Melbourne, 72 per cent. in Ballarat, 84 per cent. in Bendigo, 85 per cent. in Geelong, and 72 per cent. in the rest of the State in 1919 than in the period 1910-18.

Death rates from typhoid fever at different ages. The mortality from typhoid fever is higher at early adult and middle ages than at other periods of life, and higher among males than females. This is shown in the next table, which gives the death rates in age groups for each sex at the last three census periods :—

DEATH RATES FROM TYPHOID FEVER, 1890-2, 1900-2, AND 1910-12.

Age Group.	Deaths per 10,000 of each Sex.					
	Males.			Females.		
	1890-2.	1900-2.	1910-12.	1890-2.	1900-2.	1910-12.
0-15	2.26	0.97	0.38	2.85	1.46	0.44
15-20	5.21	2.65	1.76	5.85	2.23	1.22
20-25	9.21	4.39	1.82	4.77	1.84	1.32
25-35	6.48	3.28	1.71	3.87	2.04	0.82
35-45	3.60	2.25	1.26	2.93	1.21	0.68
45-55	2.24	1.95	0.82	1.29	0.93	0.39
55-65	1.74	0.66	0.20	1.04	0.34	0.50
65 and over	0.99	..	0.10	2.13	0.23	0.19
All ages	4.08	1.95	1.00	3.25	1.49	0.69

The experience of the last three census periods shows that the rate for males exceeds that for females by 29 per cent., and that the heaviest mortality occurs between the ages 15 and 35. It is notable that at each census period there were proportionately fewer deaths of boys than of girls under the age of 15.

Scarlet fever. In 1919 the deaths from scarlet fever numbered 35, which corresponded to a rate of 24 per million of the population, as compared with rates of 28 in the previous year, 23 in 1917, 21 in 1916, 8 in 1915, slightly over 1 in 1914, and 34 in 1890-2. During 1919 there were 1,763 cases reported as against 2,572 in the previous year, 1,994 in 1917 and 1,566 in 1916. For the four years

mentioned the deaths were equal to 1·7 per cent. of the cases. According to the experience of the past ten years the chance of contracting the disease is 76 per cent. greater for females than for males.

Measles. Although the mortality from measles has varied very considerably from period to period, there has been no very severe epidemic outbreak since 1898, when 671 deaths resulted from the disease. In 1919 there were 25 deaths attributed to this cause, representing a rate of 17 per million of the population, as compared with rates of 5 in the previous year, 11 in 1917, 13 in 1916, 22 in 1915, 74 in 1914, 32 in 1913, and 64 in 1912.

On the average of the five years 1910 to 1914, 47 per cent. of those who died from the disease were under 2 years of age and 75 per cent. were under 5 years. The incidence of mortality at various ages for each sex for the period 1910-14 was as follows :—

Sex.	Annual Deaths from Measles per 10,000 of each Sex aged—									
	0 to 1.	1 to 2.	2 to 3.	3 to 4.	4 to 5.	5 to 10.	10 to 15.	15 to 20.	20 and over.	All Ages.
Males	4·02	7·41	4·39	2·04	0·97	0·73	0·06	0·03	0·06	0·55
Females	4·34	4·92	2·44	1·96	1·00	0·72	0·06	0·06	0·10	0·46

Whooping cough. There were 35 deaths referred to whooping cough in 1919, which equalled a rate of 24 per million of the population at all ages, as compared with rates of 47 in the previous year, 51 in 1917, 84 in 1916, 68 in 1915, 69 in 1914, 71 in 1913, and 115 in 1912. The infantile death rate is more affected than the general rate by this ailment, as it is practically confined to children. In the year under review 15 of the deaths were of infants under 1 year, and, with one exception, all the deaths were of children less than 4 years of age. On the average of the past ten years the mortality rate from the disease was 23 per cent. higher among girls than boys.

Diphtheria. The prevalence of diphtheria throughout the State during the past nine years was the most unsatisfactory feature of the statistics of sickness relating to that period. For the year 1919 the number of cases was 4,007 as against a yearly average

of 5,143 in 1911-18, 1,410 in 1905-9, 1,680 in 1900-4, and 1,584 in 1895-9. On the other hand, a very great reduction took place from period to period in the proportion of cases which ended fatally. The case mortality rate was 5·3 per cent. in 1919 as compared with 4·6 per cent. in 1912-16, 6·3 per cent. in 1905-9, 9·5 per cent. in 1900-4, and 13·9 per cent. in 1895-9.

The appended table shows for the whole State and the metropolis the reported cases of, and deaths from, diphtheria, and their proportions to the population, also the ratios of deaths to cases for different periods since 1894 :—

DIPHTHERIA IN VICTORIA AND GREATER MELBOURNE,
1895 TO 1919.

Period.	Annual Cases Reported.		Annual Deaths.		Deaths per 100 Cases Reported.
	Number.	Per 100,000 of Population.	Number.	Per 100,000 of Population.	
VICTORIA.					
1895-9	1,584	134·6	221	18·8	13·9
1900-4	1,680	139·0	159	13·2	9·5
1905-9	1,410	112·6	89	7·1	6·3
1910	2,415	185·9	112	8·6	4·6
1911	5,120	387·5	237	17·9	4·6
1912	5,289	390·5	257	19·0	4·9
1913	5,367	385·2	245	17·6	4·6
1914	4,868	342·3	211	14·8	4·3
1915	4,463	313·0	203	14·2	4·5
1916	5,377	381·5	266	18·9	4·9
1917	4,092	291·1	154	11·0	3·8
1918	6,568	463·3	211	14·9	3·2
1919	4,007	273·3	211	14·4	5·3
GREATER MELBOURNE.					
1895-9	748	162·1	113	24·6	15·1
1900-4	686	136·9	58	11·6	8·5
1905-9	758	140·8	46	8·5	6·1
1910	1,655	284·6	74	12·7	4·5
1911	3,035	510·7	130	21·9	4·3
1912	2,451	399·0	130	21·2	5·3
1913	2,412	377·1	122	19·1	5·1
1914	2,164	326·6	116	17·5	5·4
1915	2,527	372·2	134	19·7	5·3
1916	3,214	465·9	173	25·1	5·4
1917	2,424	344·8	92	13·1	3·8
1918	3,807	531·8	125	17·5	3·3
1919	2,350	320·5	112	15·3	4·8

Prevalence of diphtheria in different areas. The cases of diphtheria which occurred in five divisions of the State in each of the past six years, and their proportions to the respective populations for the period 1910-18 and the year 1919, are given in the subjoined table :—

CASES OF DIPHTHERIA IN DIFFERENT AREAS.

Area.	Reported Cases of Diphtheria.						Annual Cases per 10,000 of Population.	
	1914.	1915.	1916.	1917.	1918.	1919.	1910-18.	1919.
Greater Melbourne ..	2,164	2,527	3,214	2,424	3,807	2,350	40·1	32·1
Ballarat and Suburbs	167	77	76	31	73	63	25·2	15·8
Bendigo and Suburbs	563	376	165	134	299	136	89·7	39·1
Geelong and Suburbs	91	130	122	148	314	165	42·9	48·1
Rest of the State ..	1,883	1,353	1,800	1,355	2,075	1,293	26·2	20·7

The cases in all divisions of the State were fewer in 1919 than in the preceding year.

Death rates from diphtheria at various ages. Of the 533 males and 529 females who died from diphtheria during the five years 1910-14, 883, or 83 per cent., were under 10 years of age. The incidence of mortality for each sex at different ages, for the period mentioned, was as follows :—

DEATH RATES FROM DIPHTHERIA AT DIFFERENT AGES, 1910-14.

Sex.	Annual Deaths from Diphtheria per 10,000 of each Sex aged—									
	0 to 1.	1 to 2.	2 to 3.	3 to 4.	4 to 5.	5 to 10.	10 to 15.	15 to 20.	20 and over.	All Ages.
Males..	2·92	6·30	5·56	9·90	7·50	5·91	1·76	0·36	0·09	1·57
Females	2·68	5·16	6·27	6·43	8·14	6·84	1·68	0·39	0·11	1·54

Hydatids. The deaths attributed to hydatids in 1919 numbered 27, being equivalent to a rate of 18 per million of the population, as compared with rates of 21 in the preceding year, 14 in 1917, 21 in 1916, 18 in 1915, 22 in 1908-12, and 51 in 1890-2. According to the experience of the past ten years the death rate from this disease is 31 per cent. higher among males than females. Hospital returns for the period 1914-19 show that 450 cases of hydatids were treated therein and that 64, or 1 in every 7, ended fatally.

**Anæmia,
chlorosis,
leucæmia.**

Anæmia, chlorosis, and leucæmia were responsible for 136 deaths in 1919, which corresponded to a rate of 93 per million of the population, as against rates of 90 in the previous year, 97 in 1917, 94 in 1916, 83 in 1915, 100 in 1914, 76 in 1913 and 81 in 1908-12. Of the 12 persons who died from leucæmia in 1919, 9 were males.

Diabetes.

During 1919 diabetes was responsible for 83 male and 114 female deaths, representing a rate of 134 per million of the population as compared with rates of 146 in the preceding year, 120 in 1917, 128 in 1916, 114 in 1915, 119 in 1914, 91 in 1913, and 107 in 1908-12. The deaths from diabetes per 10,000 of each sex in nine age groups for the periods 1890-2, 1900-2, and 1910-12, are shown in the subjoined table:—

**DEATHS FROM DIABETES PER 10,000 OF
EACH SEX.**

Age Group.	Deaths per 10,000 of each Sex.					
	Males.			Females.		
	1890-2.	1900-2.	1910-12.	1890-2.	1900-2.	1910-12.
0-10	·02	·09	·10	·02	·05	·15
10-20	·17	·24	·20	·14	·26	·36
20-30	·29	·17	·64	·14	·36	·30
30-40	·21	·32	·58	·30	·51	·53
40-50	·58	·49	1·11	·49	·42	·78
50-60	1·18	1·38	1·80	1·31	1·42	3·18
60-70	1·49	2·67	5·63	2·49	3·19	8·47
70-80	2·87	4·36	7·34	1·88	5·01	11·54
80 and over	1·65	4·11	7·43	4·44	3·54	6·83
All Ages	·40	·56	1·00	·36	·60	1·26

At each age group over 30 the mortality rate from diabetes was considerably higher in 1910-12 than in the previous census period. In 1910-12 the female exceeded the male rate for each age group between 50 and 80, the excess for the twenty years of life 60 to 80 amounting to 54 per cent. For all ages combined the rate for females was 26 per cent. higher than that for males.

In the next table are shown the number of deaths and the death rate from influenza in Victoria for each year from 1895 to 1919 :—

DEATHS AND DEATH RATES FROM INFLUENZA.

Year.	Males.	Females.	Persons.	Deaths per 100,000 of Population.
1895	223	199	422	35·8
1896	124	81	205	17·4
1897	103	63	166	14·2
1898	130	131	261	22·3
1899	528	435	963	81·2
1900	99	89	188	15·8
1901	150	145	295	24·5
1902	167	147	314	25·9
1903	68	61	129	10·7
1904	128	129	257	21·3
1905	71	62	133	11·0
1906	121	122	243	19·8
1907	149	127	276	22·1
1908	90	76	166	13·1
1909	61	49	110	8·6
1910	67	52	119	9·2
1911	70	80	150	11·4
1912	80	85	165	12·2
1913	56	38	94	6·7
1914	67	84	151	10·6
1915	45	50	95	6·7
1916	47	51	98	7·0
1917	39	27	66	4·7
1918	98	112	210	14·8
1919	1,969	1,561	3,530	240·7

Special features of the epidemic of 1919 are dealt with in subsequent tables.

Influenza epidemic, 1919. Towards the end of January, 1919, an outbreak of influenza occurred in Melbourne and it rapidly spread throughout the whole metropolitan area. The first wave, which was the most virulent one, reached its greatest height in the second week of February and receded slowly during the subsequent six weeks. It was followed by a second wave of greater magnitude which commenced in the last week of March and attained its maximum height about one month later, after which it receded, though more slowly than the preceding wave. A recrudescence of the disease in a milder form occurred about the middle of July, but it had abated to very small dimensions by the end of September. The disease spread gradually throughout the State and accounted for 3,530 deaths, of which 2,391 occurred in Greater Melbourne, 91 in Ballarat, 87 in Bendigo, 65 in Geelong, and 896 in the rest of the State. To every 10,000 of population the deaths from this cause were 24·1 for the State

as a whole, 32·6 in Greater Melbourne, 22·8 in Ballarat, 25·0 in Bendigo, 19·0 in Geelong, and 14·4 in the rest of the State. The mortality rate from the disease was considerably higher in the industrial than in the residential areas of the metropolis.

From reports supplied by Influenza and other Hospitals to the Department of Health the fatality rate from influenza in these institutions may be deduced. From the figures in the reports referred to it would appear that, of the cases treated in hospitals in Greater Melbourne from the 1st March to the 28th August, 1919, 7·8 per cent. ended fatally.

The striking feature of the epidemic in 1919 was the very heavy death rate among persons at the most vigorous period of life. In this respect the results are of special interest, as there is no Australian record of an epidemic of equal virulence among young and middle aged people. The influenza epidemics which prevailed in Victoria in 1891 and 1899, and accounted for 1,035 and 963 deaths respectively, were specially fatal to children and elderly persons, whilst the recent outbreak did not seriously affect these sections of the community. The ages of those who succumbed to the disease in Victoria during the year 1919 were as follows :—

AGE AT DEATH FROM INFLUENZA.

Age at Death.					Males.	Females.	Persons.
Under 5	..	..	..	..	61	54	115
5 to 10	..	..	..	..	25	18	43
10 „ 15	..	..	..	..	30	24	54
15 „ 20	..	..	..	..	75	68	143
20 „ 25	..	..	..	..	148	156	304
25 „ 30	..	..	..	..	331	250	581
30 „ 35	..	..	..	..	356	245	601
35 „ 40	..	..	..	..	264	184	448
40 „ 45	..	..	..	..	204	120	324
45 „ 50	..	..	..	..	164	108	272
50 „ 55	..	..	..	..	137	99	236
55 „ 60	..	..	..	..	77	99	176
60 „ 65	..	..	..	..	37	50	87
65 „ 70	..	..	..	..	28	38	66
70 and over	..	..	..	..	32	48	80
Total	..	..	..	..	1,969	1,561	3,530

Approximately 72 per cent. of those who died from influenza were between 20 and 50 years of age. In the earlier stages of the epidemic the proportion was 77 per cent. Among persons between 25 and 40 years of age the death rate from the disease in 1919 was slightly greater than that from all other causes combined.

The next table gives the death rate from influenza per 10,000 of each sex in age groups for five census periods, these periods being selected because the age distribution of the people was then accurately known :—

DEATHS FROM INFLUENZA IN VICTORIA PER 10,000 OF EACH SEX.

Age Group.				1870-2.	1880-2.	1890-2.	1900-2.	1910-12.
<i>Males.</i>								
0-15	...	...	...	·69	·34	2·50	1·10	·40
15-20	...	...	...	...	·07	·64	·34	·24
20-25	...	...	...	...	...	1·20	·59	·21
25-35	...	...	...	·05	·07	1·50	·79	·17
35-45	...	...	...	·05	...	3·04	1·31	·59
45-55	...	...	...	·09	·24	5·12	3·20	·73
55-65	...	...	...	·67	·24	12·65	5·25	2·38
65 and upwards	...	...	...	1·09	2·36	27·13	17·02	12·27
All ages	...	...	...	·33	·25	3·94	2·30	1·10
<i>Females.</i>								
0-15	...	...	...	·52	·34	1·86	1·15	·42
15-20	...	...	...	...	...	·92	·83	·34
20-25	...	...	...	...	...	1·28	·69	·35
25-35	...	...	...	·07	·07	2·35	·89	·22
35-45	...	...	...	...	·08	4·11	1·86	·30
45-55	...	...	...	·17	...	5·39	2·02	·68
55-65	...	...	...	·39	·62	11·46	5·53	1·61
65 and upwards	...	...	...	·84	3·18	35·22	16·02	12·80
All ages	...	...	...	·28	·24	3·72	2·13	1·10

The death rate for the last census period shows a substantial decrease as compared with that for each of the two preceding periods, the rate for 1910-12 being 50 per cent. below that for 1900-2, and nearly 71 per cent. below the rate for 1890-2. It is notable that the decline in the mortality rate from this disease has been associated with very heavy reductions in the death rates from pulmonary tuberculosis and other respiratory diseases.

In 1919 the deaths from respiratory diseases numbered 2,096, which represented a rate of 1,430 per million of the population, as compared with rates of 1,160 in the previous year, 1,094 in 1917, 1,336 in 1916, 1,368 in 1915, 1,397 in 1914, and 1,279 in 1913. Of the deaths from complaints of this nature in the year under review, 99 were referred to acute bronchitis, 317 to chronic bronchitis, 499 to broncho-pneumonia, 827 to pneumonia, 61 to pleurisy, and 65 to asthma. These six diseases accounted for 89 per cent. of the total respiratory mortality. The seasonal incidence of the maladies is evidenced by the deaths in June, July, August, and September,

which represented nearly 46 per cent. of the total for the whole year. Respiratory diseases are much more fatal at the extremes of life than at middle ages, and among males than females. This is shown in the appended table, which gives for each sex the death rates relating to groups of ages at five census periods:—

DEATHS FROM RESPIRATORY DISEASES PER 10,000 OF EACH SEX.

Age Group.	1870-2.	1880-2.	1890-2.	1900-2.	1910-12.
<i>Males.</i>					
0-15	22.65	29.02	28.52	16.53	12.94
15-20	3.05	3.30	2.92	2.70	1.66
20-25	5.70	5.34	4.88	4.85	2.35
25-35	5.69	8.31	6.85	5.94	3.86
35-45	10.28	15.80	13.55	9.49	10.50
45-55	20.43	26.59	25.18	18.04	18.25
55-65	41.79	51.65	56.51	38.37	32.68
65 and upwards	108.11	136.54	141.07	112.38	138.87
All ages	17.29	24.48	24.30	18.66	17.17
<i>Females.</i>					
0-15	18.50	24.18	24.13	13.85	10.50
15-20	1.88	2.02	3.52	2.34	1.56
20-25	3.54	4.23	3.05	3.34	2.48
25-35	4.51	5.72	5.65	3.75	3.55
35-45	7.94	12.53	11.55	7.68	5.85
45-55	7.87	13.63	17.01	11.80	8.28
55-65	22.97	29.15	32.10	27.42	16.64
65 and upwards	73.10	116.12	112.38	86.78	99.81
All ages	12.63	17.08	17.62	13.28	11.81

Compared with the census period 1900-2, the mortality from respiratory diseases for the period 1910-12 showed a decline in each age group up to 35 for males and 65 for females, the reduction for all ages combined amounting to 8 per cent. in the rate for the former and 11 per cent. in that for the latter. At each census date the male exceeded the female rate, the average excess for the five census periods being nearly 41 per cent.

Cerebro-spinal meningitis was responsible for 14 deaths in 1919, 37 in 1918, 75 in 1917, 326 in 1916, and 338 in 1915. The cases reported to the Public Health Department in those years numbered 1,630, and the proportion of these that ended fatally was 48 per cent. The numbers of deaths from

Cerebro-spinal,
tubercular,
and simple
meningitis.

cerebro-spinal, tubercular, and simple meningitis during the last nine years were as follows :—

DEATHS FROM DIFFERENT FORMS OF MENINGITIS, 1911-19.

Year.	Cerebro-spinal Meningitis.		Tubercular Meningitis.		Simple Meningitis.		Total—All Forms of Meningitis.	
	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.
1911 ..	9	2	41	49	75	51	125	102
1912 ..	4	3	26	44	63	76	93	123
1913 ..	8	4	25	41	85	65	118	110
1914 ..	12	5	42	30	89	63	143	98
1915 ..	239	99	35	35	74	46	348	180
1916 ..	191	135	29	40	56	39	276	214
1917 ..	48	27	56	41	37	35	141	103
1918 ..	28	9	55	40	39	35	122	84
1919 ..	7	7	38	24	33	29	78	60

Age incidence of different forms of meningitis.

The next table shows the incidence of mortality at various ages from different forms of meningitis for the period 1911-19 :—

DEATHS AT DIFFERENT AGES FROM MENINGITIS, 1911-19.

Age Group.	Cerebro-spinal Meningitis.		Tubercular Meningitis.		Simple Meningitis.		Total—All Forms of Meningitis.	
	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.
Under 5 ..	123	91	197	175	314	255	634	521
5 to 15 ..	67	56	75	80	65	51	207	187
15 „ 25 ..	159	48	25	47	32	43	216	138
25 „ 35 ..	77	26	24	22	26	18	127	66
35 „ 45 ..	50	24	18	9	41	26	109	59
45 „ 55 ..	47	27	5	8	40	21	92	56
55 „ 65 ..	16	12	2	2	12	9	30	23
65 and over	7	7	1	1	21	16	29	24
Total 1911-19	546	291	347	344	551	439	1,444	1,074

On the average of the last nine years the deaths of children under 5 years of age from cerebro-spinal, tubercular, and simple meningitis represented 26, 54, and 57 per cent. respectively of the total deaths from these diseases. Of the 14 persons who succumbed to cerebro-spinal meningitis in 1919, 6 were under 5 and 8 were under 15 years. Up to the age of 15 years the incidence of the mortality from this

disease in the period 1911-19 was 29 per cent. higher for males than females, while for the age group 15 to 45 the rate for the former was about three times that for the latter.

Diseases of the spine. In 1919 locomotor ataxia and other diseases of the spine, excluding infantile paralysis, accounted for 68 male and 46 female deaths, representing a death rate of 78 per million of the population, as compared with rates of 88 in the previous year, 58 in 1917, 70 in 1916, 58 in 1915, 75 in 1914, 62 in 1913, and 71 in 1908-12. Of the 22 persons who died from locomotor ataxia 19 were males.

Infantile paralysis. Mortality returns show that infantile paralysis was responsible for 3 deaths in 1919 as against 21 in the previous year, 6 in 1917, 4 in 1916, 2 in 1915, 9 in 1914, 3 in 1913, and 6 in 1912. Of the 54 persons who died during these eight years 31 were boys. Six of the victims were under 1 year of age, and 26 were under 5 years. The cases reported to the Public Health Department in 1919 numbered only 2 as compared with 303 in the preceding year, and 32 in 1917.

Heart disease. During 1919 there were 1,922 deaths ascribed to organic heart disease, 6 to pericarditis, 96 to acute endocarditis, and 31 to angina pectoris. The total—2,055—from these causes represented a rate of 1,402 per million of the population, as compared with 1,400 in the previous year, 1,442 in 1917, 1,287 in 1916, 1,134 in 1915, 1,278 in 1914, 1,294 in 1913, and 1,441 in 1908-12. Of the 2,055 persons who died from these diseases in 1919, only 26, or 1.3 per cent., were under 15 years of age. On the average of the three years 1910 to 1912 the deaths from all forms of heart disease per 10,000 of each sex in age groups were as follows:—

DEATH RATES FROM HEART DISEASE AT VARIOUS AGES.

Sex.	Deaths per 10,000 Persons aged—									
	0-15.	15-20.	20-25.	25-35.	35-45.	45-55.	55-65.	65-75.	75 and upwards.	All Ages.
Males ..	1.25	1.81	2.35	3.01	6.71	15.53	49.57	127.50	243.44	15.19
Females ..	1.25	1.66	2.08	2.88	7.10	15.63	36.22	107.21	238.36	13.58

The figures indicate that the mortality rate from heart disease is a function of age, and that it attains its maximum at the oldest age. Of the deaths of persons aged 75 and upwards, approximately 1 in 6 is due to some form of this disease.

Diseases of the digestive system. In 1919 there were 754 male and 680 female deaths from digestive ailments, representing a proportion of 978 per million of the population, as against rates of

1,030 in the previous year, 884 in 1917, 1,206 in 1916, 1,098 in 1915, 1,504 in 1914, 1,220 in 1913, 1,345 in 1912, 1,233 in 1911, and 2,382 in 1890-2. Diarrhœal diseases were responsible for 735 deaths, which were equivalent to a rate of 501 per million of population, the corresponding rates in previous periods being 504 in 1918, 408 in 1917, 731 in 1916, 590 in 1915, 941 in 1914, 709 in 1913, 833 in 1908-12, and 1,342 in 1890-2. The age incidence of these diseases shows that they are heaviest at the extremes of life. Of the 735 deaths from diarrhœal diseases in the year under review, 494, or 67 per cent., were of children under 2 years of age, and 104, or about 14 per cent., were of persons over 65 years of age. There were 49 male and 24 female deaths from cirrhosis of the liver, 53 male and 70 female deaths from other affections of that organ, and 83 male and 80 female deaths from hernia and intestinal obstruction.

Appendicitis. The deaths from appendicitis numbered 89 in 1919, 94 in the previous year, 87 in 1917, 78 in 1916, 102 in 1915, and 103 in 1914, and corresponded to rates of 61, 66, 62, 55, 72, and 72 per million of the population respectively. Hospital records show that during 1919 there were 1,458 cases treated, and that 48, or 3·3 per cent., ended fatally, as compared with fatality rates of 3·0 per cent. in 1918, 2·5 per cent. in 1917, 4·1 per cent. in 1916, 5·3 per cent. in 1915, and 6 per cent. in the period 1908-12. According to the experience of the five years, 1910 to 1914, the death rate from appendicitis is approximately 31 per cent. higher among males than females. The mortality rates at various ages for that period were as follows :—

DEATH RATES FROM APPENDICITIS, 1910-14.

Sex.	Deaths from Appendicitis per 10,000 of each Sex aged—									
	Under 10.	10 to 15.	15 to 20.	20 to 25.	25 to 35.	35 to 45.	45 to 55.	55 to 65.	65 and over.	All Ages.
Males..	0·43	1·00	1·24	1·03	1·01	0·97	0·90	1·38	1·05	0·92
Females	0·42	1·43	0·88	0·71	0·59	0·52	0·85	0·58	0·55	0·70

Diseases of urinary system. In 1919 there were 946 deaths attributed to diseases of the urinary system, which corresponded to a rate of 645 per million of the population, as against rates of 741 in the previous year, 710 in 1917, 705 in 1916, 712 in 1915, 670 in 1914, 724 in 1913, and 700 in 1909-12. Bright's disease, uræmia, and acute nephritis were responsible for 748 deaths, or 79 per cent., and complaints of the bladder and prostate for 129 deaths, or 14 per cent. of the total referred to maladies of the urinary system. The deaths

per 10,000 of each sex in age groups for the periods 1890-2, 1900-2, and 1910-12 are shown in the following table :-

DEATH RATES FROM DISEASES OF URINARY SYSTEM.

Age Group.	Deaths per 10,000 of each Sex.					
	Males.			Females.		
	1890-2.	1900-2.	1910-12.	1890-2.	1900-2.	1910-12.
0-10	1.16	.93	.67	.97	.59	.79
10-20 ... ..	.43	.45	.73	.58	.82	.71
20-30	1.45	1.83	1.72	1.82	1.59	1.61
30-40	3.05	3.55	3.03	4.72	4.21	3.76
40-50	7.36	8.12	9.03	6.63	7.26	7.07
50-60	11.90	17.43	18.95	5.91	11.36	13.81
60-70	27.42	39.62	46.63	9.62	21.49	24.44
70-80	58.98	80.68	96.18	14.62	27.70	38.53
80 and over ...	74.07	128.48	153.04	22.21	27.15	43.70
All Ages ...	5.25	8.05	9.18	2.84	4.28	5.34

The figures for the latest period show that there is scarcely any difference between the rates for males and females under 50 years of age. For older ages, however, the excess of the male over the female rate is very pronounced, especially at ages 70 and upwards. For all ages the rate for males exceeds that for females by 72 per cent.

The ages and sexes of those who died from pulmonary tuberculosis in each of the last five years are given in the next table :-

DEATHS FROM PULMONARY TUBERCULOSIS AT VARIOUS AGES.

Ages.	Males.					Females.				
	Year.					Year.				
	1915.	1916.	1917.	1918.	1919.	1915.	1916.	1917.	1918.	1919.
0-10	2	9	2	2	5	5	2	4	7	3
10-15	2	6	2	2	2	10	10	6	7	4
15-20	19	16	21	18	22	32	46	38	38	43
20-25	48	60	51	47	53	66	79	67	83	83
25-30	51	72	41	39	77	77	72	74	86	75
30-35	53	55	58	55	80	44	44	66	51	54
35-40	66	69	70	67	72	44	49	50	50	54
40-45	51	72	60	56	65	40	42	27	41	32
45-50	72	68	63	58	68	23	39	29	30	35
50-55	58	67	58	72	65	32	18	14	24	20
55-60	41	48	50	54	67	20	17	13	16	16
60-65	27	30	40	41	31	5	7	4	14	11
65-70	21	20	16	19	17	6	5	5	2	6
70 and over	16	14	17	12	10	11	11	6	3	9
Total ...	527	606	549	542	639	415	441	403	452	445

The most striking feature of the figures for 1919 is the heavy mortality from phthisis among males between 25 and 35 years of age. The death rates from the disease at various census periods are dealt with in the succeeding paragraph.

The deaths from phthisis in 1919 numbered 1,084—639 being of males and 445 of females—and equalled a rate of 739 per million of the population, as compared with rates of 701 in the previous year, 677 in 1917, 743 in 1916, 661 in 1915, 724 in 1914, 755 in 1913, 855 in 1908-12, and 1,365 in 1890-2. In England in 1918, and in Scotland and Ireland in 1917, the deaths from this cause were 1,343, 1,040 and 1,756 per million of their respective populations. The rates for Victoria are more fully shown in the following table, which gives the mortality per 10,000 of each sex, in age groups, at six census periods :—

DEATH RATES IN VICTORIA FROM PHTHISIS IN AGE GROUPS AT THE LAST SIX CENSUS PERIODS.

Age Group.	Annual Mortality from Phthisis per 10,000 of each Sex.					
	1860-2.	1870-2.	1880-2.	1890-2.	1900-2.	1910-12.
<i>Males.</i>						
0 to 15	2·55	1·22	1·74	·90	·38	·46
15 " 20	7·72	5·71	6·88	5·41	5·06	3·71
20 " 25	12·23	18·75	21·19	18·29	14·35	8·45
25 " 35	16·53	22·21	30·33	23·70	20·31	13·11
35 " 45	21·63	21·83	25·11	28·28	22·07	15·63
45 " 55	23·14	22·24	28·65	31·17	25·05	18·07
55 " 65	25·63	27·86	31·41	36·48	35·75	18·88
65 and upwards ...	23·20	19·56	18·08	25·40	31·07	13·55
All Ages	13·33	12·89	15·33	15·73	13·51	8·98
<i>Females.</i>						
0 to 15	3·70	·98	1·76	1·43	·93	·97
15 " 20	14·07	12·37	12·50	9·51	8·18	7·62
20 " 25	18·95	19·28	21·00	18·49	12·79	12·68
25 " 35	24·76	22·02	26·56	21·77	18·15	14·03
35 " 45	25·62	21·65	24·06	22·53	17·74	11·51
45 " 55	25·01	19·60	20·72	16·13	14·41	8·18
55 " 65	22·59	10·51	14·26	12·35	12·52	7·47
65 and upwards ...	18·03	12·61	13·12	8·25	8·18	5·29
All Ages	14·46	10·62	12·75	11·51	9·72	7·61

A comparison of the mortalities from pulmonary tuberculosis at the last two census periods shows that, except among boys and girls under 15, lower death rates obtained at each age group in 1910-12

than in 1900-2, and that the improvement was greater among males than females. An analysis of the figures discloses the fact that at certain ages the decrease was very slight in the female rate, while in the male rate it was very considerable at all ages over 15. Taking three important periods of life, 15-20, 20-25, and 25-35, it is found that between the last two censuses the rates for males declined by 26, 41, and 35 per cent. respectively, as compared with reductions of only 7, 1, and 22 per cent. in the rates for females. The heavy decline in the death rate from phthisis among men between 20 and 35 years of age is very striking, especially as it is co-incident with a reduction of 43 per cent. in the mortality rate from other diseases of the respiratory system. By combining the death rates from pulmonary tuberculosis, as shown above, with those from other forms of tubercular disease, given in a subsequent page, it appears that the section of the community represented by females aged 15 to 25 was the only one which experienced no relief from tubercular diseases in 1910-12 as compared with the preceding census period. It is probable that this result is partly due to the increased proportion of females engaged in manufacturing industries. Comparing the number of females aged 15 to 25 employed in factories with the total females of similar age in the community, it is found that between the 1901 census and that of 1911 there was an increase of 78 per cent. in the proportion exposed to the risk of tubercular infection involved in factory employment.

The distribution of tuberculous mortality shows that certain urban centres—particularly Bendigo and suburbs—furnish considerably higher death rates than the rural portions of the State. The tubercular death rate amongst miners is very considerably in excess of that among farmers and graziers, and, as mining occupations predominate in Bendigo and suburbs and farming and grazing occupations in the rural districts, the distribution of callings accounts in a large measure for the disparity in the mortality rates from this cause in the divisions of the State referred to. On the average of the past five years the tubercular death rate of Bendigo exceeded the rates of Ballarat and Melbourne by 39 and 74 per cent. respectively. The rates in these localities from phthisis and other tubercular diseases are given in the appended table

**Tubercular
death rates in
Melbourne,
Ballarat, and
Bendigo.**

for the periods 1891-1900, 1901-5, and 1906-10, and for each of the last nine years :—

DEATH RATES FROM TUBERCULAR DISEASES IN MELBOURNE, BALLARAT, AND BENDIGO, 1891 TO 1919.

Period.	Deaths per 10,000 of the Population.								
	Phthisis.			Other Tubercular Diseases.			All Tubercular Diseases.		
	Melbourne and Suburbs.	Ballarat and Suburbs.	Bendigo and Suburbs.	Melbourne and Suburbs.	Ballarat and Suburbs.	Bendigo and Suburbs.	Melbourne and Suburbs.	Ballarat and Suburbs.	Bendigo and Suburbs.
1891-1900 ..	16·7	17·1	24·1	4·7	3·5	4·0	21·4	20·6	28·1
1901-1905 ..	13·9	15·3	22·7	4·2	4·0	4·7	18·1	19·3	27·4
1906-1910 ..	10·8	11·5	21·2	3·0	2·1	2·0	13·8	13·6	23·2
1911 ..	9·9	9·4	19·5	2·6	3·3	2·5	12·5	12·7	22·0
1912 ..	10·0	10·0	17·7	2·0	1·7	2·1	12·0	11·7	19·8
1913 ..	8·8	10·9	20·0	2·2	2·8	2·3	11·0	13·7	22·3
1914 ..	8·9	11·2	11·8	2·0	·9	1·0	10·9	12·1	12·8
1915 ..	7·7	10·2	13·6	1·7	2·1	2·4	9·4	12·3	16·0
1916 ..	8·6	14·3	14·2	1·8	1·5	1·4	10·4	15·8	15·6
1917 ..	7·9	10·9	16·8	2·2	1·7	2·2	10·1	12·6	19·0
1918 ..	8·3	9·2	17·4	1·8	1·3	3·1	10·1	10·5	20·5
1919 ..	8·7	10·8	14·7	1·7	1·0	2·0	10·4	11·8	16·7

Prevalence of phthisis in different areas.

Relatively to population cases of pulmonary tuberculosis are fewer in country districts than in urban areas. The cases reported during each of the past six years in five divisions of the State, and their proportions to the popula-

tions of these divisions for the period 1910-18 and the year 1919 are given in the subjoined table :—

PHTHISIS IN DIFFERENT AREAS.

Area.	Reported Cases of Pulmonary Tuberculosis.						Annual Cases per 10,000 of Population.	
	1914.	1915.	1916.	1917.	1918.	1919.	1910-18.	1919.
Greater Melbourne ..	856	972	1,094	1,052	982	889	14.1	12.1
Ballarat and Suburbs	60	63	77	43	40	78	13.5	7.0
Bendigo and Suburbs	53	59	70	53	56	31	19.0	8.9
Geelong and Suburbs	18	20	37	14	22	24	8.0	7.0
Rest of the State ..	423	395	375	400	380	213	6.1	3.4
Whole State ..	1,410	1,509	1,653	1,562	1,480	1,185	10.7	8.1

Phthisis in metropolitan municipalities.

In the *Year-Book* for 1918-19 a table is given showing the reported cases of phthisis to every 10,000 of population of each metropolitan municipality. The rates are based on the reports received by the Public Health Department for the two and one-half years ended 30th June, 1911.

Other phases of phthisis.

The results of an investigation of 3,198 cases of pulmonary tuberculosis which occurred in the State during the two and a half years ended June, 1911, are given in the 1913-14 edition of this work. The matters dealt with were the sex and age of the patients, their usual place of residence, the chances of metropolitan and extra metropolitan residents contracting the disease at different ages, the time elapsing from the commencement of the complaint to the date on which medical advice is obtained, and the probability of recovering from the disease. In the issue referred to the medical and economic results of sanatorium treatment of tuberculosis of the lungs in Germany are shown for a series of years.

Tubercular diseases (phthisis excepted).

In 1919 there were in Victoria 185 deaths from tubercular diseases (excluding phthisis), which corresponded to a rate of 126 per million, as compared with rates of 144 in the previous year, 163 in 1917, 136 in 1916, 135 in 1915, 140 in 1914, 156 in 1913, 182 in 1908-12, and 379 in 1890-2. The

death rates for various age groups are shown in the following table for five census periods :—

DEATH RATES FROM TUBERCULAR DISEASES (PHTHISIS EXCEPTED) IN AGE GROUPS.

Age Group.	Deaths per 10,000 of each Sex.				
	1870-2.	1880-2.	1890-2.	1900-2.	1910-12.
<i>Males.</i>					
0-15 ...	7·53	7·98	10·36	5·64	2·75
15-20 ...	·64	·81	1·17	1·12	1·12
20-25 ...	1·80	1·23	·89	1·77	1·23
25-35 ...	·70	·66	·84	1·91	1·71
35-45 ...	·77	·88	·77	1·39	1·38
45-55 ...	·95	·85	·67	1·64	·82
55-65 ...	·88	1·07	·78	2·40	1·29
65 and over	1·09	2·36	·56	1·17	·59
All ages	3·46	3·55	4·02	2·99	1·70
<i>Females.</i>					
0-15 ...	5·89	7·28	8·43	5·33	2·12
15-20 ...	·82	1·30	1·27	1·95	2·34
20-25 ...	·52	·69	1·23	2·09	2·59
25-35 ..	·54	·41	·88	1·98	1·81
35-45 ...	1·04	·70	·42	1·77	1·33
45-55 ...	·17	·67	·34	1·01	·93
55-65 ...	·39	·62	·69	·71	1·11
65 and over	1·69	1·19	·64	·71	·29
All ages	3·10	3·39	3·58	2·91	1·76

As compared with the period 1900-2 the proportion of persons under 15 years of age who died from tubercular diseases (excluding

phthisis) during 1910-12 represented a decline of 51 per cent. for males and of 60 per cent. for females. The most important increase occurred in the rate for females aged 15-25.

The experience of recent years shows that the tubercular death rate in Victoria is but slightly affected by the arrival from beyond Australia of persons suffering from tubercular diseases. Only one of those who died in 1919 had been born outside and resident less than one year in Australia, and 11 had resided in the continent for a shorter period than five years.

The numbers dying from cancer in different age groups in each of the last five years are given below :—

DEATHS FROM CANCER AT VARIOUS AGES

Age Group.	Males.					Females.				
	1915.	1916.	1917.	1918.	1919.	1915.	1916.	1917.	1918.	1919.
0-15	6	5	6	2	6	3	6	10	4	4
15-25	3	5	2	..	5	6	4	6	3	4
25-35	16	15	8	7	8	17	18	24	16	13
35-45	28	25	24	35	31	67	57	84	68	42
45-55	86	121	116	108	106	126	164	121	145	160
55-65	144	184	204	240	182	151	162	168	190	202
65-75	166	163	140	159	173	136	154	154	130	134
75-85	86	94	94	91	79	81	93	101	93	84
85 and over ..	21	15	15	23	18	15	13	23	22	24
Total	556	627	609	665	608	602	671	691	671	667

The widely different social and economic effects produced by the prevalence of and deaths from the two important diseases—cancer and phthisis—are evidenced by the ages of their victims. For the year 1919 the average age of those who died from cancer was 62·3 years for males, and 60·9 years for females, whilst the corresponding averages for phthisis were 41·1 years for males and 34·3 years for females.

Deaths from cancer in 1919 numbered 1,275, and represented a death rate of 870 per million of the whole population, as compared with rates of 942 in the previous year, 925 in 1917, 921 in 1916, 812 in 1915, 830 in 1914, 838 in 1913, 833 in 1908-12, and 584 in 1890-2. In England in 1918, and in Scotland and Ireland in 1917 the deaths per million of population from this cause were 1,218, 1,140, and 885 respectively. Cancer rates,

computed in relation to the general population in earlier and later periods, are not fairly comparable owing to the changed age distribution of the people. A more accurate mortality rate is obtained by comparing the deaths with the number of persons in the community of the same sex in age groups. This has been done for four census periods, when the numbers of the people in age groups were accurately known, and the results are given in the appended table:—

DEATH RATES FROM CANCER IN AGE GROUPS.

Age Group.	Deaths from Cancer per 10,000 of each Sex.			
	1880-2.	1890-2.	1900-2.	1910-12.
<i>Males.</i>				
Under 5 ...	·29	·18	·30	·73
5 to 10 ...	·24	·10	·42	·25
10 " 15 ...	·18	·11	·20	·16
15 " 20 ...	·07	·17	·22	·15
20 " 25 ...	·25	·32	·33	·71
25 " 35 ...	·80	·81	1·26	·96
35 " 45 ...	4·12	4·29	3·69	3·16
45 " 55 ...	10·16	14·83	14·14	16·03
55 " 65 ...	22·01	31·92	36·00	36·36
65 " 75 ...	34·55	52·75	59·04	74·15
75 and over	45·12	58·55	74·04	88·40
All ages	4·29	6·16	7·52	8·50
<i>Females.</i>				
Under 5 ...	·12	·09	·26	·19
5 to 10 ...	·12	·10	·04	·10
10 " 15 ...	·06	·06	—	·27
15 " 20 ...	·26	·12	·28	·44
20 " 25 ...	·39	·22	·23	·41
25 " 35 ...	2·65	1·68	1·61	1·39
35 " 45 ...	7·32	7·43	6·05	7·26
45 " 55 ...	15·07	18·00	18·13	17·87
55 " 65 ...	29·35	31·79	33·05	38·03
65 " 75 ...	32·68	53·96	51·18	61·66
75 and over	27·56	49·55	62·70	86·19
All ages	4·27	5·57	6·64	8·76

Deaths from cancer occur at all age periods, but the rates in the foregoing table show that it is essentially a disease of later life, increasing rapidly in the groups past middle age, and reaching a maximum mortality rate in the oldest age group. A comparison of the figures for the last two census periods, which would not be appreciably affected by differences in the diagnosis of the disease, shows that at ages under 45 an increase occurred in the rate for females, and a slight reduction in that for males. At the next age period, 45-55, the male rate increased by nearly 13 per cent., while the female rate declined very slightly. At the period, 55-65, the mortality rate for men remained

almost stationary, but that for women exhibited a very marked increase. Among both males and females aged 65 and upwards the death rate was considerably heavier in 1910-12 than in 1900-2. From the figures for the two periods mentioned it would appear that there was a slight but definite increase in the death rate from cancer among persons under 65, and a large increase among persons over that age and, further, that on the whole the increase was much greater among females than males.

Seat of
cancer.

The following table shows the seat of cancer in persons who died from this disease in 1919 :—

SEAT OF CANCER.

Seat of Disease.	Males.	Females.	Total.
Cancer of the buccal cavity (mouth, &c.) ..	73	10	83
„ the stomach and liver	253	195	448
„ the peritoneum, the intestines, and the rectum	90	89	169
„ the female genital organs ... ..	...	109	109
„ the breast ... ..	...	115	115
„ the skin	36	17	53
„ other and unspecified organs	166	132	298
Total Deaths	608	667	1,275

Thirty-five per cent. of the persons who died from cancer were affected in the stomach or liver. Of the total females who died from the disease one-third were affected in the genital organs or the breast.

During the year 1919, the deaths of 727 men and 859 women aged 65 years and over were ascribed to senile decay. The deaths at these ages from all causes during the year numbered 5,751—2,985 of men and 2,766 of women. It is thus seen that 27·6 per cent. of the deaths of persons aged 65 years and upwards were due to senile decay. The mortality rates of elderly persons in several age groups have been computed for the period 1910-12, when the numbers of persons within those groups were accurately known. These show that of every 100 persons in the respective age groups there died within a year, from all causes, 4·21 aged 65 to 70, 6·63 aged 70 to 75, 10·71 aged 75 to 80, 16·36 aged 80 to 85, and 27·30 aged 85 and upwards.

Accidental
violence.

Death rates from accidental violence have been lower in late years than in earlier periods, a result that is chiefly due to the lighter mortality rate from accidental drowning,

the smaller proportion of the population engaged in country occupations, which are generally of a more hazardous nature than those in towns, and the increasing proportion of females in the community, In 1919 there were 475 male and 146 female deaths attributed to accidents and negligence, which represented a rate of 424 per million of the population. This proportion was 6 per cent. below the average rate—449—for the previous five years, and nearly 48 per cent. below the rate—811—for 1890-2. The deaths from various accidents in 1919 are given in the appended table :—

DEATHS FROM ACCIDENTAL VIOLENCE, 1919.

Nature or Place of Accident.	Males.	Females.	Total.
Poisoning by Food	1	5	6
Snake Bite .. .. .	..	1	1
Other Acute Poisonings	6	5	11
Burns (including Conflagrations)	23	24	47
Absorption of Poisonous Gases	10	3	13
Suffocation in bed (infants)	4	4	8
Drowning	92	31	123
Firearms	29	2	31
Falls	42	6	48
In Mines and Quarries	7	..	7
Machines	4	..	4
Vehicular Accidents—			
On Railways	46	7	53
Motor Car	28	11	39
Motor Cycle	12	1	13
Motor Lorry	1	..	1
Bicycle	4	..	4
Tram Car	12	8	20
Vehicle drawn by Horses	18	2	20
Vehicle, Undefined	6	..	6
Injuries by Animals	8	..	8
Effects of Heat	7	6	13
Excessive Cold .. .. .	..	2	2
Electricity	1	..	1
Lightning	1	1	2
Fractures, Unspecified	42	15	57
Other Violence	71	12	83
Total	475	146	621

On the average of the past three years the female mortality rate from accidents was about one-third of the rate for males.

Fatal accidents
among males
at different
ages.

The mortality rate from accidents is only one-half as great among males aged 15 to 45 as among men over that age. The deaths per 10,000 males at certain ages from

drowning, sunstroke, and other accidents for the period 1909-13 were as follows :—

DEATH RATES FROM ACCIDENT—MALES, 1909-13.

	Accidental Deaths per 10,000 Males Aged—							
	15-20.	20-25.	25-35.	35-45.	45-55.	55-65.	65 and over.	15 and upwards.
Drowning ..	1·74	1·19	1·15	1·40	1·89	2·57	3·64	1·72
Sunstroke ..	..	..	·08	·10	·27	·18	·96	·16
Other Accidents ..	3·68	5·19	4·68	5·90	7·51	10·06	16·54	6·56
Total Accidents ..	5·42	6·38	5·91	7·40	9·67	12·81	21·14	8·44

For men aged 20 to 35 the death rate from accidental violence is less than one-third of that for men over age 65 and slightly less than one-half of the rate for those aged 55 to 65. The death rates in the above table agree fairly closely with English experience, which shows that the annual deaths from accidents per 10,000 males were 5·33 at ages 15-20, 5·71 at 20-25, 6·64 at 25-35, 8·62 at 35-45, 11·12 at 45-55, 13·99 at 55-65, and 18·85 at 65 and upwards.

Occupations of men dying from accidents.

During the year 1919, 344 males aged seventeen years and upwards died from the results of accidents. The numbers for the different occupations were as follows :—

Occupation.	Deaths from Accidents, 1919.	Occupation.	Deaths from Accidents, 1919.
Labourer (undefined) ..	64	Manager	3
Farmer, grazier	57	Salesman	3
Railway employee	23	Bootmaker	2
Soldier	20	Coachpainter	2
Carter, driver, carrier ..	16	Cook	2
Miner	14	Dealer	2
Engineer	10	Drover	2
Carpenter	8	Hairdresser	2
Butcher	7	Maltster	2
Horse-trainer, groom	6	Municipal employee	2
Wharf labourer, stevedore ..	6	Orchardist	2
Clerk	6	Plasterer	2
Agent	4	Sawyer	2
Builder, contractor	4	Seaman	2
Electrician	4	Ship's fireman	2
Gardener	4	Others (specified)	25
Engine-driver	4	Unspecified	23
Student	4		
Grocer	3	Total	344

Of the above 344 deaths 55 were due to drowning.

Suicide. In the year 1919, 100 males and 30 females took their own lives. The deaths represented a rate of 89 per million of the population as compared with rates of 72 in the preceding year, 88 in 1917, 83 in 1916, 105 in 1915, 90 in 1914, 103 in 1913, 102 in 1908-12, and 109 in 1890-2. A much lower rate from suicide obtains among females than males, the rate for the former being about one-third of that for the latter on the average of the past five years.

Homicide. The deaths ascribed to homicide in 1919 numbered 26, of which 10 were of males and 16 of females. These represented a rate of 18 per million of the population as against rates of 13 in 1918 and 1917, 14 in 1916, 17 in 1915, 16 in 1914, 18 in 1913, and 19 in 1908-12.

Deaths of married women in childbed. The death rate of women in childbed varies considerably at different ages, and is less at younger than at older age periods. The number of deaths of married mothers in childbed, and the death rates for various age groups are shown for the decade 1906-15 and the year 1919 in the following table:—

DEATH RATES OF MARRIED MOTHERS IN CHILDBED IN AGE GROUPS, 1906-1915 AND 1919.

Age Group.	Married Mothers.			
	Deaths.		Deaths per 1,000 Confinements.	
	1906-15.	1919.	1906-15.	1919.
Under 20 years	23	1	2·71	1·52
20 to 25 „	184	12	2·85	2·27
25 „ 30 „	326	30	3·60	3·29
30 „ 35 „	334	34	4·59	4·47
35 „ 40 „	346	36	6·86	7·44
40 years and over	156	11	6·90	5·82

The experience of the ten years 1906-15 shows that for the age period 35 years and upwards the deaths of mothers in childbed were 69 per 10,000 as against 37 per 10,000 for those under 35 years of age. For the same term of years the number of deaths per 1,000 married

women of all ages in first confinements was 5·57, as against an average of 4·04 for other confinements.

The death rate of women in childbed is usually ascertained by comparing the number of deaths of parturient women with the total number of births. The proportions for each of the last four years, and the averages of previous periods back to 1871 are given below :—

DEATHS OF MOTHERS (MARRIED AND SINGLE) TO EVERY 10,000 CHILDREN BORN ALIVE.

Period.	Number of Mothers who Died Annually of—			Deaths of Mothers to every 10,000 Children Born Alive.
	Puerperal Diseases or Accidents. (Excluding Septicæmia.)	Puerperal Septicæmia.	Total.	
1871–1880 ..	127	46	173	64·38
1881–1890 ..	121	64	185	59·19
1891–1900 ..	117	66	183	56·01
1901–1905 ..	126	58	184	60·92
1906–1910 ..	101	46	147	47·17
1911–1915 ..	96	58	154	43·55
1916 ..	75	55	130	37·97
1917 ..	89	45	134	40·56
1918 ..	64	43	107	33·86
1919 ..	95	39	134	42·38

In recent periods a marked reduction has taken place in the death rate of women in childbed. The deaths of mothers per 10,000 children born alive were 38·7 in 1916–19 as compared with 43·5 in 1911–15, 47·2 in 1906–10, and 60·9 in 1901–5.

In 1919 there were 39 deaths of married and unmarried mothers from puerperal septicæmia, which corresponded to a death rate of 12·3 per 10,000 births, as against 13·6 in 1918 and 1917, 16·1 in 1916, 11·4 in 1915, 16·8 in 1914, 18·1 in 1913, 16·0 in 1908–12, and 18·1 in 1901–7.

Puerperal septicæmia.

NATURAL INCREASE.

Natural increase per 1,000 of population in Australasia.

The natural increase, *i.e.*, the excess of births over deaths, per 1,000 of the population, in the various Australian States and New Zealand, for the periods 1902-6 and 1907-11 and for each of the last eight years, is shown in the following table :—

NATURAL INCREASE PER 1,000 OF THE POPULATION,
AUSTRALIAN STATES AND NEW ZEALAND.

Period.	Victoria.	New South Wales.	Queensland.	South Australia.	Western Australia.	Tasmania.	Australia.	New Zealand.
1902-6	12·30	15·76	15·41	13·28	18·04	18·12	14·68	16·94
1907-11	13·05	17·45	17·03	15·54	18·13	18·85	16·01	17·07
1912	14·20	19·04	18·74	18·37	17·79	19·80	17·42	17·61
1913	14·71	17·90	19·87	18·30	20·04	19·16	17·48	16·67
1914	13·85	18·80	19·49	18·62	19·01	20·66	17·52	16·68
1915	13·45	17·81	18·35	16·14	18·69	19·21	16·57	16·27
1916	12·60	17·26	16·67	15·61	17·41	18·09	15·74	16·29
1917	13·14	18·46	19·42	16·11	16·57	18·14	16·70	16·08
1918	11·59	16·69	18·01	15·83	13·73	17·07	15·16	8·60
1919	8·36	11·27	13·80	12·26	10·34	14·76	10·96	12·03
Mean 1915-19	11·83	16·30	17·25	15·19	15·35	17·45	15·03	13·85

The smallness of the natural increase in 1919 was very largely due to the heavy mortality rate from influenza. The mean increase in the Australian States for the period 1915-19 was 15·03 per 1,000 of population, which is probably greater than will prevail when the age constitution of the people becomes similar to that of old settled countries. At present the proportion of elderly people is smaller than in those countries and, partly as a consequence of this, the death rate is lower. It has been shown in a previous paragraph that the Victorian death rates at nearly all periods of life are below those of England and Wales. The Australian annual rate of increase due to excess of births over deaths—15·03—would enable a population to double itself in slightly more than 46 years, whilst at the Victorian rate of 11·83 per 1,000 of population a period of 59 years would be required. In England and Wales in 1919 the excess in births over deaths was 4·7 per 1000 of population.