VITAL STATISTICS.

Law as to marriages in Victoria.

Marriages in Victoria can only be celebrated by a minister of religion whose name is registered in the office of the Government Statist, by the Government Statist, or the Assistant Government Statist, or by a duly appointed registrar of marriages. It is essential that every marriage be preceded by the parties making a declaration as to age and the absence of any legal impediment, and by three days' notice, except in cases of emergency, also that two witnesses of full age be present at the ceremony; but there is no residential qualification. To be married by a minister, one of the parties must give him at least three clear days' written notice, or—in cases of emergency—a written permission obtained from any Justice, dispensing with such notice; and the marriage may then be solemnized according to the rites of the religious denomination to which the minister belongs. To be married by a Registrar of Marriages, the parties to the marriage must give written notice, which has to be posted in, and a copy thereof at the outer door of, his office at least three clear days before the marriage. This can only take place in his office, with open doors, and between the hours of 8 a.m. and 4 p.m. No fee is payable for the celebration of a marriage before a registrar. In the event of a minor (not being a widower or widow), wishing to marry, there must be obtained the written consent of the father or a guardian appointed by him; or, in the case of his absence, death, desertion, judicial separation, or divorce, of the mother, if the minor is under her care; and, in other cases, of a police magistrate, or a guardian of minors appointed by the Chief Justice. If the minor is a ward of the Neglected Children's or Reformatory Schools' Department, the Departmental Secretary's consent is the authority. In order to guard against the celebration of marriages by undesirable persons,

the present law provides that no person shall be registered as a minister of religion unless he ordinarily officiates as such in one of the recognised religious denominations, is nominated by the recognised head of the denomination in Victoria, or, if there be no such head, then by at least two registered ministers; and unless he satisfies the Government Statist that he is a fit and proper person to celebrate marriages. The Governor in Council may prohibit from celebrating marriages any minister who is proved guilty of any offence, misconduct, or impropriety unworthy of his calling, or who makes a business of celebrating marriages for the purpose of profit or gain, irrespective of carrying out the ordinary duties of a minister; and the Government Statist may, at the request of the head of a denomination, cancel the registration of any minister of the same denomination who ceases to officiate or otherwise loses his qualifications. Any clergyman or person officiating as such who celebrates a marriage without being duly registered, or any person who obtains registration by untruly representing himself as an officiating minister, or who personates a registrar, shall be guilty of a misdemeanour, punishable by a penalty not exceeding £500, or by imprisonment not exceeding five years, or by both; but, if the omission were accidental, the penalty is reduced to a maximum of £20 on summary conviction. No marriage shall be invalid by reason of its having been celebrated by an unqualified person if either of the parties shall have believed at the time that such person was qualified, or by reason of any formal defect or irregularity. Marriage with a deceased wife's sister was legalized in Victoria in 1873; but there is no provision to validate the marriage of a woman with a deceased husband's brother.

Marriages of Jews and Quakers are exempted from the foregoing provisions, and are deemed legal and valid if celebrated according to their respective usages.

Registration. 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 *primâ 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. The indexes in use since the introduction of civil registration in 1853 contained up to the end of 1912 over 3,243,000 names, of which 1,672,000 relate to births, 786,000 to deaths, and 785,000 to marriages. The indexes are at present growing at the rate of 76,000 names per annum. For the registration of births and deaths, the State is divided into about 540 registration districts, for each of which a registrar is appointed, who (if not a public servant) is paid by fees at the rate of 2s. 6d. per entry, but is not prevented from following his or her own private business; whilst the marriages are recorded by the clergyman or registrar of marriages who performs the ceremony. Registrations of marriages are made in triplicate, and of births and deaths in duplicate—each copy bearing the original signatures of the parties married and witnesses (in case of a marriage), or of the informant (in case of a birth or death), and of the minister or registrar. One copy is retained by the registrar or minister; one is forwarded to the Government Statist—to be kept as a permanent record; and the third (in case of marriage only) is given to one of the parties married. Births must be registered within 60 days by the father or mother or the occupier of the house where the birth occurred, or by some person authorized by one of these. A person who fails in his duty to register within 60 days is liable to a penalty of £10, although he still may register within twelve months on payment of a fee of 5s. To insure registration of all births, parents and the occupiers of houses where births occur are required to, and doctors and nurses may, and are expected to, report cases to the registrars. After twelve months, registration can only be effected after proper legal authority has been obtained, and on payment of a fee of 10s. Deaths must, under a penalty of £10, be notified within seven days to the local registrar by the father or mother or the occupier of the house where the death occurred, or the doctor or nurse, and must be registered within twenty-one days by some person present at death or in attendance during the last illness, or in default of such persons by the occupier of the house where the death occurred, or by some person authorized by one of these. An exception is made in regard to sudden deaths, and deaths of boarded-out children under the age of five years, which should be at once reported to the Coroner, and can only be registered by him or on his authority. This exception does not apply to wards of the State or infants retained by or received into any approved public charitable institution. In addition to ordinary registration, every birth, or death under the age of five, of an illegitimate child must be notified in writing by the occupier of the house where the event

occurred within three days to the local registrar, if in any city, town, or borough, or within seven days if elsewhere, provided that if the mother is the occupier, the period for notification is extended to three weeks. Offenders against this provision are liable to imprisonment for six months, or to a penalty of £25. Illegitimate children may be legitimized at any time after the marriage of the parents on the application of the father to the Government Statist or to any Registrar of Births and Deaths, and on the payment of fees varying from 10s. to 20s.—provided that there was at the time of the birth no impediment to the marriage. 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, or 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.

MARRIAGES.

Marriages. Marriages in Victoria in 1913 numbered 11,324, which was 414 below the total for the preceding year, but 1,390 above the average of the period 1907–11. The figures for each of the last twenty years are as follows:—

MARRIAGES IN EACH YEAR, 1894 TO 1913.

Year.	No. of Marriages.	Year.	No. of Marriages.
1894 ..	7,029	1904 ..	8,210
1895 ..	7,181	1905 ..	8,774
1896 ..	7,625	1906 ..	8,930
1897 ..	7,568	1907 ..	9,575
1898 ..	7,620	1908 ..	9,334
1899 ..	8,140	1909 ..	9,431
1900 ..	8,308	1910 ..	10,240
1901 ..	8,406	1911 ..	11,088
1902 ..	8,477	1912 ..	11,738
1903 ..	7,605	1913 ..	11,324

There was an annual increase in the number of marriages for sixteen of the past twenty years. During the past decade the number of marriages increased by 49 per cent. The substantial nature of the improvement, especially in recent years, is indicated by the fact that after allowing for the increase in population 11,340 more persons were married in the past five years than in the period 1904–8. As the tendency to marry is necessarily influenced by the view taken of

present and future prospects, the relatively large number of marriages in each of the past four years is an indication of the general prosperity of that period.

Marriage rates. 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, 1904 TO 1913.

Year.	Marriage Rate.	Year.	Marriage Rate.
1904 ..	6·73	1909 ..	7·36
1905 ..	7·16	1910 ..	7·83
1906 ..	7·21	1911 ..	8·40
1907 ..	7·64	1912 ..	8·65
1908 ..	7·37	1913 ..	8·13

The marriage rate was considerably lower in 1913 than in the previous year, when it was the highest for fifty-two years, and it was also below the rate prevailing in 1911. Practically the whole of the reduction was due to the marked fall in the marrying rate among metropolitan residents.

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 that the crude marriage rate is materially affected by the proportion of marriageable persons in the community. This is evidenced by the fact that 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 are now very much smaller than at any earlier period, except 1901, 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.

Marriage rate in age groups.

To further investigate this subject, 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 :—

PROPORTION OF MARRIAGES PER 1,000 MARRIAGEABLE MEN AND WOMEN AT EACH AGE.

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 at each age (except 20–25) was the highest experienced, and the marriages to marriageable women were more numerous at every age 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 105, 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 follows that the rate for each of the two former sections is 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.

Ages of bridegrooms and brides.

The ages of bridegrooms and brides who were married in 1913 are shown in combination for various groups in the following table:—

AGES OF BRIDEGROOMS AND BRIDES IN COMBINATION IN VICTORIA, 1913.

Ages of Bridegrooms.	Ages of Brides.																		Total Bridegrooms.
	14.	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.	
17	...	...	2	2	3	3	...	2	...	...	...	...	...	...	...	...	...	...	12
18	...	...	3	3	9	7	4	3	1	1	...	...	...	...	...	...	...	...	31
19	...	1	3	19	29	20	11	18	2	1	..	...	...	...	...	...	...	...	104
20	...	1	3	15	30	44	40	71	9	...	...	...	...	...	...	...	...	...	213
21 to 25	1	3	25	82	189	286	314	1,724	454	44	9	4	1	1	...	...	...	...	3,137
25 to 30	1	2	6	29	92	139	197	1,664	1,519	273	62	16	1	3	1	...	...	...	4,005
30 to 35	...	...	1	7	26	27	45	479	672	387	94	16	14	2	...	...	...	...	1,770
35 to 40	...	1	...	1	8	12	16	145	293	258	136	41	14	1	1	...	...	...	927
40 to 45	...	...	...	4	2	3	2	43	94	112	100	73	31	11	1	1	...	...	477
45 to 50	...	...	...	...	...	4	3	21	37	48	79	59	34	9	2	1	...	...	297
50 to 55	...	...	...	1	...	...	1	5	14	24	27	27	35	18	6	2	...	...	160
55 to 60	..	...	...	...	...	...	...	5	9	5	9	17	18	12	9	...	1	...	85
60 to 65	...	...	1	...	...	...	...	1	2	2	5	5	8	2	6	4	4	...	40
65 to 70	...	...	...		...	...	...	...	1	2	3	2	5	2	6	5	4	2	32
70 to 75	...	...	...	...	...	...	...	...	2	...	2	2	2	1	4	3	1	2	19
75 and over	...	...	...	..	...	...	...	...	...	...	1	1	4	...	4	2	1	2	15
Total Brides	2	8	44	163	388	545	633	4,181	3,109	1,157	527	263	167	62	40	18	11	6	11,324

The ages of bridegrooms ranged from 17 to 88 years, and those of brides from 14 to 76. Although age inequalities among contracting parties were relatively few, they were striking in degree. Thus a man between

60 and 65 married a girl of 16, while four women between 40 and 45 were married to men who were their juniors by 20 years. The great majority of the parties were, however, of suitable ages. Of every 1,000 men married during the past three years, 704 were older and 188 younger than their brides, and 108 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 following table for the averages of the periods 1881–90 and 1901–10, also for the year 1913 :—

PROPORTION OF MALES AND FEMALES MARRYING AT DIFFERENT AGES, 1881–90, 1901–10, AND 1913.

Age Group.	Proportion per 1,000 of total.					
	Bridegrooms.			Brides.		
	1881–90.	1901–10.	1913.	1881–90.	1901–10.	1913.
Under 15	...	...	...	·15	·14	·18
15 to 16	...	...	...	1·17	1·12	·71
16 to 17	·03	·09	...	6·53	5·16	3·88
17 to 18	·29	·34	1·05	20·32	15·58	14·39
18 to 19	1·46	2·09	2·74	42·94	33·31	34·26
19 to 20	5·62	7·02	9·18	65·03	48·67	48·13
20 to 21	15·19	13·67	18·81	73·84	59·41	55·90
21 to 25	321·02	258·64	277·11	432·34	380·91	369·21
25 to 30	365·48	357·07	353·59	223·83	267·78	274·55
30 to 35	134·57	177·13	156·31	62·07	98·54	102·17
35 to 40	58·29	84·06	81·86	29·53	44·37	46·54
40 to 45	32·54	40·87	42·13	17·10	21·19	23·23
45 to 50	24·77	24·05	26·23	12·23	11·00	14·75
50 to 55	18·40	13·33	14·12	6·74	6·29	5·48
55 to 60	11·49	8·05	7·51	3·40	3·13	3·53
60 and over	10·85	13·59	9·36	2·78	3·40	3·09
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 years. Of every 1,000 women who were married during 1913 527 were under 25 years, and 275 were aged 25–30, as against 642 and 224 at corresponding ages in 1881–1890. As the fertility of married women 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 1881–1890.

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 1913 the mean age at marriage of bachelors, 28·44—with that of divorced men and of widowers—40·49 and 46·08 respectively. The average age of spinsters marrying was 25·55, as against 35·04 for divorced women and 41·16 for widows. Although the ratio of re-marriages has declined, the average age of men marrying women under 45 and of their brides is greater than in the period 1880–4. The average age at marriage 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	25·77	29·76
1906	25·97	29·90
1907	25·82	29·78
1908	25·85	29·77
1909	25·99	29·78
1910	25·88	29·58
1911	25·81	29·46
1912	25·75	29·17
1913	25·66	29·01

The mean age of women under 45 who married in 1913 was below the average of the previous five years, but it was greater by about two years than that of women who married thirty years ago. For Victoria in 1913 the mean marrying age of all brides was 26·37, as compared with 26·80 in England and Wales and 26·39 in New Zealand. The mean ages of all bridegrooms in the same countries were 29·64, 29·03, and 29·95 years respectively.

Marriage rates in Australian States and New Zealand.

The marriages in Australia for 1913 numbered 41,605, as against 42,145 in the previous year, 39,458 in 1911, and 36,598 in 1910. Of the total, 11,324 took place in Victoria, 16,311 in New South Wales, 5,662 in Queensland, 4,094 in South Australia, 2,572 in Western Australia, 1,620 in Tasmania, 16 in the Northern Territory, and 6 in the Federal Capital Territory. In the following table are shown the marriage rates per

1,000 of the population in the Australian States and New Zealand for the period 1902–6 and for each of the last seven years :—

MARRIAGE RATES IN THE AUSTRALIAN STATES AND NEW ZEALAND.

Year.	Victoria.	New South Wales.	Queensland.	South Australia.	Western Australia.	Tasmania.	Australia.	New Zealand.
1902–6	6·92	7·33	6·15	6·73	9·02	7·58	7·11	8·26
1907 ..	7·64	7·84	7·58	7·94	8·02	7·91	7·78	8·91
1908 ..	7·37	7·97	7·22	7·84	7·50	7·74	7·64	8·82
1909 ..	7·36	8·21	7·96	8·30	7·54	8·13	7·86	8·33
1910 ..	7·83	8·81	8·05	9·21	7·75	7·98	8·37	8·30
1911 ..	8·40	9·18	8·41	9·82	8·45	7·77	8·78	8·67
1912 ..	8·65	9·58	8·91	9·62	8·37	7·86	9·07	8·85
1913 ..	8·13	9·01	8·68	9·44	8·19	8·27	8·67	8·25
Average 1909–13	8·07	8·96	8·40	9·28	8·06	8·00	8·55	8·48

In all the States, except Tasmania, lower marriage rates prevailed in 1913 than in the previous year. By comparison with 1902–6, the rates in 1909–13 increased by 16·6 per cent. in Victoria, 22·2 in New South Wales, 36·6 in Queensland, 37·9 in South Australia, 5·5 in Tasmania, and 20·3 per cent. in the Commonwealth.

Marriage rates in various countries.

The average marriage rate in Australia—8·55—for the period 1909–13 was higher than in sixteen of the twenty-one countries shown in the following table for the latest five years for which this information is available :—

MARRIAGES PER 1,000 OF THE POPULATION IN VARIOUS COUNTRIES.

Country.	Marriage Rate.	Country.	Marriage Rate.
Ontario, Province of ...	9·9	England and Wales ...	7·6
Servia	9·9	Austria	7·6
Roumania	9·8	Switzerland	7·5
Bulgaria	9·7	Denmark	7·4
Hungary	9·2	The Netherlands ...	7·2
Japan	8·3	Spain	7·1
Russia	8·3	Scotland	6·7
Belgium	7·9	Norway	6·1
France	7·9	Sweden	6·0
German Empire ...	7·9	Ireland	5·2
Italy	7·9		

Marriages to marriageable males in Australasia.

For reasons already given, a better and more reliable index of the frequency of marriage in the different States is a comparison of the marriages with the number of marriageable males, aged 21 and upwards. This is shown in

the following statement for the period 1900–2 and for the year 1911 :—

MARRIAGES PER 1,000 MARRIAGEABLE MALES IN AUSTRALASIA.

—	1900–2.	1911.	Increase per cent. in 1911.
Victoria	56·0	67·3	20·2
New South Wales... ...	58·3	68·0	16·6
Queensland	41·6	54·9	32·0
South Australia	56·8	81·3	43·1
Western Australia ..	41·9	45·8	9·3
Tasmania	65·7	69·3	5·5
Australia	55·7	64·7	16·0
New Zealand	55·1	58·8	6·7

In each State the proportion of marriageable men who married during the year 1911 was greater than that for the period 1900–2, the excess amounting to 43 per cent. in South Australia, 32 in Queensland, 20 in Victoria, nearly 17 in New South Wales, 9 in Western Australia, and 5½ in Tasmania. The comparatively low marriage rates for men in Western Australia and Queensland were due to the unequal distribution of marriageable men and women. At the 1911 census, to every 1,000 unmarried and widowed women aged 18 to 50, the numbers of bachelors and widowers between 21 and 55 years of age in each State and Australia were as follows :—Victoria, 853 ; New South Wales, 1,116 ; Queensland, 1,449 ; South Australia, 946 ; Western Australia, 2,265 ; Tasmania, 950 ; and Australia, 1,096.

Marriage rates in districts.

The following table gives the numbers and rates per 1,000 of the population of brides and of bridegrooms—whose usual place of residence (if in Victoria) was in Melbourne and suburbs, other urban districts, or rural districts respectively, or was outside the State—during the year 1913 :—

USUAL RESIDENCE OF BRIDES AND BRIDEGROOMS, 1913.

Usual Residence of Bridegrooms.	Usual Residence of Brides.				Total Bridegrooms.	Proportion of Bridegrooms per 1,000 of Population.
	Metropolitan.	Other Urban.	Rural.	Outside Victoria.		
In Victoria—						
Metropolitan Districts	5,166	185	334	72	5,757	9·0
Other Urban Districts	146	1,129	217	23	1,515	6·9
Rural Districts	501	313	2,517	51	3,382	6·3
Outside Victoria ..	287	90	142	151	670	..
Total Brides	6,100	1,717	3,210	297	11,324	..
Proportion of Brides per 1,000 of Population ..	9·5	7·8	6·0	..	..	..

Of the 519 men residing outside the State who married Victorian women, 259 were residents of New South Wales, 27 of Queensland, 62 of South Australia, 40 of Western Australia, 40 of Tasmania, 26 of New Zealand, 13 of the United Kingdom, 3 of Fiji, 3 of Germany, 5 of the United States, and 7 of other countries, while 34 were seafaring men.

Marriages to marriageable persons in metropolis and country.

The extent to which the higher 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 the reverse is the case in the remainder of the State. 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.

Marrying age according to occupation.

In order to obtain information regarding the influence of occupation upon the marrying age, the following table has been constructed. This has been based upon 42,764 marriages

for the period 1907–11, in connexion with which the records gave definite occupations :—

AGE AT MARRIAGE ACCORDING TO OCCUPATION.

Occupation.	Number Married.	Average Age at Marriage.	Percentage Marrying at Age Group.			
			Under 25.	25 to 35.	35 to 45.	45 and over.
Hairdresser, Tobacconist	334	27·65	42·81	45·52	9·28	2·39
Ironworker, Foundry Employé, &c.	824	27·78	42·72	45·76	7·76	3·76
Carter, Driver, Carrier ...	2,139	28·04	43·43	42·92	9·54	4·11
Blacksmith	876	28·37	38·47	47·26	10·50	3·77
Salesman, Storeman ...	1,147	28·86	30·34	56·06	10·81	2·79
Baker, Grocer, Butcher, Fruiterer	2,680	29·01	33·62	51·23	10·78	4·37
Jockey, Trainer ...	181	29·12	35·91	46·41	14·36	3·32
Labourer	7,172	29·28	35·11	46·79	12·90	5·20
Bootmaker	754	29·34	39·39	43·90	9·15	7·56
Coachbuilder	342	29·37	30·99	49·42	15·79	3·80
Miner	2,269	29·57	35·17	45·53	13·84	5·46
Carpenter, Bricklayer, Mason, &c.	2,772	29·64	35·82	44·16	13·31	6·71
Mechanical Engineer, Fitter, Engine-driver ...	1,739	29·79	28·23	54·46	11·79	5·52
Printer, Stationer, Newsagent	695	29·89	30·06	49·68	15·53	4·73
Railway, Tramway Employé	1,331	29·86	27·88	53.12	14·34	4·66
Constable, Warder, Soldier	410	29·82	26·10	54·39	14·39	5·12
Tailor	754	29·94	28·91	52·79	11·67	6·63
Clerk	2,290	30·24	23·05	57·86	14·50	4·59
Cook, Steward, Waiter ...	352	30·26	30·68	48·86	12·79	7·67
School Teacher ...	339	31·67	15·04	63·72	12·68	8·56
Market Gardener ...	473	31·83	20·51	53·91	16·28	9·30
Civil Servant	539	32·11	24·30	43·97	23·19	8·54
Farmer, Dairy-farmer, Grazier, &c.	8,370	32·25	15·90	55·77	20·83	7·50
Commercial Traveller, Agent	1,316	32·32	14·74	57·68	18·69	8·89
Sailor, Mariner ...	395	32·50	24·30	48·86	17·22	9·62
Professional	1,207	32·69	13·67	58·99	17·56	9·78
Builder, Contractor ...	630	33·08	19·20	48·41	20·17	12·22
Brewer, Cordial-maker, Hotel-keeper ...	434	33·10	18·89	47·24	21·43	12·44

An inspection of the table shows that wage-earners marry at an earlier age than persons working on their own account and employers of labour. It should be remembered, however, that the average age of the persons in the community who belong to the two last mentioned classes is higher than that of the wage-earners. It is further shown that some wage-earners, such as ironworkers, foundry employés, &c., carters, drivers, carriers, &c., and labourers, who generally receive

the highest wage of their occupation in comparatively early manhood, marry at an earlier age than those whose highest wage is reached at a later age, of whom clerks, civil servants, school teachers, mechanical engineers, fitters, &c., and railway employés may be taken as examples. This is emphasized by comparing the proportion of labourers marrying under 25 years of age, which was equal to 35·11 per cent., with that of school teachers (15·04), civil servants (24·30), and clerks (23·05) per cent. The group comprising farmers, dairy-farmers, graziers, &c., shows a late marrying age, and has, with three exceptions (professional, commercial travellers, and school teachers) the lowest proportion marrying at the earliest age division. The average age at marriage of this class is greater than that of hairdressers and tobacconists by 4·60 years; of ironworkers and foundry employés by 4·47; of carters, drivers, and carriers, by 4·21; of blacksmiths by 3·88; of grocers, bakers, butchers, &c., by 3·24; of labourers by 2·97; of miners by 2·68; and of carpenters, bricklayers, masons, &c., by 2·61 years. The high marrying age of farmers, dairy-farmers, graziers, &c., accounts to some extent for the low marriage and birth rates in the rural division of the State.

Birthplaces of persons marrying.

Marriage records show that of the persons married in Victoria during 1913, 87·9 per cent. were born in Australia, 9·6 per cent. were born in the United Kingdom, and only small proportions, amounting to 1·7 per cent. of the bridegrooms and ·7 per cent. of the brides, were natives of foreign countries. The numbers are shown in the following table for the years 1908 and 1913:—

BIRTHPLACES OF PERSONS MARRIED, 1908 AND 1913.

Where Born.	Bridegrooms.		Brides.	
	1908.	1913.	1908.	1913.
Australia	8,013	9,628	8,709	10,270
New Zealand	173	155	106	82
England and Wales ...	635	972	301	644
Scotland	154	213	68	141
Ireland	141	126	81	83
Other British Possessions ...	31	40	20	24
Germany	56	46	15	19
Russia	7	17	2	3
Italy	15	15	6	12
United States	24	30	6	14
Other Foreign Countries ...	85	82	20	32
Total	9,334	11,324	9,334	11,324

A striking feature of the figures is the relatively large increase in the number of English women and Scotch women entering into wedlock in Victoria. The numbers indicate that the migration of single women to this State is very frequently a preliminary step to early marriage.

Marriages in quarters. The experience of the period 1881–1912 showed that the Autumn quarter was the most frequently selected season for marrying. In 1913, however, a preference for marrying in the Spring was indicated by 26·62 per cent. of the total marriages having taken place in that period as compared with 26·00 in the Autumn, 24·30 in the Summer, and 23·08 in the Winter.

Former condition of persons married. The proportion of re-marriages has shown during the last forty-three years a continuous decline, owing to the decreasing ratio of persons who have become widowed at the younger and probable marrying ages, and also to the later marrying age of bachelors and spinsters in recent as compared with earlier periods. The following statement shows the percentages of persons in each conjugal condition who married in the periods mentioned :—

CONJUGAL CONDITION OF PERSONS MARRYING, 1871–1913.

Conjugal Condition.	Percentage of total Marriages.				
	1871–80.	1881–90.	1891–1900.	1901–10.	1913.
Bachelors and Spinsters	80·59	85·84	87·22	88·46	90·70
Bachelors and Widows	7·10	4·72	4·23	3·66	3·00
Widowers and Spinsters	7·75	6·17	6·07	5·70	4·60
Widowers and Widows	4·56	3·27	2·48	2·18	1·70

Of every 1,000 persons of each sex married in Victoria during last year, 63 were widowers and 47 were widows, as against 94 and 80 respectively during the decade 1881–90.

Divorced persons re-marrying. The number of divorced persons re-married during 1913 was 177, which was considerably below the number for the preceding year. Of the 107,642 persons married during the last five years, divorced persons numbered 802, or 1 in every 134 persons, as compared with 1 in every 783 in England and Wales in 1911. The following are the numbers of divorced persons who have re-married in Victoria since 1908 :—

DIVORCED PERSONS RE-MARRYING, 1909 TO 1913.

Year.	Males.	Females.	Total.
1909	49	63	112
1910	59	72	131
1911	66	105	171
1912	91	120	211
1913	78	99	177

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.

There has been a marked increase during the past six years in the proportion of bridegrooms under 21 years of age. Of every 1,000 men married in 1913, 32 were minors, as against 24 in 1907—an increase of 33 per cent. in the intervening period. The ratio of brides under 21 increased by only 2 per cent. between the years mentioned. The percentages for each State in 1913 were as follows :—

	Percentage under 21 years of age.	
	Bridegrooms.	Brides.
Victoria	3·18 ..	15·83
New South Wales ..	4·32 ..	21·54
Queensland	3·69 ..	22·62
South Australia	4·20 ..	18·73
Western Australia ..	2·45 ..	20·14
Tasmania	4·81 ..	25·06
Australia	3·80 ..	19·85

In Victoria the proportions of bridegrooms and brides under 21 are below those for the Commonwealth.

Marriages in religious denominations.

The numbers and proportions of marriages solemnized according to the rites of the principal religious denominations and those performed by registrars of marriages for the years 1912 and 1913 are shown in the following table :—

MARRIAGES IN VARIOUS DENOMINATIONS.

Denomination.	1912.		1913.	
	Number.	Percentage of Total Marriages.	Number.	Percentage of Total Marriages.
Church of England	3,184	27·13	3,179	28·07
Roman Catholic Church	1,975	16·83	1,922	16·97
Presbyterian Church	2,114	18·01	2,105	18·59
Methodist Church	1,735	14·77	1,633	14·42
Congregational Church	1,142	9·73	1,014	8·95
Baptist Church...	515	4·39	449	3·97
Lutheran Church	78	·67	71	·63
Independent Presbyterian Church	189	1·61	172	1·52
Church of Christ	270	2·30	257	2·27
Salvation Army	52	·44	47	·42
Jews	38	·32	43	·38
Other Sects	176	1·50	142	1·25
Registrars of Marriages... ...	270	2·30	290	2·56
Total	11,738	100·00	11,824	100·00

During recent periods there has been a marked increase in the proportion of marriages solemnized according to the rites of the Church of England. Marriages by Anglican clergymen amounted to 28·07 per cent. of the total for 1913 as compared with 25·44 for 1911 and 21·18 for 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.

Civil marriages. In 1913, 2·6 per cent. of the total marriages in Victoria were celebrated by lay registrars, as against 2·3 per cent. in the previous year, 2·6 in 1911, 1·6 per cent. in 1910, 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 of 160 per cent. shown by the rate for 1913 over that for 1909 was probably due to the provisions of the *Marriage Act* 1909 permitting the removal from the list of registered clergymen of the names of those who were making a business of celebrating marriages. The percentages of civil marriages in the Australian States, New Zealand, and the United Kingdom were as follows :—

CIVIL MARRIAGES.

Country.	Year.	Civil Marriages—per cent. of total.
England and Wales	1911	20·9
New Zealand...	1913	17·6
Western Australia	1913	13·4
Scotland	1910	7·1
Queensland	1913	4·5
South Australia	1913	4·3
Victoria	1913	2·6
New South Wales	1913	2·0
Ireland	1912	1·7
Tasmania	1913	1·0

The proportion of civil marriages in Victoria is smaller than in South Australia and Queensland, and only one-fifth of the proportion in Western Australia, about one-seventh of that in New Zealand, and one-eighth of that in England and Wales.

Registered clergymen. The ministers qualified by registration to celebrate marriages in Victoria, numbered 1,443 on 31st December, 1913. The numbers of these in each denomination (excepting

Jews and Quakers) and of the lay registrars of marriages were as follows :—

MINISTERS OF EACH DENOMINATION.

Denomination.	Number of Ministers.	Denomination.	Number of Ministers.
Church of England ..	369	Ballarat Town Mission..	1
Roman Catholic ..	293	Christian (Unattached)	1
Presbyterian	264	Free Christian ..	1
Methodist	254	Moravian	1
Congregational	63	Victorian Free Church	1
Baptist	77	New Church	1
Church of Christ ..	48	Unitarian	1
Lutheran	24	Greek Orthodox Church	1
Salvation Army.. ..	31		
Seventh Day Adventist ..	5	Total clergymen ..	1,443
Latter Day Saints ..	4	Lay Registrars of Marriages	21
Catholic Apostolic ..	2		
Australian Church ..	1	Grand Total ..	1,464

BIRTHS.

Number of births.

The number of births registered in Victoria during the year 1913 was 35,978, of which 18,436 were of males and 17,542 of females. This was 161 above the number recorded for the preceding year, and 4,278 higher than the average of the period 1907–11. Still-births, which are excluded from both births and deaths, numbered 1,137, and corresponded to a ratio of 3·2 per 100 infants born alive in 1913. The ratio for the metropolitan area was 3·6, as against 2·8 for the remainder of the State. There were 1,051 male to every 1,000 female births in 1913, as compared with 1,058 to every 1,000 on the average of the preceding five years. The figures for each year since 1893 are as follows :—

BIRTHS IN VICTORIA, 1894 TO 1913.

Year.	Males.	Females.	Total.	Year.	Males.	Females.	Total.
1894 ..	17,501	16,757	34,258	1904 ..	15,313	14,450	29,763
1895 ..	17,372	16,334	33,706	1905 ..	15,523	14,584	30,107
1896 ..	16,460	15,718	32,178	1906 ..	15,716	15,128	30,844
1897 ..	16,013	15,297	31,310	1907 ..	15,989	15,380	31,369
1898 ..	15,435	14,737	30,172	1908 ..	16,073	15,028	31,101
1899 ..	15,785	15,223	31,008	1909 ..	16,092	15,457	31,549
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

About two-thirds of the increase for 1912 was due to the fact that, after the Maternity Allowance Act came into force on the 10th October of that year, births were registered much sooner after their occurrence than was customary before the passing of that measure. As a result of the commencement of this practice there were more births registered in 1912 than occurred in that year. Allowing for this fact there were approximately 2,000 more births in 1913 than in the previous year.

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 1913 :—

BIRTH RATES IN VICTORIA PER 1,000 OF POPULATION, 1870 TO 1913.

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

The birth rate for 1913 was higher than that for 1911 and 1910. It was also higher than the rate for 1912 would have been had an adjustment been made to provide for the disturbing feature mentioned on the previous page. The varying proportions and age distributions of married women at reproductive ages in the population at different periods account in a measure for the reduction in the crude rate in the above table. The effect of these changes is shown on page 335.

Birth rates, Australian States and New Zealand.

The births in Australia for 1913 numbered 135,701, as against 133,270 in the previous year, 122,369 in 1911, 116,894 in 1910, and 114,070 in 1909. Of the total births 35,978 occurred in Victoria, 52,134 in New South Wales, 19,747 in Queensland, 12,627 in South Australia, 9,233 in Western Australia, 5,886 in Tasmania, 52 in the Northern Territory, and 44 in the Federal Capital Territory. The following table gives the birth rates, calculated in the ordinary way, per thousand of the population in the Australian States and New Zealand for 1891, 1901, and each of the last five years :—

BIRTH RATES IN THE AUSTRALIAN STATES AND NEW ZEALAND.

Year.	Victoria.	New South Wales.	Queensland.	South Australia.	Western Australia.	Tasmania.	Australia.	New Zealand.
1891 ..	33·57	34·50	36·35	33·92	34·85	33·37	34·23	29·01
1901 ..	25·78	27·60	28·28	25·09	30·32	28·40	27·05	26·34
1909 ..	24·62	27·55	27·24	25·48	28·68	29·90	26·61	27·29
1910 ..	24·20	28·07	27·31	26·38	27·89	29·87	26·73	26·17
1911 ..	25·03	28·68	27·66	26·89	28·25	28·63	27·23	25·97
1912 ..	26·41	29·90	29·70	28·65	28·86	30·53	28·65	26·48
1913 ..	25·82	28·81	30·26	29·12	29·39	30·03	28·27	26·14
Mean of 1909–13	25·22	28·60	28·43	27·30	28·61	29·79	27·50	26·41

Factors in birth rates.

The birth rate was lower in Victoria, New South Wales and Tasmania and higher in the other States in 1913 than in the preceding year. 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. An investigation of the results of the last census shows that to 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 is 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.

Birth rate in various countries.

On the average of the past five years the birth rate in Victoria was lower than in any other State. It was, however, above the rates in Sweden, Belgium, England, and Wales, Ireland, Ontario, and France, on the average of the latest five years for which this information is available :—

BIRTHS PER 1,000 OF POPULATION, IN VARIOUS COUNTRIES.

Country.	Births per 1,000 of population.	Country.	Births per 1,000 of population.
Russia (European) ...	47·7	New South Wales ...	28·6
Bulgaria	42·4	Queensland	28·4
Roumania	41·4	Denmark	27·8
Servia	37·6	South Australia ...	27·3
Hungary	36·4	Scotland	27·0
Spain	33·1	Norway	26·3
Austria	33·0	Switzerland	26·0
Italy	32·6	Victoria	25·2
Japan	32·1	Sweden	25·1
Prussia	31·5	Belgium	24·7
German Empire ...	30·8	England and Wales ...	24·6
Tasmania	29·8	Ontario, Province of ...	23·8
The Netherlands ...	29·0	Ireland	23·3
Western Australia ...	28·6	France	19·5

Corrected birth rates per 1,000 wives in Victoria.

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 numbers 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 30 years ago, 50 fewer than 20 years ago, and 7 fewer than at the preceding census period.

Corrected legitimate birth rate for Victoria.

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.

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

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

State.	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

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 and New Zealand varying from 37 per cent. in Western Australia to 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 past 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.

Births to wives in European countries.

A reduction in the proportion of births to married women is not limited to Australia. Investigations made by the Registrar-General of England show that there were decreases in the ratios of births to wives of reproductive ages in nearly all of the undermentioned European countries during the twenty years ended 1901. The results of his inquiries were given in his Seventy-Second Annual Report, from which the following particulars are copied :—

LEGITIMATE BIRTH RATES.

Country.	Proportion of Legitimate Births per 1,000 Wives aged 15-45 years. Approximate Periods.			Increase + or Decrease − per cent. in Fertility during 20 years.
	1880-82.	1890-92.	1900-02.	
The Netherlands	347·5	338·8	314·6	−9·5
Norway	314·5	306·8	302·8	−3·7
Prussia	312·6	307·6	290·4	−7·1
Ireland	282·9	287·6	289·4	+2·3
German Empire	310·2	300·9	284·2	−8·4
Austria	281·4	292·4	283·7	+0·8
Scotland	311·5	296·4	271·8	−12·7
Italy	276·2	?	269·4	−2·5
Sweden	293·0	280·0	269·0	−8·2
Switzerland	284·1	274·0	265·9	−6·4
Denmark	287·1	278·1	259·1	−9·8
Spain	257·7	263·9	258·7	+0·4
Belgium	312·7	285·1	250·7	−19·8
England and Wales	286·0	263·8	235·5	−17·7
France	196·2	173·5	157·5	−19·7

The births per 1,000 wives aged 15–45 in Victoria for 1901 and 1911, as given in the preceding table, are below the proportionate numbers in all of the above countries except France.

Birthplaces of parents of legitimate children.

The birth records for 1913 show that 83 out of every 100 children were born to Australian parents, and 95 out of every 100 to one or both parents born in Australia. Of the total fathers, 78·49 per cent. were born in Victoria; 86·59 in Australia; 1·31 in New Zealand; 7·14 in

England and Wales; 1·65 in Scotland; 1·19 in Ireland; ·38 in other British Possessions; and 1·74 per cent. in foreign countries. The corresponding percentages for mothers were: Victoria, 82·15; Australia, 91·20; New Zealand, 1·22; England and Wales, 4·85; Scotland, 1·14; Ireland, ·65; other British Possessions, ·20; and foreign countries, ·74.

Chinese and half-caste Chinese births. During the past decade the births to Chinese parents numbered 98 or 1 in every 3,087 legitimate births, and the Chinese half-caste births (fathers only Chinese) amounted to 334 or 1 in every 906 legitimate births registered during the same period.

Ages of parents of legitimate children. The average ages of fathers and mothers of legitimate children whose births were recorded in 1913 were 33·84 and 29·86 years respectively, which were 4·83 and 4·20 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, 1913.

Father.		Mother.	
Age Group.	Proportion per 100 Births.	Age Group.	Proportion per 100 Births.
Under 20	·34	Under 20	2·89
20 to 25	10·58	20 to 25	21·64
25 to 30	25·34	25 to 30	30·74
30 to 35	24·33	30 to 35	22·93
35 to 40	18·00	35 to 40	15·14
40 to 45	12·10	40 to 45	6·08
45 to 50	6·32	45 and over ...	·58
50 and over	2·99		
Total ...	100·00	Total ...	100·00

It will be seen that on the experience of 1913, 52·38 per cent. of the mothers were between 20 and 30, and 38·07 per cent. between 30 and 40. The proportions of fathers at corresponding ages were 35·92 and 42·33 per cent. Of every 1,000 legitimate births, about 29 were due to mothers under 20 years, and 6 to mothers aged 45 years and upwards.

Ages of mothers of first births. The proportion of legitimate births recorded as first births was 29·26 per cent. in 1913, as compared with 28·55 in the previous year, 27·42 in 1911, 26·22 in 1910, 26·20 in 1909, 25·43 in 1908, 24·98 in 1907, 24·78 in 1906, and 21·87 per cent. in 1901, being equivalent to an increase of 33·8 per cent. for the period 1901–13. The percentages of mothers of first

births at various ages are shown in the following table for the last five years:—

PERCENTAGE OF MOTHERS OF FIRST-BORN CHILDREN IN AGE GROUPS.

Ages.	Percentage of Mothers in Age Groups.				
	1909.	1910.	1911.	1912.	1913.
Under 20	9·0	8·6	8·4	8·5	8·1
20 to 25	39·5	39·3	39·9	41·1	40·5
25 to 30	31·1	32·6	30·9	32·0	32·7
30 to 35	14·0	13·3	13·7	12·2	12·7
35 to 40	5·2	5·1	5·6	5·0	4·9
40 to 45	1·2	1·1	1·5	1.2	1·1
Total	100·0	100·0	100·0	100·0	100·0

The experience of the period 1909–13 shows that of every 100 mothers of first-born children, 8·5 were under 20 years of age, 48·6 were under 25, 80·4 were under 30, and only 1·2 were aged 40 to 45. These proportions are very similar to the ratios of brides in the same groups during the period dealt with, which show that 10·2 per cent. of the women marrying were under 20, 51·9 per cent. were under 25, 79·1 per cent. were under 30, and only 2·4 per cent. were aged 40 to 45.

Birth rates in town and country.

The next 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 the rates for each of the last eight years:—

BIRTH RATES IN METROPOLITAN, OTHER URBAN, AND RURAL DISTRICTS, 1875 TO 1913.

Year.	Births per 1,000 of the Population.			
	Metropolitan District.	Other Urban Districts.	Rural Districts.	Victoria.
1875	33·63	38·62	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	23·58	32·90	23·40	24·91
1907	23·97	32·70	23·36	25·03
1908	23·68	32·43	22·70	24·56
1909	23·75	32·09	22·65	24·62
1910	22·99	32·21	22·31	24·20
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

Of the three divisions of the State the metropolitan area is the only one in which the birth rate was higher in 1913 than in the year 1911.

Birth rates in country towns. The birth rates in the seven principal country towns are shown in the following table for each of the last five years :—

BIRTH RATES IN THE SEVEN PRINCIPAL COUNTRY TOWNS.

Year.	Births, per 1,000 of the Population.						
	Ballarat and Suburbs.	Bendigo and Suburbs.	Geelong and Suburbs.	Castlemaine and Suburbs.	Maryborough.	Warrnambool.	Stawell.
1909 ...	24·39	31·61	25·96	27·98	32·80	36·72	41·63
1910 ...	25·19	31·13	26·32	26·24	32·98	40·14	36·46
1911 ...	25·73	32·30	27·54	29·20	30·13	40·00	39·36
1912 ...	26·55	33·99	32·00	29·86	35·18	42·11	38·51
1913 ...	26·53	32·74	28·12	27·00	30·18	38·65	36·52
Average	25·68	32·35	27·99	28·06	32·25	39·52	38·50

On the average of the five years 1909 to 1913, the birth rate in all of the above towns exceeded that of Melbourne and suburbs and that of the State. The highest rate prevailed in Warrnambool, and the lowest in Ballarat and suburbs.

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

METROPOLITAN BIRTH RATES 1901, 1911, 1912 AND 1913.

Districts.	Births per 1,000 of the Population.			
	1901.	1911.	1912.	1913.
Footscray City	28·21	30·05	37·53	36·40
Northcote City	24·40	26·00	32·70	31·87
Oakleigh Borough	31·25	33·94	43·04	31·51
Richmond City	25·51	25·28	29·33	29·99
Fitzroy City	22·58	24·40	28·42	29·39
Brunswick City	26·71	24·81	29·47	28·74
Caulfield City	18·72	20·15	26·26	27·57
Prahran City	22·69	23·77	25·79	26·99
Port Melbourne Town	25·26	24·59	26·45	26·38
Preston Shire	26·76	24·06	28·23	26·23
Essendon City	23·77	21·32	24·78	25·80
Kew Town	21·54	23·43	25·65	24·54
Collingwood City	26·46	23·36	23·02	24·33
Malvern City	21·98	20·25	22·77	24·14
Williamstown Town	25·34	24·42	25·23	23·76
South Melbourne City	22·10	21·71	23·78	22·83
Melbourne City	21·15	19·90	22·68	22·32
St. Kilda City	18·59	21·10	23·69	22·23
Brighton Town	22·39	22·48	21·61	22·15
Coburg Town	20·58	22·75	24·65	20·93
Hawthorn City	22·67	20·16	19·86	20·54
Camberwell City	19·17	15·24	19·85	19·86
Greater Melbourne :—				
Excluding Births in Institutions	23·03	22·32	25·14	25·12
Including Births in Institutions	24·85	24·51	27·48	27·20

In 1913 there were 2·69 more births to every 1,000 of the population of Greater Melbourne than in 1911. Between the two years mentioned the births per 1,000 of population increased by 7·42 in Caulfield, 6·35 in Footscray, 5·87 in Northcote, 4·99 in Fitzroy, 4·71 in Richmond, 4·62 in Camberwell, and 4·48 in Essendon.

Birth rates in capital cities and suburbs.

The next table shows the mean population, number of births, and birth rate in each Australasian capital city and suburbs for the year 1913:—

BIRTH RATES IN CAPITAL CITIES OF AUSTRALASIA.

Capital City and Suburbs.	Year 1913.		
	Mean Population.	Number of Births.	Births per 1,000 of the Population.
Melbourne	639,700	17,397	27·20
Sydney	710,100	20,535	28·92
Brisbane	148,147	5,092	34·37
Adelaide	198,742	6,346	31·93
Perth	121,000	4,134	34·17
Hobart	38,845	1,324	34·08
Wellington	72,685	1,793	24·67

The average birth rate of the six capitals was 29·53 per 1,000 of the population in 1913, as against 29·66 in the previous year.

Birth rates in cities.

The birth rates of the Australasian capitals for 1913 and of 28 other cities for 1912 are given below:—

BIRTH RATES IN CITIES.

City.	Births per 1,000 of Population.	City.	Births per 1,000 of Population.
Buenos Ayres ...	35·3	Copenhagen ...	24·9
Brisbane	34·4	London	24·5
Perth	34·2	The Hague ...	23·6
Hobart	34·1	Milan	23·4
Adelaide	31·9	Amsterdam ...	23·3
Trieste	29·7	Christiania ...	22·7
Rotterdam ...	29·0	Munich	21·9
Moscow	28·9	Hamburg	21·8
Sydney	28·9	Stockholm ...	21·0
Rio de Janeiro ...	28·2	Edinburgh ...	20·9
Glasgow	28·1	Berlin	20·4
Belfast	27·8	Dresden	20·2
Dublin	27·4	Prague	19·9
Melbourne ...	27·2	Vienna	19·1
St. Petersburg ..	26·5	Turin	17·8
Breslau	26·3	Paris	16·8
Budapest	25·5	Brussels	16·6
Wellington ...	24·7		

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.
1909	314	6
1910	318	3
1911	332	3
1912	367	7
1913	394	2

On the average of the five years 1 mother in every 97 gave birth to twins and 1 in every 7,908 was delivered of three children at a birth. These proportions are almost identical with those for the decennium ended 1912, when the ratios were 1 in every 98 and 1 in every 7,949 respectively.

Children legitimized. Under a section of an Act passed in 1903, an illegitimate child, whose parents subsequently marry, may, provided there was no lawful impediment at the time of birth to the marriage of the parents, be legitimized if registered for that purpose within six months after marriage. In December, 1912, another Act 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 at the time of birth to the marriage of the parents. Up to the end of 1913 advantage was taken of these Acts to legitimate 739 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, and 157 in 1913.

Legitimation Acts are in force in all the States and New Zealand, the most recent being that of Western Australia, which was passed in 1909. Of every 100 children born out of wedlock, the numbers legitimized in the various States and New Zealand during 1913 were as follows :—Western Australia, 14·1 ; Queensland, 14·0 ; New Zealand, 13·6 ; New South Wales, 12·0 ; South Australia, 9·9 ; Victoria, 7·2 ; and Tasmania, only 4·1.

Illegitimate births in various countries. The number of illegitimate births in Victoria during the year 1913 was 2,171, which gives a proportion of 6·03 to every 100 births registered, as against 5·72 in the previous year, 5·94 in 1911, 5·59 in 1910, 5·92 in 1909, and 5·76

in 1908. The percentages of the children born out of wedlock in various countries are shown in the following table:—

PERCENTAGE OF CHILDREN BORN OUT OF WEDLOCK.

Country.	Year.	Percentage Born out of Wedlock.	Country.	Year.	Percentage Born out of Wedlock.
Sweden	1909	14·0	New South Wales	1913	5·4
Austria	1909	12·3	Italy	1910	5·4
Denmark ..	1910	11·1	Tasmania ..	1913	5·0
Japan	1909	9·2	Western Australia	1913	4·5
German Empire ..	1910	8·7	New Zealand ..	1912	4·3
Scotland ..	1911	7·1	England and Wales	1911	4·3
Norway	1910	6·6	South Australia ..	1913	4·2
Belgium	1909	6·1	Ireland	1912	2·8
Queensland ..	1913	6.1	The Netherlands ..	1910	2·1
Victoria	1913	6·0			

Illegitimate births to unmarried women in Australian States.

While the percentage of illegitimate to total births in Victoria increased from 5·36 in 1891 to 5·58 in 1901 and to 5·94 in 1911, the illegitimate births were 100 fewer in 1911 than in 1891. It is thus seen that the increased proportion of infants born out of wedlock in 1911 was not due to greater laxity of morals, but to the smaller number of legitimate births. The morality of the community, as indicated by illegitimacy, is much more satisfactorily expressed by stating the proportion of infants born out of wedlock to the unmarried and widowed women between 15 and 45 years of age. Such proportions for 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	14·49
1901	167.760	1,729	10·31
1911	187,488	1,964	10·48

Although the proportion of illegitimate births to total births was nearly 11 per cent. higher in 1911 than in 1891, the ratio of infants born out of wedlock per 1,000 unmarried and widowed women fell from 14·49 in 1891 to 10·48 in 1911, which was equal to a decrease of nearly 28 per cent. in the intervening period. The illegitimate births per 1,000 unmarried and widowed women aged 15 to 45 in each State, the Commonwealth, and New Zealand in 1911 were as

follows:—Queensland, 15·5; New South Wales, 14·5; Western Australia, 14·0; Australia, 12·6; Tasmania, 11·9; Victoria, 10·5; New Zealand, 9·2; and South Australia, 8·5.

Illegitimate births to unmarried women in European countries.

The morality of the Australian community, as indicated by the proportion of births to single and widowed women of reproductive ages, compares very favorably with that of ten of the fourteen undermentioned European countries, for which particulars are furnished by the English Registrar-General:—

ILLEGITIMATE BIRTHS PER 1,000 UNMARRIED WOMEN AGED 15–45 IN EUROPEAN COUNTRIES.

Country.	Illegitimate Births per 1,000 Unmarried Women aged 15–45.	
	1890–2.	1900–2.
German Empire	28·7	27·4
Sweden	22·9	24·3
Denmark	24·5	24·2
Prussia	25·1	23·7
Italy	...	19·4
France	17·7	19·1
Belgium	20·6	17·8
Norway	16·9	17·2
Spain	17·5	15·5
Scotland	17·1	13·4
Switzerland	10·0	9·8
England and Wales	10·5	8·5
The Netherlands	9·0	6·8
Ireland	3·9	3·8

In 1911 there were 10·48 illegitimate births in Victoria to every 1,000 unmarried women aged 15–45. This proportion was lower than that for any other State except South Australia. It was also below the rates for all of the above countries, except Ireland, The Netherlands, England and Wales, and Switzerland, for the latest date for which this information is obtainable.

Illegitimacy in town and country.

It will readily be supposed that a larger proportion of illegitimacy prevails in Melbourne and suburbs than in any other district of Victoria, and that the proportion in country districts is the smallest of all. During the year 1913, in the metropolitan area, slightly less than 1 birth in every 11, in other urban districts 1 in 21, and in the rural districts only 1 in 40, 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—males and females—also the quarters in which they were registered and the proportion per 1,000 of the population during the years 1909 to 1913:—

DEATHS IN EACH QUARTER, 1909 TO 1913.

Year.	Total Deaths.	Sex.		Quarter of Registration.				Death Rate per 1,000 of the Population.
		Males.	Females.	March.	June.	September.	December.	
1909 ..	14,436	8,070	6,366	3,580	3,453	3,860	3,543	11·27
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
Average	15,292	8,426	6,866	3,799	3,759	4,058	3,676	11·49

The number of deaths in 1913 was 15,475, which was 1,120 below the total for the preceding year. The seasonal mortality showed that the quarter ending 30th September was most fatal, the next being that ending 31st March, and the last quarter being least fatal. This accords with the experience of the period 1908 to 1912. For every 100 female there were 123 male deaths during the past five years, although the sex proportions of the population were practically equal.

Death rates in Australian States and New Zealand. The deaths in Australia for 1913 numbered 51,825, as against 52,209 in the preceding year, 47,901 in 1911, and 45,628 in 1910. Of the total deaths in the year under review 15,475 occurred in Victoria, 19,732 in New South Wales, 6,783 in Queensland, 4,693 in South Australia, 2,936 in Western Australia, 2,131 in Tasmania, 64 in the Northern Territory, and 11 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 period 1902-6, and for each of the last seven years:—

DEATH RATES IN THE AUSTRALIAN STATES AND NEW ZEALAND.

Year.	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 ..	11·61	10·56	10·35	9·87	11·09	11·22	10·86	10·95
1908 ..	12·45	10·13	10·23	9·84	10·74	11·51	10·91	9·57
1909 ..	11·27	9·97	9·68	9·72	10·21	10·01	10·31	9·22
1910 ..	11·34	9·98	9·70	10·21	10·09	11·31	10·43	9·71
1911 ..	11·52	10·34	10·65	9·82	10·20	10·12	10·67	9·39
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
Average 1909-13	11·49	10·41	10·28	10·17	10·18	10·61	10·68	9·33

The death rate in Victoria for 1913 was the lowest recorded and only slightly exceeded that for the Commonwealth. 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. In any comparison of crude death rates of the different States and New Zealand, it is necessary to bear in mind the proportion of persons aged (say) 60 years and upwards in each community. This was accurately known at the 1911 census when Victoria had 735 persons aged 60 years and over per 10,000 of the population, as compared with 629 in New South Wales, 581 in Queensland, 706 in South Australia, 402 in Western Australia, 626 in Tasmania, 647 in Australia, and 705 in New Zealand. Of the persons who died in 1913, 35·5 per cent. were aged 65 years and over in Victoria, 28·1 in New South Wales, 25·6 in Queensland, 32·1 in South Australia, 16·9 in Western Australia, 27·5 in Tasmania, 29·6 in Australia, and 35·0 in New Zealand. It will thus be seen that while Victoria had a higher crude death rate, it had concurrently a larger proportion of elderly persons in the population and a greater percentage of total deaths due to persons aged 65 years and upwards than any other State.

Death rates in various countries.

The following are the maximum, minimum, and mean death rates per 1,000 of the population in various countries for the latest five years for which these particulars are available, also the averages of the 25 years ended 1901. In all the countries except Japan, Bulgaria, and Ontario, there has been a noticeable decrease, and in Austria, Hungary, England and Wales, Germany, Prussia, Spain, Denmark, The Netherlands, and Italy, there has been a considerable decrease in the recent five-year period as compared with the average of 25 years. The countries are arranged in order according to the average rate of mortality in the more recent period :—

DEATH RATES IN VARIOUS COUNTRIES.

Country.	Five Years 1907–1911.			Average of 25 Years. 1877–1901.
	Max.	Min.	Mean.	
Russia, European (1901-5)	32·1	29·9	30·9	33·9*
Roumania	27·8	25·2	26·6	28·2
Hungary	25·7	23·6	25·0	31·8
Servia	29·3	21·8	23·9	25·8*
Spain	24·5	23·2	23·8	30·2
Bulgaria (1905-9) ..	26·6	21·8	23·5	22·1*
Austria	22·9	21·2	22·2	28·4
Italy	22·8	19·9	21·3	26·2
Japan (1905-9) ..	22·0	19·8	21·1	20·5*
France	20·2	17·8	19·1	21·8
Germany	18·1	16·2	17·4	23·9
Prussia	17·9	16·0	17·2	23·5

* 1881–1901.

DEATH RATES IN VARIOUS COUNTRIES—*continued.*

Country.	Five Years, 1907–1911.			Average of 25 Years. 1877–1901.
	Max.	Min.	Mean.	
Ireland (1908-12) ..	17·5	16·5	16·9	18·2
Switzerland (1905-10)	16·6	15·1	16·0	20·3
Belgium (1906–10) ..	16·5	15·2	15·9	19·9
Scotland	16·6	15·1	15·9	19·1
United States (registration area)	16·0	14·2	14·9	..
United Kingdom ..	15·5	14·0	14·9	18·8
The Netherlands ..	15·0	13·6	14·3	20·1
Sweden	14·9	13·7	14·2	16·8
Province of Ontario ..	14·6	13·9	14·2	11·3*
England and Wales (1909–13)	14·6	13·3	13·9	18·9
Norway	14·3	13·2	13·7	16·4
Denmark	14·6	12·9	13·7	18·1

* 1881–1901.

Comparing this statement with the previous one, it will be noticed that the death rate in Victoria—the highest in Australasia for the reason previously stated—is considerably lower than in Denmark and Norway—the European countries having the lowest rates. Emigration from the older to the newer countries tends to raise the death rate in the former, and to lower it in the latter. In consequence of this, the crude death rates, calculated on the total population, will naturally be on a lower level in Australasia than in Europe, yet it may be safely affirmed that the true rate of mortality, allowing for differences in the age constitution of the people, is considerably lighter in Australasia than in any country in Europe, except, perhaps, Denmark, Norway, England and Wales, Sweden, and The Netherlands.

Age distribution and crude death rates.

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 and each 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 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 at age 60 and over. Among the Australian States, Victoria and Western Australia are conspicuous by having 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.

Index of mortality.

The differences shown in the preceding table in the age constitutions of the populations of the six States and New Zealand 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 and New Zealand for the undermentioned years are as follows :—

INDEX OF MORTALITY FOR THE AUSTRALIAN STATES AND NEW ZEALAND.

Year.	Index of Mortality.							
	Victoria.	New South Wales.	Queensland.	South Australia.	Western Australia.	Tasmania.	Commonwealth.	New Zealand.
1901	15·63	15·33	15·24	14·30	17·89	13·82	15·41	12·42
1911	14·31	13·13	13·52	12·15	13·49	12·90	13·52	11·80
1912	15·17	13·58	14·00	12·74	15·26	13·64	14·06	11·26
1913	13·62	13·68	13·64	13·19	12·60	13·42	13·56	11·90

There was a marked improvement in the index figure for Victoria for last year. The index numbers for the different States exhibited a greater similarity in 1913 than in the two preceding years.

Death rates at various ages.

A reliable estimate of the improvement in the health of the community is obtained by comparing the death rates for each age group 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.
Males.			
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
Females.			
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 upwards 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 was lower by 33 per cent. at the age group 0-10, by 14 per cent. at 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, other than those for very old ages, 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 of each sex at various ages 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.
Males.							
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
Females.							
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	3·48	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		5·15		4·69
35–40 ..	6·20	5·79	5·90	6·05	6·22	6·47	6·04
40–45 ..	6·58	6·06	6·94		6·62		6·36
45–50 ..	8·22	7·66	7·79	8·04	7·44	7·43	7·87
50–55 ..	9·90	9·98	10·13	9·60	11·58		9·93
55–60 ..	14·49	14·45	13·51	12·88	13·13	14·19	14·12
60–65 ..	21·62	20·67	21·89	19·19	17·72	18·18	20·73
65–70 ..	35·12	37·10	33·48	32·19	34·43	34·43	35·30
70–75 ..	59·07	54·55	50·18	48·98	55·53	52·95	55·22
75–80 ..	97·13	91·45	88·41	83·86	98·36	86·75	92·80
80–85 ..	133·47	133·49	137·58	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 at 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 following table:—

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	43·5	18·9	19·4	36·0
5–10 ..	2·0	2·1	3·2	1·9	1·9	3·3
10–15 ..	1·7	1·7	1·9	1·5	1·5	2·0
15–20 ..	2·5	2·6	2·8	2·4	2·3	2·6
20–25 ..	3·1	3·4	3·7	3·5	3·4	3·1
25–35 ..	4·3	4·3	5·3	4·6	4·5	4·5
35–45 ..	7·1	7·3	9·2	6·4	6·2	7·6
45–55 ..	12·5	12·8	16·6	8·9	8·8	12·9
55–65 ..	25·3	25·2	33·0	17·6	17·0	25·3
65–75 ..	62·1	56·2	70·9	45·7	43·6	58·7
75–85 ..	138·2	127·8	138·1	109·1	105·8	125·6
85 and upwards ..	269·6	273·8	312·4	239·7	229·0	291·6
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 rate for each sex is lower in Victoria than in England and Wales for all age groups except 20-25 and 25-35 for females and 75-85 for males. The superiority of the Victorian over the English rate is very pronounced for the age groups 0-5 and 5-10, but it is less marked for 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.

Death rates among metropolitan residents.

Prior to 1912 two sets of death rates were given for metropolitan municipalites, *i.e.*, the numbers dying (exclusive of those in hospitals) in specified areas in proportion to their respective populations, and the deaths in metropolitan institutions in proportion to the population of Greater Melbourne. On the assumption that the various districts contributed proportionately to population to the deaths in institutions,

the sum of the two rates mentioned was generally accepted as the approximate death rate of a given area. An investigation of the usual place of residence of 9,500 persons who died in public hospitals in Victoria during 1910-12 showed, however, that in many instances facts did not justify the assumption referred to, and that there were striking disparities in the ratios of residents of different centres dying in hospitals. Thus, of the total deaths of persons residing in Fitzroy, Port Melbourne, and Melbourne City, 34 per cent. occurred in hospitals, as compared with only 11 per cent. in the case of deaths of persons resident in Kew, Caulfield, and Camberwell. In consequence of these discrepancies, it was decided to discard the old method of estimating mortality rates for any district, and adopt the system of distributing all hospital deaths to the districts where the deceased had resided, and show the deaths of residents of specified areas in terms of its population. In regard to persons dying in Hospitals for the Insane and Benevolent Asylums, their places of residence before entering these institutions were not available, and the deaths were, therefore, distributed according to population.

The deaths per 1,000 residents of twenty-two metropolitan municipalities are shown in the following table for the period 1910-12 and for 1913:—

DEATH RATE OF METROPOLITAN MUNICIPALITIES, 1910–12 AND 1913.

Municipality.	Annual Deaths.		Annual Deaths per 1,000 Residents.	
	1910-12.	1913.	1910-12.	1913.
Richmond City	594	539	14·71	12·99
Port Melbourne Town ...	196	174	14·56	12·68
Melbourne City	1,469	1,430	14·44	13·72
Fitzroy City	493	510	14·41	14·36
Collingwood City	462	411	13·44	11·46
Brighton Town	161	153	13·02	10·83
Oakleigh Borough	40	43	12·90	12·32
Prahran City	587	586	12·89	12·39
South Melbourne City ...	591	579	12·83	12·16
Williamstown Town	198	196	12·80	11·76
St. Kilda City	326	327	12·65	11·63
Preston Shire	65	58	12·63	9·63
Footscray City	290	337	12·15	12·71
Brunswick City	383	406	11·75	11·33
Coburg Town	111	145	11·49	12·97
Essendon City	269	266	11·12	9·68
Hawthorn City	265	275	10·64	9·95
Kew Town	105	121	10·47	11·08
Camberwell City	131	139	10·21	9·62
Caulfield City	157	198	9·68	10·62
Malvern City	151	180	9·29	9·47
Northcote City	165	216	9·22	10·84
Remainder of Metropolis ...	218	223	9·22	8·36
Whole Metropolis	7,427	7,512	12·61	11·74
Remainder of State	8,089	7,963	10·99	10·57

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, and Collingwood are examples, and the low rates in comparatively recently settled areas, such as Northcote, Malvern, Caulfield, Camberwell, and Kew. For the former group the deaths for 1910-12 were 14·33 per 1,000 as against 9·68 for the latter. Slight differences in the age distribution of the populations of the 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 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 in Greater Melbourne and the remainder of the State. On the average of the years 1910 to 1912, 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 1904-13 there were 12·94 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 16,800 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 destruction of insanitary dwellings, the improvement in the conditions of labour, the increasing supervision of the manufacture and sale of articles of consumption, the smaller proportion of infants and the greater proportion of females in the community, and the advance of medical science, have been responsible for the decline. That the sanitary conditions of the metropolis have greatly improved is evidenced by a comparison of the death rates from typhoid fever, diphtheria, and tubercular diseases for the period 1904-13 with those for the decennium 1892-1901. The following are the rates :—

Cause of Death.	Deaths per 1,000 of Population.		Total Decrease in 1904–13.
	1892–1901.	1904–1913.	
Pulmonary Tuberculosis ...	1·654	1·084	0·570
Other Tubercular Diseases ...	0·446	0·300	0·146
Typhoid Fever	0·293	0·085	0·208
Scarlet Fever	0·033	0·014	0·019
Measles	0·215	0·038	0·177
Diphtheria	0·196	0·134	0·062
Total	2·837	1·655	1·182

The figures show that the lower death rates from the six above-mentioned diseases in 1904-13 accounted for nearly 42 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 the reasons mentioned on page 351, that method was discarded and the deaths of residents in proportion to population are now shown instead. Such deaths, per 1,000 of population, are given in the following statement for the period 1910-12 and for the year 1913 :—

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.	1910–12.	1913.
Bendigo and Suburbs	690	645	17·51	16·71
Ballarat " "	639	628	15·07	14·92
Maryborough	76	79	13·39	14·36
Stawell	82	66	18·60	14·35
Warrnambool	95	92	13·55	12·43
Geelong and Suburbs ...	411	414	13·68	12·23
Castlemaine	92	90	13·11	12·27

For all of the above towns the proportionate deaths of residents exceeded those for the metropolis. On the average of the past four years the death rate in Bendigo was nearly 40 per cent. higher, and that in Ballarat 21 per cent. higher than the rate—12·39—in Greater Melbourne.

Residents of different areas dying in hospitals.

An examination of the particulars of residence of persons who died in public hospitals of Victoria during the past four years reveals interesting and definite information regarding the assistance rendered by these institutions to people in different divisions of the State. For twenty-two metropolitan municipalities, the seven principal country towns, and the remainder of the State, the percentage of the total

deaths of residents thereof which occurred in public hospitals during the period 1910-13 was as follows :—

PROPORTION OF DEATHS OF RESIDENTS OCCURRING IN HOSPITALS, 1910–13.

Area.	Percentage of Deaths of Residents occurring in Hospitals.	Area.	Percentage of Deaths of Residents occurring in Hospitals.
Fitzroy City ...	35·1	Geelong	15·6
Port Melbourne Town	35·1	Castlemaine ...	14·7
Melbourne City ...	33·9	Ballarat	14·1
Collingwood City ...	27·1	Oakleigh Borough ...	13·6
South Melbourne City	26·6	Hawthorn City ...	13·4
Richmond City ...	25·3	Malvern City ...	13·2
Northcote City ...	24·6	Williamstown Town	13·1
Preston Shire ...	24·3	Kew Town... ...	12·5
Brunswick City ...	23·6	Caulfield City ...	11·7
Footscray City ...	22·7	Camberwell City ...	11·2
Prahran City ...	21·8		
Maryborough ...	21·8	Summary :—	
Warrnambool ...	20·7	Greater Melbourne ...	24·5
St. Kilda City ...	19·1	Seven Country Towns ...	16·3
Coburg Town ...	17·0	Remainder of State ...	16·8
Bendigo	17·0	Whole State ...	20·4
Stawell	16·9		
Brighton Town ...	16·0		
Essendon City ...	15·6		

The disparities in the proportions for different areas are very significant. Of the total cases of fatal illness occurring amongst residents of the districts mentioned, the percentage treated in public hospitals varied from 35·1 for Fitzroy and Port Melbourne, 33·9 for Melbourne City, 27·1 for Collingwood, and 26·6 for South Melbourne, to 11·7 for Caulfield and 11·2 for Camberwell. For the metropolitan area the percentage was 24·5 as compared with 16·7 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 46 per cent. that given to country people.

Deaths in public institutions in Greater Melbourne.

During 1913 the deaths in public institutions in the State numbered 4,135, of which 2,737 occurred in the metropolitan area, and 1,398 in institutions outside the metropolis. As the total deaths in these areas during the same year were 15,475, 7,960, and 7,515 respectively, it follows that slightly more than 1 in every 4 deaths within the State, 1 in every 3 in Greater Melbourne, and slightly less than 1 in every 5 in extra-metropolitan districts, occurred in public

institutions. In England and Wales 1 in every 5 deaths took place in public institutions during 1911.

DEATHS IN PUBLIC INSTITUTIONS IN GREATER MELBOURNE, 1913.

Institution.	No. of Deaths.	Institution.	No. of Deaths.
Hospitals—		Other Public Institutions—	
Melbourne	895	Victorian Homes for Aged and Infirm	69
Alfred	248	Benevolent Asylum ...	172
St. Vincent's	182	Heatherton Sanatorium ...	73
Homœopathic	73	Convent of the Little Sisters of the Poor	48
Austin	156	Old Colonists' Home ...	9
Children's	297	Foundling Hospital and Infants Home	27
Women's	132	Foundling Hospital, Broadmeadows	3
Infectious Diseases ...	78	Depôt for Neglected Children	21
Queen Victoria	12	Metropolitan Lunatic Asylum	145
Eye and Ear	4	Yarra Bend Lunatic Asylum...	67
Williamstown	12	Other Institutions	14
Total Hospitals ...	2,089	Total Hospitals and other Institutions	2,737

Of the 2,089 persons who died in public hospitals in Greater Melbourne during 1913, 262 were country residents.

Deaths and births in Australasian capitals.

The next table shows the numbers of deaths and births, and the death rates in the Australasian capital cities; also the numerical and centesimal excess of births over deaths in each during 1913:—

DEATHS AND BIRTHS IN CAPITAL CITIES, 1913.

Capital City with Suburbs.	Number of Deaths.	Deaths per 1,000 of Population.	Number of Births.	Excess of Births over Deaths.	
				Numerical.	Centesimal.
Melbourne ...	7,960	12·44	17,397	9,437	119
Sydney	7,938	11·18	20,535	12,597	159
Brisbane	1,943	13·12	5,092	3,149	162
Adelaide	2,794	14·06	6,346	3,552	127
Perth	1,458	12·05	4,134	2,676	184
Hobart	625	16·09	1,324	699	112
Wellington ...	660	9·08	1,793	1,133	172

The deaths in the capital cities of the six States numbered 22,718, or 43·8 per cent. of the total deaths in Australia, during the year 1913. The centesimal excess of births over deaths for each city shows that for every 100 deaths there were 284 births in Perth, 272 in Wellington, 262 in Brisbane, 259 in Sydney, 227 in Adelaide, 219 in Melbourne, and 212 in Hobart, giving an average of 242 for the metropolitan cities of Australasia.

Death rates in various cities.

The death rate of Melbourne for 1913 was 12·44 per 1,000 of population, which was lower than the rates for 1912 in 26 of the 29 undermentioned cities :—

DEATH RATES IN VARIOUS CITIES, 1912.

City.	Death Rate.	City.	Death Rate.
Moscow	24·3	Philadelphia	15·1
St. Petersburg	21·9	Chicago	14·8
Rio de Janeiro	21·3	Berlin	14·4
Trieste	21·1	Stockholm	14·2
Dublin	20·5	Copenhagen	14·1
Budapest	18·5	New York	14·1
Belfast	18·1	London	13·6
Glasgow	17·6	Hamburg	13·6
Buenos Ayres	16·6	Brussels	13·5
Paris	16·3	Christiania	13·4
Boston	16·2	Dresden	13·1
Prague	15·8	Rotterdam	11·3
Milan	15·8	Amsterdam	11·2
Edinburgh	15·7	The Hague	10·9
Vienna	15·4		

In 1913 the death rate of the metropolitan cities of Australia was 12·24 per 1,000 of their combined populations, which was below the proportionate mortality of all of the above cities except Rotterdam, Amsterdam, and The Hague.

Infantile mortality. 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 1913 numbered 2,538, and as there were 35,978 births, it follows that of every 100 infants born, approximately, 7·05 died within twelve months, as against 7·50 in 1907-12, 9·38 in 1902-6, and 11·11 in 1891-1900.

Infantile deaths in different areas. 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 seven 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
Average, 1909–13	7·24	8·42	9·64	8·97	7·09	5·77

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 84 in Melbourne, 96 in Ballarat, 90 in Bendigo, and 71 in Geelong as against 58 in the rest of the State. The infantile death rate for the metropolis in 1913 was the lowest recorded being only 76 per 1,000 births as against 104 in the decennium 1901-10 and 134 in 1891-1900.

Infantile death rates in metropolitan districts. In previous issues of this work 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 especially that for 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 during four years were allotted to the districts where the deceased had resided and the total deaths for each district were thus ascertained. Taking the

average of the four years 1910 to 1913 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, 1910–13.	Municipality.	Deaths Under One Year Per 100 Births, 1910–13.
Port Melbourne Town ..	12·41	Williamstown Town ..	7·80
Coburg Town	11·38	Brighton Town ..	7·20
Preston Shire	10·65	Prahran City ..	7·12
Fitzroy City	10·59	St. Kilda City ..	6·51
Richmond City	10·34	Camberwell City ..	5·61
Collingwood City ..	9·93	Hawthorn City ..	5·50
Melbourne City ..	9·31	Malvern City	5·43
South Melbourne City ..	8·90	Essendon City ..	5·39
Brunswick City ..	8·42	Caulfield City ..	5·18
Footscray City	8·05	Northcote City ..	5·15
Oakleigh Borough ..	7·83	Kew Town	4·55

It is noticeable that the seven centres having the lowest infantile death rates are residential areas which are not so thickly populated as nearly all of the other metropolitan districts. On the average of the past four years Kew had only slightly more than one-third and Northcote, Caulfield, Essendon, Malvern, Hawthorn, and Camberwell had less than one-half of the rate experienced in Port Melbourne.

Infantile death rates in various cities.

In 1913 the deaths of infants under one year per 100 births were 7·63 in Melbourne, as compared with 7·83 in Sydney, 8·01 in Brisbane, 7·85 in Adelaide, 8·39 in Perth, 7·63 in Hobart, and 6·02 in Wellington. The rates in Australasian capitals in 1913 and in 25 other cities in 1912 are shown in the following table:—

INFANTILE DEATH RATES IN VARIOUS CITIES.

City.	Deaths under 1 Year per 100 Births.	City.	Deaths under 1 Year per 100 Births.
Moscow	33·3	Edinburgh	11·3
St. Petersburg ...	24·9	Christiania	10·7
Rio de Janeiro ...	18·5	Paris	10·3
Trieste	18·4	Milan	10·2
Breslau	16·3	Buenos Ayres ...	9·6
Vienna	14·9	London	9·1
Berlin	14·2	Perth	8·4
Budapest	14·1	Brisbane	8·0
Dublin	14·0	Rotterdam	7·9
Prague	13·9	Adelaide	7·8
Munich	13·4	Sydney.	7·8
Hamburg	13·0	Melbourne	7·6
Belfast	12·9	Hobart	7·6
Glasgow	12·4	The Hague	6·6
Boston	11·9	Amsterdam	6·4
Dresden	11·6	Wellington	6·0

Deaths of infants at different ages.

Of the total mortality of infants under 1 year, slightly more than two-fifths occurs in the first month and three-fifths 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 ten years ended with 1900, and the period 1909 to 1913, are shown 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. It will be noticed that in the last five years the mortality of infants per 100 births at each age period, was below the average of the ten years ended with 1900:—

DEATHS OF INFANTS AT DIFFERENT AGES, 1891-1900 AND 1909-13.

Ages.	Average Annual Deaths of Infants under 1 year of Age.					
	Ten Years—1891-1900.			Five Years—1909-13.		
	Number.	Percentage at each Age.	Number per 100 Births.	Number.	Percentage at each Age.	Number per 100 Births.
Boys.						
Under 1 month	650	31·7	3·79	627	45·3	3·64
1 to 3 months	355	17·3	2·07	241	17·4	1·39
3 to 6 ,,	445	21·7	2·59	227	16·4	1·32
6 to 12 ,,	600	29·3	3·50	289	20·9	1·68
Total ..	2,059	100·0	11·95	1,384	100·0	8·03
Girls.						
Under 1 month	488	28·7	2·98	441	41·4	2·70
1 to 3 months	301	17·7	1·84	176	16·5	1·08
3 to 6 ,,	385	22·6	2·35	198	18·6	1·21
6 to 12 ,,	528	31·0	3·23	250	23·5	1·53
Total ..	1,702	100·0	10·40	1,065	100·0	6·52

The death rate of infants under 1 month remained fairly constant in both periods, but for the age groups 1 to 3 months, 3 to 6 months, and 6 to 12 months reductions amounting to 37, 49, and 51 per cent. respectively occurred in the mortality rates in 1909-13, as compared with 1891-1900. This result may be attributed chiefly to the improved milk supply and the consequent lighter mortality from digestive and diarrhœal diseases.

Probable mortality of infants.

The experience of the years 1909-13 shows that of every 20,000 newly-born boys and girls in equal numbers, 803 boys and 652 girls died within twelve months, and 9,197 of the former and 9,348 of the latter, or 18,545 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 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 780 more survivors in 1909-13 than in 1891-1900, and 1,077 more than in 1881-1890.

Infantile death rates from certain causes.

Although the infantile death rate in Victoria has fluctuated in recent years, it shows on the whole a tendency to decrease. This tendency was much more marked in the period 1908-13 than in the preceding five years. The rate for last year—7·05 deaths per 100 births—was nearly 37 per cent. below the rate for the decennium 1891-1900. Any investigation of this subject would be incomplete unless the diseases which have proved fatal to infant life in different years were ascertained, and their incidence in each period compared. Information of this nature reveals the causes of high mortalities, and, when a fairly early period is selected for comparison with recent years, it shows in what direction the improvement is tending. A detailed comparison of the mortalities from each disease would be less useful than one giving the main preventable and non-preventable causes of death, grouped under certain headings, such as is shown in the following table for the periods 1891-3, and 1901-10, and for the years 1912 and 1913 :—

INFANTILE DEATH RATES FROM CERTAIN CAUSES, 1891–3, 1901–10, 1912 AND 1913.

Causes of Death.	Deaths under 1 year per 1,000 Births in—			
	1891-3.	1901-10.	1912.	1913.
Diarrhœal Diseases, all forms	29·66	24·62	19·32	17·32
Wasting Diseases (Marasmus, Atrophy, &c.)	22·24	12·74	11·31	13·07
Prematurity	13·13	14·99	14·18	14·48
Bronchitis, Broncho-pneumonia, Pneumonia	11·37	8·13	9·05	6·70
Convulsions	6·83	3·10	2·35	1·64
Congenital Defects and Malformations ...	3·45	4·86	5·00	5·16
Violence	3·16	2·47	1·54	1·42
Whooping Cough	2·60	2·52	2·51	1·83
Other causes	24·49	14·46	9·26	8·92
Total all causes	116·93	87·89	74·52	70·54

The most striking feature of the infantile mortality figures is the marked tendency towards lower death rates from digestive and wasting diseases, and from complaints of the respiratory system. Of every 1,000 infants born 30 died from diarrhœal and wasting diseases in 1912-13, as against 37 in 1901-10, and 52 in 1891-3—a decrease of over 42 per cent. in 21 years. In 1912-13 acute bronchitis, broncho-pneumonia and pneumonia were responsible for 7·9 deaths per 1,000 births, as compared with 11·4 in 1891-3—a decline of 31 per cent. between the two periods. A further examination of the foregoing table shows that certain causes, which may be regarded as of a non-preventable nature, such as pre-maturity, congenital defects, and malformations, were responsible for nearly 27 per cent. of the total infantile mortality during the past two years. Of the deaths from preventable causes about 1 in every 3 is due to diarrhœal

diseases, which are specially prevalent and fatal in hot weather, when milk food, the chief diet of children, undergoes rapid changes and consequently becomes dangerous to infant life. The influence of the seasons on the mortality amongst children under 1 year is vividly shown by the deaths in certain months. The Victorian experience shows a high death rate in December, January, February, and March co-existent with a heavy mortality rate from diarrhœal diseases, and a low rate in the remaining eight months, concurrent with a very low rate from these complaints. On the average of the last two years, of every 1,000 children born 18 died from diarrhœal diseases within a year, a proportion which shows the necessity for preventive measures in this direction.

Infantile deaths in seasons from certain causes.

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 of the quarters of the past nine-year period are shown in the following statement:—

Cause of Death.	Deaths during 1905–13 in the Quarter ended—			
	March.	June.	September.	December.
Diarrhœal Diseases	1,607	630	205	771
Bronchitis, Broncho-pneumonia, Pneumonia	152	278	515	122

The experience of the period 1905-13 shows that the deaths of infants from diarrhœal diseases during the first three months of the year are practically equal to those in the remaining nine months, and that the infantile deaths in the September quarter from bronchitis, broncho-pneumonia and pneumonia are nearly as numerous as in the other three quarters combined.

Legitimate and illegitimate infantile death rates.

On the average of the past ten years, 1 in every 5 illegitimate infants died within a year, as against 1 in every 14 legitimate children. It is thus seen that the chance of an illegitimate child dying before the age of 1 year is nearly three times that of the legitimate infant. In the year 1913 the mortality rate for legitimate infants was 6·45 per 100 births. The children born out of wedlock during the same year numbered 2,171, and the deaths of illegitimate infants were 357, which correspond to a rate of 16·44 per 100 births. In England and Wales, in 1911, the corresponding mortality rates for legitimate and illegitimate infants were 12·45 and 24·49 respectively. 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 in Victoria from certain causes per 1,000 legitimate and illegitimate births for the periods 1904-8 and 1909-12 and for the year 1913 :—

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.	1909-12.	1913.	1904-8.	1909-12.	1913.
Diarrhœal Diseases	19·8	17·1	15·3	72·6	66·3	48·8
Prematurity, Congenital Defects, Marasmus, &c.	30·3	28·1	31·7	52·1	61·7	67·2
Bronchitis, Broncho-pneumonia, Pneumonia	6·9	6·8	6·4	18·6	14·9	11·5
Other causes	18·3	13·6	11·1	58·7	49·2	36·9
Total all causes	75·3	65·6	64·5	202·0	192·1	164·4

The rates for 1913 show that of every 1,000 children born out of wedlock 48·8 died from diarrhœal diseases within a year as compared with 15·3 deaths per 1,000 legitimate infants from the same cause. For 1909-12 the corresponding rates were 66·3 and 17·1 respectively. 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 would indicate considerable neglect in the rearing of illegitimate infants.

Infantile mortality in Australasia.

The next table gives the proportion of deaths of infants under one year to the total births in each Australian State and New Zealand for each of the last seven years, and the periods 1902-6 and 1891-1900 :—

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	7·26	8·86	7·76	6·59	9·77	8·28	8·88
1908	8·61	7·58	7·07	6·97	8·46	7·52	6·79
1909	7·13	7·43	7·19	6·13	7·80	6·49	6·16
1910	7·69	7·46	6·31	7·06	7·80	10·22	6·77
1911	6·87	6·95	6·55	6·05	7·62	7·35	5·63
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
Average 1909-13..	7·24	7·36	6·71	6·48	7·69	7·55	5·92

Decrease in infantile mortality in Australasia.

On the average of the last five years the lowest infantile death rate prevailed in New Zealand, followed by that in South Australia, Queensland, Victoria, New South Wales, and Tasmania, in that order, and the highest in Western Australia. Although the rates show considerable variations in the States during any one year, and in different years in the same State, it is noticeable that the pronounced improvement which commenced in all the divisions of the Commonwealth in 1904 has continued with slight variations up to the latest year. Compared with the infantile death rate in 1902-6, the rate for 1913 showed a percentage decline of nearly 25 in Victoria, 16 in New South Wales, 29 in Queensland, 15 in South Australia, 43 in Western Australia, and 22 in Tasmania. This reduction in infantile mortality rates in all the States in 1913 was equivalent to a saving of 2,860 infant lives, of which 840 were in Victoria.

Infantile mortality in various countries.

The following table shows the infantile death rates of various foreign countries on the average of the latest five years for which this information is available, and of the Australian States and New Zealand on the average of the years 1909–13 :—

INFANTILE MORTALITY IN VARIOUS COUNTRIES.

Country.	Deaths under 1 year per 100 Births.	Country.	Deaths under 1 year per 100 Births.
Russia (European) ...	25·4	The Netherlands ...	11·6
Hungary	20·4	Switzerland	11·5
Austria...	20·3	Scotland	11·2
German Empire	17·6	Denmark	10·7
Prussia...	17·0	Ireland	9·4
Spain	16·5	Sweden	7·8
Bulgaria	15·6	Western Australia ...	7·7
Japan	15·6	Tasmania	7·5
Servia	15·4	New South Wales ...	7·4
Italy	15·3	Victoria	7·2
Belgium	14·1	Norway	7·0
France	12·6	Queensland	6·7
Ontario, Province of ...	12·3	South Australia ...	6·5
England and Wales ...	11·6	New Zealand	5·9

Of all the countries for which information is available Russia has the highest and New Zealand, South Australia, and Queensland have the lowest infantile mortality. In the former 1 in every 4, and in the three latter, approximately, 1 in every 16 infants dies within its first year.

Deaths of children under 5.

In 1913 the deaths of male children under 5 years of age numbered 1,839, and the deaths of female children under that age, 1,459—the former being in the proportion of 21·65 per cent., and the latter of 20·91 per cent., to the total number

of deaths of the respective sexes at all ages. Comparing the averages of the four decades ended with 1910, it will be seen that a marked falling off took place, from period to period, in the mortality of children relatively to that of persons of all ages. The next table shows the annual number of such deaths in the State at each year of age, and their proportion to the deaths at all ages in the periods mentioned :—

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.
Males.							
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
Females.							
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

Infants surviving their fifth year.

The increasing proportion of infants who survive their fifth year shows that the conditions affecting child life have materially improved in the past thirty years, and that the improvement has been very pronounced since 1903. For the ten-year period 1904–13 a low death rate between 1 and 5 years was coincident with a low mortality in the first year of life, while in the decades 1881–1890 and 1891–1900 the high rates which prevailed under one year were associated with high mortality rates for each of the four following years. It would thus appear that the effects of illness in the first year of life, as indicated by a high death rate, are conducive to a high mortality in each of the four succeeding years. The results disclosed agree with the conclusions of the Medical Officer of the Local Government Board (England), who stated in his 1909-10 report that "the countries having high infant mortalities continue in general to

suffer somewhat excessively throughout the first twenty years of human life, and that countries having low infantile mortalities continue to have relatively low death rates in the first twenty years of life, though the superiority is not so great at the later as at the earlier ages." The following table gives the numbers of survivors at each year of age from 1 to 5 inclusive per 10,000 male and 10,000 female infants born in Victoria taking the averages of the decennia 1881–1890, 1891–1900, and 1904–13 :—

SURVIVORS AT EACH YEAR OF AGE, 1 TO 5 INCLUSIVE, PER 10,000 MALES AND 10,000 FEMALES BORN 1881–1890, 1891–1900, AND 1904–13.

Age.	Survivors at each Year of Age 1 to 5 inclusive per 10,000 Births of—					
	Males.			Females.		
	1881-1890.	1891-1900.	1904-1913.	1881-1890.	1891-1900.	1904-1913.
1 year	8,652	8,805	9,139	8,816	8,960	9,301
2 years	8,351	8,540	8,985	8,529	8,713	9,169
3 "	8,252	8,459	8,930	8,430	8,629	9,117
4 "	8,180	8,396	8,891	8,361	8,577	9,082
5 "	8,121	8,349	8,862	8,305	8,534	9,053

According to the experience of the period 1904–13 of every 10,000 boys and 10,000 girls born in Victoria, 9,139 of the former and 9,301 of the latter may be expected to survive the first year of life, 8,985 boys and 9,169 girls will be alive at the end of the second year, 8,930 and 9,117 at the end of the third year, 8,891 and 9,082 at the end of the fourth year, and 8,862 and 9,053 at the end of the fifth year. Combining the two sexes in equal numbers, the average number of survivors is 8,957 per 10,000 births—a much greater number than either of the proportions deduced from the mortalities in the decennia 1891–1900 and 1881–1890, when the corresponding averages were 8,441 and 8,213 respectively. Of every 10,000 infants born in Victoria there are, on the average, 5,122 boys and 4,878 girls—being in the ratio of 105 of the former to every 100 of the latter. According to the mortality experienced in the period 1904–13 these will be reduced at the end of five years to 4,539 boys and 4,416 girls, and the ratio of the sexes will be altered to slightly less than 103 males for every 100 females. Thus, nearly one-half of the excess of males over females at birth is neutralized in the first five years by the heavier mortality among boys, especially in their first year of life.

Ages at death.

The ages of males and females who died in 1913 and in the two preceding years are shown in the following table :—

AGES AT DEATH IN VICTORIA, 1911–13.

Ages.	1911.			1912.			1913.		
	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.
Under 1 ..	1,309	961	2,270	1,515	1,154	2,669	1,419	1,119	2,538
1 to 2	201	149	350	266	217	483	241	191	432
2 „ 3	71	73	144	96	76	172	83	67	150
3 „ 4	58	50	108	66	57	123	55	47	102
4 „ 5	42	41	83	51	52	103	41	35	76
5 „ 10	147	143	290	197	181	378	169	141	310
10 „ 15	103	109	212	116	134	250	126	110	236
15 „ 20	162	150	312	170	176	346	147	165	312
20 „ 25	214	244	458	206	268	474	218	225	443
25 „ 30	198	228	426	250	249	499	205	244	449
30 „ 35	223	254	477	225	233	458	225	232	457
35 „ 40	257	273	530	282	273	555	281	289	570
40 „ 45	326	291	617	377	305	682	361	262	623
45 „ 50	389	326	715	515	325	840	457	332	789
50 „ 55	509	329	838	532	362	894	544	345	889
55 „ 60	403	287	690	486	341	827	511	324	835
60 „ 65	483	310	793	426	339	765	455	318	773
65 „ 70	571	420	991	613	488	1,101	516	428	944
70 „ 75	708	617	1,325	704	610	1,314	623	530	1,153
75 „ 80	823	737	1,560	831	705	1,536	713	655	1,368
80 „ 85	734	494	1,228	693	583	1,276	645	526	1,171
85 „ 90	315	255	570	342	274	616	355	286	641
90 „ 95	92	90	182	96	95	191	85	83	168
95 ..	4	7	11	10	3	13	8	7	15
96 ..	4	6	10	5	8	13	4	6	10
97 ..	3	3	6	2	3	5	1	5	6
98 ..	..	5	5	3	2	5	3	3	6
99 ..	2	3	5	1	4	5	1	1	2
100 ..	2	2	4	..	..	..	2	2	4
101 ..	2	1	3	..	..	..	1	..	1
102 ..	1	1	2	..	..	..	1	..	1
103 ..	..	1	1	..	1	1	..	..	..
105 ..	..	1	1	..	..	..	..	..	..
107 ..	..	..	..	1	..	1	..	1	1
Total ..	8,356	6,861	15,217	9,077	7,518	16,595	8,496	6,979	15,475

Of the 47,287 persons who died in Victoria during the last three years, 6,180 were aged 80 years and upwards, and 20—ten males and ten females—had attained or passed the age of 100 years. The highest age recorded in 1911–13 was 107 years, which was attained by

only one man and one woman. To every 100 female deaths there were 122 male deaths in 1913, as against 121 in the previous year and 122 in 1911.

Death rate from certain diseases.

Since 1906 the causes of death in Victoria have been arranged according to the International Classification List. With regard to the selection of the primary cause of death when two or more associated diseases are stated, there is no material difference between this method and the one previously followed in the State, except in the case of a few minor nervous and respiratory complaints of persons dying in Hospitals for the Insane. Many important causes of death are practically unaffected by the new classification, and consequently retain their comparative character. Amongst these are cancer, tubercular diseases, typhoid fever, whooping cough, measles, influenza, scarlet fever, meningitis and encephalitis, diabetes, appendicitis, urinary, liver and puerperal diseases, suicide, old age, &c. In many other instances, as where death was due to diarrhœa and enteritis, diphtheria and croup, hydatids, accidental violence, homicide, &c., re-arrangements of the mortalities have been made which allow comparisons to be instituted with previous years. The health of the community, as reflected in the death rates from the chief diseases arranged on a comparative basis, is shown in the following table for the period 1890–2 and for the last five years :—

DEATHS PER MILLION FROM CERTAIN CAUSES.

Cause of Death.	Deaths per Million of the Population.					
	1890–1892.	1909.	1910.	1911.	1912.	1913.
Typhoid Fever	369	103	107	72	72	68
Scarlet Fever	34	33	22	3	4	4
Measles	2	3	25	56	64	32
Whooping Cough	129	132	50	32	115	71
Diphtheria and Croup	552	69	86	179	190	176
Influenza	381	86	92	114	122	67
Hydatids	51	26	17	24	20	19
Cancer	584	802	832	833	905	839
Phthisis	1,365	848	830	839	803	755
Other Tubercular Diseases	379	192	176	186	154	156
Syphilis	39	44	51	46	57	55
Diabetes	38	102	106	117	113	91
Anæmia, Chlorosis, Leucæmia	28	90	80	66	85	76
Meningitis and Encephalitis	113	152	116	113	120	131
Infantile Paralysis	..	..	..	..	4	2
Locomotor Ataxia and other diseases of Spinal Cord	43	75	64	62	70	62
Congestion and Hæmorrhage of the Brain	344	415	439	462	464	429
Epilepsy	74	39	25	33	34	31
Convulsions	353	63	81	66	83	57
Heart Disease (including Endocarditis, Pericarditis, and Angina Pectoris)	962	1,517	1,423	1,434	1,427	1,294
Acute and Chronic Bronchitis	691	321	288	356	399	270

DEATHS PER MILLION FROM CERTAIN CAUSES—*continued.*

Cause of Death.	Deaths per Million of the Population.					
	1890–1892.	1909.	1910.	1911.	1912.	1913.
Pneumonia and Broncho-pneumonia	853	768	658	818	1,006	767
Pleurisy	96	41	38	52	46	39
Congestion of Lungs and Pulmonary Apoplexy	140	66	49	67	63	55
Asthma and Pulmonary Emphysema	70	60	60	70	52	58
Enteritis, Gastro-enteritis, and Diarrhœal Diseases	1,342	756	918	679	752	709
Hernia, Intestinal Obstruction ..	124	122	120	110	114	92
Diseases of the Stomach (Cancer excepted)	175	86	89	104	103	98
Cirrhosis and other diseases of the Liver (Cancer excepted) ..	329	149	156	152	171	136
Biliary Calculi	11	31	32	26	24	20
Appendicitis and Abscess of the Iliac Fossa	..	74	83	83	83	83
Simple Peritonitis (non-puerperal) ..	106	41	34	23	27	30
Acute and Chronic Nephritis, Uræmia, Bright's Disease	294	518	499	589	658	594
Diseases of the Bladder and Prostate	86	91	89	96	105	80
Calculi of the Urinary System ..	8	6	5	10	6	9
Old Age	631	988	982	1,038	1,030	973
Suicide	109	92	101	114	112	103
Accidental Violence	811	498	528	469	515	491
Homicide	34	12	31	18	21	18

The most striking feature of the mortality of 1913 as compared with the previous year was the decrease in the rates from practically all important diseases. These and other comparable 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 by Victorian legislation, which requires parents to have their children vaccinated. The proportion of successful vaccinations to every 100 births for the average of 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	1907 ...	67
1900 ...	67	1908 ...	67
1901 ...	62	1909 ...	68
1902 ...	53	1910 ...	69
1903 ...	71	1911 ...	62
1904 ...	69	1912 ...	60
1905 ...	67	1913 ...	69
1906 ...	67		

In 1913 the vaccinations of children were equal to 69 per cent. of the births, which was higher than the proportions for the preceding two years, but below the ratio—72 per cent.—in the period 1876–1899. As a result of an outbreak of small-pox in Sydney in 1913, it is estimated by the Public Health Department that about 160,000 adults were re-vaccinated in Victoria during that year.

Efficacy of vaccination.

Statistics of the small-pox outbreak in Sydney in 1913 show the value of recent vaccination as a protection against that disease. Between July and September, 1913, there were approximately 500,000 people vaccinated in Sydney, and none of them contracted small-pox. Of the 261 vaccinated persons employed in the Sydney Quarantine Station not one contracted the disease. The particulars of 1,037 cases of small-pox are as follows :—

—	Number.	Per Cent. of Total Cases.
Never vaccinated	928	89·5
Vaccinated successfully within incubation period	56	5·4
Vaccinated successfully more than thirteen years prior to attack	53	5·1
Vaccinated successfully less than thirteen years prior to attack	..	..
Total	1,037	100·0

There were no cases of small-pox among persons who had been successfully vaccinated within the preceding thirteen years. Similar particulars are not available for the additional 195 cases reported in New South Wales up to the end of May, 1914, but up to that date only two deaths were recorded out of a total of 1,232 cases.

The following figures, taken from the Report of the English Royal Commission on Vaccination, show the cases of small-pox per 10,000 vaccinated and unvaccinated persons at different ages, and the percentage of cases which ended fatally during the outbreak in Sheffield in 1887–8 :—

SMALL-POX IN SHEFFIELD.

Ages.	Attacks per 10,000 persons.		Deaths per 100 cases.	
	Vaccinated.	Unvaccinated.	Vaccinated.	Unvaccinated.
Under 5 ...	37	466	0·8	51·6
5 to 10 ...	67	2,597	2·2	34·0
10 to 20 ...	269	2,441	1·9	48·6
20 to 30 ...	285	799	5·4	62·2
30 to 40 ...	153	340	9·8	67·7
40 and over ...	63	95	11·7	38·9

As immunity from small-pox diminishes with the lapse of years after vaccination, the rates for children are specially important, as they relate to a period of life when the protection afforded by inoculation is greatest. Among infants under 5 the attacks were 37 per 10,000 of those vaccinated as against 466 per 10,000 of the unvaccinated. For children aged 5 to 10 the proportions for vaccinated and unvaccinated were 67 and 2,597 respectively. Regarding the effect of vaccination in cases of persons subsequently contracting small-pox, the figures quoted in the above table show that of the infants under 5 who contracted the disease slightly less than 1 per cent. of the vaccinated, and 51 per cent. of the unvaccinated, died. Among those aged 5 to 10 the fatality rate was 2 per cent. for the former and 34 per cent. for the latter.

Small-pox—danger from contact.

The proportions of vaccinated and unvaccinated persons living in infected houses who contracted small-pox are given in the following statement for five English towns:—

ATTACK RATES AMONG VACCINATED AND UNVACCINATED PERSONS LIVING IN INFECTED HOUSES IN ENGLISH TOWNS.

Town.	Attacks per 100 children under 10 living in infected houses.		Attacks per 100 persons over 10 living in infected houses.	
	Vaccinated.	Unvaccinated.	Vaccinated.	Unvaccinated.
Sheffield, 1887-8 ...	7·9	67·6	28·3	53·6
Warrington, 1892-3 ...	4·4	54·5	29·9	57·6
Dewsbury, 1891-2 ...	10·2	50·8	27·7	53·4
Leicester, 1892-3 ...	2·5	35·3	22·2	47·6
Gloucester, 1895-6 ...	8·8	46·3	32·2	50·0

The combined figures show that of every 100 contacts under 10 years of age slightly less than 7 of the vaccinated and 51 of the unvaccinated contracted small-pox. For those over 10 years of age the proportions were 28 and 52 respectively. Among persons over 10 years of age the period elapsing between vaccination and attack was considerably longer, and the protection afforded by inoculation was consequently less, than among those under that age.

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 were no deaths from this disease during the past three 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 have taken place in the twenty-nine years ended 1913. Statistics of

European countries reveal a very marked decline in the mortality from small-pox in recent years. The deaths per million of the population in various countries are shown in the following table for the average of the latest three years for which these particulars are available :—

DEATHS FROM SMALL-POX PER MILLION OF POPULATION IN VARIOUS COUNTRIES.

Country.	Period.	Deaths per Million of the Population.	Country.	Period.	Deaths per Million of the Population.
Italy	1909–11	58·2	Switzerland ...	1908–10	·6
Japan	1907–9	30·5	German Empire ...	1909–11	·5
Ceylon	1909–11	16·5	New South Wales	1911–13	·4
Belgium ...	1908–10	6·7	Scotland ...	1908–10	·4
Hungary ...	1909–11	4·9	Sweden ...	1908–10	·1
France	1908–10	2·8	The Netherlands...	1909–11	No Deaths.
United States of America ...	1909–11	2·5	Ireland	1909–11	
Ontario	1909–11	1·1	Victoria ...	1911–13	
Austria ...	1909–11	·6	Queensland ...	1911–13	
England and Wales	1909–11	·6	South Australia ...	1911–13	
Prussia	1909–11	·6	Western Australia	1911–13	
Roumania ...	1909–11	·6	Tasmania ...	1911–13	

Typhoid fever.

Typhoid fever was responsible in 1913 for 95 deaths, which represented a mortality rate of 68 per million of population, as against 72 in the years 1912 and 1911, 107 in 1910, 103 in 1909, 137 in 1908, and 369 in 1890–2. The rate for last year was 31 per cent. below the average of the preceding five years, and 82 per cent. lower than that for the period 1890–2. For Greater Melbourne also a rapidly diminishing death rate from this cause is shown in recent years, the rate for 1909–13 being only 7·0 per hundred thousand of the population as compared with 31·8 in the decennium 1891–1900 and 78·4 in 1881–1890. In regard to the prevalence of typhoid fever in different divisions of the State, figures show that the disease is twice as prevalent in the country as in the metropolis, the reported cases per 100,000 of the population being 143 in the former, and 67 in the latter, on the average of the past five years. Comparing the deaths in Greater Melbourne from typhoid fever with the cases reported, the fatality rate was 9·5 per cent. in 1909–13, as compared with 10·3 per cent. in the period 1904–8. The mortality 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	2·03	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 the deaths of persons under 15 were proportionately fewer among boys than girls.

Typhoid death rates in various countries.

The deaths from typhoid fever per 100,000 of the population in various countries for the latest three-year period for which this information is available are shown in the following table :—

DEATH RATES FROM TYPHOID FEVER IN VARIOUS COUNTRIES.

Country.	Period.	Deaths per 100,000 of Population.	Country.	Period.	Deaths per 100,000 of Population.
Servia	1907–9	50·0	Belgium ...	1908–10	10·3
Ontario, Province of	1909–11	28·8	France ...	1908–10	10·0
Italy	1909–11	27·4	Ireland ...	1909–11	7·1
Western Australia	1910–12	27·0	South Australia...	1910–12	7·1
Spain	1909–11	26·0	Victoria ...	1911–13	7·1
Hungary ...	1909–11	25·9	Scotland ...	1908–10	6·0
United States ...	1909–11	21·9	England and Wales	1909–11	6·0
Roumania ...	1909–11	21·8	New Zealand ...	1910–12	5·7
Queensland ...	1910–12	17·9	The Netherlands	1909–11	5·3
New South Wales	1910–12	13·9	Prussia ...	1909–11	5·2
Tasmania ...	1910–12	13·5	German Empire...	1909–11	4·3
Austria... ...	1909–11	12·3	Switzerland ...	1908–10	3·6
Japan	1907–9	12·0			

Scarlet fever. During 1913 the deaths from scarlet fever numbered only 6, which corresponded to the low rate of 4 per million of the population, as compared with rates of 4 in the previous year, 3 in 1911, 22 in 1910, 33 in 1909, 17 in 1908, and 34 in 1890–2. The ratio of deaths to notified cases in Greater Melbourne was 15 in every 1,000 for the period 1909–13, as compared with 13 in every 1,000 for 1904–8. Death rates from scarlet fever are considerably lower in the Australian States than in European countries. The deaths from this disease, per 100,000 of the population, in various countries on the average of the latest three years for which this information is available are given in the subjoined table :—

DEATH RATES FROM SCARLET FEVER IN VARIOUS COUNTRIES.

Country.	Period.	Deaths per 100,000 of Population.	Country.	Period.	Deaths per 100,000 of Population.
Roumania ...	1909–11	75·3	Ireland ...	1909–11	4·5
Hungary ...	1909–11	56·0	Switzerland ...	1908–10	3·8
Austria	1909–11	44·7	France ...	1908–10	3·4
Prussia	1909–11	15·9	The Netherlands	1909–11	2·3
Belgium ...	1908–10	15·7	Tasmania ...	1910–12	1·2
German Empire ...	1909–11	12·9	South Australia	1910–12	1·2
Scotland ...	1908–10	10·8	New Zealand ...	1910–12	1·0
United States ...	1909–11	10·6	New South Wales	1910–12	·9
Ontario, Province of	1909–11	10·4	Queensland ...	1910–12	·8
Italy	1909–11	7·9	Western Australia	1910–12	·8
Spain	1909–11	7·0	Japan	1907–9	·4
England and Wales	1909–11	7·0	Victoria ...	1911–13	·4
Sweden ...	1908–10	5·2			

Measles. The mortality from measles has varied very considerably from period to period, although there have been only two severe epidemic outbreaks during the past three decades, and these did not extend beyond the years—1893 and 1898—in which they occurred. In 1913 there were 45 deaths attributed to this cause, representing a rate of 32 per million of the population, as compared with rates of 64 in the previous year, 56 in 1911, 25 in 1910, 3 in 1909, and 16 in 1908. Of the persons who died during 1913 only 8 were over 10 years of age. The deaths from measles per 100,000 of the population

in different countries for the latest three years for which this information is available, are shown in the next table :—

DEATH RATES FROM MEASLES IN VARIOUS COUNTRIES.

Country.	Period.	Deaths per 100,000 of Population.	Country.	Period.	Deaths per 100,000 of Population.
Hungary ...	1909–11	42·4	New South Wales	1910–12	9·7
Scotland ...	1908–10	39·9	Ontario ...	1909–11	9·1
Spain	1909–11	37·5	Switzerland ...	1908–10	8·6
Belgium ...	1908–10	36·8	France ...	1908–10	8·3
Austria... ...	1909–11	34·3	Sweden ...	1908–10	7·8
England and Wales	1909–11	31·7	Japan	1907–9	6·3
Italy	1909–11	28·6	Queensland ...	1910–12	5·4
Roumania ...	1909–11	19·9	Victoria ...	1911–13	5·1
The Netherlands...	1909–11	19·1	Tasmania ...	1910–12	4·2
Prussia... ...	1909–11	16·3	Western Australia	1910–12	2·7
Ireland... ...	1909–11	13·1	South Australia	1910–12	2·4
United States ...	1909–11	10·6	New Zealand ...	1910–12	1·9

The average rate for the last three years in Victoria was very much below that experienced in European and other countries.

Whooping cough.

There were 99 deaths referred to whooping cough in 1913, which equalled a rate of 71 per million of the population at all ages, as compared with rates of 115 in the previous year, 32 in 1911, 50 in 1910, 132 in 1909, 54 in 1908, and 103 in 1907. 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 66, or nearly 67 per cent., 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. The incidence of this disease is generally about 20 per cent. higher among girls than boys, but in the year under review the excess amounted to 36 per cent. The deaths from whooping cough per 100,000 of the population for various countries, during the latest three-year period for which this information is available, are given in the following table :—

DEATHS FROM WHOOPING COUGH PER 100,000 OF POPULATION IN DIFFERENT COUNTRIES.

Country.	Period	Deaths per 100,000 of Population.	Country.	Period.	Deaths per 100,000 of Population.
Scotland ...	1908–10	37·9	Spain	1909–11	14·5
Austria... ...	1909–11	33·9	Tasmania ...	1910–12	11·6
Belgium ...	1908–10	32·4	United States ...	1909–11	10·8
Hungary ...	1909–11	30·4	Queensland ...	1910–12	9·4
Ireland... ...	1909–11	25·0	Ontario, Province of	1909–11	8·8
Prussia... ...	1909–11	22·9	New South Wales	1910–12	8·5
England and Wales	1909–11	22·2	Western Australia	1910–12	8·4
Roumania ...	1909–11	20·7	France ...	1908–10	8·2
Switzerland ...	1908–10	18·7	Japan	1907–9	7·4
The Netherlands	1909–11	17·8	Victoria ...	1911–13	7·3
Italy	1909–11	16·9	New Zealand ...	1910–12	5·9
Sweden ..	1908–10	14·8	South Australia ..	1910–12	5·4

On the average of the past three years the mortality rate from whooping cough in Victoria was only one-third of that in England and Wales. It was also below that in any other Australian State except South Australia.

Diphtheria and croup.

The number of deaths from diphtheria and croup during 1913 was 245, which equalled a rate of 176 per million of the population, as against 190 in the previous year, 179 in 1911, 86 in 1910, 69 in 1909, 88 in 1908, and 552 in 1890–2. Like measles, scarlet fever, and whooping cough, it is an ailment chiefly affecting children. Of the 245 deaths attributed to this disease last year, 202 were of children under 10 years of age, of whom 104 had not completed their fifth year. The incidence of the malady is light in the first year of life, as compared with the subsequent four years, and is about equal for both sexes. The proportion of deaths to the cases notified to the Board of Health shows that 48 in every 1,000 ended fatally in Greater Melbourne in 1909–13, as against 66 per 1,000 in the period 1904–8. Prior to the employment of the anti-toxin treatment of diphtheria the fatality rate in Melbourne was five and a half times that experienced in the past five years. The deaths from diphtheria and croup per 100,000 of the population for various countries during the latest three-year period for which this information is available are given in the following table :—

DEATH RATES FROM DIPHTHERIA AND CROUP IN VARIOUS COUNTRIES.

Country.	Period.	Deaths per 100,000 of Population.	Country.	Period.	Deaths per 100,000 of Population.
Hungary ...	1909–11	42·7	Tasmania ...	1910–12	14·8
Servia	1907–9	37·5	Switzerland ...	1908–10	14·4
Austria	1909–11	26·8	Queensland ...	1910–12	14·1
Prussia	1909–11	24·9	England and Wales	1909–11	13·9
German Empire ...	1909–11	24·0	Italy	1909–11	13·9
Spain ...	1909–11	20·8	South Australia	1910–12	13·5
United States ...	1909–11	20·2	Sweden ...	1908–10	13·2
Ontario, Province of	1909–11	18·4	Ireland ...	1909–11	10·9
Scotland ...	1908–10	18·4	Roumania ...	1909–11	9·8
Victoria ...	1911–13	18·2	Japan	1907–9	9·8
Western Australia	1910–12	16·2	France... ...	1908–10	8·3
Belgium ...	1908–10	15·4	The Netherlands	1909–11	7·2
New South Wales	1910–12	14·9			

Hydatids.

The deaths attributed to hydatids in 1913 numbered 26, being equivalent to a rate of 19 per million of the population as compared with rates of 20 in the preceding year, 24 in 1911, 17 in 1910, 26 in 1909, 21 in 1908, and 51 in 1890–2. Of the 140 persons who died from this disease in the last five years 79 were males and 61 females. Hospital returns for the period 1909–13 show that 433 cases of hydatids were treated therein and that 1 in every 10 ended fatally.

Anæmia, chlorosis, leucæmia. Anæmia, chlorosis, and leucæmia were responsible for 106 deaths in 1913, which corresponded to a rate of 76 per million of the population as against 85 in the previous year, 66 in 1911, 80 in 1910, 90 in 1909, and 85 in 1908. Of the 24 persons who died from leucæmia in 1913, 9 were under 10 years of age.

Diabetes. During 1913 diabetes was responsible for 70 male and 57 female deaths, representing a rate of 91 per million of the population as compared with rates of 113 in the preceding year, 117 in 1911, 106 in 1910, 102 in 1909, and 98 in 1908. 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 at the previous census period. During 1910–12 the female exceeded the male rate for each age period between 50 and 80, the excess for the twenty years of life 60 to 80 amounting to 54 per cent. For all ages the rate for females was 26 per cent. higher than that for males.

Influenza. The deaths from influenza in 1913 numbered 94, corresponding to a rate of 67 per million of the population, as compared with rates of 122 in the previous year, 114 in 1911, 92 in 1910, 86 in 1909, 131 in 1908, and 381 in 1890–2. Although this disease has varied in form in different periods it has always proved much more fatal to elderly people than to those of middle or young ages. Fifty-two per cent. of the deaths in 1913 were of persons aged 60 years and upwards. The age incidence of the disease at various periods is shown

in the next table, which gives the average yearly proportion of deaths from influenza per 10,000 of each sex in age groups during the years adjoining five census dates :—

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

Age Group.	1870–2.	1880–2.	1890–2.	1900–2.	1910–12.
Males.					
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
Females.					
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. lower than 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.

Respiratory diseases.

In 1913 the deaths from respiratory diseases numbered 1,781, which represented a rate of 1,279 per million of the population, as compared with rates of 1,659 in the previous year, 1,470 in 1911, 1,180 in 1910, 1,316 in 1909, and 1,531 in 1908. Of the deaths from complaints of this nature in the year under review, 110 were referred to acute bronchitis, 266 to chronic bronchitis, 406 to broncho-pneumonia, 663 to pneumonia, and 54 to pleurisy. These five diseases accounted for 84 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 43 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 next table, which gives the death rates in age groups for each sex 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.
Males.					
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
Females.					
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 years 1900–2, the mortality from respiratory diseases for the period 1910–12 shows a decline at each age group up to 35 for males and to 65 for females, the reduction for all ages 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.

Influenza and respiratory diseases (combined).

The average yearly proportion of deaths from influenza and respiratory diseases (combined) per 10,000 males and females respectively living at different ages at five census periods, is shown in the following table :—

DEATH RATES FROM INFLUENZA AND RESPIRATORY DISEASES (COMBINED).

Age Group.	1870–2.	1880–2.	1890–2.	1900–2.	1910–12.
Males.					
0—15	23·34	29·36	31·02	17·63	13·34
15—20	3·05	3·37	3·56	3·04	1·90
20—25	5·70	5·34	6·08	5·44	2·56
25—35	5·74	8·38	8·35	6·73	4·03
35—45	10·33	15·80	16·59	10·80	11·09
45—55	20·52	26·83	30·30	21·24	18·98
55—65	42·46	51·89	69·16	43·62	35·06
65 and upwards ...	109·20	138·90	168·20	129·40	151·14
All ages ...	17·62	24·73	28·24	20·96	18·27

DEATH RATES FROM INFLUENZA AND RESPIRATORY DISEASES (COMBINED)—*continued.*

Age Group.	1870–2.	1880–2.	1890–2.	1900–2.	1910–12.
Females.					
0—15	19·02	24·52	25·99	15·00	10·92
15—20	1·88	2·02	4·44	3·17	1·90
20—25	3·54	4·23	4·33	4·03	2·83
25—35	4·58	5·79	8·00	4·64	3·77
35—45	7·94	12·61	15·66	9·54	6·15
45—55	8·04	13·63	22·40	13·82	8·96
55—65	23·36	29·77	43·56	32·95	18·25
65 and upwards ...	73·94	119·30	147·60	102·80	112·61
All ages ...	12·91	17·32	21·34	15·41	12·91

The mortality rates from influenza and respiratory diseases combined showed a decrease for both sexes at the last census period as compared with the preceding one, such decrease amounting to 13 per cent. in the male and 16 per cent. in the female rate. Excepting the age groups 15–20 at the last three census periods, and the group 20–25 in 1910–12, the proportion of deaths of females from these diseases at the different age periods was lower in every instance than that for males. The difference in favour of the former was somewhat small up to the age of 35, but for subsequent ages it was very considerable.

Diseases of the spine. In 1913 locomotor ataxia and other diseases of the spine, excluding infantile paralysis, accounted for 65 male and 21 female deaths, representing a death rate of 62 per million of the population as compared with rates of 70 in the previous year, 62 in 1911, 64 in 1910, 75 in 1909, and 80 in 1908. Of the 22 persons who died from locomotor ataxia 19 were males.

Infantile paralysis. Mortality returns show that infantile paralysis was responsible for the deaths of 2 boys and 1 girl in 1913, as against 4 boys and 2 girls in the previous year. In view of the importance that is now attached to this disease it may be stated

that the 9 deaths therefrom occurred in different districts. Of the children who died, 4 were under 1 year of age, 1 was 2 years old, 1 was 5, 1 was 8, 1 was 10, and 1 was 16 years old. Five of the deaths occurred in the winter season.

Heart disease. During 1913 there were 1,676 deaths ascribed to organic heart disease, 30 to pericarditis, 70 to acute endocarditis, and 26 to angina pectoris. The total—1,802—from the above causes represented a rate of 1,294 per million of the population, as compared with 1,427 in the previous year, 1,434 in 1911, 1,423 in 1910, 1,517 in 1909, 1,404 in 1908, and 1,264 in 1907. Of the 1,802 persons who died from these diseases in 1913, only 49, or 2·7 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 periods 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 1913 there were 890 male and 810 female deaths from digestive ailments, representing a proportion of 1,220 per million of the population, which was considerably below the average of the preceding five years, and only slightly more than one-half of the rate—2,382—experienced in 1890–2. Victorian experience shows that more than half of the mortality from digestive maladies has been ascribed to diseases of a diarrhœal nature. In 1913 diarrhœal complaints were responsible for 987 deaths, equivalent to 709 per million, which was 47 per cent. below the ratio—1,342—for 1890–2. In 1908, 1909, 1910, 1911, and 1912 the rates per million were 1,061, 756, 918, 679, and 752 respectively. The age incidence of this disease is heaviest at the extremes of life. Of the 987 deaths in the year under review, 757, or 77 per cent., were of children under 2 years of age and 127, or 13 per cent., were of persons over 65 years of age. There were 81 male and 40 female deaths from cirrhosis of the liver, and 50 male and 69 female deaths from other affections of that organ.

Appendicitis. Of the total deaths attributed to diseases of the digestive system in 1913 nearly 7 per cent. were due to appendicitis. The experience of the past five years shows that this disease is more fatal to males than females, and that the incidence of mortality is greatest between ages 15 and 35. The deaths numbered 116 in 1913, 112 in 1912, 107 in 1911, 108 in 1910, 95 in 1909, and 101 in 1908, and corresponded to rates of 83, 83, 83, 83, 74, and 80 per million of the population respectively. Hospital records show that the fatality rate has steadily diminished. During 1913 there were 1,270 cases treated, and 57, or 4·5 per cent., ended fatally, as compared with a fatality rate of 6 per cent. on the average of the preceding five years.

Diseases of urinary system. A very marked increase in the crude mortality rate from diseases of the urinary system has taken place in recent periods. For the five years 1909 to 1913 the average annual death rate was 705 per million of the population, as compared with 408 in 1890–2—an increase of 73 per cent. in the intervening years. In 1913 there were 1,008 deaths attributed to these diseases, which corresponded to a rate of 724 per million of the population, as against rates of 803 in the previous year, 727 in 1911, 628 in 1910, 644 in 1909, and 755 in 1908. Bright's disease, uræmia, and acute nephritis were responsible for 828 deaths, or 82 per cent., and complaints of the bladder and prostate for 111 deaths, or 11 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.

Deaths from phthisis at various ages.

The ages and sexes of those who died from pulmonary tuberculosis in the decennium ended 1910, and in each of the last three years, are given in the next table :—

DEATHS FROM PULMONARY TUBERCULOSIS AT VARIOUS AGES.

Ages.	Males.				Females.			
	Ten years— 1901 to 1910.	Year.			Ten years— 1901 to 1910.	Year.		
		1911.	1912.	1913.		1911.	1912.	1913.
0–10 ...	66	4	10	6	86	9	6	6
10–15 ...	50	4	3	4	142	8	19	7
15–20 ...	323	26	22	26	551	54	52	52
20–25 ...	579	50	55	52	777	87	99	78
25–30 ...	742	56	64	51	863	79	80	83
30–35 ...	761	67	67	61	767	73	51	60
35–40 ...	854	60	63	67	731	55	60	55
40–45 ...	775	88	56	60	478	43	52	47
45–50 ...	674	61	76	71	353	38	36	32
50–55 ...	531	59	63	59	195	19	20	28
55–60 ...	423	43	39	48	170	18	6	12
60–65 ...	397	28	21	22	128	12	12	5
65–70 ...	431	23	15	23	124	7	11	11
70 and over	436	29	17	16	121	8	12	10
Total ...	7,042	598	571	566	5,486	510	516	486

Notwithstanding the great increase in population the deaths from phthisis in 1913 were at nearly every age below the annual average of the decennium 1901–1910. The decreases from period to period are dealt with in subsequent paragraphs.

Death rates from phthisis.

The deaths from phthisis in 1913 numbered 1,052—566 being of males and 486 of females—and equalled a rate of 755 per million of the population, as compared with rates of 803 in the previous year, 839 in 1911, 830 in 1910, 848 in 1909, 955 in 1908, 958 in 1907, and 1,365 in 1890–2. The improvement in the death rate from this cause since 1890–2 was equivalent to the saving of 850 lives during 1913. The rates are more fully shown in

the following table, which gives the mortality per 10,000 of the population 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.
Males.						
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
Females.						
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 during 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. 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 numbers 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 greater tubercular infection of factory employment.

Phthisis in various countries.

Death rates from pulmonary tuberculosis, per 10,000 of the population, in various countries, for the latest year for which this information is available, are given below :—

DEATH RATES FROM PULMONARY TUBERCULOSIS IN VARIOUS COUNTRIES.

Country.	Year.	Deaths per 10,000 of Population.	Country	Year.	Deaths per 10,000 of Population.
Servia	1909	34·4	England and Wales	1911	10·8
France	1910	17·9	Belgium ...	1910	9·7
Ireland	1912	17·0	Victoria ...	1913	7·6
Japan	1909	16·6	South Australia...	1912	7·4
Switzerland ...	1910	16·1	Western Australia	1912	7·1
United States ...	1911	13·8	Tasmania ...	1912	6·0
German Empire ...	1911	13·7	New South Wales	1912	5·9
Spain	1911	12·2	Queensland ...	1912	5·2
The Netherlands	1911	11·9	New Zealand ...	1912	5·0
Scotland ...	1911	11·5			

It appears that the deaths attributable to pulmonary tuberculosis are more numerous in proportion to population in Victoria than in the other States and New Zealand, but are less numerous than in the other countries mentioned.

Tubercular death rates in Melbourne, Ballarat, and Bendigo.

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. The rates show that during the past five years 10 more persons in every 10,000 of the population died each year from tubercular diseases in Bendigo than in Melbourne and suburbs, or Ballarat. The rates in these localities from phthisis and other tubercular diseases are given in the following table for the periods 1891–1900 and 1901–5, and for each of the last eight years :—

DEATH RATES FROM TUBERCULAR DISEASES IN MELBOURNE, BALLARAT, AND BENDIGO, 1891-1913.

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 ..	11·5	13·2	21·7	3·9	2·3	2·5	15·4	15·5	24·2
1907 ..	11·6	10·5	20·2	3·4	1·8	2·0	15·0	12·3	22·2
1908 ..	11·5	13·3	18·4	2·6	2·1	1·3	14·1	15·4	19·7
1909 ..	9·7	9·4	22·9	2·6	1·9	3·2	12·3	11·3	26·1
1910 ..	9·7	11·0	22·8	2·4	2·5	1·1	12·1	13·5	23·9
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
Average of 1909–13..	9·6	10·1	20·6	2·4	2·5	2·2	12·0	12·6	22·8

In 1913 the death rate from pulmonary tuberculosis was higher for Bendigo and Ballarat, and lower for Melbourne than in the preceding year. In each of these areas the proportionate mortality from phthisis shows a substantial reduction as compared with fairly recent periods, the deaths per 10,000 of population having been fewer by 5·1 in Melbourne, 4·4 in Ballarat, and 2·7 in Bendigo during 1913 than in 1901–5.

Ages and residence of tubercular patients.

Particulars of cases of pulmonary tuberculosis occurring in the State were investigated for the first time in 1911. The cases dealt with were those reported to the Board of Health during the two and a half years ended 30th June, 1911, numbering 3,198. Valuable information was obtained from them regarding the prevalence of the disease in various areas, the incidence of attack at different ages for each sex and the time which elapsed from the commencement of the disease to the date on which a medical practitioner was consulted. These and other phases of the disease, including the probability of recovering therefrom, are dealt with in subsequent paragraphs. The persons reported during the two and a half years

referred to as suffering from pulmonary tuberculosis are arranged in the subjoined table according to sex, age, and usual place of residence :—

AGE AND RESIDENCE OF REPORTED TUBERCULAR PATIENTS, 1909 TO 30TH JUNE, 1911.

Sex.	Age.														Total all Ages.
	0–10	10–15	15–20	20–25	25–30	30–35	35–40	40–45	45–50	50–55	55–60	60–65	65–70	70 and over.	
Greater Melbourne.															
Males ..	12	17	98	114	130	108	105	98	99	56	45	30	11	14	937
Females .	12	22	134	211	170	140	110	68	37	29	16	7	10	9	975
Total ..	24	39	232	325	300	248	215	166	136	85	61	37	21	23	1,912
Bendigo and Suburbs.															
Males ..	1	3	10	10	14	14	36	32	40	23	12	13	13	8	229
Females..	3	1	16	23	19	16	8	10	10	3	2	4	1	2	118
Total ..	4	4	26	33	33	30	44	42	50	26	14	17	14	10	347
Ballarat and Suburbs.															
Males ..	2	1	3	7	13	6	6	11	12	8	5	4	1	2	81
Females..	1	2	9	7	11	6	9	4	6	..	..	..	..	1	56
Total ..	3	3	12	14	24	12	15	15	18	8	5	4	1	3	137
Geelong and Suburbs.															
Males ..	..	1	1	5	3	5	4	..	4	1	..	1	..	1	26
Females..	..	1	4	10	11	3	4	4	3	3	1	1	..	..	45
Total ..	..	2	5	15	14	8	8	4	7	4	1	2	..	1	71
Rest of The State.															
Males ..	5	6	26	51	60	50	30	41	44	32	24	19	11	7	406
Females..	2	8	35	58	66	42	46	17	17	14	7	4	6	3	325
Total ..	7	14	61	109	126	92	76	58	61	46	31	23	17	10	731
Victoria.															
Males ..	20	28	138	187	220	183	181	182	199	120	86	67	36	32	1,679
Females..	18	34	198	309	277	207	177	103	73	49	26	16	17	15	1,519
Total ..	38	62	336	496	497	390	358	285	272	169	112	83	53	47	3,198

An examination of the ages of the persons in the above areas shows that an undue proportion of the males and females affected in early life resided in the metropolis. During the two and a half years ended June, 1911, there were 545 males and 784 females, aged 15–30, reported, for the whole State, as suffering from pulmonary tuberculosis, of whom 342 of the former and 515 of the latter were residents of Melbourne. These proportions point to unfavorable conditions in city as compared with country life. An analysis of the figures for Bendigo shows that the incidence of the disease among females was somewhat heavier at most age groups than that for the

metropolitan area, while among males it was considerably heavier, especially at older ages. The result for males corresponds with the mortality from phthisis in Bendigo, where many miners, past middle life, suffering from chronic respiratory diseases, subsequently die from tuberculosis.

Frequency of phthisis.

The annual attack rate from phthisis per 10,000 of each sex at various ages in Greater Melbourne, and the whole State, and the ratios for the State of female to male cases, the latter being taken as 100 at each age group, were as follows :—

ATTACK RATES FROM PHTHISIS.

Age Group.	Greater Melbourne.		Victoria.		
	Attack Rate per 10,000.		Attack Rate per 10,000.		Ratio of Female to Male Rate, the latter being taken as 100.
	Males.	Females.	Males.	Females.	
0–10	0·87	0·89	0·58	0·54	93
10–15	2·65	3·39	1·76	2·18	124
15–20	13·58	16·73	8·16	11·71	143
20–25	16·54	25·25	12·14	18·99	156
25–30	22·36	24·13	17·05	19·97	117
30–35	22·22	23·50	16·38	17·09	104
35–40	24·36	20·45	17·59	15·94	91
40–45	21·57	12·97	17·18	9·74	57
45–50	22·03	7·64	19·48	7·62	39
50–55	15·72	7·81	15·10	6·68	44
55–60	20·79	6·85	17·71	5·65	32
60–65	20·10	4·83	19·42	4·49	23
65 and over ..	8·12	4·67	8·07	3·69	46
All ages ..	13·75	12·79	10·36	9·34	90

The figures show that the frequency of the disease is greater among females than males at each age group between 10 and 35, particularly at ages 15–20 and 20–25, where the excess amounts to 43 and 56 per cent. respectively. At the age group 35–40 the excess in the male rate is only about 10 per cent., but at older ages the susceptibility of men greatly exceeds that of women, especially at 55–65, when a man's chance of attack is nearly four times that for a woman. A further analysis of the figures discloses the fact that for both sexes at every age the metropolitan rates are heavier than those for the whole State.

Duration of phthisis before diagnosis.

Particulars regarding the time which elasped between the beginning of pulmonary tuberculosis and the date at which a medical practitioner was consulted, show that of the total patients about 1 in every 8 received advice within three months, and slightly less than 1 in every 3 within six months, while about one-half were medically advised within twelve months of the commencement of the disease. It should, however, be borne in mind that the course of the disease is very irregular, as some cases are not so far advanced in two years as others are in six months. This

probably accounts, in some measure, for the fact that about one-half of the people who develop phthisis suffer, in some degree, from it for at least one year before receiving medical attention. It is highly probable that if a physician's advice were obtained at an early stage of the disease in a larger proportion of cases the ratio of recoveries would be greater.

Frequency of phthisis in various areas.

The proportion of the residents of any large area which is affected by pulmonary tuberculosis represents fairly closely the degree of infection of that centre. Such proportions have been computed for five divisions of the State on the experience of the two and a half years ended June, 1911. During that period 1,912 residents of Greater Melbourne, 137 of Ballarat and suburbs, 347 of Bendigo and suburbs, 71 of Geelong and suburbs, and 731 of the "rest of the State" contracted the disease. Comparing these numbers with the respective populations it is found that of every 10,000 persons 13·1 in the metropolitan area, 11·6 in Ballarat, 31·6 in Bendigo, 10·2 in Geelong, and 4·9 in the rest of the State contracted tuberculosis of the lungs each year. The rate of Bendigo was higher than that of any other area. It was nearly two and a half times that of Melbourne, and more than six times the rate for country districts. The low rate existing in the latter division does not, however, fully represent the degree of infection therein. This is evidenced by figures given below, which show that in this area the attack rate was lower than the death rate, while in each of the other areas it was higher. The annual notifications of cases of pulmonary tuberculosis and the annual deaths therefrom per 10,000 of the population of each of the five divisions referred to and of the whole State are compared in the following table:—

ANNUAL REPORT RATE OF AND DEATH RATE FROM PHTHISIS.

—	Per 10,000 of the Population of —					
	Melbourne.	Ballarat.	Bendigo.	Geelong.	Rest of the State.	The Whole State.
Cases Notified ..	13·1	11·6	31·6	10·2	4·9	9·8
Deaths	9·5	9·9	21·8	7·2	6·1	8·3

The report rate exceeded the death rate by 38 per cent. in the Metropolis, by 17 per cent. in Ballarat, by 45 per cent. in Bendigo, by 42 per cent. in Geelong, and by 18 per cent. in the whole State. From the deficiency in the report or notification rate for the "rest of the State" it would appear that numerous cases occurring therein have not been reported to the Board of Health, or that many residents of the metropolis and of the three other large cities referred to, who contract phthisis, leave these areas and reside in country districts, where some of them subsequently die from the disease. The latter is true to some extent, but it accounts for only a portion of the discrepancy mentioned. If all cases occurring in the rural areas were notified, it is probable that the report rate would slightly exceed the death rate.

In a previous paragraph it was stated that the attack rate of tuberculosis for a large area represented the degree of infection of that centre. This may be taken as true when applied to the metropolis as a whole, but it cannot be accepted as correct for each of its parts, as the place of residence of a large proportion of the people differs from their place of work or business. For the two and a half years ended June, 1911, the cases reported annually per 10,000 of the population of the principal metropolitan municipalities were as follows:—

NOTIFIED TUBERCULAR CASES PER 10,000 OF POPULATION OF METROPOLITAN MUNICIPALITIES.

Municipality.	Cases per 10,000 of the Population.	Municipality.	Cases per 10,000 of the Population.
Preston Shire ...	20·2	Richmond City ...	12·1
Port Melbourne Town	18·7	Brighton Town ...	10·4
Melbourne City ...	18·1	Hawthorn City ...	10·3
Fitzroy City ...	17·3	Northcote City ...	10·0
Brunswick City ...	17·1	Essendon City ...	9·8
Coburg Town ...	15·4	Kew Town ...	9·8
South Melbourne City	15·2	Footscray City ...	9·2
Camberwell City ...	14·0	St. Kilda City ...	6·7
Prahran City ...	13·4	Malvern City ...	6·6
Collingwood City ...	12·5	Caulfield City ...	5·2
Williamstown Town...	12·2		

Probability of recovering from phthisis.

The cases of pulmonary tuberculosis reported during two and a half years furnish data which, in conjunction with the known incidence of tubercular mortality, enable a fairly reliable estimate to be made of the probability of recovering from the disease. In arriving at such an estimate allowances must be made for some old standing cases, which were probably reported prior to 1909, as well as for the deficiency in the notifications for rural areas and certain other disturbing elements of a less important character. Adopting the records of reported cases and the deaths as the basis, and taking into account the disturbing factors mentioned above, a calculation shows that, of the individuals who contract tuberculosis of the lungs in a form sufficiently serious to require medical attention, about 1 in every 6 recovers.

Results of sanatorium treatment of phthisis.

In the case of persons affected with tuberculosis of the lungs who received sanatorium treatment in Victoria no definite information was obtained regarding their health for periods subsequent to their discharge, and, therefore, the full value and effect of the treatment cannot be properly gauged. In view of German experience the after results must be very beneficial. In Germany fairly complete information is obtained as to the health of tubercular patients at the end of each of the five years following their discharge. The medical and economic results of sanatorium treatment of tuberculosis of the lungs by German State Invalidity Insurance Institutions during the thirteen years, 1897 to 1909, are shown by the following figures, which were taken from an article

in the Bulletin of the United States Labour Bureau, by Frederick L. Hoffman, on the "Care of Tuberculous Wage Earners in Germany":—

RESULTS OF SANATORIUM TREATMENT OF PHTHISIS IN GERMANY.

Year.	Total Patients		
	Receiving Sanatorium Treatment.	Discharged with restored earning power.	
		Number.	Per cent.
1897	3,334	2,257	67·7
1898	4,910	3,623	73·8
1899	7,698	5,696	74·0
1900	11,094	8,037	72·4
1901	14,656	11,249	76·8
1902	16,489	12,885	78·1
1903	20,148	16,047	79·6
1904	23,477	18,634	79·4
1905	26,621	21,788	81·8
1906	31,622	25,749	83·0
1907	32,074	26,287	82·0
1908	38,725	31,979	82·6
1909	42,232	35,131	83·2

Note.—Restored earning power is taken as being not less than one-third of normal.

Post-discharge results of sanatorium treatment.

The next table gives the proportions of tubercular patients who were discharged from German sanatoria with restored earning capacity, and who retained their earning capacity at the end of each of the five years subsequent to their discharge. The totals dealt with are given in the preceding table:—

POST-DISCHARGE RESULTS OF SANATORIUM TREATMENT IN GERMANY.

Year.	Per cent. Discharged with restored earning power*	Per cent. of persons treated who retained earning power* at the end of the first, second, third, fourth, and fifth year subsequent to their discharge.				
		First.	Second.	Third.	Fourth.	Fifth.
1897 ...	67·7	62	44	30	30	27
1898 ...	73·8	68	45	38	33	31
1899 ...	74 0	67	48	40	35	32
1900 ...	72·4	66	49	41	37	31
1901 ...	76·8	70	55	46	40	34
1902 ...	78·1	73	58	50	46	42
1903 ...	79·6	74	60	53	48	45
1904 ...	79·4	74	62	54	50	46
1905 ...	81·8	77	64	56	50	46
1906 ...	83·0	78	65	57	52	...
1907 ...	82·0	78	66	57	...	...
1908 ...	82·6	78	68	...	...	...
1909 ...	83·2	80	...	...	...	...

* See note to previous table.

Taking the cases for the year 1905—the latest for which full post-discharge results are given—the figures show that 81·8 per cent. of the patients were discharged with restored earning capacity. Of the total patients treated 77 per cent. retained their earning power at the end of the first year following their discharge, 64 per cent. at the end of the second, 56 per cent. at the end of the third, 50 per cent. at the end of the fourth, and 46 per cent. at the end of the fifth year. The treatment was provided by Invalidity Insurance Institutions for the purpose of preventing serious illness or incapacity for work, and to save the payment of disability annuities to the persons treated. The fact that 46 per cent. of those treated were, five years after their discharge, earning sufficient to provide in part for their own support shows the beneficial effects of sanatorium treatment of phthisis. It also indicates that the Invalidity Insurance Companies which defrayed the expense of the treatment were probably repaid by the smaller amount paid in disability annuities.

Tubercular diseases (phthisis excepted).

In 1913 there were in Victoria 217 deaths from tubercular diseases (excluding phthisis), which corresponded to a rate of 156 per million, as compared with rates of 154 in the previous year, 186 in 1911, 176 in 1910, 192 in 1909, 200 in 1908, 209 in 1907, and 379 in 1890–2. The death rates in 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.
Males.					
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
Females.					
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 dying from tubercular diseases (excluding phthisis), during 1910–12 represents 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.

Tubercular diseases—deaths of recent arrivals from.

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. In 1913 1·3 per cent. of the persons who died were born outside and resident less than one year in Australia, and 3·4 per cent. had resided in the continent for a shorter period than five years.

Cancer—deaths at various ages.

The number dying from cancer at different age groups in each of the last three years, and the yearly average at the same ages for the period 1901–10, are given below :—

DEATHS FROM CANCER AT VARIOUS AGE GROUPS.

Age Group.	Males.				Females.			
	Yearly Average, 1901–10.	1911.	1912.	1913.	Yearly. Average, 1901–10.	1911.	1912.	1913.
0–15	5	8	8	9	3	4	4	5
15–25	6	5	7	6	4	6	5	1
25–35	9	7	13	11	13	20	15	19
35–45	34	22	26	41	59	57	72	61
45–55	79	119	118	120	90	125	138	139
55–65	107	121	116	133	102	125	142	131
65–75	159	141	176	140	121	128	159	128
75–85	81	98	97	101	60	85	102	95
85 and over ..	12	14	11	11	9	15	16	17
Total ..	492	535	572	572	461	565	653	596

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 decennial period 1903–12, the average age of those who died from cancer was 62·7 years for males, and 60·0 years for females, whilst the corresponding averages for phthisis were 42·5 years for males and 34·2 years for females. The increase in the death rate from cancer in recent periods is dealt with in subsequent paragraphs.

Cahcer—death rates at different ages.

Deaths from cancer in 1913 numbered 1,168, and represented a death rate of 839 per million of the whole population as compared with the rates of 905 in the previous year, 833 in 1911, 832 in 1910, 802 in 1909, and 794 in 1908. 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 persons of the same sex living in age groups, and this has been done for four census periods when the numbers of the people in age groups were accurately known.

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.
Males.				
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	14·33	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
Females.				
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 occurred at every age, 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 for ages under 45 an increase occurred in the rate for females, and a slight reduction in that for males. For the next age group 45–55, the male rate increased by nearly 13 per cent., while the female rate declined very slightly. For the age group 55–65 the mortality rate for men remained almost stationary, but that for women exhibited a very marked increase. Among persons 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 heavy 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 1913 :—

SEAT OF CANCER.

Seat of Disease.	Males.	Females.	Total.
Cancer of the buccal cavity (mouth, &c.) ..	72	8	80
,, the stomach and liver	253	208	461
,, the peritoneum, the intestines, and the rectum	61	63	124
,, the female genital organs ...	...	117	117
,, the breast	...	77	77
,, the skin	38	20	58
,, other and unspecified organs ...	148	103	251
Total Deaths	572	596	1,168

Nearly two-fifths of the persons who died from cancer were affected in the stomach or liver. Of the total females dying from the disease about one-third were affected in the genital organs or the breast.

Death Rates from cancer in various countries. Deaths from cancer per 10,000 of the population in various countries, for the latest year for which this information is available, are given in the following table :—

DEATH RATES FROM CANCER IN VARIOUS COUNTRIES.

Country.	Year.	Deaths per 10,000 of Population.	Country.	Year.	Deaths per 10,000 of Population.
Switzerland ...	1910	12·3	United States ...	1911	7·4
The Netherlands ...	1911	10·7	New South Wales	1912	7·4
Scotland	1911	10·4	Tasmania ...	1912	6·9
England and Wales	1911	9·9	Japan	1909	6·5
German Empire ...	1911	8·8	Italy	1911	6·5
Ireland	1912	8·5	Belgium	1910	6·3
Victoria	1913	8·4	Ontario	1911	6·3
Austria	1911	8·2	Queensland ...	1912	6·2
France	1910	7·9	Western Australia	1912	6·0
New Zealand ...	1912	7·8	Spain	1911	5·1
South Australia ..	1912	7·7			

Victoria showed a lower death rate from cancer than six of the above countries, but a higher one than any of the other Australian States. The higher crude rate in Victoria, as compared with the other States, is chiefly due to the larger proportion of elderly people in the community amongst whom the mortality is greatest.

Senile decay. During the year 1913, the deaths of 730 men and 625 women aged 65 years and over were ascribed to senile decay. The deaths at these ages from all causes during the year numbered 5,491—2,958 of men and 2,533 of women. It is thus seen that 24·7 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 taking the average

of the three years 1910–12, when the numbers of persons within those divisions were accurately known. These show that of every 100 persons in the respective 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 later than in earlier periods, a result that is chiefly due to the lighter mortality rate from accidental drowning. In 1913 there were 526 male and 158 female deaths attributed to accidents and negligence, which represented a rate of 490 per million of the population. This proportion was nearly 8 per cent. below the average rate—531—for the previous five years, and about 40 per cent. lower than the ratio—811—for 1890–2. The greatest reduction occurred in the death rate from drowning, which was only 99 per million in 1913 as against 105 for the average of the preceding five years, and 200 in 1890–2. Of the persons drowned during 1913, 111 were males and 27 females. Burns were responsible for 41 male and 42 female deaths, as compared with 36 and 54 respectively in the previous year. Fractures and other accidental injuries accounted for 308 male and 60 female deaths, as against 313 and 43 in 1912. During 1913, there were 20 deaths from motor car accidents, 1 from a motor bus accident, 1 from a motor cycle accident, 6 from bicycle and 6 from tram car accidents. During the year under review 6 male and 5 female deaths occurred through the administration of anæsthetics by medical practitioners. The number of instances in which anæsthetics were used is not available for the purpose of computing a fatality rate. Mortality rates from accidental violence are considerably lower in Greater Melbourne than in country districts, the deaths per million of population for the year 1913 being 408 and 561 respectively. According to the experience of the past five years 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 :—

—	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 the age group 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 past three years 1,064 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 for Three Years, 1911–13.	Occupation.	Deaths from Accidents for Three Years, 1911–13.
Labourer (undefined) ..	254	Builder, contractor ..	9
Farmer, grazier ..	169	Printer	9
Miner	69	Blacksmith	9
Railway employé (except clerk)	65	Baker	9
No definite occupation ..	63	Drover	8
Driver, carter, carrier ..	50	Sawyer, sawmiller ..	7
Old-age pensioner ..	32	Butcher	7
Seamen	22	Steward, waiter ..	6
Carpenter	22	Hotelkeeper	6
Commercial traveller ..	19	Metal worker ..	6
Clerk	19	Bricklayer	4
Wharf labourer ..	15	Shearer	4
Horse trainer, jockey, groom	14	Motor-driver	4
Grocer	13	Plumber	4
Painter	12	Dyer	3
Engineer	11	Constable	3
Market gardener ..	10	Tramway employé ..	3
Cook	10	Quarryman	2
Engine-driver, fireman	9	Lineman	2
		Packer	2
		Others	79

Of the 1,064 deaths of males which resulted from accidents during the past three years, 227 were due to drowning. From the descriptions of the other fatalities and the occupations of the deceased it would appear that about 60 per cent. of such deaths were due to occupational risks.

Suicide.

During the year 1913, 101 males and 43 females took their own lives. The deaths represented a rate of 103 per million of the population as compared with rates of 112 in the preceding year, 114 in 1911, 101 in 1910, 92 in 1909 and 1908, and 109 in 1890–2. The rate in the year under review was considerably below that for Australia—140—in the previous year, but it was slightly above that for England and Wales—99—in 1911. A much lower rate from suicide obtains among females than males, the rate for the former being less than one-third of that for the latter on the average of the past three years.

Homicide.

The deaths ascribed to homicide in 1913 numbered 25 of which 14 were of males and 11 of females. These represented a rate of 18 per million of the population as against rates of 21 in the previous year, 18 in 1911, 31 in 1910, 12 in 1909, 15 in 1908, and 34 in 1890–2.

Deaths of married women in childbed.

The experience of the period 1906–13 shows that the death rate of women in childbed varies considerably at different ages, and is less between 20 and 25 years than at younger or older age periods. The number of married mothers, the deaths in childbed, and the death rates for various age groups, are shown for the eight years 1906–13 in the following table :—

DEATH RATES OF MARRIED MOTHERS IN CHILDBED IN AGE GROUPS, 1906–1913.

Age Group.	Married Mothers.		
	Confinements.	Deaths.	Deaths per 1,000 Confinements.
Under 20 years	6,640	22	3·31
20 to 25 "	50,179	146	2·91
25 " 30 "	70,258	251	3·57
30 " 35 "	57,142	281	4·92
35 " 40 "	40,600	282	6·95
40 and over	18,384	127	6·91

For the age group 35 years and upwards the deaths of mothers in childbed were 69 per 10,000 as against 33 per 10,000 of those under 30 years of age. During the last eight years the number of deaths per 1,000 married women in first confinements was 5·53, as against an average of 4·20 for subsequent ones.

Deaths in childbed.

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 which prevailed in the last eight 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	180	60·92
1906 ..	115	51	166	53·82
1907 ..	119	43	162	51·64
1908 ..	80	48	128	41·16
1909 ..	97	36	133	42·16
1910 ..	94	54	148	47·08
1911 ..	86	62	148	44·79
1912 ..	92	61	153	42·72
1913 ..	112	65	177	49·20

In recent years 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 45·2 in 1909–13, as compared with 60·9 in 1901–5.

Puerperal Septicæmia.

In 1913 there were 65 deaths of married and unmarried mothers from puerperal septicæmia, which corresponded to a death rate of 18·1 per 10,000 births, as against 17·0 in the previous year, 18·8 in 1911, 17·2 in 1910, 11·4 in 1909, 15·4 in 1908, and 18·1 in 1901–7.

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 period 1902–6, and for each of the last seven years, is shown in the following table :—

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

Year.	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	13·43	16·58	16·52	13·95	18·15	18·46	15·58	16·35
1908	12·11	16·64	16·48	14·75	18·16	18·85	15·29	17·88
1909	13·35	17·58	17·55	15·76	18·47	19·89	16·30	18·07
1910	12·86	18·09	17·61	16·17	17·80	18·56	16·30	16·46
1911	13·49	18·34	17·01	17·07	18·05	18·51	16·60	16·58
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
Mean '09–13	13·72	18·19	18·16	17·13	18·43	19·18	16·82	17·08

The mean natural increase in the Australian States for the period 1909–13 was 16·82 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—16·82—would enable a population to double itself in 41 years, whilst at the Victorian rate of 13·72 per 1,000 of population a period of 51 years would be required.

Natural increase per 1,000 of population in various countries.

The rate of natural increase in Australia for 1909–13 is higher than that in Japan and all European countries, except Bulgaria, on the average of the latest five years for which this information is available. The rates for various countries are given below :—

NATURAL INCREASE PER 1,000 OF THE POPULATION IN VARIOUS COUNTRIES.

Country.	Natural Increase per 1,000 of Population.	Country.	Natural Increase per 1,000 of Population.
Tasmania	19·2	German Empire ...	13·4
Bulgaria	18·9	Norway	12·6
Western Australia ...	18·4	Hungary	11·4
New South Wales ...	18·2	Italy	11·3
Queensland	18·2	Scotland	11·1
South Australia ...	17·1	Japan	11·0
New Zealand ...	17·1	Sweden	10·9
Australia	16·8	Austria	10 8
Russia (European) ...	16·8	England and Wales ...	10·7
Roumania	14·8	Switzerland	10·0
The Netherlands ...	14·7	Ontario	9·9
Prussia	14·3	Spain ... , ...	9·3
Denmark	14·1	Belgium	8·8
Servia	13·7	Ireland	6·4
Victoria	13·7	France	·4

The rate of natural increase in Victoria is lower than in the other States and New Zealand, but higher than in fifteen of the countries enumerated in the above table.

Excess of births over deaths in Australasia.

The following table shows the excess per cent. of births over deaths in each of the Australian States and New Zealand for the period 1902–6, and for each of the last seven years :—

EXCESS PER CENT. OF BIRTHS OVER DEATHS, AUSTRALIAN STATES AND NEW ZEALAND.

Year.	Victoria.	New South Wales.	Queensland.	South Australia.	Western Australia.	Tasmania.	Australia.	New Zealand.
1902–6	98	147	144	125	150	165	129	174
1907	116	157	160	141	164	164	144	149
1908	97	164	161	150	169	164	140	187
1909	119	176	181	166	181	199	158	196
1910	113	181	182	158	176	164	156	170
1911	117	178	160	174	177	182	155	177
1912	116	175	171	179	161	185	155	199
1913	132	164	191	169	214	176	162	176
Mean 1909–13	119	175	177	169	182	181	157	184

Taking the average of the period 1909–13, it is seen that the least excess in Australasia was in Victoria, and the greatest in New Zealand. To every hundred deaths that occurred there were 219 births in Victoria, 275 in New South Wales, 277 in Queensland, 269 in South Australia, 282 in Western Australia, 281 in Tasmania, 257 in Australia, and 284 in New Zealand.

Excess of births over deaths in districts.

The excess per cent. of births over deaths varies very considerably in different portions of the State, being greater in areas which have been settled at a comparatively recent date than in old-established districts. This is specially noticeable in the excess rates for the Mallee, Wimmera, and Gippsland districts, where the loss of population through every 100 deaths was replaced by 510, 322, and 315 births respectively, as against 219 births in the Metropolitan, 200 in the North-Eastern, and 190 in the North Central districts. The subjoined table shows the excess per cent. of births over deaths in nine divisions of the State for the period 1905–7 and for each of the last six years :—

EXCESS PER CENT. OF BIRTHS OVER DEATHS IN DISTRICTS.

District.	Excess per cent. of Births over Deaths.						
	1905–7.	1908.	1909.	1910.	1911.	1912.	1913.
Metropolitan...	81	74	94	85	91	96	119
Central ...	121	96	113	112	127	119	133
North Central	87	87	95	99	102	98	90
Western ...	110	101	118	118	120	119	131
Wimmera ..	179	175	210	184	223	182	222
Mallee ..	305	331	336	295	340	313	410
Northern ...	122	113	134	141	133	133	146
North Eastern	133	114	173	161	148	124	100
Gippsland ..	235	205	258	233	208	219	215
State ...	108	97	119	113	117	116	132

The very favorable position of the Mallee, Wimmera, and Gippsland districts in respect of their excess of births over deaths is almost wholly due to their low death rates.

Excess of births over deaths in various countries.

Although the excess per cent. of births over deaths is lower in Victoria than in the other States and New Zealand, it is higher than in any of the other countries in the following table, on the average of the latest five years for which this information is available :—

EXCESS PER CENT. OF BIRTHS OVER DEATHS IN AUSTRALASIA AND OTHER COUNTRIES.

Country.	Excess per cent. Births over Deaths.	Country.	Excess per cent. Births over Deaths.
New Zealand	184	Germany	77
Western Australia ...	182	Ontario	71
Tasmania	181	Scotland	70
Queensland	177	Switzerland	63
New South Wales ...	175	Servia	57
South Australia ..	169	Roumania	56
Australia	157	Belgium	55
Victoria	119	Russia (European) ...	54
The Netherlands ...	103	Italy	53
Denmark	103	Japan	52
Norway	92	Austria	49
Prussia	83	Hungary	46
Bulgaria	80	Spain	39
England and Wales ...	77	Ireland	38
Sweden	77	France	2

The very favorable position of Australasia as regards the excess of births over deaths is wholly due to its low death rate. Very much higher birth rates prevailed in some of the above countries, especially Russia, Bulgaria, Roumania, Servia, Austria, and Spain, than in Australia, but this advantage was more than counterbalanced by their higher death rates. On the average of five years, the loss caused by every 100 deaths was compensated by 257 births in Australia, as compared with 203 in The Netherlands and Denmark, 192 in Norway, 183 in Prussia, 177 in England and Wales and in Germany, 170 in Scotland, 154 in Russia, 152 in Japan, and only 102 in France, which had the lowest excess rate of all the countries shown.