

## VITAL STATISTICS.

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 by any duly appointed registrar of marriages. 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 officially recognised religious denominations, is supported by the recognised head of the denomination in Victoria, or, if there be no such head, then by at least two registered ministers; and 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; and the Government Statist may cancel the registration of any minister 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. In the case of a minor (not being a widower or widow), wishing to marry, there must be obtained the written consent (*a*) of the father if he be within Victoria; if not (*b*) of a guardian appointed by him; if no such appointment (*c*) of the mother if within Victoria; if there be no such parent or guardian (*d*) of a police magistrate, or a justice appointed for the purpose by the Chief Justice or a Judge of the Supreme Court. If the mother has been deserted by the father, or obtained a protection order against him, or if, through divorce or judicial separation she has become the guardian *de facto*, her consent is sufficient authority for the marriage. If the minor is a ward of the Neglected Children's or Reformatory Schools' Department, the Departmental Secretary's consent is the authority. In all cases the consent must be indorsed on the marriage certificate. Marriages of Jews and Quakers are exempted from the above provisions, and are deemed legal and valid if celebrated according to their respective usages. To guard against the abuse of the system of matrimonial agencies, the Governor in Council is empowered, if deemed expedient, to prohibit ministers from celebrating marriages in any undesirable place or building. No marriage shall be invalid by reason of having been celebrated by an unqualified person if either of the

Law as to  
marriages  
in Victoria.

parties shall have believed at the time that such person was qualified, nor by reason of any formal defect or irregularity. Marriage with a deceased wife's sister has been legalized in Victoria since 1873; but there is no provision to validate a marriage of a woman with a deceased husband's brother.

Registra-  
tion.

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) of the officiating clergymen and lay registrars; and copies of all 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 certified copies or originals of all existing church records relating to earlier periods, as far back as 1837. For the registration of births and deaths, the State is divided into over 600 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 lay registrar 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 marriage), or of the informant (in case of a birth or death), and of the registrar. One copy is retained by the registrar or clergyman; one 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. The parents of a legitimate child born in Victoria, or the occupier of a house wherein a birth or death occurs, is required under a penalty of £10 to give notice (either personally or by authorized agent) to the registrar of the district within 60 days after the birth, and within 7 days after the death. (As an alternative, the notice may be given by the attending doctor or nurse.) If an illegitimate child is born in any house or place of which the mother of the child is not the occupier, or if an illegitimate child, under five years of age, dies in, or its dead body is brought to, any house or place, the occupier must give notice to the deputy-registrar within three days if within any city, town, or borough, or to either the deputy-registrar or police officer in charge, if elsewhere. In the case of an illegitimate birth, if the mother is the occupier the notice must be given within three weeks. The penalty for breach of this is imprisonment for six months or a penalty of £25. No fee is charged for registration, except in the case of a birth registered after sixty days, when 5s. is charged if within twelve months, and 12s. 6d., if over one year. 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.

### MARRIAGES.

Marriages in 1906 numbered 8,930, which was the highest during the past sixteen years, and was 156 more than in the preceding year, 1,325 greater than 1903, and 531 above the average of the last five years. The marriages in Victoria in each of the last sixteen years are as follow :—

#### MARRIAGES IN EACH YEAR, 1891-1906.

Year.	No. of Marriages.	Year.	No. of Marriages.
1891	8,780	1899	8,140
1892	7,723	1900	8,308
1893	7,004	1901	8,406
1894	7,029	1902	8,477
1895	7,181	1903	7,605
1896	7,625	1904	8,210
1897	7,568	1905	8,774
1898	7,620	1906	8,930

Between 1891 and 1894, a period of commercial depression, a fall in the number of marriages amounting to 20 per cent. took place, but since 1894 an upward movement is shown in each year, excepting 1897 and 1903. As the tendency to marry is necessarily influenced by the view taken of present and future prospects, the large increase in the number of marriages in the past three years evidences a belief in the present and prospective prosperity in the State.

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 years, 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 RATE, 1897 TO 1906.

Year.	Marriage Rate.	Year.	Marriage Rate.
1897	6.41	1902	7.00
1898	6.44	1903	6.29
1899	6.86	1904	6.80
1900	6.96	1905	7.24
1901	6.97	1906	7.28

With the exception of 1903 there was a perceptible yearly increase in the marriage rate since 1897, that for 1906 being the highest during the last fifteen years.

Factors in  
marriage  
rates.

It has been frequently shown that the marriage rate is not so dependent upon the number of marriageable women as upon the number of marriageable men the community contains, and, to demonstrate this the following table is designed, showing the proportion of marriages to the population, to the number of single men, and of single women in each census year 1854 to 1901:—

PROPORTION OF MARRIAGES PER 1,000 OF POPULATION AND OF  
SINGLE MEN AND WOMEN, 1854-1901.

Year of Census.	Exclusive of Chinese and Aborigines.						
	Enumerated Population.	Number Marriageable—		Marriages.	Proportion of Marriages per 1,000 of the—		
		Men.	Women.		Popula- tion.	Marriage- able Men.	Marriage- able Women.
1854 ..	234,361	70,865	15,083	3,696	15.77	52.16	245.04
1857 ..	383,668	95,427	26,317	4,465	11.64	46.79	169.66
1861 ..	513,896	106,940	37,006	4,528	8.81	42.34	122.36
1871 ..	712,263	89,921	65,386	4,715	6.62	52.43	72.11
1881 ..	849,438	99,824	119,360	5,732	6.75	57.42	48.02
1891 ..	1,130,463	163,048	173,138	9,007	7.97	55.24	52.02
1901 ..	1,193,340	154,334	211,087	8,468	7.08	54.87	40.12

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

Fluctua-  
tions in  
marriage  
rate.

It will thus be observed that, whilst the proportion of marriages to the population (marriage rate) and to the marriageable women has fluctuated considerably, the proportion to the marriageable men has been tolerably constant, the extremes being  $57\frac{1}{2}$  in 1881, and  $42\frac{1}{2}$  in 1861, and the usual range was between the narrow limits of 52 and 55. This proportion steadily diminished from  $57\frac{1}{2}$  in 1881 to 55 in 1901, although the latter was higher than at any period prior to 1881. The proportion of marriages per 1,000 marriageable women, on the other hand, has fallen off considerably. Even in the more settled times, after the gold rush, it fell from 72 in 1871 to a level of about 50 in 1881 and 1891, and still further to as low as 40 in 1901, owing to the generally increased proportion of marriageable women to men, which at the last period reached as high as 137 per 100 men. In other words, the chances of a woman marrying in Victoria are now very much smaller than at any earlier period, the proportions having fallen from about 1 in every 4 of the marriageable women in 1854, 1 in 8 in 1861, to 1 in 20 in 1891, and 1 in every 25 in 1901 marrying within a year.

To further investigate this subject, it will be interesting to ascertain the marriage rates amongst marriageable men and women at different periods of life, and, with this view, the rates have been computed for various age groups between 15 and 50 at each of the last three census periods, and are shown in the following table:—

Marriage  
rates in  
age groups.

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

Age Group (Years.)	Men.			Women.		
	1881.	1891.	1901.	1881.	1891.	1901.
15—21 .. ..	..	..	..	24.6	23.6	18.8
21—25* .. ..	57.8	44.3	44.6	118.8	106.0	87.2
25—30 .. ..	114.2	85.9	90.5	105.7	100.5	84.7
30—35 .. ..	82.9	75.2	82.1	73.1	66.4	57.9
35—40 .. ..	56.4	51.1	62.6	53.8	46.4	37.2
40—45 .. ..	30.5	33.4	39.9	32.5	27.7	22.3
45—50 .. ..	21.8	25.9	29.8	22.1	17.8	14.3
50 upwards ..	10.5	9.1	9.1	4.9	4.2	2.4
15—45 .. ..	..	..	..	55.9	58.7†	49.0

\* In the case of men 20-25.

† The apparent anomaly of the rate for women between 15 and 45 being higher in 1891 than in 1881, whilst the rate in each age group in 1881 is higher than that in the corresponding group in 1891, is due to the changes in the age constitution of women under 45 years of age.

In the last two periods, as compared with the first, there is every evidence of a tendency amongst men to defer marriage to a later period in life—the turning point being age group 30-35, for there has been a marked decrease in the rates below, but an increase in the rates above that age. In 1901, as compared with 1891, however, there was a considerable increase in the rate at every age period except 20-25 and over 50.

Tendency  
amongst  
men to  
defer  
marriage

In the case of marriageable women, there was, it will be observed, a fall between 1881 and 1891, and a still greater fall between 1891 and 1901 in the proportion marrying at each age group under 35; but a rapid fall from each census to the subsequent one in the proportions at ages over 35. The fall between 1891 and 1901 was almost uniformly distributed over the various age groups, and averaged about 18 per cent. In this connexion it may be noted that whilst the marriageable women between 15 and 45 increased by 25,300 during the intercensal period 1891-1901, the number of marriageable men between 20 and 50 decreased by 9,156—a decrease chiefly due to the efflux of single men to Western Australia and South Africa. Thus, there were resident in Western Australia, according to the last census returns of that State, 17,433 adult males of Victorian birth (besides 6,909 minors), of whom 6,701 were married, and 10,732 were single.

Fall in  
marriage  
rates of  
women at  
all ages.

Ages of  
bride-  
grooms and  
brides.

The ages of bridegrooms and brides who were married in 1906 are shown in combination for various groups in the following table:—

AGES OF BRIDEGROOMS AND BRIDES IN COMBINATION IN VICTORIA,  
1906.

		Ages of Bridegrooms																	Total Brides.
Ages of Brides.		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 to 75.	75 and up-wards,	
14	...	...	1	...	...	1	...	1	...	...	...	...	...	...	...	...	...	...	2
15	...	...	...	1	...	...	2	3	...	1	...	...	...	...	...	...	...	...	8
16	...	1	...	3	...	2	...	11	2	3	2	...	...	...	...	...	...	...	49
17	...	...	1	1	10	7	59	23	10	2	...	1	...	...	...	...	...	...	114
18	...	...	7	10	26	124	59	22	9	3	1	...	...	...	...	...	...	...	261
19	...	2	4	11	28	210	110	32	17	3	3	...	...	...	1	1	...	...	422
20	...	...	4	11	36	228	150	55	16	6	2	...	...	...	...	...	...	...	508
21 to 25	...	1	6	14	39	1,314	1,254	456	178	64	19	5	2	1	1	...	2	...	3,356
25 to 30	...	...	...	...	1	4	265	1,051	582	308	92	39	6	3	2	2	...	...	2,355
30 to 35	...	...	...	...	...	...	45	211	288	238	114	54	16	5	10	2	...	...	983
35 to 40	...	...	...	...	...	...	5	33	82	133	105	53	15	10	4	4	1	1	446
40 to 45	...	...	...	...	...	...	1	10	24	26	67	39	31	15	10	5	4	...	232
45 to 50	...	...	...	...	...	...	...	1	2	10	27	21	17	9	7	4	3	6	107
50 to 55	...	...	...	...	...	...	...	1	1	1	7	5	10	11	5	6	1	3	51
55 to 60	...	...	...	...	...	...	...	...	1	...	1	1	...	4	1	2	4	1	15
60 to 65	...	...	...	...	...	...	...	...	...	1	...	1	1	3	...	1	...	2	9
65 to 70	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	3	2	3	10
70 to 75	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1
75 and over	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1
Total Bridegrooms ..		1	5	23	60	143	2,278	2,918	1,557	943	491	239	101	63	43	30	16	19	8,930

Some inequalities of age appear amongst the persons married, as for instance, a man between 35 and 40 was married to a girl of 15 years of age, 3 men between 35 and 40 to girls of 16, and 2 over 75 years of age to women between 21 and 25. About 33 per cent. of the contracting parties were about the same age, whilst 9 per cent. of the brides were older than their bridegrooms. Of the total bridegrooms and brides, 65 of the former and 12 of the latter were over 65 years of age.

Proportion  
of mar-  
riages 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, 1891-5, and for the year 1906:—

PROPORTION OF MALES AND FEMALES MARRYING AT DIFFERENT  
AGES, 1881-90, 1891-5, AND 1906.

Ages (Years).	Proportion per 1,000 of total.					
	Bridegrooms.			Brides.		
	1881-90.	1891-5.	1906.	1881-90.	1891-5.	1906.
Under 15 ...	...	...	...	·15	·13	·22
15 to 16 ...	...	...	...	1·17	1·31	·88
16 to 17 ...	·03	·08	·11	6·53	5·70	5·49
17 to 18 ...	·29	·16	·56	20·32	17·21	12·77
18 to 19 ...	1·46	1·30	2·58	42·94	35·27	29·23
19 to 20 ...	5·62	5·52	6·72	65·03	50·48	47·26
20 to 21 ...	15·19	11·94	16·01	73·84	62·09	56·89
21 to 25 ...	321·02	262·69	255·10	432·34	398·04	375·81
25 to 30 ...	365·48	383·61	326·76	223·83	268·61	263·72
30 to 35 ...	134·57	182·99	174·36	62·07	87·42	110·08
35 to 40 ...	58·29	68·17	105·60	29·53	34·68	49·95
40 to 45 ...	32·54	29·09	54·99	17·10	16·73	25·98
45 to 50 ...	24·77	17·66	26·76	12·23	8·74	11·98
50 to 55 ...	18·40	12·57	11·31	6·74	6·15	5·71
55 to 60 ...	11·49	8·71	7·05	3·40	3·92	1·68
60 and over ...	10·85	15·51	12·09	2·78	3·52	2·35
Total ...	1,000·00	1,000·00	1,000·00	1,000·00	1,000·00	1,000·00

It will be observed that in later years the proportion of both sexes marrying between 21 and 30 shows a decline. This is more marked amongst the men than the women, the former having fallen from 69 per cent. in 1881-1890 to 58 in 1906—or 16 per cent.—as compared with a decline of only 3 per cent. amongst the women. On the other hand, a large increase occurred in later years in the proportions of bridegrooms and brides between 30 and 40, the former being 19 and the latter 9 per cent. in 1881-1890 as against 28 and 16 per cent. respectively in 1906.

There was a gradual increase in the mean ages at marriage of both brides and bridegrooms during the 26 years ended in 1905, and a further increase for the year 1906. The following statement gives, for certain five year periods, and for 1905 and 1906, the mean ages of brides under 45, and of bridegrooms marrying such brides:—

Increased  
age at  
marriage.

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

In the two earlier periods shown, the difference between the mean ages of brides under 45 and their bridegrooms was about 5, as compared with 4 years in the four later periods. The mean age of all bridegrooms during 1906 was 30.42, which was nearly .2 years higher than that of England and Wales—28.56—during the year 1905.

Marriage  
rates in  
Australian  
States and  
New  
Zealand.

In the following table are shown the marriage rates per 1,000 of the population in the Australian States and New Zealand for each of the last five years, and also the mean rates for the whole period:—

MARRIAGE RATES IN THE AUSTRALIAN STATES AND NEW ZEALAND:  
RETURN FOR FIVE YEARS.

Year.	Victoria.	New South Wales.	Queens- land.	South Australia.	Western Australia.	Tasmania.	Australia.	New Zealand
1902 ..	7.00	7.53	6.31	6.61	9.77	7.46	7.23	8.01
1903 ..	6.29	6.88	5.72	6.21	9.33	7.53	6.67	8.27
1904 ..	6.80	7.21	5.93	6.85	8.83	7.55	7.00	8.26
1905 ..	7.24	7.42	6.04	6.94	8.48	7.61	7.21	8.28
1906 ..	7.28	7.63	6.73	7.05	8.70	7.74	7.43	8.48
Mean	6.92	7.33	6.15	6.73	9.02	7.58	7.11	8.26

It will be observed that, according to the average of the five years, the lowest marriage rates prevailed in Queensland and South Australia, and by far the highest in Western Australia. In Victoria the rate was somewhat below, and in New South Wales slightly above, the average for Australia. For the year 1906, all the States showed an increase in the marriage rate as compared with the previous year, varying from over 11 per cent. in Queensland to  $\frac{1}{2}$  per cent. in Victoria. The rate in Australia increased by 3 per cent. in the same year.

Marriage  
rates in  
European  
countries.

The average marriage rate in Australia for the period 1902-6 was lower than in ten of the fifteen European countries shown in the following table during the years 1901-5:—

MARRIAGES PER 1,000 OF THE POPULATION IN EUROPEAN COUNTRIES,  
1901-5.

Hungary .. ..	8.6	Switzerland .. ..	7.5
Belgium (1900-4) ..	8.2	Italy .. ..	7.3
Spain .. ..	8.1	Denmark .. ..	7.1
German Empire (1900-4) ..	8.0	Scotland .. ..	6.9
Austria (1900-4) ..	7.9	Norway .. ..	6.2
England and Wales ..	7.8	Sweden .. ..	5.9
France .. ..	7.6	Ireland .. ..	5.2
Holland .. ..	7.5		



For reasons already explained, 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 male adults per 1,000, aged 21 and upwards, such as is contained in the following statement for the average of the three years, 1900 to 1902 :—

Marriages in proportion to marriageable males in Australian States and New Zealand.

MARRIAGES PER 1,000 MARRIAGEABLE MALES IN AUSTRALASIA.

Victoria	...	...	...	...	56.0
New South Wales	...	...	...	...	58.3
Queensland	...	...	...	...	41.6
South Australia	...	...	...	...	56.8
Western Australia	...	...	...	...	41.9
Tasmania	...	...	...	...	65.7
Total Australia	...	...	...	...	55.7
New Zealand	...	...	...	...	55.1

Although high marriages rates are generally regarded as evidence of prosperity in a community, low rates can hardly be regarded as showing the reverse in some of the Australian States, where the age and sex constitutions are not normal. Thus, in Queensland and Western Australia, the low rates amongst marriageable men cannot be said to be due to the absence of prosperity, as compared with the other States, or to greater disinclination on the part of the men to marry, but rather to the fact that the number of marriageable women to that of men is small in both those States.

Formerly the marriages which were celebrated in urban and rural districts were compared with the populations of those districts respectively, but as the place where a marriage is solemnized is no guide as to domicile, the method has been abandoned, and the classification according to the usual residence of the parties adopted instead. 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 1906 :—

Marriage rates in urban and rural districts.

USUAL RESIDENCE OF BRIDES AND BRIDEGROOMS DURING 1906.

Usual Residence of Bridegroom.	Usual Residence of Bride.				Total Bridegrooms.	Proportion of Bridegrooms per 1,000 of Population.
	Metro-politan.	Other Urban.	Rural.	Outside Victoria.		
In Victoria—						
Metropolitan Dis-tricts	3,400	123	196	32	3,751	7.2
Other Urban Dis-tricts	137	1,171	205	13	1,526	7.4
Rural Districts	336	301	2,531	31	3,199	6.4
Outside Victoria ..	168	70	116	100	454	..
Total Brides	4,041	1,665	3,048	176	8,930	7.3
Proportion of Brides per 1,000 of Popu-lation ..	<div> <div>7.8</div> <div>8.1</div> <div>6.1</div> <div>..</div> </div>				7.3	..

It will be noticed that over 5 per cent. of the bridegrooms, and 2 per cent. of the brides, resided outside the State. Excluding non-residents, these figures show that the marriage rate—for both males and females—was higher in the metropolitan and other urban districts than in rural districts.

Compared with the average of the five years, 1900-4, the marriage rates of both sexes in 1906 showed a marked increase in the urban and the rural districts; but only a very small increase in the metropolitan district. The rates prevailing in each division of the State for the two periods are shown in the following statement:—

Period.				Marriage Rates in Victoria.		
				Metropolitan.	Urban.	Rural.
Males	{ 1900-4	...	...	6.9	6.8	5.8
	{ 1906	...	...	7.2	7.4	6.4
Females	{ 1900-4	...	...	7.5	7.4	5.5
	{ 1906	...	...	7.8	8.1	6.1

Marriages  
in quarters.

The Autumn quarter is the most frequently selected season for marrying. Of the 194,871 marriages recorded in the twenty-five years 1881-1905, 26.86 per cent. were celebrated in the Autumn, 25.74 in the Spring, 24.03 in the Summer, and 23.37 in the Winter quarter. For the corresponding periods of 1906 the percentages were 28.16, 25.26, 23.16 and 23.42 respectively.

Former con-  
dition of  
persons  
married.

The following statement shows the percentages of persons in each conjugal condition, who married at the periods specified:—

#### CONJUGAL CONDITIONS OF PERSONS MARRYING, 1871-1906.

Conjugal Conditions.	Percentage of total Marriages.				
	1871-80.	1881-90.	1891-1900.	1901-5.	1906.
Bachelors and Spinsters	80.59	85.84	87.22	88.06	88.18
Bachelors and Widows	7.10	4.72	4.23	3.73	3.56
Widowers and Spinsters	7.75	6.17	6.07	5.94	6.08
Widowers and Widows	4.56	3.27	2.48	2.27	2.18

That these percentages are now approaching somewhat those of a settled community might be inferred from the slight alteration which has taken place between the rates in 1901-5 and those of the preceding ten years. This is corroborated by the similar percentages for England and Wales during the year 1905, which were 88.27 for marriages contracted between bachelors and spinsters, 3.24 between bachelors and widows, 5.41 between widowers and spinsters, and 3.08 between widowers and widows.

The number of divorced persons re-married during 1906 was 100, which was above the average of the preceding four years, but below that of 1904 and 1905. Of the 83,992 persons married during the last five years, divorced persons numbered 478, or, 1 in every 176 persons as compared with 1 in every 946 in England and Wales in 1905. The following are the numbers of divorced persons re-marrying in Victoria since 1901:—

#### DIVORCED PERSONS RE-MARRYING : RETURN FOR FIVE YEARS.

Year.	Males.	Females.	Total.
1902 .. ..	34	59	93
1903 .. ..	33	37	70
1904 .. ..	45	68	113
1905 .. ..	38	64	102
1906 .. ..	42	58	100

In all civilized countries minors are not permitted to marry without the consent of their parents or guardians. In Victoria the number of bridegrooms under 21 years of age in the four years 1903-6 was equivalent to 2.45 per cent. of the total marriages, which was the highest proportion shown for the averaged periods of the past 25 years, but was only about half that of England and Wales in 1905. The following table shows the number of males and females who marry under 21 to every 100 marriages, for the periods, 1881-90, 1891-5, 1898-1902, and 1903-6, in Victoria, and for the year 1905 in England and Wales:—

#### MARRIAGES OF PERSONS UNDER 21 YEARS IN VICTORIA AND ENGLAND AND WALES.

	Number under 21 in every 100 Marriages in Victoria.				Number under 21 in every 100 Marriages in England and Wales.
	1881-90.	1891-5.	1898-1902.	1903-6.	1905.
Bridegroom ..	2.26	1.89	1.95	2.45	4.38
Bride ..	21.00	17.13	15.44	15.58	14.69
Mean ..	11.63	9.51	8.69	9.01	9.53

During the five years, 1902 to 1906, an annual average of 8,399 marriages was registered, of which only 110, or 1.3 per cent., were celebrated by lay registrars. This proportion was as high as 7 in

Divorced persons re-marrying.

Marriages of minors.

Marriages by principal denominations.

the ten years, 1881-90, but dropped to 3.7 in 1894, and has since declined to 1 in 1906, probably owing to the competition of matrimonial agencies, which sprang up about 1894. Of the annual average marriages in 1902-6, 1,724 were solemnized according to the rites of the Church of England, 1,384 of the Presbyterians, 1,449 of the Methodists, 413 of the Baptists, 652 of the Independents, 57 of the Lutherans, 1,257 of "other sects"—chiefly Protestants—1,330 of the Roman Catholic Church, and 23 according to those of the Jews.

Marriages  
at matri-  
monial  
or adver-  
tising  
agencies.

The number of marriages solemnized at matrimonial or advertising agencies gradually rose from 1,409 in 1898 to 1,701 in 1900, and fell to 1,188 in 1902, but increased again to 1,353 in 1903, 1,502 in 1904, 1,792 in 1905, and to 1,941 in 1906. About 20 per cent. of the total marriages were performed in such agencies in 1900, and 18 per cent. in 1903 and 1904, 20 per cent. in 1905, and nearly 22 per cent. in 1906. This accounts for the unduly large proportion of marriages celebrated by "other sects," whose clergymen acted for such agencies.

#### BIRTHS.

Number of  
births.

The number of births registered in Victoria during the year 1906 was 30,844—15,716 males and 15,128 females. This was 737 above the number recorded for the preceding year, but 2,785 fewer than the average of the ten years ended 1900. The figures for each year since 1890 were:—

#### NUMBER OF BIRTHS IN VICTORIA, 1891-1906.

1891	..	38,505	1897	..	31,310	1902	..	30,461
1892	..	37,831	1898	..	30,172	1903	..	29,569
1893	..	36,552	1899	..	31,008	1904	..	29,763
1894	..	34,258	1900	..	30,779	1905	..	30,107
1895	..	33,706	1901	..	31,008	1906	..	30,844
1896	..	32,178						

During the twenty years ended with 1883, the number of births remained almost stationary; but in 1884 a marked increase took place, which continued during the subsequent seven years; the number in 1891 being the highest. Since 1891, however, a rapid falling off has taken place down to the period embraced in the last nine years, when the number has fluctuated at a lower level than that which had prevailed at any other year since 1886. Since 1903, when the fewest births since 1884 were recorded, the numbers have shown a steady increase—the total for 1906 being 1,275 greater than in 1903.

In connexion with this decline in the number of births since 1891, it must be borne in mind that during the intervening period Victoria suffered serious loss of population by emigration.

The following table shows the birth rates in Victoria from 1860 Birth rates. to 1906 :—

**BIRTH RATES IN VICTORIA PER 1,000 OF POPULATION, 1860-1906.**

Year.	Birth Rate.	Year.	Birth Rate.	Year.	Birth Rate.
1860 ..	42·81	1891 ..	33·57	1899 ..	26·14
1865 ..	42·40	1892 ..	32·51	1900 ..	25·79
1870 ..	38·07	1893 ..	31·18	1901 ..	25·78
1875 ..	33·94	1894 ..	29·05	1902 ..	25·15
1880 ..	30·75	1895 ..	28·46	1903 ..	24·46
1885 ..	31·33	1896 ..	27·19	1904 ..	24·65
1890 ..	33·60	1897 ..	26·49	1905 ..	24·83
		1898 ..	25·51	1906 ..	26·14

From 1891 to 1903, there was a heavy decline in the crude birth rate, but, during the last three years a steady improvement has taken place, that for 1906 being the highest during the last four years.

In young communities, birth rates calculated per 1,000 of the population are to some extent unreliable and misleading. In the earlier years when, owing to immigration, the population consisted 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 to the total population must continuously diminish, and with it, of necessity, the birth rate.

A more correct rate is the ratio of the number of legitimate births to that of married women under 45, and the following table shows the rate computed in the ordinary manner, also the proportion of legitimate births per 1,000 of such women during the last four census years :—

**LEGITIMATE BIRTHS PER 1,000 OF THE POPULATION AND OF MARRIED WOMEN UNDER 45 YEARS OF AGE.**

Year.	Enumerated Population.	Married Women under 45 years of Age.	Legitimate Births.	Proportion of Legitimate Births.	
				Per 1,000 of the Population.	Per 1,000 Married Women under 45 years of Age.
1871 ..	731,528	88,561	26,805	36·64	302·67
1881 ..	862,346	84,831	25,675	29·77	302·66
1891 ..	1,140,405	120,700	35,853	31·44	297·04
1901 ..	1,201,341	127,858	29,279	24·37	229·00

Proportion of births to population and married women.

It will be observed that, although the proportion of legitimate births per 1,000 of the population fluctuated considerably during the four census periods, the proportions per 1,000 of married women remained fairly uniform during the first three census years, but showed a decline in 1901 from 297 to 229, being equivalent to nearly 23 per cent. A noticeable instance of the unreliability of the ordinary birth rate in a new country such as this, appears in the above table on comparing 1881 with 1891, for whereas the birth rate per 1,000 of the population was considerably higher (by nearly  $1\frac{3}{4}$ ) in the later than in the earlier year, yet the proportion of births per 1,000 married women was actually lower. The fluctuations in the ordinary birth rate from 1871 to 1891 are, therefore, found to have been mainly due to varying proportions of married women in the community at the fruitful period of life. The exceptional fall since 1891, however, cannot be so explained, as other factors must be involved which require further investigation, and which will be dealt with in the following paragraphs.

Percentage  
of married  
women in  
quinquen-  
nial groups  
under 45  
years of  
age.

An analysis of the minor age groups, of which the whole age group, 15 to 45, is composed, will disclose the fact that there has been a considerable falling off in 1901, as compared with previous census periods, in the proportion of married women at the younger, and more fertile ages, but a counter-balancing increase in that at the higher ages—a result chiefly brought about by a decrease in the proportion of young men at marriageable ages, through emigration, and the consequent decline of the female marriage rates at the lower age groups. Thus, the number of married women under 30 years of age fell from 53,778 in 1891 to 39,230 in 1901, or by 27 per cent., whereas the number over 35, but under 45, increased during the same period from 37,460 to 57,161, or by  $52\frac{1}{2}$  per cent. Relatively to the whole number at child-bearing ages, the married women under 30 years of age fell from  $44\frac{1}{2}$  per cent. in 1891 to  $30\frac{1}{2}$  in 1901; whilst those at the higher ages, between 35 and 45, rose from 31 to  $44\frac{1}{2}$  per cent. This will be seen in the following statement:—

PERCENTAGE OF MARRIED WOMEN IN AGE GROUPS TO TOTAL UNDER 45 YEARS AT FOUR LAST CENSUS YEARS.

[Census Year.	Married Women Under 45 Years of Age—Percentage in each Age Group.					
	15—20.	20—25.	25—30.	30—35.	35—40.	40—45.
1871 ..	2·03	13·04	21·14	23·07	23·32	17·40
1881 ..	1·73	15·95	20·46	20·60	20·97	20·29
1891 ..	1·35	15·69	27·52	24·41	17·21	13·82
1901 ..	·81	9·90	19·83	24·96	24·92	19·58

Of the total married women under 45, the proportion under 25 years of age was slightly higher in Victoria than in England and Wales in 1881 and 1891, but was about 15 per cent. lower in 1901. According to the English Registrar-General's Report for 1905 the

percentage under 25 years of all married women under 45 was 15.2 in 1871, 14.8 in 1881, 13.7 in 1891, and 12.4 in 1901—a fall of 18 per cent. as compared with one of 29 in Victoria in 30 years.

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, and for each of the last five years:—

Birth rates  
in Aus-  
tralian  
States and  
New  
Zealand.

**BIRTH RATES IN THE AUSTRALIAN STATES AND NEW ZEALAND:  
RETURN FOR 1891 AND THE LAST FIVE YEARS.**

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
1902 ..	25.15	27.17	27.68	24.60	30.09	28.92	26.63	25.89
1903 ..	24.46	25.35	24.62	23.24	30.27	28.47	25.21	26.61
1904 ..	24.65	26.73	27.12	24.70	30.34	29.59	26.30	26.94
1905 ..	24.83	26.72	25.92	23.66	30.30	29.32	26.10	27.21
1906 ..	25.14	27.04	26.31	23.54	30.02	29.52	26.35	27.08
Mean of 5 Years	24.85	26.60	26.33	23.95	30.20	29.16	26.12	26.75

Excepting South Australia and Western Australia all the States show slightly higher birth rates for 1906 than for the previous year. The rate for Australia—26.35—was the highest since 1902, and was nearly 1 per cent. greater than for the preceding year. The births in Australia in the year under review numbered 107,890, and the deaths 44,340, thus showing a natural increase of 63,550 persons, which was 6,664 above the average—56,886—of the preceding five years.

According to the average of the last five years, the highest birth rate prevailed in Western Australia and the lowest in South Australia. The comparison of these rates is not a reliable one, but it is useful for certain purposes. As already explained in the case of Victoria, it cannot be relied on as an index of the productiveness of married women, which can be more closely gauged by a comparison of the legitimate births with the number of married women at reproductive ages. Such a comparison is effected in the sub-joined return, which shows the results for each Australian State and for New Zealand at the two last census years:—

Decline in  
the number  
of legiti-  
mate  
births.

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

State.	Proportion of Legitimate Births per 1,000 Married Women, aged 15 to 45.		Decrease per cent.
	1891.	1901.	
Victoria .. ..	302.1	227.9	24.6
New South Wales .. ..	298.9	235.6	21.2
Queensland .. ..	315.0	251.0	20.3
South Australia .. ..	311.1	235.0	24.5
Western Australia .. ..	352.8	244.0	31.1
Tasmania .. ..	315.9	254.6	19.4
New Zealand .. ..	279.1	246.1	11.8

It will be seen from these figures that between 1891 and 1901 there was a pronounced decline in the proportion of legitimate births to married women under 45 years of age in the different States, varying from 31 per cent. in Western Australia, and 24 in Victoria and South Australia, to about 20 in Queensland and Tasmania, and to nearly 12 per cent. in New Zealand.

Similar information regarding various European countries, the Australian States and New Zealand is given in a table published by the Registrar-General of England of which the following is a copy:—

## LEGITIMATE BIRTH RATES.

COUNTRY (Arranged in order of Rates in 1900-02.)	Proportion of Legitimate Births per 1,000 Wives aged 15-45 years.			Increase + or Decrease - per cent. in Fertility during 20 years.
	Approximate Periods.			
	1880-82.	1890-92.	1900-02.	
European Countries—				
The Netherlands	...	...	...	...
Norway	...	...	...	...
Prussia	...	...	...	...
Ireland	...	...	...	...
German Empire	...	...	...	...
Austria	...	...	...	...
Scotland	...	...	...	...
Italy	...	...	...	...
Sweden	...	...	...	...
Switzerland	...	...	...	...
Denmark	...	...	...	...
Spain	...	...	...	...
Belgium	...	...	...	...
England and Wales	...	...	...	...
France	...	...	...	...
Australian Commonwealth—				
Tasmania	...	...	...	...
Queensland	...	...	...	...
Western Australia	...	...	...	...
South Australia	...	...	...	...
New South Wales	...	...	...	...
Victoria	...	...	...	...
New Zealand	...	...	...	...

In commenting upon these figures the English Registrar-General says—"It appears that among European countries from which it has been possible to obtain returns, there were only two—Austria and Spain—in which the fertility of wives during the 20 years (1881-1901) showed a tendency to increase, and this also applied to Ireland. In all the remaining countries a decrease in human fertility had taken place in the period under review ranging from 2.5 to as much as 19.8 per cent."



The ordinary birth rate (per 1,000 of the total population) is only of value when comparing results of two or more countries where the proportions and ages of married women between 15 and 45 are alike, but as these conditions vary in each community any comparisons of rates computed on this basis are misleading. In expressing birth rates of different countries in proportion to population it is necessary that factors for correction of such rates should be used based upon the ages and proportion of married women between 15 and 45 by comparison with a standard proportion, in order to make the results comparable. This has been done by Drs. Newsholme and Stevenson in the *Journal of the Royal Statistical Society* for March, 1906, in a paper on the "Decline of Human Fertility in the United Kingdom and other countries as shown by a Corrected Birth Rate," and the results are given in the following table for the periods 1880 or 1881 and 1901-4.

## CORRECTED BIRTH RATES IN VARIOUS COUNTRIES AND CITIES.

Country or City.	Corrected Birth Rate per 1,000 of Population.		Percentage Decline in Corrected Birth Rate.
	1880 or 1881.	1901-4.	
Bavaria ... ..	45.49	40.37	11
Saxony ... ..	41.45	31.76	23
Belgium ... ..	40.76	31.01	24
German Empire ... ..	40.37	35.34	12
Norway ... ..	40.12	37.79	6
Prussia ... ..	39.87	35.72	10
Scotland ... ..	39.29	33.38	15
Austria ... ..	39.04	38.50	1
Denmark ... ..	38.92	33.12	15
New South Wales ... ..	38.80	26.47	32
Sweden ... ..	38.49	36.19	6
Italy ... ..	36.89	33.71	9
New Zealand ... ..	36.68	29.63	19
Victoria ... ..	36.02	27.04	25
Ireland ... ..	35.17	36.08	3 (increase)
Hamburg ... ..	34.98	25.40	27
Edinburgh ... ..	34.97	28.08	20
England and Wales ... ..	34.65	28.41	18
Berlin ... ..	33.11	21.89	34
Dublin ... ..	32.24	35.39	10 (increase)
London ... ..	32.21	26.83	17
France ... ..	25.06	21.63	14
Paris ... ..	23.27	16.65	28

The above method of calculating birth rates allows for the differing ages and proportions of married women at child-bearing years in the countries compared, and gives them higher statistical value than ordinary or crude ratios. A very striking illustration of the necessity for a method which takes into account these important factors in each population is shown in the case of Ireland, which has one of the highest corrected birth rates in Europe, but has nearly the lowest rate when no allowance is made for the unfavorable age distribution and proportion of married women of child-bearing years

in the community. The corrected rates show that (with the exception of Ireland and Dublin, whose rates increased), all the countries and cities had a lower rate in 1901-4 than in 1880 or 1881. The greatest decline—34 per cent—occurred in Berlin, followed by 32 per cent. in New South Wales, 28 in Paris, 27 in Hamburg, 25 in Victoria, 24 in Belgium, 23 in Saxony, 20 in Edinburgh, 19 in New Zealand, 18 in England, 17 in London, 15 in Scotland and Denmark, 14 in France, and the least decline—1 per cent.—in Austria.

Birthplaces  
of parents  
of legiti-  
mate  
children,  
1903-5.

The birthplaces of parents whose children's births were registered during the three years, 1903-5, show that 77 out of every 100 children were born to Australian parents, and 96 of every 100 to one or both parents born in Australia. Of the total fathers 75.10 per cent. were born in Victoria, 82.25 within Australia, 1.24 in New Zealand, 8.36 in England and Wales, 2.08 in Scotland, 3.19 in Ireland, .46 in other British Possessions, and 2.42 in foreign countries. The corresponding percentages for mothers were: Victoria, 83.06; Australia, 91.31; New Zealand, 1.31; England and Wales 3.91; Scotland, .91; Ireland, 1.66; other British Possessions, .16; and in foreign countries .74.

Chinese and  
half-caste  
Chinese  
births,  
1903-6.

The births to Chinese parents numbered 46, and the Chinese half-caste births (fathers only Chinese) amounted to 123 during the four years 1903-6.

Ages of  
parents of  
legitimate  
children.

The average ages of fathers and mothers of legitimate children whose births were recorded in 1906 were 34.94 and 30.57 years respectively, which were 5.04 and 4.60 years above the average age 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 latest year:—

PERCENTAGE OF PARENTS IN AGE GROUPS, 1906.

Father.		Mother.	
Age Group (Years).	Proportion per 100 Births.	Age Group (Years).	Proportion per 100 Births.
Under 21 ... ..	63	Under 21 ... ..	4.89
21 to 25 ... ..	8.05	21 to 25 ... ..	17.39
25 to 30 ... ..	20.60	25 to 30 ... ..	27.58
30 to 35 ... ..	23.22	30 to 35 ... ..	24.11
35 to 40 ... ..	22.59	35 to 40 ... ..	17.95
40 to 45 ... ..	15.13	40 to 45 ... ..	7.37
45 to 50 ... ..	7.05	45 and over ...	71
50 and over ...	2.73		
Total ... ..	100.00	Total ... ..	100.00

It will be seen that on the experience of 1906, 45 per cent. of the mothers were between 21 and 30, and 42 per cent. between 30 and 40. The proportions of fathers at corresponding ages were  $28\frac{2}{3}$  and  $45\frac{4}{5}$  per cent. Of every 1,000 legitimate births, about 49 were due to

mothers under 21 years, and only 7 to mothers aged 45 years and upwards.

The proportion of legitimate births recorded as first births was 21.87 per cent. in 1901 as compared with 24.78 in 1906, an increase of over 13 per cent. in the intervening period. The numbers and percentages of fathers and mothers of first births at various ages are shown in the subsequent table for the latest year:—

NUMBER AND PERCENTAGE OF PARENTS OF FIRST-BORN CHILDREN  
IN AGE GROUPS, 1906.

Ages.	Year, 1906.			
	Fathers.		Mothers.	
	Number.	Per cent.	Number.	Per cent.
Under 21 ... ..	160	2.2	1,092	15.2
21 to 25 ... ..	1,539	21.5	2,477	34.5
25 to 30 ... ..	2,451	34.2	2,198	30.6
30 to 35 ... ..	1,555	21.6	959	13.4
35 to 40 ... ..	886	12.3	376	5.3
40 to 45 ... ..	399	5.6	70	1.0
45 and over ... ..	185	2.6	3	...
Total ... ..	7,175	100.0	7,175	100.0

Ages of  
parents of  
first births  
1906.

The experience of the year 1906 shows that of every 100 mothers of first-born children, 15.2 were under 21 years of age, 49.7 were under 25, and 80.3 were under 30, and only 1 aged 40 to 45. These proportions are very similar to the ratios of brides in the same groups during 1906, which showed that 15.2 per cent. of the women marrying were under 21, 52.7 per cent. were under 25, 79 per cent. under 30, and only 2.6 per cent. were aged 40 to 45.

The following 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, and the averages of the years 1901-5 and 1906:—

Birth rates  
in town and  
country.

BIRTH RATES IN METROPOLITAN, OTHER URBAN, AND RURAL  
DISTRICTS.

Year.	Births per 1,000 of the Population.			
	Metropolitan District.	Other Urban Districts.	Rural Districts.	Victoria.
1875 .. ..	33.63	38.63	31.54	33.94
1880 .. ..	31.19	34.21	28.72	30.75
1885 .. ..	34.94	31.87	28.12	31.33
1890 .. ..	37.71	34.43	28.93	33.60
1895 .. ..	29.46	34.03	25.49	28.46
1900 .. ..	24.54	32.29	24.26	25.79
1901-5 .. ..	24.10	32.11	23.36	24.97
1906 .. ..	23.75	32.87	23.38	25.14

It will be noticed that the birth rate in 1906 in the metropolitan district was slightly lower and in the urban and rural districts higher than the average rate of the previous five years.

Birth rates  
in seven  
principal  
country  
towns.

The birth rates in the seven principal country towns are shown in the following table for the years 1902-6:—

**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.
1902 ...	26·28	34·48	27·32	26·46	33·22	29·10	32·26
1903 ...	24·12	30·18	28·29	28·62	29·04	25·61	29·04
1904 ...	24·96	31·95	27·12	28·55	29·74	29·02	25·58
1905 ...	24·45	32·52	26·51	28·66	32·50	29·40	31·35
1906 ...	26·25	33·55	25·35	32·52	36·61	34·29	30·96
Average 5 years	25·21	32·54	26·92	28·96	32·22	29·48	29·84

On the average of the five years 1902-6, the birth rate in all of the above towns exceeded that of Melbourne and suburbs and of the State. The highest rate prevailed in Bendigo and suburbs, followed by Maryborough and Stawell, and the lowest in Ballarat and suburbs.

Birth rates  
in sub-  
districts of  
Greater  
Melbourne.

The birth rates in the various sub-districts of Greater Melbourne (exclusive of those in Hospitals and public institutions) are shown in the following table for each of the five years, 1902-6:—

**BIRTH RATES IN SUB-DISTRICTS OF GREATER MELBOURNE, 1902-6.**

Sub-Districts.		Births per 1,000 of the Population.				
		1902.	1903.	1904.	1905.	1906.
Melbourne City	...	22·07	20·48	20·30	19·45	19·54
Fitzroy City	...	21·60	20·34	18·97	21·20	19·29
Collingwood City	...	24·45	23·37	22·82	21·92	23·98
Richmond City	...	27·65	22·87	23·70	21·80	24·40
Brunswick Town	...	26·80	27·00	26·50	26·55	24·30
Northcote Town	...	30·12	27·89	27·84	29·73	26·16
Prahran City	...	22·56	20·55	21·25	21·52	21·85
South Melbourne City	...	22·51	21·80	21·05	21·38	21·66
Port Melbourne Town	...	29·44	27·64	24·21	24·48	26·94
St. Kilda City...	...	18·70	17·93	17·61	19·34	18·78
Brighton Town	...	21·09	20·08	19·36	19·90	17·95
Essendon Town	...	23·42	22·28	22·29	21·96	20·84
Hawthorn City	...	19·37	20·22	18·66	18·68	19·67
Kew Borough	...	13·25	20·60	18·22	19·69	20·39
Footscray City	...	29·72	26·18	27·99	29·36	29·53
Williamstown Town	...	22·40	22·09	24·13	21·37	24·96
Oakleigh Borough	...	33·85	29·23	22·31	36·15	28·37
Caulfield Town	...	19·31	17·74	19·80	19·54	22·02
Malvern Town	...	21·07	23·64	19·15	19·09	22·52
Camberwell Town	...	17·79	17·73	15·77	18·56	17·30
Preston Shire	...	21·38	19·26	21·82	25·83	25·12
Coburg Borough	...	21·10	17·84	21·38	15·81	20·13
Remainder of District	...	23·04	24·32	22·36	19·97	18·01
Greater Melbourne (including Hospitals, &c.)		24·85	23·93	23·54	23·33	23·75

The births in Greater Melbourne in 1906 numbered 12,373 and corresponded to a rate of 23.75 per thousand of the population, which was higher than the two preceding years, but nearly 17 per cent. below that for the average of the period 1892-1901, when the proportion was 28.55. The smaller districts—Oakleigh, Preston, and Coburg—being more susceptible to slight influences, showed the greatest variation during the past five years. The highest average rates for this period prevailed in Oakleigh 29.98, followed by Footscray 28.56, Northcote 28.35, Port Melbourne 26.54, Brunswick 26.23, and the lowest in Camberwell 17.43, St. Kilda 18.47, Coburg 19.25, and Hawthorn 19.32.

The subsequent table shows the mean population, number of births, and birth rates in each Australasian capital city and suburbs during the year 1906, and the birth rates for 1905:—

Birth rates in capital cities and suburbs.

BIRTH RATES IN CAPITAL CITIES OF AUSTRALASIA.

Capital Cities and Suburbs.	Year 1906.			Births per 1,000 of the population, 1905.
	Mean Population.	Number of Births.	Births per 1,000 of the population.	
Melbourne ... ..	521,000	12,373	23.75	23.33
Sydney ... ..	534,200	13,984	26.18	26.27
Brisbane ... ..	131,102	3,211	24.50	25.64
Adelaide ... ..	174,438	3,815	21.87	22.39
Perth ... ..	53,300	2,011	37.73	38.17
Hobart ... ..	34,985	1,097	31.36	28.91
Wellington ... ..	64,302	1,753	27.26	29.38

With the exceptions of Perth, Hobart and Wellington, the Australasian capitals showed a lower birth rate than their respective States in the latest year.

Under a section of an Act passed in 1903, an illegitimate child, whose parents subsequently marry, may, provided there be 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. Advantage was taken of this section to legitimate 110 children, of whom 14 were registered in 1903, 19 in 1904, 34 in 1905, and 43 in 1906. In addition, there were 247 children legitimated in 1903 under another section, which provides that if the parents were married before the passing of the Act, the child should be registered for that purpose within six months of the passing of the Act.

Children legitimized under Legitimation Act.

The number of illegitimate births registered in Victoria during the year 1906 was 1,721, which gives a proportion of 5.58 to every 100 births registered, being slightly below the average of the previous year. This proportion has been fairly constant during the last twelve years, when it was decidedly higher than at any earlier period within the last 30 years. The proportion in Victoria in 1906 was much

Illegitimate births and rates.

lower than in New South Wales and Queensland, slightly lower than in Tasmania, but much higher than in either of the other two Australian States or New Zealand; it was also lower than in Scotland, but much higher than in the other portions of the United Kingdom. The following are the proportions of illegitimate births to every 100 children born in the Australian States and New Zealand, for the year 1906, and in the United Kingdom for the latest available years:—

#### ILLEGITIMATE BIRTH RATES.

Queensland .. ..	7·68	Western Australia ..	4·78
New South Wales ..	7·04	New Zealand .. ..	4·67
Scotland (1903) ..	6·21	England and Wales (1905)	4·02
Tasmania .. ..	5·78	South Australia ..	4·00
Victoria .. ..	5·58	Ireland (1905) ..	2·63

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 five years 1900-4, in the metropolitan districts, about 1 birth in 11; in the other urban districts, about 1 in 18; and in the rural districts, only 1 birth in 38 was registered as illegitimate. The proportions in 1906 were 1 in 11·4, 1 in 20, and 1 in 40 respectively.

Fall in illegitimate  
birth rate.

Although the proportion of illegitimate births to the total births, as already stated, has varied so little for several years past, yet the proportion of such births to the number of unmarried women and widows, between the ages of 15 and 45, shows the same decline between 1891 and 1901 as has already been observed in the proportion of legitimate births to married women at similar ages. With the exception of altered age distribution, which in this instance is estimated to account for less than  $1\frac{1}{2}$  per cent. of the fall, the many causes, which have contributed so largely to the decline in the legitimate birth rate, have no doubt operated—but in a major degree—to bring about a reduction in the illegitimate birth rate per 1,000 single women, which will be seen on comparing the rate for 1901 with that of the previous census, 1891, as given in the subjoined statement:—

#### ILLEGITIMATE BIRTHS PER 1,000 SINGLE WOMEN.

Period.		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

Rates in  
England  
and Wales  
and  
Victoria.

The proportion of illegitimate births per 1,000 unmarried and widowed women between the ages of 15 and 45, was 14·49 in 1891, and 10·31 in 1901. In England and Wales it was 14·1 in 1880-2, 10·5 in 1890-2, and 8·5 in 1900-2. The reduction, during the two latest census periods, was about 29 per cent. in Victoria, and 19 per cent. in England and Wales.

Birth and  
infantile  
death rates  
in various  
countries.

Infantile mortality is perhaps one of the most prominent determinants of the birth rate. A cursory glance at the next table, which shows the ordinary birth rate and the infantile mortality on the average of the latest five years for which these data are available, is

*prima facie* evidence of the intimate connexion existing between the two events:—

### BIRTH AND INFANTILE DEATH RATES IN VARIOUS COUNTRIES.

Country.	Birth Rate per 1,000 of the Population.		Deaths under 1 year per 100 Births.	
Russia (European)	...	48.9	...	26.1
Hungary	...	37.2	...	21.2
Austria	...	36.3	...	22.0
Spain	...	35.3	...	18.2
German Empire	...	34.9	...	19.7
Prussia	...	34.9	...	19.0
Italy	...	32.5	...	16.8
The Netherlands	...	31.6	...	13.6
Western Australia	...	30.2	...	12.2
Tasmania	...	29.2	...	9.0
Denmark	...	29.0	...	12.1
Scotland	...	28.9	...	12.2
Norway	...	28.6	...	8.3
Belgium	...	28.3	...	15.3
Switzerland	...	28.1	...	13.4
England and Wales	...	28.1	...	13.8
New Zealand	...	26.7	...	7.3
New South Wales	...	26.6	...	9.3
Queensland	...	26.3	...	8.9
Sweden	...	26.1	...	9.9
Victoria	...	24.8	...	9.4
South Australia	...	23.9	...	8.2

France and Ireland have been intentionally omitted from this table—the former because the low birth rate is due to special causes, the latter to the excessive withdrawal of reproductive adults by emigration.

### DEATHS.

The following return shows the number of deaths—males and females—also the quarters in which they were registered and proportion per 1,000 of the population, during the years 1902-6:—

#### DEATHS IN EACH QUARTER: RETURN FOR FIVE YEARS.

Year.	Total Deaths.	Sex.		Quarter of Registration.				Death Rate per 1,000 of the Population.
		Males.	Females.	March.	June.	September.	December.	
1902 ..	16,177	9,152	7,025	3,886	3,930	4,281	4,080	13.40
1903 ..	15,595	8,626	6,969	4,036	3,994	3,810	3,755	12.90
1904 ..	14,393	7,992	6,401	3,439	3,590	3,992	3,372	11.92
1905 ..	14,676	8,273	6,403	3,912	3,540	3,710	3,514	12.10
1906 ..	15,237	8,342	6,895	3,896	3,550	3,875	3,916	12.42
Average	15,216	8,477	6,739	3,834	3,721	3,934	3,727	12.55

The number of deaths during the year 1906 was 15,237—8,342 males and 6,895 females—a result equal to the average of the last five years, which was 15,216—the males 8,477, and the females 6,739. According to the experience of the five years, 1902-6, the quarter of the year ending 30th September is the most fatal, the next in order being the quarter ending 31st March. These positions, however, were not maintained in the year under review, when the greatest number of deaths occurred in the December quarter, and the next occurred in the March quarter.

Death rates  
in Aus-  
tralian  
States  
and New  
Zealand.

For purposes of comparison 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 a period of five years from 1902 to 1906:—

DEATH RATES IN THE AUSTRALIAN STATES AND NEW ZEALAND:  
RETURN FOR FIVE YEARS.

Year.	Victoria.	New South Wales.	Queensland.	South Australia.	Western Australia.	Tasmania.	Australia.	New Zealand.
1902 ..	13·40	11·95	12·08	11·86	13·63	10·90	12·45	10·50
1903 ..	12·90	11·63	12·38	10·79	12·60	11·86	12·09	10·40
1904 ..	11·92	10·62	10·11	10·22	11·91	11·01	11·01	9·57
1905 ..	12·10	10·13	10·47	10·15	10·83	10·28	10·82	9·27
1906 ..	12·42	9·89	9·56	10·34	11·87	11·17	10·83	9·31
Average	12·55	10·84	10·92	10·67	12·17	11·04	11·44	9·81

Although the death rate of Victoria, according to the average of the five years, 1902-6, was higher than in any other State, this result is due to the larger proportion of elderly persons, amongst whom the death rate is very high. In any comparison of crude death rates of the different States or New Zealand, it is therefore necessary to bear in mind the proportion of persons aged (say) 60 years and upwards in each community. This was accurately known at the last census when Victoria had 798 persons aged 60 years and over, per 10,000 of the population, as compared with 558 in New South Wales, 482 in Queensland, 633 in South Australia, 326 in Western Australia, 608 in Tasmania, 623 in Australia, and 676 in New Zealand. Of the total deaths in 1906, 36·3 per cent. were 65 years and over in Victoria, 27·6 in New South Wales, 22·0 in Queensland, 33·1 in South Australia, 11·9 in Western Australia, 31·4 in Tasmania, 29·5 in Australia, and 31·8 in New Zealand. It will thus be seen that though 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 65 years and upwards, than any other State or New Zealand. Although the death rates of the different States varied somewhat in 1906 by comparison with the previous year, that for Australia remained constant, and was 5·4 per cent. lower than the average of the years 1902-6.



The following were the maximum, minimum, and mean death rates per 1,000 of the population in the principal European countries during the five years ended with 1902, also the average of the 25 years ended 1901. In all, except Ireland, where the rate has remained stationary, there has been a noticeable decrease, and in Austria, Hungary, Switzerland, Germany, Holland, and Italy, 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 European  
countries.

## DEATH RATES IN EUROPEAN COUNTRIES.

Country.	Five Years, 1898-1902.			Average of 25 Years. 1877-1901.
	Max.	Min.	Mean.	
Norway .. ..	16·9	13·9	15·4	16·4
Denmark .. ..	17·3	14·7	16·0	18·1
Sweden .. ..	17·7	15·1	16·2	16·8
Holland .. ..	17·8	16·3	17·1	20·1
England and Wales ..	18·2	16·2	17·4	18·9
United Kingdom ..	18·4	16·5	17·6	18·8
Scotland .. ..	18·5	17·2	17·9	19·1
Belgium .. ..	19·3	17·2	18·0	19·9
Switzerland .. ..	19·3	17·2	18·1	20·3
Ireland .. ..	19·6	17·5	18·2	18·2
Prussia .. ..	21·8	19·2	20·6	23·5
France .. ..	21·9	19·5	20·7	21·8
Germany .. ..	22·1	19·4	20·8	23·9
Italy .. ..	23·8	21·9	22·5	26·2
Austria .. ..	25·4	24·2	24·9	28·4
Hungary .. ..	28·0	25·4	26·9	31·8
Spain .. ..	28·7	26·0	27·8	30·2

Comparing this statement with a previous one, it will be noticed that the death rate of Victoria—the highest in Australasia—is considerably lower than that in Norway—the lowest in Europe. And although, owing to the fact that emigration from the old to the newer countries tends to raise the death rate in the former, but to lower it in the latter, the death rates, calculated on the total population, would naturally be on a higher level in Europe than in Australasia, yet it may be safely affirmed that the true rate of mortality, allowing for differences in the age constitution of the people, is lighter in Australasia than in any country in Europe, except, perhaps, Norway, Sweden and Denmark.

Death rates  
of European  
and Austral-  
asian States  
compared.

In every country the death rate is higher in towns than it is in the country districts. This circumstance, although no doubt partly attributable to the superior healthfulness and immunity from contagion prevailing in the latter, is also to a great extent due to the fact that hospitals and charitable institutions, which are frequented by patients from the country as well as by town residents, are generally situated in the towns; and further, that outside of charitable institutions many

Death rates  
in town and  
country.

persons die who have come from the country on the approach of a serious illness for the sake of the superior nursing and medical attendance to be obtained in towns. In the ten years ended with 1890, the rate in the metropolitan district was higher than in the other urban districts, but in more recent years was much lower, in consequence of a marked decrease in the rate in the former district; whilst in the rural districts the rate has remained fairly constant, at between 8 and 9 per 1,000, or much less than half the rate in the extra-metropolitan towns. The following are the means for the periods, 1881-90 and 1891-1900, and the years 1901 to 1906:—

**DEATH RATES IN METROPOLITAN, OTHER URBAN, AND  
RURAL DISTRICTS.**

Period.				Metropolitan District.	Other Urban Districts.	Rural Districts.
1881-90	..	..	..	20·65	19·90	8·90
1891-1900	..	..	..	16·25	21·17	8·98
1901	..	..	..	15·09	19·54	8·73
1902	..	..	..	14·93	20·86	8·77
1903	..	..	..	14·37	20·17	8·41
1904	..	..	..	12·99	18·71	8·02
1905	..	..	..	12·88	19·62	8·19
1906	..	..	..	13·59	19·39	8·30

Death rates  
in principal  
country towns in  
Victoria.

The death rates in the principal country towns are shown in the following table for each year, and the average of the period 1902-6:—

**DEATH RATES IN PRINCIPAL COUNTRY TOWNS, 1902-6.**

Year.		Deaths per 1,000 of the Population.						
		Ballarat and Suburbs.	Bendigo and Suburbs.	Geelong and Suburbs.	Castlemaine and Suburbs.	Maryborough.	Warrnambool.	Stawell.
1902	...	19·36	21·70	15·69	21·34	20·36	15·15	20·38
1903	...	17·91	21·23	17·25	19·25	15·13	14·85	19·61
1904	...	16·34	18·59	15·41	18·45	17·09	14·13	18·27
1905	...	17·68	18·25	15·41	19·84	20·50	17·42	17·88
1906	...	17·48	19·46	14·26	19·46	17·61	13·23	16·15
Average of 5 years	...	17·75	19·85	15·60	19·67	18·14	14·96	18·46

On the average of the five years, 1902-6, the death rates in all of the above towns were higher than in Melbourne and suburbs, and, as might be expected, they were considerably higher than that for the State, on account of the hospitals situated in those centres. On the average of the five years under review, the lowest rate obtained in Warrnambool, followed by Geelong, Ballarat, Maryborough, Stawell, Castlemaine, and Bendigo in that order.

The deaths in Greater Melbourne in 1906 numbered 7,083, which was 490 more than the previous year, and represented a death rate of 13.59 per 1,000 of the population. Death rates in Melbourne and suburbs.

Excluding the deaths in hospitals and other public institutions, which numbered 2,140, the rate was 9.58 for the same period. The rates for each sub-district, exclusive of hospitals, &c., for the latest five years are shown in the following table:—

**DEATH RATES IN SUB-DISTRICTS OF MELBOURNE AND SUBURBS,  
EXCLUSIVE OF HOSPITALS, 1902-6.**

Sub-Districts.	Deaths per 1,000 of the Population.				
	1902.	1903.	1904.	1905.	1906.
Melbourne City ... ..	13.28	12.79	10.43	10.25	10.49
Fitzroy City ... ..	14.21	12.45	10.89	9.67	11.02
Collingwood City ... ..	12.27	10.82	9.55	9.31	8.72
Richmond City ... ..	11.11	11.45	9.40	8.68	8.83
Brunswick Town ... ..	13.40	11.24	9.96	10.41	10.28
Northcote Town ... ..	11.48	10.83	7.84	9.05	9.74
Prahran City ... ..	10.19	10.34	9.07	9.71	9.31
South Melbourne City ... ..	9.33	10.57	8.95	9.26	9.49
Port Melbourne Town ... ..	10.46	10.95	8.91	8.35	8.79
St. Kilda City ... ..	10.90	9.60	10.00	9.72	9.39
Brighton Town ... ..	10.89	10.73	10.21	8.95	10.23
Essendon Town ... ..	8.97	9.67	8.07	7.48	8.24
Hawthorn City ... ..	8.57	8.13	9.15	7.68	9.19
Kew Borough ... ..	7.35	9.40	7.46	8.73	7.49
Footscray City ... ..	12.09	11.35	9.71	8.74	11.84
Williamstown Town ... ..	12.16	14.68	12.75	10.39	10.41
Oakleigh Borough ... ..	13.84	13.84	12.31	9.23	11.35
Caulfield Town ... ..	8.64	8.22	7.09	7.18	8.16
Malvern Town ... ..	8.92	7.44	6.16	7.38	7.69
Camberwell Town ... ..	9.12	9.14	7.94	8.59	7.80
Preston Shire ... ..	12.53	14.10	7.79	11.90	10.84
Coburg Borough ... ..	9.28	8.11	9.56	8.30	9.28
Remainder of District ... ..	11.19	10.83	10.82	9.11	8.79
Greater Melbourne, including Hospitals ... ..	14.93	14.37	12.99	12.88	13.59

Much lighter mortality rates prevailed in the principal centres of population in Greater Melbourne on the average of the past three years, indicating that the effects of improved sanitation are being reflected in the general health of the community. This is strikingly evidenced in the reported cases of Typhoid Fever, Diphtheria and Scarlet Fever combined, which numbered 2,694 in 1905-6, as against 5,352 in 1902-3, or a decline of 50 per cent. between these periods. On the average of the five years 1902-6, the highest death rate—12.11—prevailed in Oakleigh, followed by 12.08 in Williamstown, 11.65 in Fitzroy, 11.43 in Preston Shire; and the lowest rates—7.52 in Malvern, 7.86 in Caulfield, 8.09 in Kew, and 8.52 in Camberwell.

Deaths in hospitals, &c., in Victoria and Greater Melbourne.

The deaths occurring in hospitals and other public institutions, in proportion to the total deaths, in Melbourne and Suburbs, are nearly twice as great as the ratio for the whole State. The returns from general hospitals in Victoria show that 2,360 deaths occurred in these institutions during the year ended June, 1906, which give a ratio of 1 in every 6.4 deaths, as compared with 1 in every 3.3 dying in hospitals or public institutions in Greater Melbourne in the year 1906. The following table shows the deaths in public institutions in Melbourne and Suburbs for the latest year:—

#### DEATHS IN PUBLIC INSTITUTIONS IN GREATER MELBOURNE, 1906.

Institution.	No. of Deaths.	Institution.	No. of Deaths.
Melbourne Hospital ...	725	Benevolent Asylum ...	133
Alfred Hospital ...	249	Old Colonists' Home ...	4
Homœopathic Hospital ...	43	Convent of the Little Sisters of the Poor ...	60
St. Vincent's Hospital ...	117	Girls' Depot, Royal Park ...	9
Williamstown Hospital ...	11	Metropolitan Lunatic Asylum ...	70
Austin Hospital ...	149	Yarra Bend Lunatic Asylum ...	65
Women's Hospital ...	90	Protestant Refuge ...	7
Children's Hospital ...	226	Melbourne Gaol ...	6
Infectious Diseases Hospital ...	18	Eye and Ear Hospital ...	5
Foundling Hospital, Broadmeadows ...	23	Queen Victoria Hospital ...	17
Foundling Hospital and Infants' Home ...	14		
Victorian Homes for Aged and Infirm ...	99	Total ...	2,140

The deaths in Public Institutions in Greater Melbourne steadily increased during the last four years, the number in 1906 being 246 greater than the preceding year and 324 more than in 1904.

Deaths and births in Australasian capitals.

The subsequent table shows the number 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 1906:—

#### DEATHS AND BIRTHS IN CAPITAL CITIES, 1906.

Capital City with Suburbs	Number of Deaths.	Deaths per 1,000 of population.	Number of Births.	Excess of Births over Deaths.	
				Numerical.	Centesimal.
Melbourne ...	7,083	13.59	12,373	5,290	75
Sydney ...	5,703	10.68	13,984	8,281	145
Brisbane ...	1,311	10.00	3,211	1,900	145
Adelaide ...	2,078	11.91	3,815	1,737	84
Perth ...	892	16.74	2,011	1,119	125
Hobart ...	604	17.26	1,097	493	82
Wellington ...	591	9.19	1,753	1,162	197

The deaths in the Capital Cities of the six States numbered 17,671, or nearly 40 per cent. of the deaths in Australia during the year 1906. The centesimal excess of births over deaths for each city shows that for every 100 deaths there were 297 births in Wellington, 245 in Sydney and Brisbane, 225 in Perth, 184 in Adelaide, 182 in Hobart, and 175 in Melbourne, and an average of 206 for the metropolitan cities of Australia.

In recent years, as compared with earlier periods, the death rate of Melbourne has been adversely affected by the increasing proportion of aged persons—75 years and upwards—in the population, which nearly doubled between the censuses of 1891 and 1901. During the past sixteen years, the deaths in this age group have shown an increasing proportion, which ranged from 5.94 per cent. of the total deaths in 1891, to 16.43 in 1906.

The average death rate of the Australasian Capitals, in 1906, was 12.07, which was considerably lower than the rates of the British and foreign cities given in the following list, which has been taken from *Whitaker's Almanac* :—

#### DEATH RATES IN BRITISH AND FOREIGN CITIES, 1902.

City or Town.	Deaths per 1,000 of the population.	City or Town.	Deaths per 1000 of the population.
Dublin ... ..	24.3	Calcutta ... ..	37.2
Liverpool ... ..	22.5	Cairo ... ..	35.4
Belfast ... ..	20.8	St. Petersburg ... ..	23.0
Manchester ... ..	20.0	Rio de Janeiro ... ..	20.8
Glasgow ... ..	20.0	Rome (1901) ... ..	20.0
Newcastle-on-Tyne ... ..	19.9	Vienna ... ..	19.4
Birmingham ... ..	18.6	Buda-Pesth ... ..	19.2
Edinburgh ... ..	17.8	Buenos Ayres (1901) ... ..	19.0
London ... ..	17.7	New York ... ..	18.7
Bristol ... ..	17.4	Paris ... ..	18.4
Hull ... ..	17.2	Berlin (1901) ... ..	18.0
Sheffield ... ..	17.1	Brussels ... ..	16.1

Proportion  
of deaths of  
elderly  
persons in  
Melbourne.

Death rates  
in Austral-  
asian  
capitals  
and other  
cities.

Unre-  
liability of  
ordinary  
death rate.

The misleading results arrived at by a comparison of the ordinary death rates of different countries, or of the same country at different periods, unless the age distribution is identical, have been pointed out in former editions of this work. This applies more especially to such a comparison of newly-settled communities—such as the Australian States—with one another, and with the old-established communities of (say) Europe. In the former the population is, on the average, younger than in the older countries, and is, moreover, constantly being strengthened by immigrants at the younger adult ages, at which the mortality is low; whereas, in the latter, not only is the age distribution more constant from year to year, but there is relatively a much larger proportion of elderly people, amongst whom the death rate is very high, concurrent with a smaller proportion of the younger and middle-aged adults, at the most vigorous period of life. Some idea of the differences of age distribution at present existing between European countries and the Australian States (as a whole)

will be obtained by the following comparison of the proportions of the population living at various age groups in Sweden—as representative of the former—and in Australia:—

PERCENTAGE OF POPULATION IN AGE GROUPS, SWEDEN AND AUSTRALIA.

Age Group. (Years.)	Percentage of Population Living at each Age Group.	
	Sweden in 1890.	Australia in 1901.
Under 1	2.55	2.47
1 to 5	9.25	9.05
5 to 15.	21.10	23.60
15 to 20	9.50	10.04
20 to 25	8.20	9.36
25 to 30	6.70	8.50
30 to 35	6.00	7.79
35 to 40	6.00	7.25
40 to 45	5.60	5.88
45 to 55	9.40	7.29
55 to 65*	7.70	4.76
65 to 75	5.40	3.01
75 to 85	2.34	.89
85 and over	.26	.11
Total	100.00	100.00

It will be observed that the most striking differences occur between the ages of 20 and 40—the migratory period—under which ranged 33 per cent. of the population in Australia, as against only 27 per cent. in Sweden; and at ages over 45, at which the preponderance was in favour of Sweden, where 25 per cent. of the people were over that age—as against only 16 in Australia.

Index of  
mortality.

In accordance with the decision of the Conference of Statisticians, held at Hobart in 1902, that “for computing the ‘Index of Mortality’ the table of age groups adopted by the Congress of International Statistics be followed, viz.:—Under 1 year, 1 to 20 years, 20 to 40 years, 40 to 60 years, and 60 years and over, and that the population of Sweden, as enumerated at the last census at those ages, be taken as a standard,” the method referred to has been adopted in Victoria. It consists of applying the ascertained death rates in the age group specified to a population whose age distribution corresponds with that of Sweden in 1890.

\* At age 55 to 60 the proportion in Sweden was 4.20, and in Australia 2.54 per cent.

The following was the result for Victoria in 1901, when the populations within the several age groups were accurately known, and the incidental death rates could be established:—

“INDEX OF MORTALITY,” VICTORIA, 1901.

Age.				Standard Population, per 1,000. (Sweden, 1890.)	Death Rate per 1,000 at each Age in Victoria, 1901.	Index of Mortality for Victoria, 1901.
0—1	..	..	..	25·5	112·55	2·88
1—20	..	..	..	398·0	4·19	1·67
20—40	..	..	..	269·6	6·21	1·68
40—60	..	..	..	192·3	13·19	2·54
60 and over	..	..	..	114·6	59·81	6·86
Total	..	..	..	1,000·0	13·22	15·63

In order to compare with the proportion in Sweden, as shown in the second column of the previous table, as well as to afford a basis for the computation of the “Index of Mortality,” the proportions per 10,000 living at the same five age groups in each Australian State and New Zealand, for the year 1901, are given in the following table for both sexes, and also for males. The great preponderance of population at the age groups between 1 and 40, and the large and increasing deficiency at age groups over 40, are the characteristic features of the Australian populations when compared with the Swedish. Amongst the Australian States, Victoria is conspicuous in having by far the largest proportion of persons aged 60 and over—an age group which has an important influence in determining the death rate. On the other hand, Victoria has, with one exception, the lowest proportion of both sexes between 1 and 20, and also, with one exception, the lowest proportion of males between 20 and 40—at which age groups the death rate is lightest:—

Proportions of population at five age groups in Australian States and New Zealand.

PROPORTIONS LIVING AT FIVE AGE GROUPS IN AUSTRALIAN STATES AND NEW ZEALAND, 1901.

State.	Proportion per 10,000 of Total Population Living at the Age Period—					Total.
	Under 1 Year.	1 to 20.	20 to 40.	40 to 60.	60 and over.	
<i>Both Sexes.</i>						
Victoria .. .. .	236	4,163	3,272	1,531	798	10,000
New South Wales .. .. .	253	4,382	3,210	1,597	558	10,000
Queensland .. .. .	260	4,348	3,309	1,601	482	10,000
South Australia .. .. .	227	4,445	3,054	1,641	633	10,000
Western Australia .. .. .	273	3,324	4,548	1,529	326	10,000
Tasmania .. .. .	267	4,519	3,118	1,488	608	10,000
Australia .. .. .	247	4,269	3,290	1,571	623	10,000
New Zealand .. .. .	238	4,195	3,295	1,596	676	10,000

PROPORTIONS LIVING AT FIVE AGE GROUPS IN AUSTRALIAN STATES  
AND NEW ZEALAND, 1901—*continued.*

State.	Proportion per 10,000 of Total Population Living at the Age Period—					Total.
	Under 1 year.	1 to 20.	20 to 40.	40 to 60.	60 and over.	
<i>Males only.</i>						
Victoria .. ..	120	2,093	1,585	795	434	5,027
New South Wales ..	127	2,210	1,664	915	324	5,240
Queensland .. ..	132	2,201	1,910	1,016	302	5,561
South Australia ..	116	2,234	1,527	897	312	5,086
Western Australia ..	140	1,704	2,994	1,073	219	6,130
Tasmania .. ..	135	2,297	1,639	802	323	5,196
Australia .. ..	125	2,154	1,723	890	350	5,242
New Zealand .. ..	124	2,117	1,692	906	415	5,254

Index of  
mortality in  
Australian  
States.

The "Index of Mortality" has been computed for each Australian State and New Zealand for the year 1901, with the following result, which is contrasted with the death rate per 1,000 of the total population for the same year:—

"INDEX OF MORTALITY" IN EACH AUSTRALIAN STATE AND  
NEW ZEALAND, 1901.

State.	Ordinary Death Rate.	"Index of Mortality."
Victoria .. ..	13·22	15·63
New South Wales .. ..	11·68	15·33
Queensland .. ..	11·88	15·24
South Australia .. ..	11·22	14·30
Western Australia .. ..	13·36	17·89
Tasmania .. ..	10·45	13·82
Australia .. ..	12·17	15·41
New Zealand .. ..	9·81	12·42

Although the order of the States is but slightly affected by the new method, Western Australia is shown to have really a far higher rate of mortality than that indicated by the ordinary method; but Victoria only a slightly higher rate than in the two other principal Australian States—New South Wales and Queensland—and probably



even this small difference in favour of the latter States would disappear if the old-age group, 60 and upwards, were subdivided. New Zealand enjoys the enviable position of supremacy—its death rate not only being the lowest Australasian, but probably the lowest of any country in the world for which statistics are available.

The "Index of Mortality" has not been computed for earlier years, but an equally fair comparison is available for Victoria, for three successive decades, and for the triennial period 1900-2, by means of the "adjusted"\* death rates, and these are embodied in the following table for each sex, together with the ordinary death rates, based on the total population of either sex, irrespective of age variations:—

ADJUSTED DEATH RATES IN VICTORIA, 1871-1902.

Period.	Ordinary Death Rate.†		Adjusted Death Rate.‡	
	Males.	Females.	Males.	Females.
1871 to 1880 ..	16·45	14·15	16·48	14·64
1881 to 1890 ..	16·65	13·56	15·97	13·85
1891 to 1900 ..	15·47	12·36	14·14	12·04
1900 to 1902 ..	14·80	11·43	13·05	10·75

The "adjusted" rates indicate that there has been a considerable falling off in the true rates of mortality at each successive decade, more especially the last, at which the rate per 1,000 was about  $2\frac{1}{2}$  lower than in the first decade, and over  $1\frac{3}{4}$  lower than in the second one. A further fall occurred during the three years, 1900-1902, when the mortality was exceptionally low, being more than 1 per 1,000 below that of the ten years, 1891-1900.

Diminishing  
rate of  
mortality  
in Victoria.

The following are the death rates at various age groups in Victoria, according to the average of the ten years, 1891-1900, and of the three years, 1900-2. The population on which the rates in the last column but one are based is the mean of the populations enumerated at the censuses of 1891 and 1901; and the population, according

Proportion  
of deaths at  
each age to  
population.

\* For the method of calculating the "Adjusted death rate" see *Victorian Year-Book*, 1892, Vol. I., paragraph 656 *et seq.*

† Per 1,000 of the actual population.

‡ Per 1,000 of the standard population. See *Year-Book*, 1892, paragraph 656.

to the census of 1901, taken at the end of March, was used for computing the rates in the last column:—

DEATH RATES AT VARIOUS AGE GROUPS IN VICTORIA, 1891-1900  
AND 1900-2.

Ages.	Deaths.		Deaths per 1,000 Living at each Age.	
	Average of Ten Years, 1891-1900.	Average of Three Years, 1900-2.	Average of Ten Years, 1891-1900.	Average of Three Years, 1900-2.
<i>Males.</i>				
Under 5 years ..	2,794	2,282	39·29	34·07
5-10 .. ..	231	195	3·36	2·70
10-15 .. ..	139	142	2·20	2·10
15-20 .. ..	191	184	3·28	3·11
20-25 .. ..	274	249	4·79	4·90
25-35 .. ..	672	579	6·60	6·25
35-45 .. ..	633	742	9·03	8·81
45-55 .. ..	671	655	15·32	15·34
55-65 .. ..	1,200	910	32·90	29·86
65-75 .. ..	1,460	1,724	62·99	61·57
75 and upwards ..	1,032	1,276	145·05	141·59
All ages ..	9,297	8,938	15·47	14·80
<i>Females.</i>				
Under 5 years ..	2,367	1,900	34·09	29·10
5-10 .. ..	209	186	3·12	2·63
10-15 .. ..	128	128	2·06	1·92
15-20 .. ..	202	175	3·43	2·92
20-25 .. ..	289	237	4·81	4·10
25-35 .. ..	676	608	6·89	6·00
35-45 .. ..	543	642	8·68	8·32
45-55 .. ..	476	454	12·12	11·48
55-65 .. ..	693	635	23·64	21·49
65-75 .. ..	785	994	45·87	45·07
75 and upwards ..	673	868	124·33	122·77
All ages ..	7,041	6,827	12·36	11·43

It will be observed that the rate of mortality in the three years, 1900-1902, was lower at every age group in the case of females, and at all age groups except two—20 to 25, and 45 to 55—in the case of males.

A still greater improvement is noticeable on comparing the rates for the decade, 1891-1900, with those for the previous one;\* for in the case of males, there was a much diminished rate of mortality at every age group below 55, and only a slight increase in the groups over that age, and, in the case of females, a considerable decrease at every age group except 55-65.

\* See *Victorian Year-Book*, 1895-8, page 685.

The proportion of deaths per 1,000 persons 60 years and upwards in the Commonwealth, is of special interest now, owing to its bearing on the question of a Commonwealth old-age pension, at present under consideration, and the following table has been constructed, showing, in age groups, such proportions for the Australian States and New Zealand on the average of the years 1900-2 :—

Deaths of  
sexagen-  
arians.

## DEATH RATES OF SEXAGENARIANS.

Ages at Death.	Deaths per 1,000 of the Population in Age Groups in							
	Victoria.	New South Wales.	Queens- land.	South Australia.	Western Australia.	Tasmania.	Australia.	New Zealand.
60 to 65	30.1	29.8	29.8	25.3	32.1	25.2	29.3	24.3
65 to 70	43.9	45.4	47.7	41.1	51.4	41.0	44.5	39.9
70 to 75	69.5	71.7	72.1	58.9	67.8	66.2	68.9	64.4
75 to 80	104.5	105.8	124.4	88.8	127.4	106.0	101.8	97.8
80 & over	181.7	195.2		162.4	186.8	199.1	185.0	182.0
Total ..	62.2	58.9	52.1	54.5	56.6	65.1	58.4	49.2

The experience of the three years, 1900-2, shows that of every 1,000 persons aged 60 years and upwards in Australia, 58.4 died during the year, a lower rate than that of Tasmania, Victoria, or of New South Wales, but higher than that of the other States and New Zealand, the proportion of deaths for each State and New Zealand being:—Victoria, 62.2; New South Wales, 58.9; Queensland, 52.1; South Australia, 54.5; Western Australia, 56.6; Tasmania, 65.1; and New Zealand, 49.2. As the average age of persons over 60 years tends to increase in young countries, it may be expected that these rates will become higher, until the normal, or settled conditions of older countries are reached.

The mortality of children under one year in proportion to births was 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. Of every 100 infants born in the ten years 1891-1900 11.11 died within a year, as against 9.38 in 1902-6. The lower rate for the latter period represented a saving of 2,600 infant lives in the last five years. The deaths of infants in 1906 numbered 2,866, and, as the births were 30,844, it follows that 9.29 of every 100 infants born died within twelve months—a higher proportion than in the two preceding years, but slightly below the average of the period 1902-6.

Infantile  
mortality  
in 1906 and  
previous  
years.

The prejudicial effect of city surroundings on infant life is evidenced by the higher infantile mortality in the Metropolitan Area than in the remainder of the State, amounting to an excess of 43 per cent. in the year under review, which was above the average of the period 1901-5. That the difference in favour of infants in less densely populated centres is not confined to Victoria is indicated by

Infantile  
mortality  
in Mel-  
bourne and  
country.

the English Registrar-General's Report for 1905, which shows that the death rate of infants in Urban Areas was 30 per cent. higher than in Rural Counties of England and Wales.

The following table shows the infantile mortality rates in Melbourne and suburbs, and the remainder of the State, and the difference in favour of the latter during the years 1873-1906:—

INFANTILE DEATH RATES IN MELBOURNE AND SUBURBS, AND THE  
REMAINDER OF THE STATE, 1873-1906.

Period.	Melbourne and Suburbs—Deaths per 100 Births.	Remainder of State—Deaths per 100 Births.	Excess per cent. of Melbourne over Country Rate.
1873-80 .. .. .	16.85	10.16	66
1881-90 .. .. .	17.14	9.50	80
1891-1900 .. .. .	13.36	9.60	39
1901 .. .. .	12.41	8.89	39
1902 .. .. .	12.74	9.55	33
1903 .. .. .	12.43	9.42	32
1904 .. .. .	9.27	6.81	36
1905 .. .. .	9.48	7.57	25
1906 .. .. .	11.35	7.92	43

Legitimate  
and illegi-  
timate  
infantile  
causes of  
death  
compared.

On the average of the years 1903-6, the mortality rate of illegitimate infants was nearly three times as great as that of legitimate infants. In 1906, the illegitimate births numbered 1,721, and the deaths 411, which correspond to a rate of 23.88 deaths per 100 births, as compared with 8.43 for legitimate children under one year of age. To ascertain the reasons for the marked disproportion in the death rates between the two classes, the subsequent table has been constructed, showing the deaths from certain causes per 1,000 legitimate and illegitimate births on the average of the years 1903-6.

LEGITIMATE AND ILLEGITIMATE DEATH RATES FROM CERTAIN  
CAUSES, 1903-6.

Cause of Death.	Deaths, under 1 year, per 1,000 Births.	
	Legitimate.	Illegitimate.
Enteritis, Gastro-Enteritis, and Diarrhoeal Diseases ...	21.8	67.5
Artificial Feeding ... .. .	.5	12.2
Wasting Diseases ... .. .	32.0	61.8
Bronchitis, Broncho-Pneumonia, and Pneumonia ...	8.1	24.1
Violence { Accidental Suffocation ... .. .	.7	9.5
{ Murder... .. .	.2	5.6
Other Causes ... .. .	18.3	51.4
Total All Causes ... .. .	81.6	232.1

The rates for 1903-6 show that of every 1,000 children born out of wedlock 79.7 died from the chief digestive complaints in a year as compared with 22.3 deaths per 1,000 legitimate infants from the same cause. Owing to the larger proportion of illegitimate than legitimate infants deprived of breast food a somewhat higher mortality might be expected among the former than the latter, especially from digestive diseases, but the striking differences in the mortality rates from this cause and from respiratory diseases would indicate considerable neglect in the rearing of illegitimate infants.

In classifying the deaths of infants, those are distinguished which occur at under the age of one month, at from 1 to 3 months, at from 3 to 6 months, and at from 6 to 12 months. The annual numbers of these during the ten years ended with 1900, and the period, 1902 to 1906, are shown in the following table, together with the proportion of deaths at each of those periods of age and the number at each such period to every 100 births. It will be noticed that in the last five years the mortality of infants per 100 births at each age period, excepting under 1 month, was below the average of the ten years ended with 1900:—

Deaths of  
infants at  
different  
ages.

DEATHS OF INFANTS AT DIFFERENT AGES, 1891-1900 AND 1902-6.

Ages.	Average Annual Deaths at under 1 year of Age.					
	Ten Years—1891-1900.			Five Years—1902-6.		
	Number.	Percentage at each Age.	Number per 100 Births.	Number.	Percentage at each Age.	Number per 100 Births.
<i>Boys.</i>						
Under 1 month	650	31.7	3.79	582	37.3	3.77
1 to 3 months	355	17.3	2.07	283	18.2	1.83
3 to 6 "	445	21.7	2.59	316	20.3	2.05
6 to 12 "	600	29.3	3.50	378	24.2	2.45
Total ..	2,050	100.0	11.95	1,559	100.0	10.10
<i>Girls.</i>						
Under 1 month	488	28.7	2.98	447	35.2	3.04
1 to 3 months	301	17.7	1.84	213	16.8	1.45
3 to 6 "	385	22.6	2.35	268	21.1	1.82
6 to 12 "	528	31.0	3.23	343	26.9	2.33
Total ..	1,702	100.0	10.40	1,271	100.0	8.64

In the period 1902-6, the births of boys were in the proportion of 105 to every 100 girls, but as the mortality among the former was greater than among the latter at each age group, more especially under 1 month, the proportion alive at the end of the year was reduced to 103 boys to 100 girls. The death rate of infants under 1 month remained fairly constant in both periods, but a large decrease is shown for each of the three remaining age groups—that for 6 to 12 months amounting to 29 per cent.—in 1902-6 as compared with

1891-1900, and may be attributed chiefly to the improved milk supply and the consequent lighter mortality from digestive and diarrhoeal diseases.

Probable  
mortality  
of infants.

The experience of the years 1902-6 shows that of every 20,000 newly-born boys and girls in equal numbers, 1,010 boys and 864 girls died within twelve months, and 8,990 of the former and 9,136 of the latter, or 18,126 of mixed sexes were living at the end of the year. The proportions surviving the first year 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 of equal numbers of each sex there were 658 more survivors in 1902-6 than in 1881-1890, and 361 more than in 1891-1900.

Infantile  
mortality  
in Aus-  
tralian  
States and  
New  
Zealand.

The following table shows the proportion of deaths of infants under one year to the total births in each Australian State and in New Zealand for each of the last five years, and the average for the ten years ended with 1900:—

#### INFANTILE MORTALITY IN AUSTRALASIA.

Year.	Deaths under 1 Year per 100 Births.						
	Victoria.	New South Wales.	Queens-land.	South Australia.	Western Australia.	Tasmania.	New Zealand
1891-1900 ..	11.11	11.22	10.34	10.54	14.48	9.58	8.38
1902 ..	10.86	10.97	10.02	9.40	14.20	7.91	8.29
1903 ..	10.64	11.63	11.99	9.71	14.12	11.08	8.11
1904 ..	7.79	8.24	7.61	7.05	11.30	9.07	7.10
1905 ..	8.33	8.06	7.55	7.30	10.42	7.97	6.75
1906 ..	9.29	7.45	7.47	7.59	11.00	9.09	6.21
Average 1902-6..	9.38	9.27	8.93	8.21	12.21	9.02	7.29

Decrease in  
infantile  
mortality  
in Aus-  
tralasia.

It will be observed that the average rate for the ten years 1891-1900 was far higher in Western Australia, and much lower in New Zealand and Tasmania, than in any other Australasian State. A very pronounced improvement in infantile death rates has taken place in Australia and New Zealand in the latest three years, the decline in the rates for each State and New Zealand in 1906, as compared with the period 1891-1900, being equivalent to 16.4 per cent. in Victoria, 33.6 in New South Wales, 27.8 in Queensland, 28.0 in South Australia, 24.0 in Western Australia, 5.0 in Tasmania, and 25.9 in New Zealand, which has the lowest rate in Australasia, and, probably, in the world.

Infantile  
mortality  
in various  
countries.

Of all the countries respecting which information is available, infantile mortality is highest in Russia, where one out of every four infants born dies within twelve months. The following table shows the rates for various foreign countries for the average of the latest five years for which this information is available, and for the Australian States and New Zealand in 1902-6:—

## INFANTILE MORTALITY IN VARIOUS COUNTRIES.

	Deaths under 1 year per 100 births.		Deaths under 1 year per 100 births.
Russia (European) ...	26.1	Switzerland ...	13.4
Austria ...	22.0	Scotland ...	12.2
Hungary ...	21.2	Western Australia ...	12.2
German Empire ...	19.7	Denmark ...	12.1
Prussia ...	19.0	Sweden ...	9.9
Spain ...	18.2	Ireland ...	9.8
Italy ...	16.8	Victoria ...	9.4
Belgium ...	15.3	New South Wales ...	9.3
Japan ...	15.3	Tasmania ...	9.0
Servia ...	14.9	Queensland ...	8.9
Bulgaria ...	14.6	Norway ...	8.3
France ...	14.4	South Australia ...	8.2
England and Wales ...	13.8	New Zealand ...	7.3
The Netherlands ...	13.6		

In the year 1906 deaths of male children under 5 years of age numbered 1,970, and deaths of female children under that age numbered 1,700—the former being in the proportion of 23.62 per cent., and the latter of 24.65 per cent., to the total number of deaths at all ages. These proportions, although higher than the two previous years are much below the average of former years. Comparing the averages of the last three decades, a marked falling off took place, from period to period, in the mortality of children relatively to that of persons of all ages, and the following table shows the annual number of such deaths at each year of age, and their proportion to the deaths at all ages, in each of the last six years and during the three decennial periods ended with 1880, 1890, and 1900:—

## MORTALITY OF CHILDREN UNDER FIVE YEARS.

Period.	Years of Age at Death.					Total under 5 Years.	
	0.	1.	2.	3.	4.	Number.	Proportion Per 100 Deaths at all Ages.
<i>Males.</i>							
1871-80 ..	1,783	508	206	148	119	2,764	39.41
1881-90 ..	2,158	464	161	114	92	2,989	34.28
1891-1900 ..	2,050	432	143	93	76	2,794	30.05
1901 ..	1,788	317	90	77	58	2,330	25.79
1902 ..	1,793	345	106	67	37	2,348	25.65
1903 ..	1,694	271	100	76	47	2,188	25.36
1904 ..	1,299	192	85	55	50	1,681	21.03
1905 ..	1,446	210	73	69	39	1,837	22.20
1906 ..	1,563	255	82	38	32	1,970	23.62
<i>Females.</i>							
1871-1880 ..	1,482	482	198	139	106	2,407	46.06
1881-1890 ..	1,805	423	151	105	84	2,568	39.61
1891-1900 ..	1,702	385	129	82	68	2,366	33.61
1901 ..	1,404	308	100	61	48	1,921	28.11
1902 ..	1,515	285	110	52	51	2,013	28.65
1903 ..	1,452	267	103	67	51	1,940	27.84
1904 ..	1,020	169	79	49	56	1,373	21.45
1905 ..	1,062	183	79	52	40	1,416	22.11
1906 ..	1,303	235	80	51	31	1,700	24.65

Number of children under 5 and their deaths.

The average number of male and female children at each year of age under 5, living during the period of ten years ended with 1900, is compared in the next table with the average number of deaths of children of the same sexes at those ages which occurred annually during that period:—

DEATHS OF CHILDREN UNDER FIVE IN PROPORTION TO POPULATION.

Age last Birthday in years.	Males.				Females.			
	Mean Number Living, 1891 and 1901.	Annual Deaths, 1891 to 1900.		Deaths per 1,000 Children Living.	Mean Number Living, 1891 and 1901.	Annual Deaths, 1891 to 1900.		Deaths per 1,000 Children Living.
		Number.	Per-centage.			Number.	Per-centage.	
0	15,516	2,050	73·38	132·12	15,089	1,702	71·94	112·80
1	14,124	432	15·46	30·59	13,783	385	16·27	27·94
2	13,981	143	5·11	10·23	13,428	129	5·45	9·61
3	13,780	93	3·33	6·75	13,667	82	3·47	6·00
4	13,698	76	2·72	5·55	13,437	68	2·87	5·06
Total	71,099	2,794	100·00	39·29	69,404	2,366	100·00	34·09

Of every 1,000 boys under 1 year of age, 132, and of every 1,000 girls under 1 year of age, 113, died in the decade under notice; the corresponding proportions for the previous ten years being 152 and 130 respectively. These proportions are naturally higher than those quoted in the table showing the comparison of deaths of children under 1 with the births, the proportions in which were 120 deaths of male infants and 104 deaths of female infants to every 1,000 births of infants of those sexes respectively during the recent decade, and 135 and 118 respectively during the previous one.

In proportion to their respective numbers in the population, more boys than girls died at every year of age, the difference per 1,000 living being as much as 19 at under 1 year, but only about 2·2·3 at from 1 to 2, and less than 1 at subsequent ages.

According to the figures, deaths of boys under 1 year of age furnish a larger proportion to the total deaths of boys under 5 than deaths of girls under 1 do to the total deaths of girls under 5, but the reverse is the case at each of the years of age after the first.

Of the whole number of children who died before they attained the age of 5, nearly three-fourths, viz., 73 per cent. of the boys, and 72 per cent. of the girls, were under 1 year of age; less than a sixth of the boys and about a sixth of the girls were between 1 and 2; about 1 in 19 of the boys and about 1 in 18 of the girls were between 2 and 3; 1 in 33 of the boys and 1 in 28 of the girls were between 3 and 4; 1 in 37 of the boys and 1 in 35 of the girls were between 4 and 5.

It results from actuarial calculations, based upon the figures for the decade 1891-00 in the last table, that of every 20,000 boys and girls in equal numbers born in Victoria, 1,195 boys and 1,040 girls



may be expected to die before they complete a year of life, 265 more boys and 247 more girls before they complete 2 years, 81 more boys and 84 more girls before they complete 3 years, 63 more boys and 52 more girls before they complete 4 years, and 47 more boys and 43 more girls before they complete 5 years. At the end of that period it is probable that 1,651 of the boys and 1,466 of the girls will have died; and 8,349 of the boys and 8,534 of the girls will be still living. The average result for both sexes is 8,441 per 10,000, which is more favorable than that deduced from the mortality of either of the two previous decades 1881-90, and 1871-80, which showed the number of survivors at the end of the first five years of life to be 8,211 and 8,103 respectively.

Out of every 10,000 infants born in Victoria, there will on the average be 5,120 boys and 4,880 girls—being in the ratio of 105 of the former to every 100 of the latter. These, according to the results just arrived at, will be reduced at the end of 5 years to 4,275 boys and 4,165 girls—or in the ratio of 103 of the former to every 100 of the latter. Thus, one-half of the excess of males over females at birth is neutralized in the first five years.

The number of survivors at the age of 5 out of every 1,000 children born has also been computed for New South Wales and New Zealand, and the results are compared with those given in *Mulhall's Dictionary of Statistics* for several European countries, as follow. It will be noticed that a larger number of infants survive the first five years in New Zealand, New South Wales, and Victoria than in any European country:—

#### CHILDREN SURVIVING THEIR FIFTH YEAR IN VARIOUS COUNTRIES.

No. of Survivors.		No. of Survivors.	
New Zealand ..	889	Denmark ..	755
New South Wales ..	850	France ..	751
Victoria ..	844	Switzerland ..	748
Norway ..	838	Prussia ..	684
Ireland ..	837	Italy ..	632
Sweden ..	783	Austria ..	614
Scotland ..	780	Hungary ..	598
England and Wales ..	762	Spain ..	571
Belgium ..	756		

It is remarkable that those countries (with the exception of France) in which the greatest infantile mortality occurs are those which possess a high birth rate, and on the contrary those countries which have a low birth rate have also the lightest mortality. It is evident, therefore, that there is an intimate association between the birth rate and the infantile mortality. So great indeed is the mortality per 1,000 births in the high birth rate countries that the ultimate gain to the population of those countries at the expiration of five years is in some cases below that of the low birth rate countries, and it is highly probable that could the mortality have been traced for a year or two beyond that period, it would be found that the supremacy rests with the low birth rate countries. The following statement shows for the latest five years the birth rate per 1,000 of

Connexion  
between  
infantile  
mortality  
and birth  
rate.

the population, and the number surviving their fifth year similarly estimated:—

### BIRTH RATES AND SURVIVORS IN VARIOUS COUNTRIES.

Country.	Birth rate.	Surviving age 5.
Hungary .. .. .	37·2	22·2
Austria .. .. .	36·3	22·3
Spain .. .. .	35·3	20·2
Prussia .. .. .	34·9	23·9
Italy .. .. .	32·5	20·5
Holland .. .. .	31·6	25·2
Denmark .. .. .	29·0	21·9
Norway .. .. .	28·6	24·0
Belgium .. .. .	28·3	21·4
England and Wales .. .. .	28·1	21·4
Switzerland .. .. .	28·1	21·0
New Zealand .. .. .	26·7	23·7
New South Wales .. .. .	26·6	22·6
Sweden .. .. .	26·1	20·5
Victoria .. .. .	24·8	20·9
France .. .. .	21·3	16·0

Thus it will be seen that the superiority of the birth rate of European States, so far as population is concerned, has for the most part disappeared at the end of five years.

A very favorable feature of Victorian mortality in recent years is the steadily diminishing number of both sexes dying between 5 and 25 years of age. Although fluctuations occurred in the general death rate, the deaths between these ages fell from 1,474 in 1902, 1,435 in 1903, 1,405 in 1904, 1,279 in 1905, to 1,215 in 1906.

Percentage  
of deaths  
in age  
groups.

The following table shows the number of deaths in various age groups in 1906, and the percentage of the total deaths in such groups in 1891-5, 1901, and 1906:—

### PERCENTAGE OF DEATHS IN AGE GROUPS, 1891-5, 1901, AND 1906.

Age Groups. (Years).	Number of Deaths in 1906.	Percentage of Deaths in Age Groups.		
		1891-5.	1901.	1906.
Under 5 ... ..	3,670	33·82	26·75	24·09
5 to 10 ... ..	257	2·59	2·51	1·69
10 to 15 ... ..	241	1·57	1·68	1·58
15 to 20 ... ..	343	2·38	2·38	2·25
20 to 25 ... ..	374	3·72	3·00	2·45
25 to 35 ... ..	965	8·48	7·46	6·33
35 to 45 ... ..	1,276	6·60	8·96	8·38
45 to 55 ... ..	1,242	7·39	7·11	8·15
55 to 65 ... ..	1,334	12·18	9·11	8·75
65 to 75 ... ..	2,543	12·26	17·30	16·69
75 and over ... ..	2,992	9·01	13·74	19·64
Total ... ..	15,237	100·00	100·00	100·00

In proportion to the total deaths, the deaths of persons aged 75 and upwards increased from 9.01 per cent. in 1891-5 to 19.64 in 1906, or by 118 per cent. in the intervening years, and the proportion in the earlier age group—65 to 75—increased by nearly 36 per cent. in the same period. The higher proportion of deaths of elderly people in the latest year accounts for a higher death rate per 1,000 of the population than would be otherwise shown. On the other hand, the proportion of deaths under 5 years diminished by nearly 29 per cent. between 1891-5 and 1906.

In accordance with the decision of the Conference of Statisticians held in Melbourne in 1906, the present methods of classifying diseases in the various States and New Zealand will be replaced by the Bertillon system of classification in 1907 and future years, when the mortalities from the different diseases will be tabulated on a uniform basis, and interstate and international comparisons of deaths from each cause thus rendered possible.

To compare the health of the community in the different years it is not sufficient to compare the ordinary death rates prevailing in each with one another, but it is necessary to know the diseases which proved more or less fatal in the years compared. To enable this to be done, the following table has been prepared showing the deaths from the principal causes, per million of the population, on the average of the years 1890-2, and for each of the five years 1902-6:—

Altered classification of causes of death.

Mortality rates from principal causes or diseases.

DEATHS FROM PRINCIPAL CAUSES PER MILLION OF THE POPULATION OF VICTORIA, 1890-2 AND 1902-6.

Cause of Death.	Deaths per million of the population.					
	Average of 1890-2.	1902.	1903.	1904.	1905.	1906.
Measles ...	2	41	17	...	65	6
Scarlet Fever ...	34	12	38	19	8	3
Influenza ...	381	259	107	213	110	198
Whooping Cough ...	129	154	91	38	16	201
Diphtheria ...	451	86	83	157	66	41
Typhoid Fever ...	369	163	210	157	100	132
Diarrhoeal Diseases ...	684	354	380	183	185	200
Syphilis ...	39	49	50	39	35	50
Hydatids ...	51	32	25	33	24	23
Alcoholism — Delirium Tremens	77	49	49	33	29	36
Rheumatic Fever ...	35	22	34	19	19	14
Rheumatism ...	54	56	57	54	40	28
Gout ...	23	12	18	14	20	14
Cancer ...	584	703	761	740	786	755
Phthisis ...	1,365	1,166	1,109	1,111	1,019	988
Other Tubercular Diseases	379	260	289	311	282	273
Anæmia, Chlorosis, Leucocythæmia	28	48	52	57	50	60
Diabetes Mellitus ...	38	54	58	82	82	85
Old Age ...	631	835	870	991	1,041	928

DEATHS FROM PRINCIPAL CAUSES PER MILLION OF THE POPULATION  
OF VICTORIA, 1890-2 AND 1902-6—*continued.*

Cause of Death.	Deaths per million of the population.					
	Average of 1890-2.	1902.	1903.	1904.	1905.	1906.
Inflammation of Brain or Membranes	113	123	127	102	119	145
Apoplexy ...	344	354	360	389	401	404
Softening of the Brain ...	57	40	43	40	40	35
Hemiplegia, Brain Para- lysis	39	76	70	93	80	90
Paralysis (undefined) ...	152	131	124	109	115	125
Insanity ...	130	139	108	106	90	45
Epilepsy ...	74	56	52	47	35	43
Convulsions ...	353	134	139	94	99	90
Paraplegia, Diseases of Spinal Cord	43	53	51	60	50	50
Endocarditis, Valvular Disease of Heart	255	335	380	340	370	432
Heart Disease, Syncope ...	824	771	707	694	731	809
Aneurism ...	63	78	93	78	87	72
Asthma ...	70	64	76	64	70	66
Bronchitis ...	691	445	412	320	425	477
Pneumonia ...	853	991	784	709	850	884
Congestion of the Lungs ...	140	63	66	46	45	50
Pleurisy ...	96	110	88	78	83	86
Diseases of the Stomach ...	175	82	97	103	100	108
Enteritis ...	658	944	886	178	223	269
Gastro Enteritis ...				400	405	474
Ulceration of Intestine ...				39	57	37
Appendicitis ...	33	111	111	71	72	96
Ileus, Obstruction of In- testine	70	73	80	51	55	73
Peritonitis ...	106	63	78	56	61	61
Cirrhosis of the Liver ...	132	118	92	83	88	88
Other Diseases of the Liver	197	125	110	90	94	87
Nephritis ...	85	92	107	102	84	89
Bright's Disease of the Kidneys	180	321	385	380	407	388
Uræmia ...	29	52	62	58	68	74
Diseases of Bladder and Prostate	76	90	89	97	99	121
Accidents ...	811	547	516	526	574	535
Murder and Manslaughter	34	22	12	19	33	16
Suicides ...	109	109	114	94	115	90

An examination of the foregoing table shows that on the average of the five years 1902-6, as compared with 1890-2, there was a very considerable reduction in the rates from Scarlet Fever, Influenza, Diphtheria, Typhoid Fever, Diarrhoeal Diseases, Hydatids, Intemperance, all Tubercular Diseases, Epilepsy, Bronchitis, Peritonitis, Cirrhosis and other diseases of the liver, and from accidents and negligence, which, together with other causes, are fully dealt with in the following paragraphs.

Although the death rates referring to miasmatic diseases, which include Measles, Scarlet Fever, Influenza, Whooping Cough, Diphtheria, and Typhoid Fever, show a marked variation during the last five years, they indicate an absence of any severe epidemic outbreak excepting Whooping Cough in 1906, in that period. Typhoid Fever, which is really a preventible disease that is most fatal between 15 and 50 years, declined from 369 per million of the population in 1890-2 to 132 in 1906. For Greater Melbourne also a rapidly diminishing death rate from this cause is shown in recent years, that for 1891-1900 being nearly three times as high as for the period 1902-6. The proportion of deaths from Whooping Cough, per million of the people, rose from 16 in 1905 to 201 in 1906. Of the total deaths in 1906 two-thirds were under 1 year, and 96 per cent. were under 5 years of age. The mortality from Whooping Cough was much heavier among female than male children, the deaths of the former being 140 as against 107 of the latter. The deaths from Diphtheria corresponded to a rate of 86 per million in 1902, 83 in 1903, 157 in 1904, 66 in 1905, and 41 in 1906. On the average of these years half of the deaths from this complaint were of children under 5 years. Measles showed its epidemic nature by being responsible for a death rate of 65 per million in 1905, and only 6 in the year under review.

Miasmatic diseases.

Deaths from Diarrhoeal Diseases, of which 61 per cent. were of children under 5 years of age, showed a striking reduction in 1902-6 as compared with the period 1890-2—the decline in the death rate amounting to 62 per cent. Comparing 1901-3 and 1904-6, it is found that the rate for the latter was only about half that of the former period.

Diarrhoeal diseases.

The death rate from Hydatids shows a large decrease in recent as compared with earlier years. In 1890-2, the deaths per million of the population were 51 as against 27 in 1902-6—a decline of 47 per cent. in the rate of the earlier period. Of the 166 deaths attributed to this cause in the last five years, 99 were males and 67 were females, and only 1 was under 5 years of age. In the same period 92 per cent. of the deaths from Parasitic Diseases were due to Hydatids. Hospital returns for the five years ended June, 1906, show that 671 Hydatid cases were treated therein, and that 1 in every 9 ended fatally.

Hydatids.

Death rates directly due to intemperance showed a diminution in recent years. The deaths referable to this cause in 1890-2 corresponded to a rate of 77 per million of the population, as against 49 in 1902 and 1903, 33 in 1904, 29 in 1905, and 36 in 1906. The average rate for 1902-6 was 39, which was 49 per cent. lower than that of 1890-2, and only slightly more than half that for England and Wales—70—in 1903-5. The diminishing rates from this cause, and from Cirrhosis and other diseases of the liver, which are frequently due to intemperance, indicate that excessive use of alcohol is considerably less in recent than in earlier years in Victoria.

Intemperance.

Rheumatic  
fever—  
Rheuma-  
tism, gout.

Deaths from rheumatic fever and rheumatism of the heart per million of the population, decreased from 35 in 1890-2 to 22—or by 37 per cent.—in the period 1902-6. Deaths from rheumatism also show a diminishing rate, that for the latest year being only about half of that prevailing in 1890-2. Mortality from gout varied considerably in the last five years, but the average rate of that period was 32 per cent. lower than for 1890-2.

Anæmia,  
&c., and  
Diabetes,  
Mellitus.

In 1906 the deaths attributed to Anæmia, Chlorosis, and Leucocythæmia numbered 74, and to Diabetes Mellitus 105, corresponding to rates of 60 and 85 respectively per million of the population. Mortality rates from both causes were about 90 per cent. higher in 1902-6 than in 1890-2, and are now steadily approximating the rates prevailing in England and Wales. The Victorian and English rates from these causes are shown in the following table:—

VICTORIAN AND ENGLISH RATES FROM ANÆMIA, ETC., AND DIABETES.

Cause of Death.	DEATHS PER MILLION OF THE POPULATION.							
	Victoria.							En gland and Wales
	1890-2.	1902.	1903.	1904.	1905.	1906.	Average of 1902-6.	1901-5.
Anæmia, Chlorosis, and Leucocythæmia	28	48	52	57	50	60	53	56
Diabetes Mellitus ...	38	54	58	82	82	85	72	89

The increasing mortality from Anæmia, Chlorosis, and Leucocythæmia, and from Diabetes Mellitus cannot be wholly explained by the difference in the age constitution of the population, although a greater proportion of middle-aged and elderly persons, amongst whom the heaviest mortality prevails, would account for a higher rate in later than in earlier years.

Cancer.

Deaths from cancer in 1906 numbered 926, and represented a death rate of 755 per million of the whole population as compared with rates of 786 in 1905, 740 in 1904, 761 in 1903, and 703 in 1902. Cancer rates, computed in proportion 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 in proportion to the persons living in age groups, and this has been done for both sexes for the census periods 1880-2, 1890-2, and 1900-2, when the numbers of the people in age groups were accurately known.

DEATH RATE FROM CANCER IN AGE GROUPS DURING  
1880-2, 1890-2, 1900-2.

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

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 rates for females under 25 years of age at the three census periods shows that there was no increase in mortality in the two later periods, whilst the rates for males and females aged 25 to 45 showed an appreciable decrease in 1900-2 as compared with 1890-2. In the age groups over 55 a marked increase was shown in the later periods, but, probably a superior diagnosis of this disease, and a higher average age of persons within these groups—particularly that of 75 and upwards—would account in a large measure for the higher rates in the years 1890-2 and 1900-2 as compared with 1880-2.

The experience of 1901-5 shows that amongst males deaths from cancer of the stomach were nearly twice as numerous as those from cancer of the liver, whilst for females the deaths resulting from a similar complaint of these organs were almost equal. Of the

Seat of  
cancer—  
Males and  
females.

2,365 male deaths due to cancer in the same period, 607 were ascribed to cancer of the stomach, 317 of the liver, 144 of the intestines, 142 of the tongue, and 92 of the jaw. Of the total female deaths—2,135—399 were due to cancer of the uterus, 333 of the liver, 326 of the stomach, 275 of the breast, 127 of the intestines, and only 15 to cancer of the tongue. Comparing the deaths from affections of similar organs of each sex it will be noticed that deaths from cancer of the stomach were about twice, and of the tongue  $9\frac{1}{2}$  times, as numerous among males as females; and that deaths from cancer of the liver were nearly equal for both sexes.

Cancer in  
various  
countries.

Deaths from cancer per 10,000 of the population in various countries are shown in the following table, the rates of which have been taken from the English Registrar-General's Report for 1905, for the average of the ten years 1895-1904.

DEATH RATES FROM CANCER IN VARIOUS COUNTRIES, 1895-1904.

Country.	Deaths from Cancer per 10,000 of the Population.	Country.	Deaths from Cancer per 10,000 of the Population.
Switzerland ...	12·8	Ireland ...	6·1
The Netherlands ...	9·3	Prussia ...	6·0
Norway ...	8·7	South Australia ...	5·9
England and Wales ...	8·2	New South Wales ...	5·7
Scotland ...	7·9	Ceylon ...	5·6
German Empire ...	7·3	Tasmania ...	5·5
Victoria ...	7·0	Italy ...	5·2
Austria (1893-1902) ...	6·9	Queensland ...	4·8
New Zealand ...	6·2	Western Australia ...	3·5

Victoria showed a lower death rate from cancer than six of the above European countries, but a higher one than the other Australian States. The higher 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, whilst the high proportion of persons at less susceptible ages accounts for the very low rate in Western Australia.

Deaths of  
recent ar-  
rivals from  
tuberculous  
diseases.

The experience of the years 1902-6 shows that the death rates from all tuberculous diseases are but slightly affected by the arrival in Victoria of persons suffering from tubercular complaints. In that period less than 1 per cent. of those dying from tubercular diseases were born outside, and resident under one year in the State, and  $2\frac{1}{4}$  per cent. were born outside, and resident less than five years in Victoria.



The deaths from phthisis in 1906 numbered 1,213, which were Phthisis. equal to a rate of 988 per million of the population as compared with 1,019 in 1905, 1,111 in 1904, 1,109 in 1903, 1,166 in 1902, and 1,365 in 1890-2. 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, during the last five census periods.

DEATH RATES IN VICTORIA FROM PHTHISIS IN AGE GROUPS AT FIVE CENSUS PERIODS, 1860-2, 1870-2, 1880-2, 1890-2, 1900-2.

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

It will thus be seen that the male death rates per 10,000 of the population from phthisis were greater during the latest four census periods than those of females; but the proportion of deaths of females under 20 years of age, was nearly twice as great as that of males during each period, whilst the proportion of males, 45 years and upwards, was considerably greater than that of females in all but the first period. The figures for 1900-2, show that there was a decline in every age group (excepting 65 and upwards amongst males, and 55-65 amongst females) as compared with those for 1890-2.

Pulmonary tuberculosis in various countries.

Death rates from pulmonary tuberculosis per 10,000 of the population, in various countries are shown in the following table, the figures for which have been taken from the English Registrar-General's Report for 1905, for the average of the ten years 1895-1904:—

DEATH RATES FROM PULMONARY TUBERCULOSIS IN VARIOUS COUNTRIES, 1895-1904.

Country.	Deaths per 10,000 of the Population.	Country.	Deaths per 10,000 of the Population.
Ireland ...	21·5	England and Wales ...	12·9
German Empire ...	20·2	Victoria ...	11·8
Norway ...	19·9	South Australia ...	8·7
Switzerland ...	19·1	Queensland ...	8·6
Scotland ...	15·9	New South Wales ...	8·1
The Netherlands ...	15·4	New Zealand ...	7·7
Japan (1894-1903) ...	14·1	Western Australia ...	7·0
Belgium ...	13·5	Tasmania ...	6·7

Owing to the different age constitutions, and the possible variations in the classification of tubercular diseases in the various countries, the above figures show only approximately the mortality from pulmonary tuberculosis. It appears that the deaths attributable to this disease are greater, in proportion to population, in Victoria than in the other Australian States and New Zealand, but are less than in the other countries.

In 1906, there were 335 deaths from tubercular diseases (excluding phthisis), which corresponded to a rate of 273 per million, as compared with 282 in the previous year, 311 in 1904, 289 in 1903, 260 in 1902, and 379 in 1890-2. The death rates in various age groups are shown in the subsequent table for the latest four census periods:—

DEATH RATES FROM TUBERCULAR DISEASES (PHTHISIS EXCEPTED) IN AGE GROUPS DURING THE YEARS 1870-2, 1880-2, 1890-2, 1900-2.

Ages (Years).	Deaths per 10,000 persons at each age during—			
	1870-2.	1880-2.	1890-2.	1900-2.
<i>Males.</i>				
0-15 ...	7·53	7·98	10·36	5·64
15-20 ...	·64	·81	1·17	1·12
20-25 ...	1·80	1·23	·89	1·77
25-35 ...	·70	·66	·84	1·91
35-45 ...	·77	·88	·77	1·39
45-55 ...	·95	·85	·67	1·64
55-65 ...	·88	1·07	·78	2·40
65 and over ...	1·09	2·26	·56	1·17
All ages ...	3·46	3·55	4·02	2·99

DEATH RATES FROM TUBERCULAR DISEASES (PHTHISIS EXCEPTED) IN  
AGE GROUPS DURING THE YEARS 1870-2, 1880-2, 1890-2, 1900-2  
—continued.

Ages (Years).	Deaths per 10,000 persons at each age during—			
	1870-2.	1880-2.	1890-2.	1900-2.
<i>Females.</i>				
0—15 ... ..	5·89	7·28	8·43	5·33
15—20 ... ..	·82	1·30	1·27	1·95
20—25 ... ..	·52	·69	1·23	2·09
25—35 ... ..	·54	·41	·88	1·98
35—45 ... ..	1·04	·70	·42	1·77
45—55 ... ..	·17	·67	·34	1·01
55—65 ... ..	·39	·62	·69	·71
65 and over ... ..	1·69	1·19	·64	·71
All ages ... ..	3·10	3·39	3·58	2·91

It will be noticed that the proportion of persons under fifteen years of age dying from tubercular diseases (excluding phthisis), during 1900-2, as compared with 1890-2, showed a decline of 45 per cent. for males, and nearly 37 per cent. for females. As a reduction of 58 and 35 per cent. for males and females respectively occurred also in the proportion of deaths of persons of the same age from phthisis, it evidences a gratifying decrease in the mortality rates from all tubercular diseases amongst children during the last decennial period.

Diseases of the nervous system, which include meningitis, inflammation of brain or its membranes, softening of the brain, paralysis, insanity, epilepsy, convulsions, paraplegia, and other diseases of the nervous system, were responsible in 1906 for 777 deaths, which were equivalent to a rate of 633 per million, as against a rate of 1095 in 1890-2. The chief cause of the lower rate in the latest year was the fewer deaths attributed to convulsions, only 112 being recorded from this cause in 1906, as compared with 405 in 1890-2. As this affection is almost wholly confined to children under five years, and is most fatal to children under one year, the comparatively small number of deaths in recent years had a most favorable influence on the infantile death rate. Deaths from epilepsy, which were equal to a rate of 74 per million in 1890-2, fell to 47 on the average of the period 1902-6, as compared with a similarly computed rate of 88 in England and Wales in 1901-5. Death rates from insanity in Victoria show a steady decrease in the last four years, that for 1906 being the lowest. In 1890-2 the rate per million was 130, as compared with 98 in 1902-6. Paraplegia and diseases of the spinal cord increased slightly in recent years, the average rate for 1902-6 being 53, as against 43 in 1890-2.

Diseases of  
the  
nervous  
system.

Heart  
disease

Heart diseases include endocarditis, valvular disease of heart, pericarditis, hypertrophy of heart, angina pectoris, fatty degeneration of heart, syncope, and undefined "heart disease." The total deaths from all these causes in 1906 numbered 1,612, corresponding to a rate of 1,314 per million, as compared with 1,146 in 1890-2. A more definite description by medical practitioners of these causes of death is noticeable in recent years, proportionately fewer were certified as syncope and "heart disease," and a larger number as endocarditis and valvular diseases, 22 per cent. of all heart complaints was attributed to the latter in 1890-2, as against 30 per cent. in 1906.

Diseases of  
the blood  
vessels.

To diseases of the blood vessels (which include cerebral hæmorrhage and embolism, apoplexy, hemiplegia, aneurism, senile gangrene, embolism, thrombosis, phlebitis, and varicose veins) were ascribed 572 deaths, representing a rate of 497 per million of the population in 1890-2, as compared with 779, or a rate of 635, in 1906. The higher rate from diseases of the blood vessels in the later years is chiefly due to the increased proportion of elderly persons in the community. Cerebral hæmorrhage or its symptom—apoplexy—and hemiplegia, were responsible for 78 per cent. of the deaths from diseases of the blood vessels in 1906, and were chiefly fatal to persons over 40, showing an increasing mortality in advancing years, and attaining a maximum amongst persons of both sexes over 65 years. The fatality from varicose veins was light, only 8 deaths being due to this cause in the last five years.

Respiratory  
diseases.

In 1906 Respiratory Diseases were responsible for 1,990 deaths, which were equal to a rate of 1,622 per million of the people, as compared with rates of 1,552 in 1905, 1,297 in 1904, 1,482 in 1903, 1,745 in 1902, and 2,029 in 1890-2. On the average of the latest five years, 54.8 per cent. of the deaths from respiratory complaints were due to pneumonia, and 27 per cent. to bronchitis. In the same period, as compared with 1890-2, death rates from bronchitis declined by 40 per cent., whilst the rates from pneumonia remained fairly constant.

The next table shows the average yearly deaths (for males and females) per 10,000 of the population, in various age groups, from respiratory diseases, during the latest four census periods.

DEATH RATES IN VICTORIA FROM RESPIRATORY DISEASES.

Age Group (Years).	Males.				Females.			
	1870-2.	1880-2.	1890-2.	1900-2.	1870-2.	1880-2.	1890-2.	1900-2.
0-15 ...	22.65	29.02	28.52	16.53	18.50	24.18	24.13	13.85
15-20 ...	3.45	3.30	2.92	2.70	1.88	2.02	3.52	2.34
20-25 ...	5.70	5.34	4.88	4.85	3.54	4.23	3.05	3.34
25-35 ...	4.69	8.31	6.85	5.94	4.51	5.72	5.65	3.75
35-45 ...	10.28	15.80	13.55	9.49	7.94	12.53	11.55	7.68
45-55 ...	20.43	26.59	25.18	18.04	7.87	13.63	17.01	11.80
55-65 ...	41.79	51.65	56.51	38.37	22.97	29.15	32.10	27.42
65 and upwards	108.11	136.54	141.07	112.38	73.10	116.12	112.38	86.78
All ages ...	17.29	24.48	24.30	18.66	12.63	17.08	17.62	13.28

An examination of the above table shows that the proportion of males dying from diseases of the respiratory system exceeded that of females at each census period. The average mortality per 10,000 of the population for the four census years was 21.18 deaths for males, and 15.15 for females. In each age group (except 15-20 in 1890-2), the mortality rate for males was heavier than that for females, and not only was there a considerable decrease in the proportions for both sexes, but, in nearly every age group, a reduction is shown during 1900-2, as compared with 1890-2.

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

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

Age Group (Years).				1870-2.	1880-2.	1890-2.	1900-2.
<i>Males.</i>							
0-15	...	...	...	23.34	29.36	31.02	17.63
15-20	...	...	...	3.05	3.37	3.56	3.04
20-25	...	...	...	5.70	5.34	6.08	5.44
25-35	...	...	...	5.74	8.38	8.35	6.73
35-45	...	...	...	10.33	15.80	16.59	10.80
45-55	...	...	...	20.52	26.83	30.30	21.24
55-65	...	...	...	42.46	51.89	69.16	43.62
65 and upwards	...	...	...	109.20	138.90	168.20	129.40
All ages	...	...	...	17.62	24.73	28.24	20.96
<i>Females.</i>							
0-15	...	...	...	19.02	24.52	25.99	15.00
15-20	...	...	...	1.88	2.02	4.44	3.17
20-25	...	...	...	3.54	4.23	4.33	4.03
25-35	...	...	...	4.58	5.79	8.00	4.64
35-45	...	...	...	7.94	12.61	15.66	9.54
45-55	...	...	...	8.04	13.63	22.40	13.82
55-65	...	...	...	23.36	29.77	43.56	32.95
65 and upwards	...	...	...	73.94	119.30	147.60	102.80
All ages	...	...	...	12.91	17.32	21.34	15.41

Excepting the age group 15-20 during 1890-2, and 1900-2, the proportion of deaths of males from influenza and respiratory diseases combined, was greater in every instance at each census period, than that for females. The mortality rates showed a considerable decrease

for both sexes during the last census period, as compared with the two previous ones, such decrease amounting to 26 per cent. in male, and 28 per cent. in female rates.

## Influenza.

The next table gives the average yearly proportion of deaths from influenza per 10,000 of the population in age groups, during the latest four census periods, and shows that during the latter two the proportion of deaths resulting from this disease was eleven times as great as in the two preceding periods:—

DEATHS FROM INFLUENZA IN VICTORIA PER 10,000 OF  
POPULATION AT EACH AGE.

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

Since 1890, there were two epidemic outbreaks of influenza—in 1891, and 1899, resulting in 1,035 and 963 deaths respectively. The deaths due to this cause in 1903 numbered 129, which was the lowest during the past sixteen years.

Although influenza has varied in form at different periods, it has always proved more fatal at the extremes of life than at middle age. The mortality in 1906 was nearly twice as great as in the preceding year, but the deaths of children under 5 from this cause were about the same, the principal increase occurring in the age group 55 years and upwards, which contributed 63 per cent. of the deaths, as compared with 54 in 1905 and 50 per cent. in 1890-8.

A most satisfactory decrease in the rates referable to Diseases of the Digestive System occurred in the last three years; that for 1904 being specially favorable. The deaths from all digestive complaints in 1906 numbered 1,832, which equalled a rate of 1.493 per million, as against proportions of 1,324 in the previous year, 1,216 in 1904, 1,618 in 1903, 1,710 in 1902, and 1,647 in 1890-2. The rates from

the chief diseases under this heading are given in the following table for the period 1890-2, and each year, 1902-6:—

DEATH RATES FROM DIGESTIVE DISEASES, 1890-2 AND 1902-6.

Digestive Diseases.	Deaths per Million of the Population.					
	1890-2.	1902.	1903.	1904.	1905.	1906.
Gastro-Enteritis... ..	653	944	886	400	405	474
Enteritis ... ..				178	223	269
Cirrhosis and other Liver Diseases				173	182	175
Diseases of the Stomach ...	175	82	97	103	100	108
Appendicitis ... ..	33	111	111	71	72	96
Ulceration of Intestine ...				39	57	37
Peritonitis ... ..				56	61	61
Obstruction of Intestine ...	70	73	80	51	55	73
Gall stones ... ..	11	17	21	21	33	33
All other Digestive Diseases	265	177	143	124	136	167
Total ... ..	1,647	1,710	1,618	1,216	1,324	1,493

With the exception of the rates relating to diseases of the stomach, ulceration of the intestine, and gallstones, there was a very considerable reduction in 1904-6, as compared with previous years. Many deaths in earlier years, which were attributed to diarrhoeal diseases, would, under modern diagnosis, be classified as enteritis or gastro-enteritis. By combining the deaths from these causes, it is found that there was a remarkable decline in 1904, 1905, and 1906, when they fell to a ratio of 761, 813, and 943 per million, respectively, as compared with 1,266 in 1903, 1,298 in 1902, and 1,342 in 1890-2. As the heaviest mortality from these combined causes is amongst children under 1 year, the low rate in 1904, 1905, and 1906 accounts in a large measure for the light infantile mortality in the same years.

The experience of the years 1904-6 shows that appendicitis was more fatal to males than to females, and that the incidence of mortality was greatest between 15 and 35 years. The deaths in 1904, 1905, and 1906 represent rates of 71, 72, and 96 per million, respectively, as against 55 in England and Wales in 1903-5 from the same cause. An idea of the fatality of appendicitis may be obtained by comparing the number of deaths in general hospitals—130—with the total cases treated—1,467—which shows that 1 in every 11 cases ended fatally in hospitals in Victoria in the last three years.

A striking alteration in Victorian mortality rates from diseases of the urinary system occurred in recent years, the rate for the period 1902-6, was 67 per cent. higher than that for 1890-2. The rates for the principal diseases constituting this group showed a decided increase, and are now considerably heavier than those of England and Wales, where, with few exceptions, the mortalities of the various

groups of diseases are generally higher. As the age constitution of the population of Victoria (other influences being equal) would warrant a lower rate than in England, the marked disparity between their mortality rates from this cause would indicate a greater prevalence of urinary complaints in this State than in England. The following are the death rates for two periods in both countries:—

DEATH RATES FROM URINARY DISEASES IN VICTORIA AND ENGLAND AND WALES.

Urinary Diseases.	Deaths per million of the Population.			
	Victoria.		England and Wales.	
	1890-2.	1902-6.	1890-2.	1901-5.
Acute Nephritis, Uræmia ...	114	158	82	91
Bright's Disease ...	180	376	254	287
Calculus (not Biliary) ...	8	8	8	8
Diseases of Bladder and of Prostate	76	99	73	73
Other Diseases of the Urinary System	30	41	38	17
Total Urinary Diseases ...	408	682	455	476

Bright's Disease accounted for 55 per cent. of the deaths from complaints of the urinary system in 1902-6, and was responsible for a death rate of 376 per million in that period, as compared with 180 in 1890-2. As the fatality is greatest among elderly persons of both sexes, a higher rate might be expected in later than in earlier years owing to the increased proportion of persons 65 years and upwards in the population.

Accidents  
and negli-  
gence.

Deaths resulting from accident and negligence represented a proportion of 811 per million in 1890-2, 547 in 1902, 516 in 1903, 526 in 1904, 574 in 1905, and 535 in 1906. The greatest reduction occurred in deaths from drowning, which were equivalent to a rate of 200 in 1890-2, and only 119 in 1906. The proportion dying from accidental suffocation—a large number of whom were young children—fell from 89 to 56 in the same period. Deaths from fractures and contusions equalled a rate of 329 in 1890-2, but steadily declined in recent years to a rate of 222 per million in 1906.

Murder and  
man-  
slaughter.

Deaths from murder and manslaughter correspond to a rate of 34 per million in 1890-2, 22 in 1902, 12 in 1903, 19 in 1904, 33 in 1905, and 16 in 1906. Although the proportion in 1905 is higher than in the preceding three years, the average rate of the period 1902-6 is 41 per cent. below that of 1890-2. Of the total deaths referable to this cause, in the latest five years, about 58 per cent. were infants, of whom nearly all were born out of wedlock and were less than 1 month old.



Suicidal death rates remained fairly constant in the periods 1890-2 and 1902-6. The deaths ascribed to this cause in 1906 numbered 111, and represented a rate of 90 per million of the people, as against rates of 115 in the previous year, 94 in 1904, 114 in 1903, 109 in 1902, and 109 on the average of the period 1890-2. In the last two years 3 per cent. of the male and 4 per cent. of the female deaths from suicide were under 20 years of age. Hanging was the most frequently selected mode of death by males, and poisoning by females during the same period.

Old age is not recorded as a cause of death unless the deceased was 65 years of age or over. On the average of the three years 1890-2, 631 deaths, per million of the population, were ascribed to old age; 835 in 1902, 870 in 1903, 991 in 1904, 1,041 in 1905, and 928 in 1906. The higher rate in recent years is due to the larger proportion of elderly persons in the community. The experience of the three years, 1900-2, shows that of every 100 persons aged 65 to 70, 4.39 died from all causes within a year; of those between 70 and 75 years, 6.95; of those aged 75 to 80 years, 10.45; and of every 100 persons 80 years and upwards, 18.17 died from all causes within twelve months.

The chief causes of death among children under 1 year of age are wasting diseases (including prematurity and other congenital defects and atrophy, debility, and marasmus), enteritis and gastro-enteritis, pneumonia and bronchitis, diarrhoeal diseases, convulsions, and whooping cough. The deaths and death rates (per 1,000 births) from these causes are shown in the following table for the average of the period 1901-5 and for the year 1906:—

DEATHS UNDER 1 YEAR FROM CERTAIN CAUSES, PER 1,000 BIRTHS,  
1901-5 AND 1906.

Causes of Death.	Deaths under 1 year—			
	Average of 1901-5.		Year, 1906.	
	Number.	Per 1,000 Births.	Number.	Per 1,000 Births.
Wasting Diseases ...	1,042	34.52	1,007	32.65
Enteritis and Gastro-enteritis ...	637	21.11	631	20.46
Pneumonia, Bronchitis ...	274	9.08	333	10.80
Diarrhoeal Diseases ...	168	5.57	122	3.96
Convulsions ...	112	3.71	89	2.89
Whooping Cough ...	66	2.18	165	5.35
Other Causes ...	596	19.65	519	16.81
All Causes ...	2,895	95.82	2,866	92.92

In 1906, lower rates prevailed from all the above causes (except pneumonia and bronchitis and whooping cough) than on the average of the preceding five years. The higher rates from respiratory

diseases—pneumonia and bronchitis—are probably due to after effects of whooping cough, which assumed a fairly severe form, and was responsible for the deaths of 165 infants in the year under review.

On the average of the five years, 1901-5, of every 1,000 children born 34.52 died within a year from wasting diseases; 21.11 from enteritis and gastro-enteritis; 9.08 from pneumonia and bronchitis; 5.57 from diarrhoeal diseases; 3.71 from convulsions; 2.18 from whooping cough; and 19.65 from other complaints. Prematurity death rates were higher in later than in earlier years; that for 1902-6 equalling 15.7 deaths per 1,000 births, as against 13.7 in the decade ended 1900.

Deaths of  
Married  
Women in  
Childbed.

The experience of the year 1906 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 child-bed, and the death rate for various age groups, are shown for the year under review in the following table:—

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

Age Group.	Married Mothers.		
	Number.	Deaths.	Deaths per 1,000 Mothers.
Under 20 years	748	7	9.36
20 to 25 "	5,666	15	2.65
25 " 30 "	7,940	33	4.16
30 " 35 "	6,941	37	5.33
35 " 40 "	5,166	35	6.77
40 " 45 "	2,121	21	9.90

A rapidly increasing death rate is shown for each succeeding age group beyond 20-25, that for 40-45 being about  $3\frac{3}{4}$  times as high as for 20-25.

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. Such deaths are classified in two ways. If the death is supposed to occur merely from the consequences of child-bearing without specific disease, it is set down under the head of childbirth, but if it should arise from puerperal fever or puerperal septicæmia it is placed under puerperal fever. The proportion of deaths of child-bearing women has fallen decade by decade from 64 per 10,000 in 1871-80 to 56 in 1891-00. In the years 1901 and 1902, however, the rate was as high as in the decade 1871-80. This rise was no doubt partly attributable to the increased average age of mothers. The proportions which prevailed in the last six years, and the averages of previous periods back to 1864, are shown in the following table:—

## DEATHS OF MOTHERS TO EVERY 10,000 CHILDREN BORN ALIVE.

Period.	Number of Women who Died Annually of—			Deaths of Mothers to every 10,000 Children Born Alive.
	Child Birth.	Puerperal Fever.	Total.	
1864-70 ..	108	20	128	49·06
1871-1880 ..	127	46	173	64·38
1881-1890 ..	121	64	185	59·19
1891-1900 ..	117	66	183	56·01
1901 ..	130	71	201	64·82
1902 ..	131	68	199	65·32
1903 ..	136	53	189	63·92
1904 ..	113	46	159	53·42
1905 ..	119	53	172	57·13
1906 ..	115	51	166	53·82

The proportion per 1,000 births of deaths in childbirth from septic diseases was 1.93 in 1901-5, and 1.65 in 1906. In England and Wales for 1905 the proportion was 1.75. These rates are considerably higher than those obtaining in the out-door departments of the large maternity hospitals in London, where, according to Dr. H. O. Cowen, in his paper on "Puerperal Sepsis," in the *Intercolonial Medical Journal* for August, 1904, the results of the Queen Charlotte and the British Lying-in Hospitals show that out of 34,628 out-door births attended by trained and skilled midwives attached to these institutions there were only six deaths, or the very small proportion of less than two deaths to every 10,000 births—one-tenth of the Victorian mortality rate from the same cause.

Deaths in  
childbed  
from septic  
diseases.

## NATURAL INCREASE.

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 each of the years 1902 to 1906, and also for the mean of that period, is shown in the following table:—

Natural  
increase  
per 1,000  
of popula-  
tion in  
Australasia

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

Year.	Victoria.	New South Wales.	Queens- land.	South Australia.	Western Australia.	Tasmania.	Australia.	New Zealand.
1902	11·78	15·22	15·60	12·74	16·46	18·02	14·18	15·39
1903	11·56	13·72	12·24	12·45	17·67	16·61	13·12	16·21
1904	12·73	16·11	17·01	14·48	18·43	18·58	15·29	17·37
1905	12·73	16·59	15·45	13·51	19·47	19·04	15·30	17·95
1906	12·72	17·15	16·75	13·20	18·15	18·35	15·52	17·77
Mean	12·30	15·76	15·41	13·28	18·04	18·12	14·68	16·94

The mean natural increase of the Australian States for the period 1902-6, viz., 14.68, is probably not far from that which will be attained under ordinary circumstances when the age constitution of the population will have become normal, and when undisturbed by migration. At the present time, the birth rate and death rate are both below normal, owing to factors in operation which have already been discussed in dealing with the birth and death rates. This annual rate of increase, 14.68 per thousand, will enable a population to double itself in  $47\frac{1}{3}$  years. The rate for the last year was .84 above the average of the five years, and if this increased rate were maintained, the population would take  $45\frac{1}{3}$  years to double itself.

The rate of natural increase in Australia in 1902-6 is higher than in the United Kingdom and eleven European countries on the average of the latest five years for which this information is available.

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

Country.	Natural Increase per 1,000 of Population.	Country.	Natural Increase per 1,000 of Population.
Tasmania ... ..	18.1	Victoria ... ..	12.3
Western Australia ...	18.0	England and Wales ...	12.1
Russia (European) ...	17.1	Scotland ... ..	12.0
New Zealand ... ..	16.9	Austria ... ..	12.0
New South Wales ...	15.8	United Kingdom ...	11.4
The Netherlands ...	15.5	Hungary ... ..	11.0
Queensland ... ..	15.4	Belgium ... ..	10.7
Prussia ... ..	15.2	Italy ... ..	10.7
Australia ... ..	14.7	Sweden ... ..	10.6
German Empire ...	14.5	Switzerland ... ..	10.4
Denmark ... ..	14.1	Spain ... ..	9.2
Norway ... ..	14.1	Ireland ... ..	5.6
South Australia ...	13.3	France ... ..	1.7

The rate of natural increase in Victoria is higher than in England and Wales, Scotland, Austria, Hungary, Belgium, Italy, Switzerland, and Spain, although higher birth rates obtained in those countries in the periods compared.

The actual rates of increase in various European countries have been computed and are set forth in the following table, which also shows the periods from which such rates were obtained, and also the periods in which the population would double itself at the computed rate of increase :—

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

Actual rate of increase of population in European countries.

ACTUAL RATE OF INCREASE OF POPULATION IN VARIOUS  
EUROPEAN COUNTRIES.

Country.	Annual Rate of Increase per cent.	Period of Experience.	Period required to double Population.
German Empire ...	1.12	1872-1901	62½
Prussia ...	1.11	1867-1901	62½
The Netherlands ...	1.05	1853-1901	66½
Denmark ...	1.03	1861-1901	67½
Hungary ...	.97	1876-1901	71½
Great Britain ...	.91	1864-1901	76½
Belgium ...	.84	1853-1901	83
Norway ...	.81	1871-1901	86
Sweden ...	.77	1852-1901	90½
Austria ...	.77	1853-1901	90½
Switzerland ...	.72	1868-1901	96½
Italy ...	.64	1872-1901	108½
Spain ...	.45	1861-1901	154½
France ...	.16	1853-1901	433½

Even at the present rate of natural increase in Australia, the period required to double its population, viz., 47½ years—and which is independent of immigration—is considerably less than that required by any of the European countries, based upon actual experience.

The following table shows the excess per cent. of births over deaths in each of the Australian States and New Zealand for each of the five years 1902 to 1906, together with the mean of the same period:—

Excess of births over deaths in Australasia

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 ...	88	127	129	107	121	165	113	147
1903 ...	90	118	99	115	140	140	109	156
1904 ...	107	152	168	142	155	169	139	181
1905 ...	105	164	148	133	180	185	141	194
1906 ...	102	173	175	130	153	164	143	191
Mean...	98	147	144	125	150	165	129	174

From this it is seen that the least excess in Australasia is in Victoria and the greatest in New Zealand. To every hundred deaths that occur in Victoria there are 198 births, in New South Wales 247, in Queensland 244, in South Australia 225, in Western Australia 250, in Tasmania 265, whilst in New Zealand there are 274.

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 European 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 EUROPEAN COUNTRIES.

Country.	Excess per cent. Births over Deaths.	Country.	Excess per cent. Births over Deaths.
New Zealand ...	174	Scotland ...	71
Tasmania ...	165	German Empire ...	71
Western Australia ...	150	United Kingdom ...	70
New South Wales ...	147	Sweden ...	69
Queensland ...	144	Belgium ...	61
Australia ...	129	Switzerland ...	59
South Australia ...	125	Russia (European) ...	54
Victoria ...	98	Austria ...	49
Norway ...	97	Italy ...	49
The Netherlands ...	97	Hungary ...	42
Denmark ...	95	Spain ...	35
Prussia ...	77	Ireland ...	32
England and Wales ...	76	France ...	9

The very favorable position of Australasia in respect of the excess of births over deaths is wholly due to its low death rate. Higher birth rates prevailed in the above European countries (except Ireland and France) 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 replaced by 229 births in Australia, as compared with 197 in Norway and The Netherlands, 195 in Denmark, 177 in Prussia, 176 in England and Wales, 171 in Scotland and the German Empire, and only 109 in France, which was the lowest in Europe.