VITAL STATISTICS.

Law as to marriages in Victoria.

Marriages in Victoria can only be celebrated by a minister of religion whose name is registered in the office of the Government Statist, by the Government Statist, or 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

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.

Registration.

The present official system of compulsory registration of births, deaths, and marriages in Victoria has been in force since 1853; and the registers—framed on the best models—are replete with all necessary information bearing on the family history of the people. The statutory duties under the Registration Acts are performed by the Government Statist, who has control over the local registrars of births and deaths, and (so far as regards their registration duties) 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 1905 numbered 8,774, which was the highest during the past fourteen years, and was 564 more than in the preceding year, 1,169 greater than 1903, and 480 above the average of the last five years. The marriages in Victoria in each of the last fifteen years are as follow:— Marriages.

MARRIAGES IN EACH YEAR, 1891-1905.

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		

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 regulated by the view taken of present and future prospects, the large increase in the number of marriages in the past two years evidences a belief of increasing 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 rates.

MARRIAGE RATES, 1896 TO 1905.

Year.	Marriage Rate.	Year.	Marriage Rate.
1896 ...	6.44	1901 ...	6.97
1897 ...	6.41	1902 ...	7.00
1898 ...	6.44	1903 ...	6.29
1899 ...	6.86	1904 ...	6.80
1900 ...	6.96	1905 ...	7.24

It will be noticed that, with the exception of 1903, there was a perceptible yearly increase in the marriage rate since 1897, and that the highest rate during the past ten years occurred in 1905.

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.		Population.	Marriageable Men.	Marriageable 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 ..	1,13[illegible],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

Fluctuations 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 57½ in 1881, and 42⅓ in 1861, and the usual range was between the narrow limits of 52 and 55. This proportion steadily diminished from 57½ 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.

Marriage rates in age groups.

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 com-

puted for various age groups between 15 and 50 at each of the last three census periods, and are shown in the following table:—

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 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 recent 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.

* 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.

Ages of bridegrooms and brides.

The ages of bridegrooms and brides who were married in 1905, are shown in combination for various groups in the following table:—

AGES OF BRIDEGROOMS AND BRIDES IN COMBINATION IN VICTORIA, 1905.

Ages of Brides.	Ages of Bridegrooms.																Total Brides.
	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 upwards.	
14 ...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	1
15 ...	...	1	...	...	2	...	...	3	...	...	...	...	...	...	...	...	6
16 ...	...	2	2	5	25	7	1	...	...	...	...	...	...	...	...	...	42
17 ...	...	2	8	13	60	35	11	4	2	...	...	...	...	...	...	...	135
18 ...	2	5	19	17	156	76	19	6	6	...	1	...	...	...	...	...	307
19 ...	...	5	20	34	192	109	31	11	6	1	...	...	...	...	...	...	409
20 ...	...	3	11	16	233	153	64	26	7	...	...	...	...	...	...	...	513
21 to 25 ...	1	2	13	31	1,281	1,219	474	175	58	11	2	2	...	...	...	...	3,269
25 to 30 ...	...	...	3	5	262	1,015	653	277	93	39	5	3	1	...	2	...	2,358
30 to 35 ...	...	...	...	1	27	167	293	221	121	47	14	6	3	3	...	...	903
35 to 40 ...	...	...	...	...	6	38	80	133	83	48	23	8	4	3	2	1	429
40 to 45 ...	...	...	...	...	1	6	23	40	70	44	13	11	8	2	2	1	221
45 to 50 ...	...	...	...	...	...	1	5	9	18	19	15	14	7	1	1	1	91
50 to 55 ...	...	...	...	...	...	1	...	2	6	9	4	8	4	3	3	1	41
55 to 60 ...	...	...	...	...	...	...	...	...	...	2	2	4	4	3	4	...	19
60 to 65 ...	...	...	...	...	...	...	...	...	...	...	1	1	2	4	7	2	17
65 to 70 ...	...	...	...	...	...	...	...	...	...	...	...	...	1	3	3	2	9
70 to 75 ...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	2	4
Total Bridegrooms ..	3	20	76	122	2,245	2,828	1,654	907	470	220	80	57	34	24	24	10	8,774

Some inequalities of age amongst the persons married appear in several columns, as for instance, three men between 35 and 40 were married to girls 15 years of age, 1 between 50 and 55 to a girl of 18, and 2 between 70 and 75 to women between 25 and 30. In 2,865 instances, or 33 per cent. of the whole, the contracting parties were about the same age, and for 1 marriage in every 11, the bride was older than the bridegroom. Of the total bridegrooms and brides 58 of the former and 13 of the latter were over 65 years of age.

Proportion of marriages at various ages.

The proportions of both sexes marrying in the various age groups are shown in the following table for the averages of the periods 1881-90, 1891-5, and for the year 1905:—

PROPORTION OF MALES AND FEMALES MARRYING AT DIFFERENT AGES, 1881-90, 1891-5, AND 1905.

Ages (Years).	Bridegrooms.			Brides.		
	Proportion per 1,000 at each age.			Proportion per 1,000 at each age.		
	1881–90.	1891–5.	1905.	1881–90.	1891–5.	1905.
Under 15	...	...	...	·15	·13	·11
15 to 16	...	...	...	1·17	1·31	·68
16 to 17	·03	·08	...	6·53	5·70	4·79
17 to 18	·29	·16	·34	20·32	17·21	15·38
18 to 19	1·46	1·30	2·28	42·94	35·27	34·99
19 to 20	5·62	5·52	8·66	65·03	50·48	46·62
20 to 21	15·19	11·94	13·90	73·84	62·09	58·47
21 to 25	321·02	262·69	255·87	432·34	398·04	372·58
25 to 30	365·48	383·61	322·32	223·83	268·61	268·75
30 to 35	134·57	182·99	188·51	62·07	87·42	102·92
35 to 40	58·29	68·17	103·37	29·53	34·68	48·89
40 to 45	32·54	29·09	53·57	17·10	16·73	25·19
45 to 50	24·77	17·66	25·07	12·23	8·74	10·37
50 to 55	18·40	12·57	9·12	6·74	6·15	4·67
55 to 60	11·49	8·71	6·50	3·40	3·92	2·17
60 and over	10·85	15·51	10·49	2·78	3·52	3·42
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 proportions of both sexes marrying between the ages 21 and 25 show a steady decline, but among the men more than the women, and those between 30 and 40 a substantial increase, again principally with the men. These altered proportions support the view that in Victoria a custom has grown up to defer marriage until a later age than formerly.

Increased age at marriage.

There was a gradual increase in the mean ages at marriage of both brides and bridegrooms during the 25 years ended in 1904, and a further increase for the year 1905. The following statement gives, for certain five year periods, and for 1905, the mean ages of brides under 45, and of bridegrooms marrying such brides:—

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

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 three later periods. The mean age of all bridegrooms during 1905 was 30.27, which was nearly $1\frac{3}{4}$ years higher than that of England and Wales—28.53—during the year 1902.

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.	Queensland.	South Australia.	Western Australia.	Tasmania.	Australia.	New Zealand
1901 ..	6·97	7·68	6·61	6·43	9·66	7·71	7·29	7·81
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
Mean	6·86	7·34	6·12	6·61	9·21	7·57	7·08	8·13

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 1905, all the States, except Western Australia, showed an increase in the marriage rate as compared with the previous year, there being an increase of $6\frac{1}{2}$ per cent. in Victoria, 3 per cent. in New South Wales, about 2 per cent. in Queensland, $1\frac{1}{3}$ per cent. in South Australia, and less than 1 per cent. in Tasmania. 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 1901-5 was lower than in twelve of the fifteen European countries shown in the following table during the years 1899-1903:—

MARRIAGES PER 1,000 OF THE POPULATION IN EUROPEAN COUNTRIES, 1899-1903.

Hungary	8·7	Switzerland	7·6
Spain	8·5	Denmark	7·3
German Empire	8·2	Scotland	7·2
Belgium	8·2	Italy	7·2
Austria	8·1	Norway	6·6
England and Wales ..	8·0	Sweden	6·0
France	7·6	Ireland	5·0
Holland	7·6		

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 the marriage rates are generally regarded as evidence of prosperity in a community, it can hardly be regarded as such 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 average annual 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 1905:— Marriage rates in urban and rural districts.

USUAL RESIDENCE OF BRIDES AND BRIDEGROOMS DURING 1905.

Usual Residence of Bridegroom.	Usual Residence of Bride.				Total Bridegrooms.	Proportion of Bridegrooms per 1,000 of Population.
	Metropolitan.	Other Urban.	Rural.	Outside Victoria.		
In Victoria—						
Metropolitan Districts	3,242	127	197	26	3,592	7·0
Other Urban Districts	108	1,188	226	18	1,540	7·5
Rural Districts	367	319	2,474	23	3,183	6·4
Outside Victoria ..	180	65	85	129	459	..
Total Brides	3,897	1,699	2,982	196	8,774	7·2
Proportion of Brides per 1,000 of Population ..	7·6	8·3	6·0	..	7·2	..

It will first be noticed that over 5 per cent. of the bridegrooms, and over 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 preceding five years, the marriage rate of both sexes in 1905 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
	1905	7·0	7·5	6·4
Females	1900–4	7·5	7·4	5·5
	1905	7·6	8·3	6·0

Marriages in quarters.

During the twenty years, 1881 to 1900, of the 153,399 marriages celebrated in Victoria, 26.73 per cent. were celebrated in the Autumn quarter, 25.97 per cent. in the Spring, 24.00 in the Summer, and 23.30 in the Winter. In the period 1901-5 the percentages were 27.39 in the Autumn, 24.15 in the Summer, 24.82 in the Spring, and 23.64 in the Winter quarter. It thus appears that marriages are most numerous in the Autumn, and least in the Winter quarters.

Former condition of persons married at certain periods.

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

CONJUGAL CONDITIONS OF PERSONS MARRYING, 1871-1905.

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

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 1902, which were 87.46 for marriages contracted between bachelors and spinsters, 3.43 between bachelors and widows, 5.73 between widowers and spinsters, and 3.38 between widowers and widows.

The number of divorced persons re-married during 1905 was 102, which was above the average of the preceding four years, but below that of 1904. A larger number of divorced women re-marry than men, the ratio for the last five years being about seven of the former to every five of the latter. The following are the numbers of divorced persons re-marrying in Victoria since 1900:— Divorced persons re-marrying.

DIVORCED PERSONS RE-MARRYING: RETURN FOR FIVE YEARS.

Year.	Males.	Females.	Total.
1901	41	45	86
1902	34	59	93
1903	33	37	70
1904	45	68	113
1905	38	64	102

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 three years 1903-5 was equivalent to 2.39 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 1901-3. 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 1903-5, in Victoria, and for the period 1901-3 in England and Wales:— Marriages of minors.

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.
	1903–5.	1898-1902.	1891-5.	1881–90.	1901–3.
Bridegroom ..	2·39	1·95	1·89	2·26	4·74
Bride	15·69	15·44	17·13	21·00	15·53
Mean ..	9·04	8·74	9·51	11·63	10·13

During the five years, 1901 to 1905, an annual average of 8,294 marriages was registered, of which only 125, or 1.5 per cent., were celebrated by lay registrars. This proportion was as high as 7 in the ten years, 1881-90, but suddenly dropped from 6.6 to 3.7 in Marriages by principal denominations.

1894, and has since declined to 1 in 1905, probably owing to the competition of matrimonial agencies, which sprang up about 1894. Of the annual average marriages in 1901-5, 1,691 were solemnized according to the rites of the Church of England, 1,354 of the Presbyterians, 1,555 of the Methodists, 431 of the Baptists, 508 of the Independents, 60 of the Lutherans, 1,245 of "other sects" —chiefly Protestants—1,303 of the Roman Catholic Church, and 22 according to those of the Jews.

Marriages at matrimonial or advertising 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, and to 1,792 in 1905. About 20 per cent. of the total marriages were performed in such agencies in 1900, and 18 per cent. in 1903 and 1904, and 20 per cent. in 1905. 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 1905 was 30,107—15,523 males and 14,584 females. This was 344 above the number recorded for the preceding year, but 3,522 fewer than the average of the ten years ended 1900. The figures for each year since 1890 were:—

NUMBER OF BIRTHS IN VICTORIA, 1891-1905.

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

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 eight 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 slight increase—the total for 1905 being 538 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 whole of the intervening period there has been an extensive emigration from Victoria, but this loss, by emigration, was much less in 1905 than in previous years.

The following table shows the birth rates in Victoria from 1860 to 1905:— Birth rates.

BIRTH RATES IN VICTORIA, 1860-1905.

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

The above rates, based upon the number of births to every 1,000 of the population, are, like marriage rates, calculated on a similar basis, apt to mislead, unless the different constituents, or elements of the population, bear a similar proportion to one another at the various periods.

The method is, at all events, in young communities, absolutely 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 birth rate is 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. The decline in Victoria in the latter years is accentuated on account, not only of the cessation of immigration, but on the absolute emigration of adults. Under these circumstances, the figures in the table do not show the true measure of the fall in 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:— Proportion of births to population and married women.

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

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 $1\frac{3}{4}$ per 1,000) 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 quinquennial 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

So far as the groups 15 to 25 are concerned, the results are in accordance with the figures published in the English Registrar-General's Report for 1903, which show that of the total number of married women between 15 and 45 years of age in England and Wales, the proportion of those between 15 and 25 was 15·2 per cent. in 1871, 14·8 per cent. in 1881, 13·7 per cent. in 1891, and as low as 12·4 in 1901.

Rates of legitimate natality at various ages in Sweden.

To estimate the extent to which the changes in age distribution between the two last census periods would influence the birth rate for this State, it is necessary to ascertain the rates of natality for married women at different ages. Up to the present, the available information relating to Victoria on which such rates might be computed, has not yet been tabulated in respect to all married women, although it was done for one year in respect to newly married women.* Such rates were, however, published in a previous issue of this work† for several European countries and towns, from which it is proposed to select the rates for Sweden—which it has been decided to adopt as a standard for measuring the extent of the decline in the productiveness of married women in Victoria during the last ten years, owing to changes in their age constitution. The following were the rates of natality in Sweden in 1891, at each quinquennial age group under 45:—

Ages of Wives.	Births per 100 Wives.
15—20	... 51·8
20—25	... 45·1
25—30	... 37·5
30—35	... 31·2
35—40	... 25·0
40—45	... 14·2

Applying these proportions to the numbers of married women at similar age groups in Victoria in 1891 and 1901, it is found that the relative fertility of such women diminished by 9 per cent. in the interval, owing to their increased average age alone. This will, however, account for little more than a third of the fall since 1891 in the rate actually experienced. It is also found that in 1891 the rate in Victoria was only 5½ per cent. below that of Sweden under similar age conditions, whereas in 1901 the former was nearly 22 per cent. below the latter. The following are the results:—

BIRTH RATE.

Year.	Births per 1,000 Married Women 15 to 45.		Percentage of Victorian rate below Swedish.
	Actual.	Applying Swedish rates to Victoria.	
1891	302·1	319·8	5·5
1901	227·9	291·2	21·7
Decrease	74·2	28·6	..
„ per cent.	24·6	8·9	..

* For particulars, see *Victorian Year-Book*, 1895–8, page 663, *et seq.*
† Ibid, page 666.

Birth rates in Australian States and New Zealand.

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 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
1901 ..	25·78	27·60	28·28	25·09	30·32	28·40	27·05	26·34
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
Mean of 5 Years	24·97	26·71	26·72	24·26	30·26	28·94	26·26	26·60

During the year 1905, the birth rates in Victoria and New Zealand improved slightly, whilst in New South Wales, Queensland, South Australia, Western Australia, and Tasmania, they were lower than in the preceding year—the greatest reduction (4½ per cent.) taking place in Queensland. The rate in Australia for 1905 (26.10) which was slightly below that of 1904, was equivalent to 104,940 births, and, as the deaths in the same period numbered 43,514, the gain by excess of births over deaths was 61,426 for the six States.

Decline in the number of legitimate births.

According to the average of the last five years, the highest birth rate prevailed in Western Australia and the lowest in South Australia, the latter being but slightly lower than that of Victoria. 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 subjoined return, which shows the results for each Australian State and for New Zealand at the two last census years:—

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.

Birth rates in European countries.

The following is a statement of the birth rates in the principal European countries for the year 1902, also the average birth rates for the 25 years, 1877-1901, arranged in order according to the rates in 1902 :—

BIRTH RATES IN EUROPEAN COUNTRIES.

Country.	Births per 1,000 of Population.		Decline per cent.
	1902.	1877–1901.	
Hungary	38·8	42·3	8·3
Austria	37·0	37·7	1·9
Prussia	35·6	37·3	4·5
Spain	35·5	35·4	0·3 (increase)
German Empire	35·1	36·8	4·6
Italy	33·3	36·2	8·0
Holland	31·8	33·8	5·9
Denmark	29·4	31·2	5·8
Scotland	29·2	31·7	7·9
Norway	29·1	30·6	4·9
Switzerland	28·7	28·6	0·4 (increase)
England and Wales ..	28·5	31·7	10·1
Belgium	28·4	29·8	4·7
Sweden	26·3	28·4	7·4
Ireland	23·0	23·5	2·1
France	21·7	23·3	6·9

It will be seen that there was a decline in the birth rates for 1902 as compared with the averages of the 25-year period in all the countries named with the exception of Spain and Switzerland. The decline was relatively greatest in the case of England and Wales, viz., 10 per cent., and of Hungary (where the birth rate is still the highest in Europe, with the exception of Russia), and was also very marked in Italy and Scotland, with a fall of 8 per cent., Sweden (7), France, (7), and Holland (6), whilst the fall was less than 6 per cent. in all the other countries shown. The average rate in Australia for the past five years was lower than the rate for 1902 in any of the European countries except Ireland and France; but, as already explained, there are exceptional reasons why the rate in Australia is so abnormally low. By a comparison of the birth and marriage rates in European countries, it is found that a high birth rate is generally concurrent with a high marriage rate and *vice versâ*. A notable exception to this is France, in which a high marriage rate is co-existent with a lower birth rate than in any other European country.

Birth places of parents of legitimate 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 proportions 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 .74 per cent. in foreign countries.

Chinese and half-caste Chinese births, 1903-5.

The births to Chinese parents numbered 35, and the Chinese half-caste births (fathers only Chinese) amounted to 85 during the three years, 1903-5.

Ages of parents of legitimate children.

The average ages of fathers and mothers of legitimate children whose births were recorded in 1905 were 35.10 and 30.72 years respectively, which were 5.34 and 4.95 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, 1905.

Father.		Mother.	
Age Group (Years).	Proportion per 100 Births.	Age Group (Years).	Proportion per 100 Births.
Under 21	·57	Under 21	4·68
21 to 25	7·14	21 to 25	16·78
25 to 30	20·52	25 to 30	27·26
30 to 35	23·23	30 to 35	24·45
35 to 40	23·36	35 to 40	18·59
40 to 45	15·75	40 to 45	7·53
45 to 50	6·68	45 and over ...	·71
50 and over	2·75		
Total ...	100·00	Total ...	100·00

It will be seen that on the experience of 1905, 44 per cent. of the mothers were between 21 and 30, and 43 per cent. between 30 and 40. The proportions of fathers at corresponding ages were 27⅔ and 46½ per cent. Of every 1,000 legitimate births, about 47 were due to mothers under 21 years, and only 7 to mothers aged 45 years and upwards.

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:— Birth rates in town and country.

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

Year.	Number 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

It will be noticed that in the last five years, as compared with 1890, the birth rate in the metropolitan district fell off by 36 per cent., in the other urban districts by about 7 per cent., and in the rural districts by 19 per cent.

The birth rates in the seven principal country towns are shown in the following table for the years 1901-5:— Birth rates in seven principal country towns.

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.
1901 ...	27·81	35·53	28·46	27·93	33·97	29·98	34·79
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
Average 5 years	25·52	32·93	27·54	28·04	31·69	28·62	30·60

On the average of the five years 1901-5, 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, 1901-5:—

BIRTH RATES IN SUB-DISTRICTS OF GREATER MELBOURNE, 1901-5.

Sub-Districts.	Births per 1,000 of the Population.				
	1901.	1902.	1903.	1904.	1905.
Melbourne City	21·15	22·07	20·48	20·30	19·45
Fitzroy City	22·58	21·60	20·34	18·97	21·20
Collingwood City	26·46	24·45	23·37	22·82	21·92
Richmond City	25·51	27·65	22·87	23·70	21·80
Brunswick Town	26·71	26·80	27·00	26·50	26·55
Northcote Town	24·40	30·12	27·89	27·84	29·73
Prahran City	22·69	22·56	20·55	21·25	21·52
South Melbourne City	22·10	22·51	21·80	21·05	21·38
Port Melbourne Town	25·26	29·44	27·64	24·21	24·48
St. Kilda City...	18·59	18·70	17·93	17·61	19·34
Brighton Town	22·39	21·09	20·08	19·36	19·90
Essendon Town	23·77	23·42	22·28	22·29	21·96
Hawthorn City	22·67	19·37	20·22	18·66	18·68
Kew Borough	21·54	18·25	20·60	18·22	19·69
Footscray City	28·21	29·72	26·18	27·99	29·36
Williamstown Town	25·34	22·40	22·09	24·13	21·37
Oakleigh Borough	31·25	33·85	29·23	22·31	36·15
Caulfield Town	18·72	19·31	17·74	19·80	19·54
Malvern Town	21·98	21·07	23·64	19·15	19.09
Camberwell and Boroondara Borough	19·17	17·79	17·73	15·77	18·56
Preston Shire	26·76	21·38	19·26	21·82	25·83
Coburg Borough	20·58	21·10	17·84	21·38	15·81
Remainder of District	24·28	23·04	24·32	22·36	19·97
Greater Melbourne (including Hospitals, &c.)	24·85	24·85	23·93	23·54	23·33

The births in Greater Melbourne in 1905 numbered 11,944 and corresponded to a rate of 23.33 per thousand of the population, which was the lowest rate recorded, and over 18 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 that period prevailed in Oakleigh 30.56, followed by Footscray 28.29, Northcote 28.00, Brunswick 26.71, Port Melbourne 26.21, and the lowest in Camberwell and Boroondara 17.80, St. Kilda 18.43, and Caulfield 19.02.

The subsequent table shows the mean population, number of births, and birth rates in each Australasian capital city and suburbs during the year 1905, and the birth rates for 1904:— Birth rates in capital cities and suburbs.

BIRTH RATES IN CAPITAL CITIES OF AUSTRALASIA.

Capital Cities and Suburbs.	Year 1905.			Births per 1,000 of the population, 1904.
	Mean Population.	Number of Births.	Births per 1,000 of the population.	
Melbourne	511,900	11,944	23·33	23·54
Sydney	524,100	13,769	26.27	25·67
Brisbane	127,704	3,274	25·64	26·40
Adelaide	171,982	3,850	22·39	23·71
Perth	51,300	1,958	38·17	36·78
Hobart	34,907	1,009	28·91	28·64
Wellington	58,365	1,715	29·38	26·59

With the exceptions of Perth and Wellington, all 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 67 children, of whom 14 were registered in 1903, 19 in 1904, and 34 in 1905. 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 1905 was 1,689, which gives a proportion of 5.61 to every 100 births registered, being slightly below the average of the five years ended with 1904. 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 1905 was much lower than in New South Wales and Queensland, slightly higher than in Tasmania, but much higher than in any other of the Australian States or New Zealand; it was also lower than in Scotland, but much higher than in the other portions of the United Kingdom; it was also lower than in 14 countries on the continent of Europe respecting which particulars are available, in six of which the rates run as high as from 10 to 15 per cent.* The following are the Illegitimate births and rates.

* For particulars, see edition of this work for 1895–8, page 654.

proportions of illegitimate births to every 100 children born in the Australian States and New Zealand, for the year 1905, and in the United Kingdom for the year 1902 :—

ILLEGITIMATE BIRTH RATES.

Australasia—		*Australasia*—	
New South Wales ..	7·4	Western Australia ..	4·2
Queensland	7·0		
Victoria	5·6	*United Kingdom*—	
Tasmania	5·5	Scotland	6·3
New Zealand	4·6	England	3·9
South Australia ..	4·3	Ireland	2·6

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 1905 were 1 in 11.5, 1 in 20, and 1 in 35 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 $1\frac{1}{4}$ 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 betwen 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 (that is, the percentage of infants dying under one year), is *primâ 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.
South Australia ...	25·5	10·9
Victoria	25·7	11·0
New Zealand	25·7	8·1
Sweden	26·9	10·0
Australia	27·1	11·0
New South Wales ...	27·4	11·1
Tasmania	28·1	9·6
Switzerland	28·4	19·0
Queensland	28·5	10·4
Great Britain	28·7	15·0
Belgium	28·9	17·0
Japan	29·8	15·2
Denmark ...	30·0	14·0
Western Australia ...	30·6	14·0
Italy	33·9	19·0
Holland	32·1	20·0
Prussia	36·5	21·0
Austria	37·2	25·0
Hungary	39·4	25·6
Saxony	39·9	28·3

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. Russia is also omitted in consequence of want of reliable figures, but it is generally understood that both the birth rate and infantile mortality are the highest in the civilized world.

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 1901-5:— Deaths.

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.	
1901 ..	15,904	9,035	6,869	4,129	3,844	4,120	3,811	13·22
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
Average	15,349	8,616	6,733	3,880	3,780	3,983	3,706	12·71

The number of deaths during the year 1905 was 14,676—8,273 males and 6,403 females—a result considerably under the average of the last five years, when the total was 15,349—the males 8,616, and the females 6,733. According to the experience of the five years, 1901-5, 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 March quarter, and the next occurred in the September quarter.

Death rates in Australian 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 1901 to 1905:—

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.
1901 ..	13·22	11·68	11·88	11·22	13·36	10·45	12·17	9·81
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
Average	12·71	11·20	11·38	10·85	12·47	10·90	11·71	9·91

Although the death rate of Victoria, according to the average of the five years, 1901-5, was higher than in any other State, this result is due, as will be shown later on, to the larger proportion of persons aged 60 years and over, amongst whom the death rate is very high.

The year 1905, like the previous one, was marked by a very favorable mortality rate, the only States showing an increase on that of the preceding year being Victoria and Queensland; although their death rates, as well as those of the other States and New Zealand, were considerably below the average of the period 1901-5. Since 1902, when the Australian death rate was 12.45, a steady decline is shown down to the latest year amounting to 13 per cent. which represents a saving of 6,554 lives during the year 1905 as compared with 1902.

Death rates in European countries.

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.

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

Death rates of European and Australasian States compared.

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 State in Europe, except, perhaps, Norway, Sweden, and Denmark.

Death rates in town and country.

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 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 1905 :—

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

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 1901-5 :—

DEATH RATES IN PRINCIPAL COUNTRY TOWNS, 1901-5.

Year.	Deaths per 1,000 of the Population.						
	Ballarat and Suburbs.	Bendigo and Suburbs.	Geelong and Suburbs.	Castlemaine and Suburbs.	Maryborough.	Warrnambool.	Stawell.
1901 ...	16·90	20·80	17·07	24 27	16·36	14·37	21·25
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
Average of 5 years ...	17·64	20·11	16·17	20·63	17·89	15·18	19·48

On the average of the five years, 1901-5, 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, Bendigo, and Castlemaine in that order.

Death rates in Melbourne and suburbs.

The deaths in Greater Melbourne in 1905 numbered 6,593, which was 35 more than the previous year, and represented a death rate of 12.88 per 1,000 of the population, which was the lowest rate re-

corded. Excluding the deaths in hospitals and other public institutions, which numbered 1,894, the rate was 9.26 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, 1901-5.

Sub-Districts.	Deaths per 1,000 of the Population.				
	1901.	1902.	1903.	1904.	1905.
Melbourne City	13·08	13·28	12·79	10·43	10·25
Fitzroy City	11·02	14·21	12·45	10·89	9·67
Collingwood City	11·98	12·27	10·82	9·55	9·31
Richmond City	11·01	11·11	11·45	9·40	8·68
Brunswick Town	12·05	13·40	11·24	9·96	10·41
Northcote Town	10·88	11·48	10·83	7·84	9·05
Prahran City	11·58	10·19	10·34	9·07	9·71
South Melbourne City	10·65	9·33	10·57	8·95	9·26
Port Melbourne Town	12·96	10·46	10·95	8·91	8·35
St. Kilda City	9·88	10·90	9·60	10·00	9·72
Brighton Town	11·64	10·89	10·73	10·21	8·95
Essendon Town	8·40	8·97	9·67	8·07	7·48
Hawthorn City	10·54	8·57	8·13	9·15	7·68
Kew Borough	11·53	7·35	9·40	7·46	8·73
Footscray City	11·52	12·09	11·35	9·71	8·74
Williamstown Town	13·95	12·16	14·68	12·75	10·39
Oakleigh Borough	17·97	13·84	13·84	12·31	9·23
Caulfield Town	8·17	8·64	8·22	7·09	7·18
Malvern Town	9·96	8·92	7·44	6·16	7·38
Camberwell and Boroondara Borough	8·38	9·12	9·14	7·94	8·59
Preston Shire	8·52	12·53	14·10	7·79	11·90
Coburg Borough	8·61	9·28	8·11	9·56	8·30
Remainder of District	11·94	11·19	10·83	10·82	9·11
Greater Melbourne, including Hospitals	15·09	14·93	14·37	12·99	12·88

On the average of the five years, 1901-5, the highest death rate—13.44—prevailed in Oakleigh, followed by Williamstown, 12.79, Melbourne City, 11.97, Fitzroy, 11.65, Brunswick, 11.41; and the lowest rates in Caulfield, 7.86, Malvern, 7.97, Essendon, 8.52, and Camberwell and Boroondara Borough, 8.63. Mortality rates for Footscray showed a decided improvement during the past three years, declining from 12.09 in 1902, 11.35 in 1903, 9.71 in 1904, to 8.74 in 1905; or by nearly 28 per cent. in that period.

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 2,239 deaths

occurred in these institutions during the year ended June, 1905, which give a ratio of 1 in every 6.6 deaths, as compared with 1 in every 3.5 dying in hospitals or public institutions in Greater Melbourne in the year 1905. The following table shows the deaths in public institutions in Melbourne and Suburbs for the latest year:—

DEATHS IN PUBLIC INSTITUTIONS IN GREATER MELBOURNE, 1905.

Institution.	No. of Deaths.	Institution.	No. of Deaths.
Melbourne Hospital ...	702	Benevolent Asylum ...	129
Alfred Hospital	225	Old Colonists' Home ...	3
Homœopathic Hospital ...	50	Convent of the Little Sisters of the Poor ...	43
St. Vincent's Hospital ...	36	Girls' Depôt, Royal Park ...	11
Williamstown Hospital ...	14	Metropolitan Lunatic Asylum	83
Austin Hospital	101	Yarra Bend Lunatic Asylum	64
Women's Hospital ...	67	Protestant Refuge ...	4
Children's Hospital ...	198	Melbourne Gaol	10
Infectious Diseases Hospital	19	Pentridge Stockade ...	1
Foundling Hospital, Broadmeadows	25		
Foundling Hospital and Infants' Home	15		
Victorian Homes for Aged and Infirm	94	Total	1,894

Of the total deaths in hospitals and public institutions, 1,455 took place in institutions in Melbourne City, 83 in Kew, 50 in South Melbourne, 39 in Fitzroy, 43 in Northcote, 14 in Williamstown, 1 in Coburg, and 209 in the remainder of the district.

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 1905:—

DEATHS AND BIRTHS IN CAPITAL CITIES, 1905.

Capital City with Suburbs	Number of Deaths.	Deaths per 1,000 of population.	Number of Births.	Excess of Births over Deaths.	
				Numerical.	Centesimal.
Melbourne ...	6,593	12·88	11,944	5,351	81
Sydney	5,770	11·01	13,769	7,999	139
Brisbane	1,550	12·14	3,274	1,724	111
Adelaide	2,013	11·70	3,850	1,837	91
Perth	835	16·28	1,958	1,123	134
Hobart	532	15·24	1,009	477	90
Wellington ...	596	10·21	1,715	1,119	188

In 1905, a considerably higher death rate prevailed in Perth and Hobart, and a lower one in Wellington, than in the other Australasian capitals. The centesimal excess of births over deaths for each

city shows that for every 100 deaths there were 288 births in Wellington, 239 in Sydney, 234 in Perth, 211 in Brisbane, 191 in Adelaide, 190 in Hobart, 181 in Melbourne, and an average of 210 for the metropolitan cities of Australasia.

Proportion of deaths of elderly persons in Melbourne.

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 fifteen 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 16.05 in 1901.

Death rates in Australasian capitals and other cities.

The average death rate of the Australasian Capitals, in 1905, was 12.08, 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

Unreliability 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

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

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 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.	
Both Sexes.						
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.	
Males only.						
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. The death rates for 1901 differ but slightly from the average of the 3 years, 1900-2:—

"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.

"Adjusted" death rates.

The "Index of Mortality" has not yet been computed for earlier years, or for other countries, except Sweden (where it was, in 1900, 16·72); 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

Diminishing rate of mortality in Victoria.

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 was about $2\frac{1}{2}$ per 1,000 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.

Proportion of deaths at each age to population.

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

* 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.
Males.				
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
Females.				
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

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

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.

Deaths of sexagenarians.

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 :—

DEATH RATES OF SEXAGENARIANS.

Ages at Death.	Deaths per 1,000 of the Population in Age Groups in.							
	Victoria.	New South Wales.	Queensland.	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.

Infantile mortality in 1905 and previous years.

The infantile death rate was higher for 1905 than for the previous year, when it was the lowest recorded in the history of the State, but it was nearly 18 per cent. below the average of the five years 1900-4. In 1905 the number under 1 year who died was 2,508, and, as the births for the same period were 30,107, it follows that 1 infant died out of every 12 births. In the ten years ended with 1900 the proportion was 1 death to every 9 births. Had the 1891-1900 rate prevailed in 1905 there would have been 837 more deaths of infants in that year.

Infantile death rates in Melbourne and country.

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 1873-1905:—

INFANTILE DEATH RATES IN MELBOURNE AND SUBURBS, AND THE REMAINDER OF THE STATE, 1873-1905.

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

It will be observed from the above figures that the mortality amongst infants is much heavier in the metropolitan area than in the remainder of the State. This was more marked in earlier than later years. During the period, 1873-80, the rate prevailing in the metropolitan area was 66 per cent. greater than in the rest of Victoria. In 1881-90 it was 80, and in 1891-1900 it was 39 per cent., whilst in the years 1904 and 1905 it fell to 36 and 25 per cent. respectively, showing that the conditions surrounding infant life in Melbourne are steadily improving, and are approaching those of rural life.

Mortality amongst illegitimate infants.

On the average of the years 1901, 1903, and 1904, the mortality amongst illegitimate children under 1 year was nearly three times as great as that for children legitimately born. Of the former 24.3 per cent. died within a year, and only 8.7 of the latter. A similar disparity appears between the rates for the two classes for 1905, when 21.6 per cent. of the illegitimate and 7.5 per cent. of the legitimate children died within the year.

Deaths of infants at different ages.

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, 1901 to 1905, 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, 1891-1900 AND 1901-5.

Ages.	Average Annual Deaths at under 1 year of Age.					
	Ten Years—1891–1900.			Five Years—1901–5.		
	Number.	Percentage at each Age.	Number per 100 Births.	Number.	Percentage at each Age.	Number per 100 Births.
Boys.						
Under 1 month	650	31·7	3·79	591	36·8	3·82
1 to 3 months	355	17·3	2·07	290	18·1	1·87
3 to 6 „	445	21·7	2·59	333	20·8	2·15
6 to 12 „	600	29·3	3·50	390	24·3	2·52
Total ..	2,050	100·0	11·95	1,604	100·0	10·36
Girls.						
Under 1 month	488	28·7	2·98	450	34·8	3·06
1 to 3 months	301	17·7	1·84	210	16·3	1·43
3 to 6 „	385	22·6	2·35	276	21·4	1·88
6 to 12 „	528	31·0	3·23	355	27·5	2·41
Total ..	1,702	100·0	10·40	1,291	100·0	8·78

During both periods referred to in the table, the mortality of male infants in proportion to the number born exceeded that of female infants at each of the age periods—more especially in the first month of life, when the excess was about one-fourth. During the period of five years, the births of male infants were in the proportion of about 105 to every 100 female infants; but as the numbers shown above indicate a proportion of 124 deaths of the former to 100 of the latter, the proportion alive at the end of the first year is reduced to 103 males to every 100 females. Comparing the proportions dying in the four age groups in the two periods, it will be seen that the improvement in the infantile death rates is limited to the age groups over one month, when diarrhœal and digestive diseases, which are generally the result of an impure milk supply or improper feeding, produce a heavy mortality.

Periods at which infants die in Victoria, England, and New South Wales.

Of infants of both sexes who died under 12 months, 53.2 per cent. were under 3 months, 21 per cent. were from 3 to 6 months, and 25.8 per cent. from 6 to 12 months. In England and Wales, in 1902, the percentages were—under 3 months, 51.5; 3 to 6 months, 19.4; 6 to 12 months, 29.1. In New South Wales, in 1904, the percentages were 56.3, 19.2, and 24.5 respectively.

Probable mortality of infants.

According to the experience of the ten years 1891-1900, it appears that of every 20,000 newly-born boys and girls in equal numbers, 379 of the former and 298 of the latter may be expected to die

before they are a month old; 207 more boys and 184 more girls may be expected to die between one and three months of age; 259 more boys and 235 more girls between three and six months; 350 more boys and 323 more girls between six and twelve months. At the end of a year it is probable that 1,195 of the boys and 1,040 of the girls will have died, and 8,805 of the former and 8,960 of the latter, or 17,765 of mixed sexes, will be still living. In the previous ten years, the proportion surviving the first year was 8,652 males and 8,816 females. Hence there has been an improvement in the rate of infantile mortality in the last decade, as compared with the previous one, which has resulted in the saving of 148 more lives in every 10,000 infants of both sexes.

Infantile mortality in Australian 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.	Queensland.	South Australia.	Western Australia.	Tasmania.	New Zealand
1891-1900 ..	11·11	11·22	10·34	10·54	14·48	9·58	8·38
1901	10·29	10·37	10·19	10·01	12·89	8·90	7·14
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	..	7·30	10·42	7·97	6·75
Mean—5 years ..	9·58	9·85	9·95	8·69	12·59	8·99	7·48

Decrease in infantile mortality in Australasia.

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 two years, the decline in the rates for each State and New Zealand in 1905, as compared with the period, 1891-1900, being equivalent to 25 per cent. in Victoria, 28 in New South Wales and Western Australia, 31 in South Australia, 17 in Tasmania, and 19 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, Austria, and some of the German States—where at least one out of every four infants born die within twelve months—whilst it is lower in the Australian States (except Western Australia) and New Zealand than in any of the European countries. The following table shows the various rates

for foreign countries in 1895, as shown by *Mulhall*, and for the Australian States and New Zealand in 1901-5:—

INFANTILE MORTALITY IN VARIOUS COUNTRIES.

	Deaths under 1 year per 100 births.		Deaths under 1 year per 100 births.
Russia	30.0	Denmark	14.0
Bavaria	27.0	England & Wales (1902) ...	13.3
Austria	25.0	Western Australia ...	12.6
Wurtemburg	25.0	Scotland (1902)	11.3
Prussia	21.0	Ireland (1904)	10.0
Holland	20.0	Sweden	10.0
Roumania	20.0	Queensland (1900-4) ...	9.9
Switzerland	19.0	New South Wales ...	9.8
Italy	19.0	Victoria	9.6
Belgium	17.0	Tasmania	9.0
France	17.0	South Australia	8.7
Greece	15.0	New Zealand	7.5

Deaths of childr en under 5.

In the year 1905 deaths of male children under 5 years of age numbered 1,837, and deaths of female children under that age numbered 1,416—the former being in the proportion of 22.2 per cent., and the latter of 22.1 per cent., to the total number of deaths at all ages. These proportions, although slightly higher than 1904, 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 five 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.
Males.							
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
Females.							
1871-1880 ..	1,482	482	198	139	106	2,407	46·06
1881-1890 ..	1,805	423	151	105	84	2,568	39·61
1891-1900 ..	1,702	385	129	82	68	2,366	33·61
1901	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

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.	Percentage.			Number.	Percentage.	
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		

Connexion between infantile mortality and birth rate

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 the birth rate per 1,000 of 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	39·4	23·6
Austria	37·2	22·8
Prussia	36·5	25·0
Spain	34·8	19·9
Italy	33·9	21·4
Holland	32·1	25·6
Norway	30·3	25·4
Denmark	30·0	22·7
England	29·2	22·2
Belgium	28·9	21·9
Switzerland	28·4	21·2
New South Wales	27·4	23·3
Sweden	26·9	21·1
New Zealand	25·7	22·8
Victoria	25·7	21·7
France	22·0	16·5

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.

Percentage of deaths in age groups.

The following table shows the number of deaths in various age groups in 1905, and the percentage of the total deaths in such groups in 1891-5, and 1905:—

PERCENTAGE OF DEATHS IN AGE GROUPS, 1891-5, 1901, AND 1905.

Age Groups. (Years).	Number of Deaths in 1905.	Percentage of Deaths in Age Groups.		
		1891-5.	1901.	1905.
Under 5	3,253	33·82	26·75	22·17
5 to 10	253	2·59	2·51	1·72
10 to 15	255	1·57	1·68	1·74
15 to 20	374	2·38	2·38	2·55
20 to 25	397	3·72	3·00	2·70
25 to 35	961	8·48	7·46	6·55
35 to 45	1,261	6·60	8·96	8·59
45 to 55	1,171	7·39	7·11	7·98
55 to 65	1,334	12·18	9·11	9·09
65 to 75	2,559	12·26	17·36	17·44
75 and over	2,857	9·01	13·74	19·47
Unspecified	1	.	...	...
Total	14,676	100·00	100·00	100·00

It will be seen that, in proportion to the total deaths, the deaths of persons aged 75 and upwards increased from 9.01 per cent. in 1891-5 to 19.47 in 1905, or by 116 per cent. in the intervening years, and the proportion in the earlier age group—65 to 75—increased by nearly 45 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 35 per cent. between 1891-5 and 1905.

Mortality rates from principal causes or diseases.

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 1901-5:—

DEATH RATES FROM PRINCIPAL CAUSES PER MILLION OF THE POPULATION OF VICTORIA, 1890-2 AND 1901-5.

Cause of Death.	Deaths per million of the population.					
	Average of 1890-2.	1901.	1902.	1903.	1904.	1905.
Measles	2	42	41	17	...	65
Scarlet Fever	34	2	12	38	19	8
Influenza	381	245	259	107	213	110
Whooping Cough ..	129	154	154	91	38	16
Diphtheria	451	122	86	83	157	66
Typhoid Fever	369	153	163	210	157	100
Diarrhœal Diseases ...	684	362	354	380	183	185
Syphilis	39	43	49	50	39	35
Parasitic Diseases ..	65	46	35	32	35	26
Alcoholism — Delirium Tremens	77	66	49	49	33	29
Rheumatic Fever ...	35	20	22	34	19	19
Rheumatism	54	66	56	57	54	40
Gout	23	20	12	18	14	20
Cancer...	584	733	703	761	740	786
Phthisis	1,365	1,177	1,166	1,109	1,111	1,019
Other Tubercular Diseases	379	315	260	289	311	282
Anæmia, Chlorosis, Leucocythæmia	28	46	48	52	57	50
Diabetes Mellitus ...	38	64	54	58	82	82
Old Age	631	750	835	870	991	1,041
Inflammation of Brain or Membranes	113	111	123	127	102	119
Apoplexy	344	351	354	360	389	401
Softening of the Brain ...	57	34	40	43	40	40
Hemiplegia, Brain Paralysis	39	66	76	70	93	80
Paralysis (undefined) ...	152	112	131	124	109	115
Insanity	130	146	139	108	106	90
Epilepsy	74	67	56	52	47	35

DEATH RATES FROM PRINCIPAL CAUSES PER MILLION OF THE POPULATION OF VICTORIA, 1890-2 AND 1901-5—*continued.*

Cause of Death.	Death per million of the population.					
	Average of 1890–2.	1901.	1902.	1903.	1904.	1905.
Convulsions	353	161	134	139	94	99
Paraplegia, Diseases of Spinal Cord	43	63	53	51	60	50
Endocarditis, Valvular Disease of Heart	255	333	335	380	340	370
Heart Disease, Syncope ...	824	843	771	707	694	731
Aneurism	63	60	78	93	78	87
Asthma	70	63	64	76	64	70
Bronchitis	691	422	445	412	320	425
Pneumonia	853	838	991	784	709	850
Congestion of the Lungs ...	140	60	63	66	46	45
Pleurisy	96	91	110	88	78	83
Diseases of the Stomach ...	175	81	82	97	103	100
Enteritis	658	795	944	886	178	223
Gastro Enteritis ...					400	405
Ulceration of Intestine ...	33	105	111	111	39	57
Appendicitis					71	72
Ileus, Obstruction of Intestine	70	84	73	80	51	55
Peritonitis	106	83	63	78	56	61
Cirrhosis of the Liver ...	132	100	118	92	83	88
Other Diseases of the Liver	197	88	125	110	90	94
Nephritis	85	67	92	107	102	84
Bright's Disease of the Kidneys	180	387	321	385	380	407
Uræmia	29	60	52	62	58	68
Diseases of Bladder and Prostate	76	91	90	89	97	99
Accidents	811	641	547	516	526	574
Murder and Manslaughter	34	26	22	12	19	33
Suicides	109	102	109	114	94	115

An examination of the foregoing table shows that on the average of the five years 1901-5, as compared with 1890-2, there was a very considerable reduction in the rates from Scarlet Fever, Influenza, Whooping Cough, Diphtheria, Typhoid Fever, Diarrhœal and Parasitic Diseases, 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.

Miasmatic diseases.

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 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 population in 1890-2 to 100 in 1905. Of the total deaths attributable to whooping cough in the latest five years, 95 per cent. were of children under 5 years. The proportion of deaths from this cause per million of the people, fell from 154 in 1901 and 1902, to only 16 in 1905. The deaths from Diphtheria corresponded to a rate of 122 per million in 1901, 86 in 1902, 83 in 1903, 157 in 1904, and 66 in 1905. On the average of these years, 49 per cent. of the total deaths from Diphtheria were of children under 5 years. Measles showed its epidemic nature by being responsible for a death rate of 65 per million, in 1905, as against no deaths at all in the previous year.

Diarrhœal diseases.

Deaths from Diarrhœal Diseases, of which 61 per cent. were of children under 5 years of age, showed a striking reduction in 1901-5, as compared with the period 1890-2—the decline amounting to 57 per cent. Comparing 1901-3 and 1904-5, it is found that the rate for the latter was only about half that of the former period.

Parasitic diseases.

Deaths from Parasitic Diseases gave a proportion of 65 per million in 1890-2, as compared with 46 in 1901, 35 in 1902, 32 in 1903, 35 in 1904, and 26—the lowest rate for the periods shown—in 1905.

Intemperance.

Death rates directly due to intemperance showed a steady diminution in recent years. The deaths referrable to this cause in 1890-2 corresponded to a rate of 77 per million of the population, as against 66 in 1901, 49 in 1902 and 1903, 33 in 1904, and 29 in 1905. The average rate for 1901-5 was 45, which was 41 per cent. lower than that of 1890-2, and only slightly more than half that for England and Wales—85—in 1901-3. 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.

Rheumatic fever—Rheumatism, gout.

Deaths from rheumatic fever and rheumatism of the heart, per million of the population, decreased from 35 in 1890-2, to 23—or by 34 per cent.—in the period 1901-5. Death rates from rheumatism remained fairly constant, but those referrable to gout fell by 26 per cent. in the later period.

Anæmia, diabetes, &c.

Deaths from anæmia chlorosis and leucocythæmia numbered 60—or 50 per million of the people—in 1905, as compared with rates of 57 in the preceding year, 52 in 1903, 48 in 1902, 46 in 1901, and 28 in 1890-2. The average rate for 1901-5 was 51, which was 82 per cent. higher than that of 1890-2. Diabetes mellitus was responsible for 99 deaths, or a rate of 82 per million, in 1905, as against an average rate of 68 for 1901-5, and 38 for the period 1890-2. The proportion in the latest five years shows an increase of 79 per cent. over the earlier period. The increasing mortality from anæmia and diabetes in recent years, cannot be wholly explained by the difference in the age consitution of the people, although a greater proportion of middle-aged and elderly persons, amongst whom the heaviest mortality prevails, would account for a somewhat higher general rate than in earlier periods.

Cancer.

Deaths from cancer in 1905 numbered 953, and represented a death rate of 786 per million of the whole population as compared with rates of 740 in 1904, 761 in 1903, 703 in 1902, and 733 in 1901. 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.

PROPORTION OF DEATHS FROM CANCER IN AGE GROUPS DURING 1880-2, 1890-2, 1900-2.

Age Group (Years).	Deaths from Cancer per 10,000 of the population.		
	1880–2.	1890–2.	1900–2.
Males.			
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
Females.			
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.

Seat of cancer—Males and females.

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 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 9½ 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, which has been taken from the English Registrar-General's Report for 1904, for the average of the ten years 1894-1903.

DEATH RATES FROM CANCER IN VARIOUS COUNTRIES, 1894-1903.

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

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 arrivals from tuberculous diseases.

The experience of the years 1901-5 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 2¼ per cent. were born outside, and resident less than five years in Victoria.

Phthisis.

The deaths from phthisis in 1905 numbered 1,235, which were equal to a rate of 1,019 per million of the population as compared with 1,111 in 1904, 1,109 in 1903, 1,166 in 1902, 1,177 in 1901, 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 latest five census periods when the ages of the people were accurately known.

DEATH RATES IN VICTORIA FROM PHTHISIS AT DIFFERENT AGES 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.				
	1860-2.	1870-2.	1880-2.	1890-2.	1900-2.
Males.					
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
Females.					
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 four latest 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.

Death rates from pulmonary tuberculosis per 10,000 of the population, in various countries are shown in the following table, which has also been taken from the English Registrar-General's Report for 1904, for the average of the ten years 1894-1903:— Pulmonary tuberculosis in various countries.

DEATH RATES FROM PULMONARY TUBERCULOSIS IN VARIOUS COUNTRIES, 1894-1903.

Country.	Deaths per 10,000 of the Population.	Country.	Deaths per 10,000 of the Population.
Austria (1893-1902) ...	34·7	England and Wales ...	13·1
Ireland	21·3	Victoria ...	12·0
German Empire ...	20·7	South Australia ...	8·9
Norway	19·8	Queensland	8·8
Switzerland	19·2	New South Wales ...	8·2
Scotland	16·2	New Zealand.. ...	7·8
The Netherlands ...	16·0	Tasmania	7·0
Japan (1892-1901) ...	14·1	Western Australia ...	6·9
Belgium	13·6		

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 were less than in the other countries.

In 1905, there were 342 deaths recorded from tubercular diseases (excluding phthisis), which corresponded to a rate of 282 per million, as compared with 311 in the previous year, 289 in 1903, 260 in 1902, 315 in 1901, and 379 in 1890-2. The death rates in various age groups are shown in the subsequent table for the four latest census periods:—

AVERAGE YEARLY DEATH RATE PER 10,000 PERSONS DYING FROM TUBERCULAR DISEASES (PHTHISIS EXCEPTED) DURING THE YEARS 1870-2, 1880-2, 1890-2, 1900-2.

Ages	Death-rate per 10,000 persons during—			
	1870-2.	1880-2.	1890-2.	1900-2.
	MALES.			
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	2·36	·56	1·17
All ages	3·46	3·55	4·02	2·99

AVERAGE YEARLY DEATH RATE PER 10,000 PERSONS DYING FROM TUBERCULAR DISEASES (PHTHISIS EXCEPTED) DURING THE YEARS 1870-2, 1880-2, 1890-2, 1900-2—*continued.*

Ages (Years).	Deaths per 10,000 persons during—			
	1870–2.	1880–2.	1890–2.	1900–2.
	FEMALES.			
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.

Diseases of the nervous system, which include deaths from 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 1905 for 775 deaths, which were equivalent to a rate of 639 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 121 being recorded from this cause in 1905, 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 51 on the average of the period 1901-5, as compared with a similarly computed rate of 90 in England and Wales in 1901-3. Death rates from insanity in Victoria show a steady decrease in the last four years, that for 1905 being the lowest. In 1890-2 the rate per million was 130, as compared with 146 in 1901, 139 in 1902, 108 in 1903, 106 in 1904, and 90 in the following year. Paraplegia and diseases of the spinal cord increased slightly in recent years, the average rate for 1901-5 being 55, as against 43 in 1890-2.

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 1905 numbered 1492, corresponding to a rate of 1231 per million, as compared with 1146 in 1890-2. A more definite description by medical practitioners of these causes of death is noticeable in recent years, proportionately few being described as syncope and "heart disease," and a larger number to endocarditis and valvular diseases, 22 per cent. of all heart complaints being attributed to the latter in 1890-2, as against 30 per cent. in 1905.) Heart disease.

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 780, or a rate of 643, in 1905. Cerebral hæmorrhage or its symptom—apoplexy—and hemiplegia, were responsible for 75 per cent. of the deaths from diseases of the blood vessels in 1905, 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 11 deaths being due to this cause in the last five years. Diseases of the blood vessels.

In 1905 Respiratory Diseases were responsible for 1,882 deaths, which were equal to a rate of 1,552 per million of the people, as compared with rates of 1,297 in 1904, 1,482 in 1903, 1,745 in 1902, 1,556 in 1901, and 2,029 in 1890-2. On the average of the latest five years, 54.6 per cent. of the deaths from respiratory complaints were due to pneumonia, and 26·5 per cent. to bronchitis. In the same period, as compared with 1890-2, death rates from bronchitis declined by 41 per cent., whilst the rates from pneumonia remained fairly constant. Respiratory diseases.

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

DEATH RATES IN VICTORIA PER 10,000 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 rate per 10,000 of the population for the four census years being 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 four latest census periods, is shown in the following table:—

DEATH RATES FROM INFLUENZA AND RESPIRATORY DISEASES (COMBINED), PER 10,000 OF THE POPULATION.

Age Group (Years).	1870-2.	1880-2	1890-2.	1900-2.
Males.				
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
Females.				
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 four latest 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:—

DEATH RATES FROM INFLUENZA IN VICTORIA PER 10,000 OF POPULATION.

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 ...	0·33	·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 fifteen years. In 1904, the number increased to 257, but fell to 133 in 1905. In the period 1890-8, 16 per cent. of the deaths from influenza were of children under five years, and nearly 50 per cent. were aged 55 and upwards. In 1905, the rates were 20 and 54 respectively, thus showing that it is more fatal to the very young and old than to those of middle ages.

Diseases of the Digestive System.

A most satisfactory decrease in the rates referrable to Diseases of the Digestive System occurred in the latest two years; that for 1904 being specially favorable. The deaths from all digestive complaints in 1905 numbered 1,606, which equalled a rate of 1,324 per million, as against proportions of 1,216 in the previous year, 1,618 in 1903, 1,710 in 1902, 1,512 in 1901, 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, 1901-5:—

DEATH RATES FROM DIGESTIVE DISEASES, 1890-2 AND 1901-5.

Digestive Diseases.	Deaths per Million of the Population.					
	1890–2.	1901.	1902.	1903.	1904.	1905.
Gastro-Enteritis... ...	653	795	944	886	400	405
Enteritis					178	223
Cirrhosis and other Liver Diseases	329	188	243	202	173	182
Diseases of the Stomach ...	175	81	82	97	103	100
Appendicitis	33	105	111	111	71	72
Ulceration of Intestine ...					39	57
Peritonitis	106	83	63	78	56	61
Obstruction of Intestine ...	70	84	73	80	51	55
Gall Stones	11	12	17	21	21	33
All other Digestive Diseases	265	164	177	143	124	136
Total	1,647	1,512	1,710	1,618	1,216	1,324

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 and 1905, as compared with previous years. Many deaths in earlier years, which were attributed to diarrhœal 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 and 1905, when they fell to a ratio of 761 and 813 per million, respectively, as compared with 1,266 in 1903, 1,298 in 1902, 1,157 in 1901, 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 and 1905 accounts in a large measure for the light infantile mortality in the same years.

Appendicitis. The experience of the two years, 1904 and 1905, shows that appendicitis was nearly twice as fatal to males as to females, and that the incidence of mortality was greatest between 15 and 35 years. The deaths in 1904 and 1905 represent rates of 71 and 72 per million, respectively, as against 45 in England and Wales in 1901-3 from the same cause. An idea of the fatality of appendicitis may be obtained by comparing the number of deaths in general hospitals—76—with the total cases treated—854—which shows that 1 in every 11 cases ended fatally in hospitals in Victoria in the last two years.

Bright's disease. A very striking increase in the mortality rates from Bright's disease took place in recent, as compared with earlier, periods, and apparently has not yet reached a maximum, the proportion in 1905 being the highest of the periods shown. The deaths from this cause

were equivalent to 180 per million in 1890-2, 387 in 1901, 321 in 1902, 385 in 1903, 380 in 1904, and 407 in 1905. The average rate for 1901-5 was 109 per cent. higher than for the period 1890-2. Death rates from all urinary complaints increased by 64 per cent. in the same period. These increases are not so remarkable, if the age distribution of the population be taken into account, as persons over 65 years increased by 69 per cent., and the total population by less than 5½ per cent., between the censuses of 1891 and 1901, and these complaints are chiefly fatal after middle age.

Accidents and negligence.

Deaths resulting from accident and negligence represented a proportion of 811 per million in 1890-2, 641 in 1901, 547 in 1902, 516 in 1903, 526 in 1904, and 574 in 1905. The greatest reduction occurred in deaths from drowning, which were equivalent to a rate of 200 in 1890-2, and only 83 in 1905. The proportion dying from accidental suffocation—a large number of whom were young children—fell from 89 to 42 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 220 per million in 1905.

Murder and manslaughter.

Deaths from murder and manslaughter correspond to a rate of 34 per million in 1890-2, 26 in 1901, 22 in 1902, 12 in 1903, 19 in 1904, and 33 in 1905. Although the proportion in 1905 is higher than in the preceding four years, the average rate of the period 1901-5 is 34 per cent. below that of 1890-2. Of the total deaths referrable to this cause, in the five latest years, about 55 per cent. were infants, of whom nearly all were less than 1 month old.

Suicide

Suicidal death rates remained fairly constant in the periods 1890-2 and 1901-5. The deaths ascribed to this cause in 1905 numbered 140, and represented a rate of 115 per million of the people, as against rates of 94 in the previous year, 114 in 1903, 109 in 1902, 102 in 1901, and 109 on the average of the period 1890-2. In the year 1905 nearly 2 per cent. of the male deaths and 8 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.

Old age is not recorded as a cause of death unless the deceased was over 64 years of age. On the average of the three years 1890-2, 631 deaths, per million of the population, were ascribed to old age; 750 in 1901, 835 in 1902, 870 in 1903, 991 in 1904, and 1,041 in 1905. 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.

Infantile deaths.

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, diarrhœal diseases, convulsions, bronchitis, 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:—

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

Causes of Death.	Average Number of Deaths under 1 year, 1901–5.	Deaths under 1 year per 1,000 Births.
Wasting Diseases	1,042	34·52
Enteritis and Gastro-enteritis	637	21·11
Pneumonia	181	6·00
Diarrhœal Diseases	168	5·57
Convulsions	112	3·71
Bronchitis	93	3·08
Whooping Cough	66	2·18
Other Causes	596	19·65
All Causes	2,895	95·82

The above rates show, on the average of the five years, 1901-5, that of every 1,000 children born 34·52 died within a year from wasting diseases; 21·11 from enteritis and gastro-enteritis; 6 from pneumonia; 5·57 from diarrhœal diseases; 3·71 from convulsions; 3·08 from bronchitis; 2·18 from whooping cough; and 19·65 from other complaints. Prematurity death rates were higher in later than in earlier years; that for 1901-5 equalling 15·3 deaths per 1,000 births, as against 13·7 in the decade ended 1900.

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, previously referred to. The proportions which prevailed in the last five 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

Deaths in childbed from septic diseases.

The proportion per 1,000 births of deaths in childbirth from septic diseases was 1·97 in 1901-4 and 1·76 in 1905. In England and Wales for 1903 the proportion was 1·67. 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.

NATURAL INCREASE.

Natural increase per 1,000 of population in Australasia.

The natural increase, *i.e.*, the excess of births over deaths, per 1,000 of the population, in the various Australian States and New

Zealand for each of the years 1901 to 1905, and also for the mean of that period, is shown in the following table:—

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

Year.	Victoria.	New South Wales.	Queensland.	South Australia.	Western Australia.	Tasmania.	Australia.	New Zealand.
1901	12·56	15·92	16·40	13·87	16·96	17·95	14·88	16·53
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
Mean	12·27	15·51	15·34	13·41	17·80	18·04	14·55	16·69

The mean natural increase of the Australian States for the period 1901-5, viz., 14·55, 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, 14·55 per thousand, will enable a population to double itself in 48 years. It will, however, be noticed that the rate for the last year was ·75 above the average of the five years, and if this increased rate were maintained, the population would take 45½ years to double itself.

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

The following table shows the natural increase per 1,000 of the population in various European countries—the mean of the five years, 1897-1901, being adopted, and the countries placed in order of increase:—

NATURAL INCREASE PER 1,000 OF POPULATION—EUROPEAN COUNTRIES—MEAN OF FIVE YEARS, 1897 TO 1901.

Country.	Natural Increase.	Country.	Natural Increase.
Prussia	15·5	Italy	11·0
The Netherlands ...	14·8	Belgium ...	10·9
German Empire ...	14·6	United Kingdom ...	10·7
Norway	14·5	Sweden	10·6
Denmark ...	13·5	Switzerland ...	10·5
Austria	11·9	Spain	5·6
Hungary	11·7	Ireland	4·7
Scotland	11·6	France	1·2
England and Wales	11·4		

It is seen from this statement that the Australian rate for 1901-5 was below the first three countries shown, but was equal to that of Norway. It might be inferred that Prussia, Netherlands, and the German Empire—where the rate of natural increase is higher than in

Australia—were increasing their populations at a greater rate than Australia, but emigration must be taken into account when dealing with European countries.

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 :— 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	62¼
Prussia	1·11	1867–1901	62⅜
The Netherlands ...	1·05	1853–1901	66¼
Denmark	1·03	1861–1901	67½
Great Britain ...	·91	1864–1901	76½
Hungary	·97	1876–1901	71⅜
Belgium	·84	1853–1901	83
Norway	·81	1871–1901	86
Sweden	·77	1852–1901	90¼
Austria	·77	1853–1901	90¼
Switzerland ...	·72	1868–1901	96⅜
Italy	·64	1872–1901	108½
Spain	·45	1861–1901	154¼
France	·16	1853–1901	433½

Even at the present rate of natural increase in Australia, the period required to double its population, viz., 48 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, 1901 to 1905, together with the mean of the same period :— Excess per cent. 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.
1901 ...	95	136	138	124	127	172	122	169
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
Mean...	97	139	136	124	145	166	125	169

Excess of births over deaths in European countries.

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 were 197 births, in New South Wales 239, in Queensland 236, in South Australia 224, in Western Australia 245, in Tasmania 266, whilst in New Zealand there were 269. The position occupied by Victoria is due to the excessive emigration of adults in recent years, which is also chiefly responsible for the low birth rate, and (compared with Australian rates) to some extent for its somewhat high death rate. But even under these adverse circumstances, the excess in Victoria compares advantageously with those of European countries, as will be seen from the following table, which shows the excess in those countries as derived from the mean of the five years 1897-1901 :—

EXCESS PER CENT. OF BIRTHS OVER DEATHS IN EUROPEAN COUNTRIES.

Country.	Excess.	Country.	Excess.
Norway	92	Great Britain ...	60
The Netherlands ...	86	Switzerland ...	58
Denmark	82	Italy	49
Prussia	74	Austria	47
German Empire ...	69	Hungary	43
England and Wales...	65	Ireland	26
Sweden	65	Spain	20
Scotland	64	France	6
Belgium	61		

Comparison between excess per cent. of births over deaths in Australasia and European countries.

Thus it will be seen that in no European country does the excess per cent. of births over deaths reach the average of the Australian States. In Hungary, which has the highest birth rate amongst the European States quoted, viz., 38·9, the death rate is so high, viz., 27·2 per 1,000 of the population, that the excess per cent. of births over deaths is only 43, whilst Australia, with its birth rate of only 26·3 has an excess of 125 per cent. In other words, whilst in Hungary the loss caused by every 100 deaths is replaced by 143 births, in Australia such loss is replaced by 225 births. In New Zealand, which has a birth rate of only 26·6, the 100 deaths are replaced by no less than 269 births. In Germany every 100 deaths are replaced by 160 births, in Great Britain by 160, and in France by only 106. The comparison, it is obvious, is entirely to the advantage of Australasia.