Part 6.—VITAL STATISTICS.

Marriages, 1894 to 1898.

910. The marriages celebrated in 1898 numbered 7,620, as against 7,568 in 1897, 7,625 in 1896, 7,181 in 1895, and 7,029 in 1894.

Marriages, 1898 and former years.

911. Although fewer than in 1896, the marriages in 1898 were more numerous than those in any other year since 1892. The number returned annually had been almost stationary during the seven years prior to 1880, but in that year an advance was made which continued until 1890. In 1882, for the first time, the marriages returned exceeded 6,000; in 1884 they exceeded 7,000; in 1888 they nearly reached 9,000; and in 1889 and 1890 they exceeded that number by nearly 200*; but in 1891 they again fell below 9,000; in 1892 they fell below 8,000; and in 1893 and 1894 to 7,000, or fewer than they were nine or ten years previously. A partial recovery, however, has taken place in the three years ended with 1898, when the number averaged 7,600.

Marriage rate.

912. The proportion which the number of marriages bears to the total population is generally called the marriage rate. The rate at first gradually declined from over 8 per 1,000 in the years 1860 to 1862, to a minimum of 5·98 in 1879; then gradually recovered to over 8 in the years 1888–90; it then again fell rapidly until the minimum (5·98) was for the second time reached in 1893 and 1894. It subsequently rose to over 6 in 1895, and remained stationary at nearly 6½ in the three years 1896–8. The following table gives the number of marriages and number of persons married per 1,000 of the population during 1860 and each subsequent fifth year, also in the eight years ended with 1898 :—

Annual Marriage Rate, 1860 to 1898.

Year.	Per 1,000 of the Mean Population.	
	Number of Marriages.	Numbers of Persons Married.
1860	8·15	16·30
1865	7·36	14·72
1870	6·63	13·26
1875	6·33	12·66
1880	6·22	12·44
1885	7·73	15·46
1890	8·21	16·42
1891	7·66	15·32
1892	6·64	13·28
1893	5·98	11·96
1894	5·98	11·96
1895	6·08	12·16
1896	6·48	12·96
1897	6·45	12·90
1898	6·50	13·00

* For the number of marriages during each year since the first settlement of Port Phillip, see Statistical Summary of Victoria (first folding sheet) to be published later on.

913. It has been shown, upon more than one occasion,* that the frequency of marriage is not dependent upon the numbers of the total population, still less upon the number of marriageable women, but almost entirely upon the number of marriageable men the community contains, the tendency of whom to marry is modified by their habits and occupations, and upon the view they take of their future prospects. Thus men have a greater tendency to marry in prosperous than in dull times, and the men of a rural, and especially of an agricultural, community have a greater tendency to marry than those of an urban one. The following table has been constructed, showing the proportion of marriages to the population, to the number of single men, and to the number of single women in each of the last six census years ended with 1891 :— Marriage rate at various periods

PROPORTION OF MARRIAGES TO POPULATION† AND TO SINGLE MEN AND WOMEN, 1854 TO 1891.

Year of Census.	Exclusive of Chinese and Aborigines.						
	Total Population.	Marriageable Men. ‡	Marriageable Women.§	Marriages.	Proportion of Marriages per 1,000 of the—		
					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 ...	1,130,463	163,048	173,138	9,007	7·97	55·24	52·02

914. 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. At the last three decennial periods, when the colony was in a more settled condition than at earlier periods, this proportion averaged 55 per 1,000, which also was about the rate in 1891. At the same periods the proportion of marriages per 1,000 marriageable females varied from 72 in 1871 to 48 in 1881; since 1881, as was anticipated,‖ this proportion has increased, and in 1891 it stood at 52. Fluctuations in marriage rate.

* See *Victorian Year-Book*, 1889-90, pages 265 to 267; same work, 1879-80, pages 103 and 104; same work, 1880-81, pages 199 and 200; same work, 1881-2, pages 165 and 166; and same work, 1892, Vol. I., pages 323 and 324.

† The populations in this table are those returned at the respective censuses, the Chinese and Aborigines being excluded; and the marriages are those (exclusive of marriages of Chinese and Aborigines) which took place in the twelve months of which the date of each census was the middle. The proportion of the latter to the former in 1891, therefore, differs slightly from that in the previous table, which is based upon the total mean population and all the marriages in the calendar year.

‡ Comprising bachelors of twenty and upwards, and widowers at all ages.

§ Comprising spinsters of fifteen and upwards, and widows at all ages.

‖ See *Victorian Year-Book*, 1889-90, Vol. I., paragraph 447.

Marriages of available persons in Australasia and United Kingdom.

915. It would appear from the following calculations, which have been made in the office of the Government Statist, Melbourne, that, in proportion to the number of marriageable men (bachelors aged 20 and upwards and widowers and divorced men at all ages), more marriages take place in England and fewer in Ireland and Scotland than in any of the Australasian Colonies; also that, in proportion to the number of marriageable women (spinsters aged fifteen and upwards and widows and divorced women at all ages), fewer marriages take place in England, Ireland, and Scotland than in any of the Australasian Colonies, of which Western Australia, in this respect, stands at the head. Victoria, it will be observed, stands below South Australia, and slightly below Tasmania and New South Wales, as regards the proportion of marriages of available men, and below any of the other Australasian Colonies as regards the proportion of marriages of available women :—

MARRIAGES IN PROPORTION TO NUMBER OF AVAILABLE MEN AND WOMEN IN THE AUSTRALASIAN COLONIES AND DIVISIONS OF THE UNITED KINGDOM, 1891.

Marriages per 1,000 Marriageable Men.

England	84·84
South Australia	64·58
Tasmania	54·80
New South Wales	53·87
Victoria	53·85*
New Zealand	48·64
Queensland	44·70
Western Australia	35·74
Ireland	32·95
Scotland	32·08

Marriages per 1,000 Marriageable Women.

Western Australia	76·31
Queensland	72·87
New South Wales	61·72
South Australia	53·67
New Zealand	52·88
Tasmania	51·03
Victoria	50·71*
England	45·92
Ireland	21·29
Scotland	17.29

Marriages of available persons in France and Switzerland.

916. According to papers read before the Statistical Society of Paris, by M. Toussaint Lona, in September and December, 1884, marriageable men marry at the rate of 57 per 1,000 in France, and of 49 per 1,000 in Switzerland, and marriageable women marry at the rate of 46 per 1,000 in France, and of 38 per 1,000 in Switzerland. It is not certain, however, that the figures are comparable with those in the

* These proportions differ slightly from those given in the table following paragraph 913 *ante*, where the comparisons are made with the marriages which took place in the twelve months of which the Census was the middle instead of the calendar year 1891, which has here been adopted uniformly for all the colonies and countries. The marriages in the former table, moreover, were exclusive of those of Chinese and Aborigines, which is not the case here.

foregoing table, as it is not known what were the ages selected by the author in making his calculations as those marking the commencement of the period of bachelorhood and spinsterhood.

917. The following table gives a statement of the number of marriages to every 1,000 of the population of the various Australasian Colonies for each fifth year from 1865 to 1890, also for the four years, 1894 to 1897, except in regard to Western Australia for the first two periods :— Marriage rates in Australasian Colonies.

MARRIAGE RATES IN AUSTRALASIAN COLONIES, 1865 TO 1897.*

Year.	Number of Marriages† per 1,000 of Mean Population.						
	Victoria.	New South Wales.	Queensland.	South Australia.	‡ Western Australia.	Tasmania.	New Zealand.
1865 ...	7·36	8·94	13·27	9·45	...	6·27	10·47
1870 ...	6·63	7·85	7·80	6·90	...	6·62	7·62
1875 ...	6·33	7·88	8·63	8·01	7·26	6·63	8·94
1880 ...	6·22	7·68	6·97	8·69	7·42	7·38	6·71
1885 ...	7·73	8·22	9·20	7·82	7·51	8·22	6·73
1890 ...	8·21	7·15	8·28	7·04	6·18	6·64	6·12
1894 ...	5·98	6·19	5·70	6·07	6·48	5·43	6·15
1895 ...	6·08	6·35	6·23	5·88	6·99	5·32	5·94
1896 ...	6·48	6·59	6·05	6·17	8·82	5·91	6·86
1897 ...	6·45	6·72	6·05	5·46	10·65	6·23	6·83
Mean of 33 years	6·88	7·69	8·15	7·49	7·18‡	6·81	7·34

918. According to an average extending over a period of 33 years, the marriage rate in Victoria was almost identical with that in Tasmania, but was below that in any of the other colonies. In the last year, the marriage rate in Victoria occupied the fourth position, it being lower than that in Western Australia, New Zealand, and New South Wales, although it was but little lower than in the two last-named colonies. The rates in all the colonies, except South Australia, have improved since 1894, when they were particularly low, but in 1897 they were still below the average—with one exception—more especially in Queensland, South Australia, and New South Wales. The exception referred to was Western Australia, where the rate in 1897 was far the highest on record in that colony. Marriage rates in colonies compared.

* For the number of marriages in the various colonies during the 25 years ended with 1897, see General Summary of Australasian Statistics (third folding sheet) to be published later on.
† The numbers doubled give the *persons* married per 1,000 of the population.
‡ Mean of 26 years.

Order of colonies in respect to marriage rates.

919. The following is the order of the colonies in reference to their respective marriage rates in the last year shown in the table and according to the average of the whole period of 33 years :—

Order in Latest Year.	Order in a Series of Years.
1. Western Australia.	1. Queensland.
2. New Zealand.	2. New South Wales.
3. New South Wales.	3. South Australia.
4. Victoria.	4. New Zealand.
5. Tasmania.	5. Western Australia.
6. Queensland.	6. Victoria.
7. South Australia.	7. Tasmania.

Marriage rates in Australia and Australasia.

920. The mean marriage rate of the five colonies situated upon the Australian continent, and of those colonies with the addition of Tasmania and New Zealand, fell off from a maximum of 8 or over in 1883 or 1884, at first slowly, but rapidly after 1891, to a minimum of 6 in 1894; but has since been gradually recovering, as will be seen by the following figures :—

MARRIAGE RATES IN AUSTRALIA AND AUSTRALASIA, 1873 TO 1897.

Year.	Number of Marriages* per 1,000 of Mean Population.		Year.	Number of Marriages* per 1,000 of Mean Population.	
	Continent of Australia.	Australia with Tasmania and New Zealand.		Continent of Australia.	Australia with Tasmania and New Zealand.
1873 ...	7·35	7·38	1887 ...	7·56	7·26
1874 ...	7·07	7·32	1888 ...	7·99	7·61
1875 ...	7·12	7·38	1889 ...	7·69	7·37
1876 ...	6·93	7·15	1890 ...	7·67	7·37
1877 ...	7·05	7·18	1891 ...	7·46	7·20
1878 ...	7·08	7·27	1892 ...	6·69	6·61
1879 ...	6·88	7·01	1893 ...	6·16	6·14
1880 ...	7·15	7·08	1894 ...	6·04	6·03
1881 ...	7·62	7·41	1895 ...	6·20	6·12
1882 ...	8·03	7·86	1896 ...	6·50	6·54
1883 ...	8·24	8·02	1897 ...	6·58	6·61
1884 ...	8·22	7·98			
1885 ...	8·09	7·86			
1886 ...	7·84	7·50	Means ...	7·25	7·17

Marriage rates in certain British Possessions.

921. Returns of marriages, births, and deaths are obtainable for few British Colonies outside of Australasia. The following are the marriage rates in those colonies—which, it is to be regretted, are, for the most part, of only minor importance—for which such particulars have come to hand, or can be gathered from their official reports. The low rates in some of the West India Islands are explained by the fact that the negro population as a rule ignore the marriage ceremony. The same circumstance may perhaps also affect the marriage rates in the Cape of Good Hope and Mauritius, although the low marriage rate in

* The numbers doubled give the *persons* married per 1,000 of the population.

the latter would, to a certain extent, be accounted for by the fact that the large imported Coolie population is for the most part comprised of males, the females introduced being extremely few :—

MARRIAGE RATES IN CERTAIN BRITISH COLONIES.

—	Years.	Annual Rate per 1,000 of the Population.*	—	Years.	Annual Rate per 1,000 of the Population.*
Ceylon ...	1894–8	7·5	West Indies—		
Cape of Good Hope	1898	4·0	Leeward Islands †	1897	3·5
Mauritius ...	1893	6·3	Jamaica ...	1894–8	4·5
Seychelles ...	1894	8·0	St. Lucia ...	1898	6·4
Bermuda ...	1897	7·7	Grenada ...	1897	5·5
			Trinidad ...	1898	8·6‡
			British Honduras	1896	8·5

922. The following table gives for each of the five years ended with 1897 a statement of the marriage rates in each division of the United Kingdom and such foreign countries as the information is available for. It will be seen that the rate varies from as high as 8 or upwards in Austria, Hungary, and Germany, to less than 6 in Sweden, and as low as 5 in Ireland. The figures have been taken from the 60th report of the Registrar-General of England :— Marriage rates in European countries.

MARRIAGE RATES IN EUROPEAN COUNTRIES, 1893 TO 1897.

Countries.	Number of Marriages* per 1,000 of Mean Populations.					
	1893.	1894.	1895.	1896.	1897.	Mean of 5 Years.
Hungary	9·3	9·2	8·4	8·0	8·1	8·6
Prussia	8·0	8·0	8·0	8·3	8·4	8·1
German Empire	7·9	7·9	7·9	8·2	8·3	8·0
Austria	7·9	7·9	8·1	7·9	8·0	8·0
Belgium	7·6	7·5	7·7	8·1	8·2	7·8
England and Wales ...	7·3	7·5	7·5	7·9	8·0	7·6
Switzerland	7·3	7·3	7·5	7·8	8·1	7·6
France	7·5	7·5	7·4	7·6	7·6	7·5
Holland	7·3	7·2	7·4	7·5	7·4	7·4
Italy	7·4	7·5	7·3	7·1	7·2	7·3
United Kingdom	7·0	7·1	7·2	7·5	7·6	7·3
Denmark	7·0	7·0	7·1	7·3	7·5	7·2
Scotland	6·6	6·7	6·8	7·2	7·3	6·9
Norway	6·4	6·4	6·5	6·7	6·7	6·5
Sweden	5·6	5·7	5·8	6·0	...	5·8 §
Ireland	4·7	4·7	5·0	5·0	5·0	4·9 ‖

* The numbers doubled give the *persons* married per 1,000 of the population.

† Consisting of the following Presidencies. Antigua, St. Kitts, Nevis, Dominica, Montserrat, and Virgin Islands.

‡ The East Indian section of the population (Coolies), amongst whom concubinage largely prevails, is not taken into account in the calculation.

§ Mean of four years.

‖ The low marriage rate in Ireland is partly attributed to the defective registration of Roman Catholic marriages, which amount to over 70 per cent. of the whole. It is also stated to be in part due to "the abnormal conditions arising from a large annual emigration of unmarried persons at what may be called the marrying ages."—See 15th Detailed Report of the Registrar-General of Ireland, page 6.

Austral-asian and European marriage rates compared.

923. In the five years, 1893 to 1897, the mean marriage rate in Western Australia was higher than in any of the countries named except Hungary, Prussia, the German Empire, Austria, and Belgium, where it was about equal. The rate in New South Wales and New Zealand was about the same as in Norway, where it was lower than in any of the other European countries shown except Sweden and Ireland; whilst in the remaining colonies it was about the same, or only slightly higher than in Sweden. It should be noted, however, that the rates in the Australasian Colonies during the period dealt with were, omitting Western Australia, exceptionally low. The following are the rates referred to :—

MEAN MARRIAGE RATES IN AUSTRALASIAN COLONIES, 1893 TO 1897.

	Number of Marriages per 1,000 of Mean Population.
Western Australia	7·84
New South Wales	6·45
New Zealand	6·40
Victoria	6·19
Queensland	5·99
South Australia	5·97
Tasmania	5·68

Marriage-able persons in Austral-asian Colonies.

924. The following table shows the number of marriageable men and women in each Australasian Colony, according to the returns of the census of 1891, the unmarried (never married) being distinguished from the widowed:—

MARRIAGEABLE MEN AND WOMEN IN EACH AUSTRALASIAN COLONY, 1891.

(Exclusive of Chinese and Aborigines.)

Colony.	Marriageable Men.			Marriageable Women.		
	Bachelors aged 20 and upwards.*	Widowers at all ages.	Total.	Spinsters aged 15 and upwards.*	Widows at all ages.	Total.
Victoria ...	144,567	18,481	163,048	140,240	32,898	173,138
New South Wales	140,242	16,760	157,002	111,221	25,795	137,016
Queensland ...	60,518	4,464	64,982	33,171	6,695	39,866
South Australia ...	32,056	3,791	35,847	34,692	8,442	43,134
Western Australia	10,667	890	11,557	4,526	886	5,412
Total ...	388,050	44,386	432,436	323,850	74,716	398,566
Tasmania ...	15,616	2,413	18,029	15,416	3,945	19,361
New Zealand ...	70,437	7,797	78,234	59,861	12,098	71,959
Grand Total ...	474,103	54,596	528,699	399,127	90,759	489,886

* Including divorced persons at all ages.

925. South Australia, Tasmania, and Victoria are the only colonies in which the marriageable women exceeded the marriageable men. The following are the proportions of the former to the latter, the colonies being arranged in order:— Proportion of single women to men in Australasian Colonies.

MARRIAGEABLE WOMEN PER 10,000 MARRIAGEABLE MEN LIVING IN EACH COLONY, 1891.

1. South Australia	...	12,033	5. New South Wales	...	8,727
2. Tasmania ...	...	10,739	6. Queensland	...	6,135
3. Victoria ...	...	10,619	7. Western Australia	...	4,683
4. New Zealand	...	9,198			

926. The following are the numbers of husbands and wives in each Australasian colony, those under and over 21 years of age being distinguished:— Husbands and wives in Australasian Colonies.

HUSBANDS AND WIVES IN EACH AUSTRALASIAN COLONY, 1891.

(Exclusive of Aborigines.)

Colony.	Husbands.			Wives.		
	Under 21 years.	Over 21 years.	Total.	Under 21 years.	Over 21 years.	Total.
Victoria	276	170,678	170,954	3,447	170,302	173,749
New South Wales ...	393	166,241	166,634	5,233	160,415	165,648
Queensland ...	115	57,772	57,887	1,873	55,723	57,596
South Australia ...	103	48,829	48,932	785	47,510	48,295
Western Australia	20	7,223	7,243	208	6,170	6,378
Total ...	907	450,743	451,650	11,546	440,120	451,666
Tasmania ...	76	22,237	22,313	591	20,808	21,399
New Zealand ...	107	90,443	90,550	1,666	89,211	90,877
Grand Total ...	1,090	563,423	564,513	13,803	550,139	563,942

927. Victoria and New Zealand are the only Australasian Colonies in which wives exceeded husbands. In all the other colonies husbands were in excess. Wives relatively to husbands were fewest in Western Australia, and next so in Tasmania. The following are the proportions in the different colonies:— Proportion of wives to husbands in Australasian Colonies

WIVES TO EVERY 10,000 HUSBANDS IN EACH COLONY, 1891.

(Exclusive of Aborigines.)

1. Victoria ...	...	10,164	5. South Australia	...	9,870
2. New Zealand	...	10,036	6. Tasmania ...	...	9,590
3. Queensland	...	9,950	7. Western Australia	...	8,806
4. New South Wales	...	9,941			

928. In the Australian Continent as a whole the husbands and wives were about equal, the difference being only 16 in favour of the latter. In Australia combined with Tasmania and New Zealand there was a slight difference in the opposite direction, there being 571 more husbands than wives. Proport on of wives to husbands in Australasia.

Marriage rates in town and country.

929. Although rural rather than urban life tends to the promotion of marriage, it happens that, since the marriage ceremony is generally performed in towns, whatever may be the ordinary residence of the persons marrying, the marriage rate recorded there is much higher than that in the country. In Victoria, during the year 1898, it was about two and a half times as high in the metropolis, and nearly three times as high in country towns, as it was in rural districts, as will be seen by the following table, which contains a statement of the proportion of marriages to the population in the three classes of districts in the year 1898 and in the previous quinquennial period :—

MARRIAGES IN URBAN AND COUNTRY DISTRICTS, 1898.

Districts.	Estimated Mean Population.	Marriages in 1898.		Proportion per 1,000 of the Population, 1891–5.
		Total Number.	No. per 1,000 of the Population.	
Melbourne and Suburbs (Greater Melbourne)	464,690	3,992	8·59	8·68
Extra-Metropolitan Towns ...	196,930	1,921	9·75	9·59
Country Districts	511,330	1,707	3·34	3·20
Total	1,172,950	7,620	6·50	6·46

Marriages in each quarter.

930. Marriages in Victoria are generally most numerous in the autumn quarter, next in the spring quarter, next in the summer quarter, and least numerous in the winter quarter. In the year 1898 these relative positions were maintained so far as the autumn and spring quarters were concerned, but the marriages were least numerous in the summer quarter. The following table shows the number and percentage of marriages in each quarter of 1896, 1897, and 1898, and the percentage in each quarter according to the average of a series of fifteen years :—

MARRIAGES IN EACH QUARTER.

Seasons.	Quarter ended on the last day of—	1896.		1897.		1898.		15 Years 1881–95.
		Number of Marriages.	Percentage.	Number of Marriages.	Percentage.	Number of Marriages.	Percentage.	Percentage.
Summer	March ...	1,843	24·17	1,871	24·72	1,730	22·70	23·98
Autumn	June ...	1,999	26·22	2,111	27·89	2,084	27·35	26·60
Winter	September ...	1,797	23·57	1,697	22·43	1,851	24·29	23·27
Spring	December ...	1,986	26·04	1,889	24·96	1,955	25·66	26·15
	Year ...	7,625	100·00	7,568	100 00	7,620	100·00	100·00

931. In 1898, 674 widowers and 483 widows re-entered the marriage state. During the last twenty-five years more widowers have re-married than widows. Formerly it was different. In the nine years ended with 1873 the widowers re-entering the married state numbered 4,847, and the widows 5,128, and at earlier periods in the history of the colony the preponderance of re-marriages of widows over those of widowers was even greater than this. Moreover, a remarkable increase in the excess of widowers over widows re-marrying —although the actual numbers in both cases have fallen off—has taken place since 1891 ; for whereas there was an excess of 10 or 11 per cent. in 1890 and 1891, it rose to about 23½ per cent. in the years 1892–4, to an average of 29 per cent. in the years 1895–7, and to nearly 40 per cent. in 1898. In England and Wales, during the ten years ended with 1890, 42 per cent. more widowers re-married than widows, the proportion in every 1,000 marriages being 122 of the former and 86 of the latter. The following is a statement of the number of widowers and widows who re-married in Victoria during 1865 and each subsequent fifth year, also in each of the five years ended with 1898 :— Re-marriages.

RE-MARRIAGES, 1865 TO 1898.

Year.	Number of Re-marriages of—	
	Widowers.	Widows.
1865	503	510
1870	547	595
1875	614	583
1880	603	520
1885	735	646
1890	748	674
1894	566	460
1895	620	481
1896	639	490
1897	624	491
1898	674	483
Mean of 34 years ...	637	571

932. Of recent years nearly nine-tenths of the unions which took place were between bachelors and spinsters, the proportion having gradually increased since 1871–80, when it was about four-fifths. The next most numerous marriages are generally those between widowers and spinsters, although they have occasionally been exceeded by marriages between bachelors and widows. Marriages between widowers and widows in the period 1871–80 were about a twentieth of the whole, but have since fallen to about a fortieth in 1898. The following is the number and percentage of each of these groups during Former condition of those marrying.

1896, 1897, and 1898, and the percentage during the periods 1881-90 and 1891–95 :—

FORMER CONDITION OF PERSONS MARRIED.

Previous Condition.	1896.		1897.		1898.		Percentages.	
	Number of Marriages.	Per-centages.	Number of Marriages.	Per-centages.	Number of Marriages.	Per-centages.	1881 to 1890.	1891 to 1895.
Bachelors and spinsters	6,665	87·41	6,626	87·56	6,623	86·92	85·84	87·07
Bachelors and widows	321	4·21	318	4·20	323	4·24	4·72	4·37
Widowers and spinsters	470	6·16	451	5·96	514	6·75	6·17	5·83
Widowers and widows	169	2·22	173	2·28	160	2·09	3·27	2·68
Total ...	7,625	100·00	7,568	100·00	7,620	100·00	100·00	100·00

Re-marriages in various countries.

933. By the figures in the following table it would appear that a larger proportion of widowers re-marry in Vermont, and a smaller in the Australasian Colonies, and a larger proportion of widows re-marry in Hungary, and a smaller in Sweden and Norway, than in any other of the countries named; also, that in Victoria widowers re-marry less frequently than in any of those countries except New Zealand, New South Wales, and Queensland; but that in eleven of these countries widows re-marry less frequently than in Victoria :—

RE-MARRIAGES IN VARIOUS COUNTRIES.*

Countries.	Widowers re-married per 1,000 Marriages.	Countries.	Widows re-married per 1,000 Marriages.
Vermont	209	Hungary	151
Hungary	198	Russia in Europe ...	130
Russia in Europe ...	186	Vermont	125
Austria	180	Austria	113
Massachusetts	162	Massachusetts ...	107
Finland	158	Finland	99
Holland	151	England and Wales ...	97
Spain	149	Holland	92
Prussia	140	Roumania	91
England and Wales ...	137	Spain	89
Switzerland	135	Prussia	88
Italy	131	New South Wales ...	85
Roumania	124	Belgium	85
Scotland	120	Victoria	80
Denmark	118	Switzerland	80

* The figures in this table have been derived from those contained in a table showing the proportions of marriages of persons of different conjugal conditions in various countries, for which see *Victorian Year-Book*, 1892, Vol. I., paragraph 583.

RE-MARRIAGES IN VARIOUS COUNTRIES—*continued.**

Countries.	Widowers re-married per 1,000 Marriages.	Countries.	Widows re-married per 1,000 Marriages
Belgium	116	Queensland	78
France	115	France	78
Ireland ...	112	Italy	74
Sweden	112	Denmark	72
Norway	112	Greece	72
Greece	100	South Australia ...	71
South Australia ...	98	New Zealand ...	71
Victoria	95	Scotland	60
New Zealand	90	Ireland	57
New South Wales ...	83	Sweden	55
Queensland	78	Norway	55

934. Divorced persons marrying have hitherto been classified as bachelors and spinsters, unless in cases where they had become widowers or widows before contracting the marriage from which they were released by divorce, but in future it is intended to keep them in a separate category. The following were the numbers in each of the last five years:— Marriages of divorced persons, 1898

MARRIAGES OF DIVORCED PERSONS, 1894 TO 1898.

	Men.	Women.	Total.
1894	24 ...	25 ...	49
1895	17 ..	33 ...	50
1896	31 ...	38 ...	69
1897	20 ...	37 ...	57
1898	20 ...	34 ...	54

935. During the last four years 77 per cent. of the divorced men, and the same proportion of divorced women, who re-married, married spinsters and bachelors respectively; but only in one instance had both parties to a marriage been divorced. The following are the figures for each of those years :— Conjugal conditions of those marrying divorcees.

CONJUGAL CONDITIONS OF THOSE MARRYING DIVORCED PERSONS, 1895–8.

To Whom Married.	Males.				Females.			
	1895.	1896.	1897.	1898.	1895.	1896.	1897.	1898.
Bachelors or spinsters	12	27	14	16	29	28	26	26
Widowers or widows ...	5	4	6	3	4	10	11	7
Divorced persons ...	...	...	...	1	...	...	...	1
Total ...	17	31	20	20	33	38	37	34

* See footnote (*) on previous page.

Re-marriages of divorcees in town and country.

936. In the same period four-fifths of the marriages of divorced men, and about six-sevenths of those of divorced women, took place in Melbourne and suburbs, and fully two-thirds of the remainder in the other urban districts of the colony, as may be ascertained from the following figures:—

RE-MARRIAGES OF DIVORCED PERSONS IN URBAN AND RURAL DISTRICTS, 1895–8.

District.	Males.				Females.			
	1895.	1896.	1897.	1898.	1895.	1896.	1897.	1898.
Melbourne and Suburbs	12	24	19	15	26	32	32	31
Other Urban Districts	3	6	...	3	5	3	5	2
Rural Districts ...	2	1	1	2	2	3	...	1
Total ...	17	31	20	20	33	38	37	34

Age of divorcees at re-marriage.

937. From the following table it may be ascertained that in the last four years only 9 per cent. of the divorced male persons who re-married were between the ages of 25 and 30 years; but that 72 per cent. were between 30 and 45; whilst only six persons (of whom three were over 60), or 7 per cent., were over 50 years of age. Amongst the divorced females who re-married, however, 81 per cent. were between the ages of 25 and 40; but only six persons, or 4 per cent., were more than 45 years old.

AGES OF DIVORCED PERSONS AT RE-MARRIAGE, 1895 TO 1898.

Age Group.	Males.				Females.			
	1895.	1896.	1897.	1898.	1895.	1896.	1897.	1898.
20 and under 25 ...	...	...	...	...	8	...	1	...
25 " 30 ...	4	2	2	...	7	17	6	7
30 " 35 ...	2	9	2	2	9	10	14	13
35 " 40 ...	7	8	5	5	5	7	10	10
40 " 45 ...	1	7	7	8	3	2	4	3
45 " 50 ...	2	4	2	2	...	2	1	1
50 " 55 ...	...	1	1	1	1	...	...	...
55 " 60 ...	...	...	...	...	...	...	1	..
60 " 65 ...	1	...	1	1	...	...	...	...
Non-specified ...	...	...	...	1	...	...	...	...
Total ...	17	31	20	20	33	38	37	34

Divorce and re-marriage period.

938. In the 78 marriages of divorced males during the last four years in respect to which the interval between divorce and re-marriage could be ascertained, 57, or 73 per cent., and in a total of 136 specified

marriages of divorced females, 100, or 73 per cent., occurred within three years of divorce ; but only four men and eleven women re-married, who had been divorced for upwards of six years. The following are the particulars for each year:—

INTERVAL BETWEEN DIVORCE AND RE-MARRIAGE.

Interval between Divorce and Re-marriage. (Years.)	Divorced Males Re-married.				Divorced Females Re-married.			
	1895.	1896.	1897.	1898.	1895.	1896.	1897.	1898.
0—1	2	3	6	5	7	17	12	11
1	8	9	4	3	6	3	12	10
2	4	6	3	4	8	6	2	6
3	...	...	1	3	3	2	5	2
4	1	2	3	1	4	2	1	2
5	1	1	2	2	...	2	1	1
6	...	1	...	...	...	1	1	...
7	...	1	...	1	...	...	...	1
8	...	...	...	...	...	...	...	1
9	...	1	...	...	...	...	1	...
10 and over	...	...	...	...	3	2	1	...
Not stated	1	7	1	1	2	3	1	...
Total ...	17	31	20	20	33	38	37	34

939. Of the 230 divorced persons re-married during the four years, 22, or nearly 10 per cent., were married in the Church of England ; 40, or 17½ per cent., in the Presbyterian Church ; 61, or 27 per cent., in the Methodist chapels ; 36, or 15½ per cent., in the Church of Christ ; 49, or over 21 per cent., in other Protestant churches ; whilst 21, or nearly 9 per cent., were united by lay registrars. No marriage of a divorced person took place in the period referred to in a Jewish Synagogue, and only one of a divorced woman in the Roman Catholic church. As a rough guide to the extent of divorces amongst members of different denominations, the numbers of divorced persons re-marrying might be compared with the total numbers of persons marrying during the same period. The total number of persons married in the Church of England in the period referred to was 12,902, in the Presbyterian church 11,100, in the Methodist 12,250, in the Church of Christ 4,390, and in other Protestant churches 7,566. Comparing these figures with those first quoted, it will be found that there were seventeen divorced persons married per 10,000 persons married in the Church of England, 36 per 10,000 in the Presbyterian church, 50 in the Methodist

Divorced persons married by different religious denominations.

churches, 82 in the Church of Christ, and 65 in other Protestant churches. The high proportion in the Church of Christ is probably due to marriages performed at matrimonial agencies by ministers of that denomination. The numbers of divorced men and women re-married according to the rites of the various denominations during each of the years are shown in the following statement :—

RELIGIOUS DENOMINATIONS OF DIVORCED PERSONS RE-MARRYING.

In Marriages celebrated according to the Rites of —	Divorced Men re-married in—				Divorced Women re-married in—			
	1895.	1896.	1897.	1898.	1895.	1896.	1897.	1898.
Church of England ...	1	5	1	4	3	2	1	1
Victorian Free Church	...	...	...	...	1	3	...	...
Presbyterians ...	3	6	2	2	6	7	9	5
Wesleyan and United Methodists	...	3	4	4	2	5	5	3
Primitive Methodists	1	4	4	3	...	4	7	8
Bible Christians ...	1	...	...	1	1	...	...	1
Independents ...	1	3	1	1	10	3	1	1
Baptists	1	1	...	...	...	1	1	3
Church of Christ ...	6	6	4	...	8	4	7	1
Other Protestant Sects	...	1	1	4*	1	3	2	9*
Roman Catholics ...	..	...	...	...	...	1	...	...
Registrars	3	2	3	1	1	5	4	2
Total	17	31	20	20	33	38	37	34

Number of divorced persons, 1891.

940. The persons returned at the census of 1891 as living in a state of divorce numbered 196, viz., 110 males and 86 females, the former being in the proportion of 1 to every 1,555 men returned as husbands, and the latter in the proportion of 1 to every 2,021 women returned as wives. At the previous census only 19 divorced persons were returned, viz., 9 males and 10 females.†

Divorced persons in Australasian Colonies.

941. The numbers of males and females returned as living in a state of divorce in five Australasian Colonies when the census was taken are subjoined :—

DIVORCED PERSONS IN FIVE AUSTRALASIAN COLONIES, 1891.

	Males.	Females.
Victoria	110	86
New South Wales	178	126
Queensland	16	7
Western Australia	3	3
Tasmania	25	6
Total	332	228

NOTE.—In South Australia and New Zealand the persons stated in the householders' schedules to be living in a state of divorce were not separately tabulated.

* Including two males and five females in the "Free Christian Church.

† For the occupations and religions of the persons returned at the census of 1891 as living in a state of divorce, see *Victorian Year-Book*, 1892, Vol. I., paragraph 508.

942. Comparing the divorced with the married persons of either sex, the following proportions are found to have existed in the different colonies :— Proportion of divorced to married persons.

In Tasmania	there was 1 divorced man to every	...	893	husbands.
„ New South Wales	„	„	„	...	936	„
„ Victoria	„	„	„	...	1,554	„
„ Western Australia	„	„	„	...	2,414	„
„ Queensland	„	„	„	...	3,618	„
„ New South Wales	there was 1 divorced woman to every		1,315	wives.
„ Victoria	„	„	„	...	2,021	„
„ Western Australia	„	„	„	...	2,126	„
„ Tasmania	„	„	„	...	3,566	„
„ Queensland	„	„	„	...	8,228	„

943. The number of divorces which took place in each Australasian Colony during 1890 and 1891 and their proportions to the married persons of either sex returned at the census were as follow :— Divorces in Australasian Colonies.

DIVORCES IN AUSTRALASIAN COLONIES, 1890 AND 1891.

Colony.	Average Annual Number of Divorces.	Divorces per 100,000 Husbands.	Divorces per 100,000 Wives.
1. Victoria	69	40·4	40·0
2. Western Australia	2	27·6	31·3
3. New South Wales	46	27·6	27·7
4. New Zealand	21	23·2	23·1
5. Queensland	6	10·4	10·4
6. Tasmania	2	8·5	9·3
7. South Australia	3	6·1	6·1

944. If the divorces be compared with the number of marriages, the positions of the colonies remain unaltered, except that Tasmania rises above Queensland, and occupies the fifth position on the list instead of the sixth, thus :— Marriages to each divorce in Australasian Colonies.

MARRIAGES TO EACH DIVORCE IN EACH AUSTRALASIAN COLONY, 1890 AND 1891.

	Annual Marriages to each Divorce.		Annual Marriages to each Divorce.
1. Victoria ...	... 130	5. Tasmania ...	... 485
2. Western Australia	... 172	6. Queensland ...	... 508
3. New South Wales	... 178	7. South Australia	... 758
4. New Zealand	... 186		

945. Combining the dissolutions of marriage with the judicial separations in the Australasian Colonies for the sake of comparison with such events in other countries, the following are the numbers in some of the principal countries of the world, the proportions to the Divorces and separations in various countries.

married couples living being also shown. The figures for the Australasian Colonies are those of the average of the five years ended with 1890, whilst those for the other countries are for the year 1885:—

DIVORCES AND SEPARATIONS IN VARIOUS COUNTRIES.

Country.	Divorces and Judicial Separations.	
	Number in One Year.*	Number per 100,000 Married Couples.
United States	23,472	203·0†
Switzerland	920	195·5
Denmark	635	184·7
France	6,245	80·5
Germany	6,161	77·7
Roumania	541	61·5
Holland	339	47·7
Austria	1,718	44·0
Belgium	290	31·4
Western Australia	2·	27·8
Sweden and Norway	297	27·0
New South Wales	40	26·4
New Zealand	23	26·1
Victoria	27	16·9
Tasmania	3	14·6
Queensland	6	11·1
Russia in Europe	1,789	11·1
Italy	556	10·6
South Australia	5	10·4
United Kingdom	508	8·6
Canada	12	1·6

High proportion of divorces in United States.

946. According to the table, more divorces and separations take place in the United States than in any of the other countries named, there being in that country a proportion of over 200 divorces annually per 100,000 married couples living. This proportion is approached in only two other countries, viz., Switzerland and Denmark. The Australasian Colonies stand low on the list, but even South Australia has a higher rate than the United Kingdom. Strange to say, Canada, which adjoins the United States, has the lowest rate of all. Perhaps its inhabitants cross the frontier when they desire to become divorced.

Deserted husbands and wives.

947. Persons whose wives or husbands have not been heard of for a period of seven years may marry again without rendering themselves liable to be prosecuted for bigamy; but such unions are subject to the serious disadvantage that the issue by the second marriage would be illegitimate, and the marriage itself void, if it should turn out that the

* In the absence of official information, the numbers, except those relating to the Australasian Colonies, have been taken from a pamphlet entitled *A Divorce Problem*, by Dr. W. F. Wilcox, of Columbia College, U.S. It is possible that, in some cases, judicial separations may not be included.

† Proportion for 1880.

first husband or wife was alive at the time thereof. Three deserted persons (all females) availed themselves of this provision in 1893, none in 1894, three (two males, one female) in 1895, none in 1896, two (males) in 1897, eleven (three males, eight females) in 1898.

948. It may be mentioned that by the *Divorce Act* 1889† (53 Vict. No. 1056), which received the Royal assent on the 13th May, 1890, it is provided that any married person domiciled in Victoria for two years and upwards may obtain a divorce, after which he or she may legally re-marry, on proving that he or she had, without just cause or excuse, been wilfully deserted, and continuously so deserted over a period of three years or upwards. *Divorce Act* 1889.

949. The marriages of 3 Aboriginal males with Aboriginal females are included in the returns of 1898. In 1897, two marriages of Aboriginal males with Aboriginal females took place; in 1896, three marriages; and one in each of the years 1894 and 1895. Marriages of Aborigines.

950. Six Chinese males were married in Victoria in the year 1898, as against 9 in 1897, 11 in 1896, 4 in 1895, and 11 in 1894. During the twenty-eight years prior to 1894, 430 Chinamen were married in Victoria, or an average of about 15 per annum. The following table shows the nationalities of the women who formed matrimonial unions with Chinese during that period, also during the years under review :— Marriages of Chinese.

NATIONALITY OF WOMEN MARRYING CHINESE, 1866 TO 1898.

Birthplace of Wives.	Number of Marriages of Chinese Males.						
	Twenty-eight years, 1866 to 1893.	1894.	1895.	1896.	1897.	1898.	Total 1866 to 1898.
Victoria	224†	7	2	6	8	5	252
Other Australasian Colonies	64	2	1	2	...	1	70
England and Wales ...	73	1	1	2	...	...	77
Scotland	17	...	...	...	...	...	17
Ireland	29	1	...	1	...	...	31
Other British Possessions ...	1	...	...	...	...	...	1
France	1	...	...	...	...	...	1
Germany	2	...	...	...	...	...	2
Spain	1	...	...	...	...	...	1
The United States	2	...	...	...	...	...	2
China	6	...	...	...	...	...	6
At Sea	9	...	...	...	...	...	9
Not known	1	...	...	...	1	...	2
Total	430	11	4	11	9	6	471

* An account of the provisions of this Act was given in the *Victorian Year-Book*, 1892, Vol. II., paragraph 256. Further particulars respecting divorces are given under the head of "Law, Crime, &c.," *post*

† Two of the wives, although born in Victoria, were stated to be of the Chinese race, and four of the husbands were returned as half-caste.

Marriages by different sects.

951. The marriage ceremony in Victoria may be performed either by the registered clergy of any religious sect or by lay registrars. In 1898, about 97 per cent. of the marriages were celebrated according to the former, and nearly 3 per cent. according to the latter system. The number of lay marriages was 219. The following table gives a statement of the number and percentage of marriages celebrated by each religious denomination and by lay registrars during 1896, 1897, and 1898, also the percentage in the periods 1881 to 1890 and 1891 to 1895:—

MARRIAGES BY DIFFERENT DENOMINATIONS.

Marriages performed according to the usages of the—	Marriages, 1896.		Marriages, 1897.		Marriages, 1898.		Percentages.	
	Number.	Percentages.	Number.	Percentages.	Number.	Percentages.	1881 to 1890.	1891 to 1895.
Church of England ...	1,684	22·09	1,591	21·02	1,569	20·59	30·52	26·83
Presbyterians ...	1,484	19·46	1,466	19·37	1,153	15·13	17·24	18·21
Methodists*... ...	1,441	18·90	1,499	19·81	1,526	20·03	15·63	16·25
Bible Christians ...	146	1·91	160	2·11	202	2·65	2·00	2·15
Independents ...	273	3·58	196	2·59	175	2·30	4·42	3·03
Baptists	243	3·19	220	2·91	281	3·69	5·00	3·06
Lutherans	57	·75	59	·78	52	·68	·93	1·02
Unitarians	3	·04	...	...	2	·03	·05	·05
Calvinistic Methodists	3	·04	4	·05	2	·03	·06	·09
Roman Catholics ...	1,181	15·48	1,236	16·33	1,250	16·40	14·91	15·99
Jews	20	·26	25	·33	23	·30	·43	·33
Other Sects	821	10·77	864	11·42	1,166	15·30	1·78	7·69
Lay Registrars ...	269	3·53	248	3·28	219	2·87	7·03	5·30
Total	7,625	100·00	7,568	100·00	7,620	100·00	100·00	100·00

Duplicate marriages.

952. It should be mentioned that, occasionally, a marriage is performed twice over, viz., by a lay registrar and a clergyman, or by clergymen of two different denominations. It is not always easy to detect these cases in the registers, but when discovered, they are counted only once. One such case, however, was noticed in 1892, and included in the returns, viz., that of a couple who had been previously married—probably outside the colony—being re-united under the form of the Roman Catholic denomination.

Sects of Aboriginals married.

953. Of the 3 Aboriginal marriages which took place in 1898, 1 was solemnized according to the rites of the Church of England, 1 of the Lutherans, and 1 of the Moravians.

Sects of Chinese married.

954. Of the 6 marriages of Chinese in 1898, 2 were celebrated according to the rites of the Church of England, 2 according to those of the Presbyterians, 1 according to those of the Methodists, and 1 according to those of the Roman Catholics.

Marriage by different denominations.

955. The returns of the censuses of 1881 and 1891 afford an opportunity of comparing the number of marriages performed according to the rites of each particular denomination with the numbers of that

* Including Wesleyan Methodists, Primitive Methodists, and United Methodists.

denomination in the population; and by taking the mean of the returns of the two periods, and of the marriages which were performed in the interval between them, the same information is obtained extending over a period of ten years. The results are given in the following table, as are also those of the previous decennial period :—

PROPORTION OF MARRIAGES TO NUMBER OF EACH DENOMINATION, 1871–80 AND 1881–90.

Religious Denomination.	Persons of each Denomination (mean of 1881 and 1891).	Marriages celebrated Annually.		
		Mean of 1881 to 1890.	Proportion per 1,000 Persons living.	
			1881 to 1890.	1871 to 1880.
Church of England ...	364,237	2,332·0	6·40	4·31
Presbyterians ...	149,809	1,317·5	8·79	8·30
Methodists*	128,427	1,194·5	9·30	8·22
Bible Christians ...	8,119	152·6	18·80	15·48
Independents ...	20,994	337·5	16·08	14·17
Baptists	24,128	382·3	15·84	10·03
Lutherans	13,339	71·0	5·32	4·68
Unitarians	1,222	4·0	3·27	·92
Society of Friends ...	321	·1	·31	1·30
Calvinistic Methodists	869	4·4	5·06	7·65
Roman Catholics ...	226,036	1,140·4	5·14	4·58
Jews	5,395	32·6	6·04	5·34
Other Sects	21,928	135·7	...	...
Residue	36,551†	537·5‡	...	...
Total	1,001,375	7,642·1	7·63	6·25

Churches which perform most marriages and *vice versâ*.

956. It will be observed that the denominations which solemnize most marriages in proportion to their numbers in the population are the Bible Christian, the Independent, and the Baptist, in the order named. In all these cases the proportions in the ten years 1881 to 1890 were 16 per 1,000 or upwards, whilst the proportions in all the other denominations were below 10 per 1,000 persons living. In proportion to their respective numbers, the marriages performed in the ten years named according to the rites of the Church of England were much fewer than those celebrated according to the rites of the Methodists* and Presbyterians, but were more numerous than those performed according to the rites of the Roman Catholic Church, as well as those of all other denominations, except the three first named. In the last decade, as compared with the preceding one, a marked increase took place in the marriage rate amongst most denominations, the only ones showing a decrease being the Society of Friends and the Calvinistic Methodists.

* Including Wesleyan Methodists, Primitive Methodists, and United Methodists.

† Including Buddhists, Confucians, &c., those of no denomination and of no religion, and the unspecified.

‡ Marriages by lay registrars.

Signing with marks.

957. The numbers of either sex who evinced their want of elementary education by signing the marriage register with a mark instead of in writing were as follow in 1898, the proportion of those who signed with marks to the total numbers married being also shown :—

SIGNING MARRIAGE REGISTER WITH MARKS, 1898.

Persons Married.	Numbers Married.	Signing with Marks.	
		Total Number.	Number in every 100 Married.
Bridegrooms... ...	7,620	56	·73
Brides	7,620	47	·62
Mean	7,620	51	·67

Increased numbers signing in writing.

958. In proportion to the total numbers married, a very satisfactory increase has taken place of late years in the number of both males and females signing the marriage register in writing. With few exceptions, a constant improvement has been apparent from year to year—nearly every year, as compared with its predecessor, showing a smaller proportion of persons signing with marks. In 1898, the proportion of women signing with marks was lower than in any previous year, and that of men lower than in any previous year except 1896. The following figures show the proportions so signing in 1875 and each subsequent fifth year, also in the last five years :—

NUMBERS SIGNING WITH MARKS PER 100 MARRIED, 1875 TO 1898.

Year.	Men.	Women.	Mean.	Year.	Men.	Women.	Mean.
1875 ...	5·48	9·43	7·46	1895 ...	·89	·67	·78
1880 ...	4·18	4·09	4·13	1896 ...	·73	·66	·69
1885 ...	2·56	2·62	2·59	1897 ...	·85	·74	·79
1890 ...	1·50	1·53	1·52	1898 ...	·73	·62	·67
1894 ...	·88	·87	·88				

Cases of both signing with marks.

959. The marriages in which marks instead of writing were made use of in 1898 numbered 103 ; but in only 5 of these, or 1 in 21, did both the parties use marks. In the 98 other instances either the husband or the wife signed in writing. Thus, whereas in the case of 1 marriage in 74 either the bride or the bridegroom was unable to write, it happened in the case of only 1 marriage in 1,524 that neither party was able to sign the marriage register in writing.

Signatures of Chinese.

960. Of the 6 Chinese who married in 1898, 4 signed in writing, and 2 with a cross.

961. Of the Aborigines who married in 1898, there were two marriages in which both signed with a cross, and one in which both signed in writing. Signatures of Aborigines.

962. The proportion of persons signing with marks is found to differ according to the religious denomination. Means are afforded by the following table of observing the position of the adherents of the different sects so far as the possession of a sufficient amount of rudimentary education to enable them to write their names is concerned. The figures are those of the year 1898, and the average of the periods 1881 to 1890, and 1891 to 1895. Considerable improvement will be noticed in respect to all the principal denominations :— Signing with marks in each denomination.

SIGNING WITH MARKS IN EACH DENOMINATION.

Marriages performed according to the usages of the—	Number Signing with Marks in every 100 Married.								
	Year 1898.			Five Years: 1891 to 1895.			Ten Years: 1881 to 1890.		
	Men.	Women.	Mean.	Men.	Women.	Mean.	Men.	Women.	Mean.
Church of England ...	·51	·06	·28	1·03	1·11	1·07	1·62	1·76	1·69
Presbyterians ...	·26	·61	·43	·67	·86	·76	1·32	1·42	1·37
Methodists* / Bible Christians	·75	·58	·67	·72	·57	·64	1·82	1·80	1·81
Independents ...	...	...	...	·61	·96	·78	1·72	1·39	1·56
Baptists	...	...	...	·78	·43	·61	1·91	2·15	2·03
Lutherans	...	...	...	1·04	1·04	1·04	·56	·56	·56
Calvinistic Methodists	...	...	...	...	...	...	2·86	...	1·43
Roman Catholics ...	·64	·56	·60	1·21	1·45	1·33	3·85	3·91	3·88
Jews	8·70	...	4·35	·80	3·20	2·00	1·84	3·12	2·48
Other Sects ...	1·45	1·54	1·50	1·01	1·01	1·01	2·27	2·07	2·17
Lay Registrars ...	2·28	1·83	2·05	2·49	2·79	2·64	4·56	6·68	5·62
Total	·73	·62	·67	·99	1·09	1·04	2·17	2·38	2·28

963. In 68 marriages by Unitarians which took place in the twenty-eight years ended with 1898, not one instance occurred of either of the parties signing with a mark ; this denomination, therefore, finds no place in the above table. In 168 marriages by Calvinistic Methodists during the same period, all but 2 of the males signed in writing, but 5 of the females signed with marks. In 418 marriages of Jews which took place prior to 1889, only 7 persons signed with marks ; but in 274 marriages of Jews celebrated since, as many as 20 persons signed with marks. On examining the returns of the last nine years, it was found that most of the Jews not signing in writing were Eastern Jews, chiefly from Russia or Russian Poland. Marriages by Unitarians, Calvinists, and Jews.

964. A statement of the numbers who sign the marriage register with marks is published in all the Australasian Colonies except Western Australia, and from the figures given the following percentages for the five years 1893 to 1897 have been deduced. The colonies are Signing with marks in Australasian Colonies.

* Including Wesleyan Methodists, Primitive Methodists, and United Methodists.

placed in order according to the state of education thus displayed, the colony with the smallest proportion signing with marks being placed first, and that with the reverse last :—

Signing with Marks in Australasian Colonies, 1893 to 1897.

Colony.	Year.	Number Signing with Marks to every 100 Married.		
		Men.	Women.	Mean.
1. Victoria	1893	·91	1·14	1·03
	1894	·88	·87	·88
	1895	·89	·67	·78
	1896	·73	·66	·69
	1897	·85	·74	·79
Mean of 5 years	...	·85	·82	·83
2. New Zealand	1893	1·14	1·70	1·42
	1894	1·03	1·51	1·27
	1895	·95	·95	·95
	1896	·62	·70	·66
	1897	·51	·79	·65
Mean of 5 years	...	·85	1·13	·99
3. South Australia ...	1893	2·04	1·85	1·94
	1894	1·81	2·20	2·01
	1895	1·71	1·07	1·39
	1896	1·15	1·74	1·45
	1897	1·08	1·03	1·05
Mean of 5 years	...	1·56	1·58	1·57
4. New South Wales ...	1893	2·31	2·01	2·16
	1894	1·85	1·96	1·90
	1895	2·20	1·98	2·09
	1896	2·33	2·04	2·18
	1897	1·59	1·42	1·50
Mean of 5 years	...	2·06	1·88	1·97
5. Queensland	1893	2·29	3·01	2·65
	1894	2·56	3·20	2·88
	1895	2·90	2·69	2·80
	1896	2·16	2·80	2·48
	1897	1·52	2·42	1·97
Mean of 5 years	...	2·28	2·82	2·55
6. Tasmania	1893	3·89	4·12	4·00
	1894	6·37	4·49	5·43
	1895	4·72	3·54	4·13
	1896	5·50	4·46	4·98
	1897	4·75	3·80	4·27
Mean of 5 years	...	5·05	4·08	4·56

965. By these figures it appears that the proportion of persons able to sign in writing is, on the average, larger in this than in any other colony. Next to Victoria in this respect is New Zealand, in which the proportion of males signing in writing was the same as in this colony. The colonies, generally, show improvement from year to year, and there is every reason to expect that in all the colonies, as the children educated under the compulsory systems established arrive at marriageable ages, it will become a rare occurrence for a marriage to be attested otherwise than in writing.

Victoria the least illiterate colony.

966. No returns are at hand showing the manner in which the marriage registers are signed in British Colonies other than those named and Trinidad and Jamaica. The following, however, is a statement of the numbers who signed with marks in the latest year for which the information is available in the undermentioned countries, which are arranged in order; the least illiterate country being placed first and the rest in succession :—

Signing with marks in various countries.

SIGNING WITH MARKS IN VARIOUS COUNTRIES.

Country.	Year.	Number signing with Marks to every 100 Married.		
		Men.	Women.	Mean.
Scotland	1896	2·26	3·78	3·02
England and Wales ...	1897	3·30	4·00	3·65
France	1892	8·10	12·10	10·10
Ireland	1898	14·00	12·70	13·35
Trinidad	1898	33·00	45·64	39·32
Italy	1896	36·96	52·57	44·76
Jamaica	1893–7	43·56	56·96	50·26

967. By comparing these figures with those in the previous table, it will appear that adult education, so far as it is indicated by signature to the marriage register, is more forward in the Australasian Colonies, with the exception of Tasmania, which is behind Scotland and England and Wales, than in any of the countries named. It will further be remarked that the proportion signing with marks in Scotland and England and Wales is much smaller than in any of the other countries named. France comes next to England and Wales, but it is nearly three times as illiterate. The very large proportion signing with marks in France, Ireland, Italy, and the two West India Islands attracts particular attention.

Countries compared as to illiteracy.

968. The age of both bridegroom and bride was specified in the case of all but 31 of the 7,620 marriages which took place in 1898. In 24 of the defective entries the age of neither party was given; in five cases the age of the husband was stated, but not that of his wife; and in two

Ages of bridegrooms and brides in combination.

instances the age of the wife was given, but not that of the husband. The following table shows the ages of the husbands and of the wives in combination :—

AGES OF BRIDEGROOMS AND BRIDES IN COMBINATION, 1898.

Ages of Husbands.	Ages of Wives.																			Total Husbands.
	Under 15.	15 to 16.	16 to 17.	17 to 18.	18 to 19.	19 to 20.	20 to 21.	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.	78.	Unspecified.	
17 to 18	...	...	...	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2
18 to 19	...	...	...	3	...	...	2	2	...	...	...	...	...	...	...	...	...	...	...	...	7
19 to 20	1	1	2	4	13	11	2	7	...	...	...	...	...	...	...	...	...	..	...	...	41
20 to 21	...	1	1	9	8	15	13	21	6	...	...	...	...	...	...	...	...	...	...	...	74
21 to 25	1	2	16	57	108	146	177	876	195	35	5	3	1	...	...	...	...	...	...	...	1,622
25 to 30	1	2	9	35	76	121	135	1,162	1,008	154	31	4	...	...	...	...	...	...	...	1	2,739
30 to 35	1	1	3	10	30	32	52	490	601	325	76	19	2	...	...	...	...	...	...	2	1,644
35 to 40	...	1	...	3	7	13	14	163	248	190	99	23	8	...	...	...	...	...	...	1	770
40 to 45	...	...	...	...	2	4	2	42	71	67	59	38	5	5	1	...	...	...	...	1	297
45 to 50	...	...	...	...	1	...	1	8	20	29	27	19	16	4	3	1	...	...	...	...	129
50 to 55	...	...	...	...	...	...	...	7	12	14	13	18	12	7	2	1	...	...	...	...	86
55 to 60	...	...	...	...	...	1	...	5	6	4	12	10	8	7	4	...	...	...	...	...	57
60 to 65	...	...	...	...	...	...	...	1	1	11	5	13	12	9	8	5	1	1	...	...	67
65 to 70	...	...	...	...	...	1	...	1	...	3	2	6	8	3	4	8	3	...	1	...	40
70 to 75	...	...	...	...	...	...	...	...	...	1	...	2	4	...	2	1	1	3	...	...	14
75 to 80	...	...	...	...	...	...	...	...	...	1	...	...	1	1	...	...	...	...	..	...	3
80 ...	...	...	...	...	...	...	...	...	...	1	...	1	...	...	...	...	...	...	...	...	2
Unspecified ...	...	...	..	...	1	...	...	1	...	...	...	...	.	...	...	...	...	...	..	24	26*
Total Wives	4	8	31	122	246	345	398	2,786	2,168	835	329	156	77	36	24	16	5	4	1	29*	7,620

NOTE.—This table should be read thus:—Two men between 21 and 25 married girls between 15 and 16 ; six women between 25 and 30 married men between 20 and 21, &c.

Relative ages of husband and wife.

969. An examination of the 7,589 cases in which the ages of both parties are specified will show that in 2,409 instances, or 32 per cent. of the whole, both parties to the marriage were about the same age; in 622 instances, or 8 per cent. of the whole, the wife was older than the husband ; and in 4,558 instances, or 60 per cent. of the whole, the husband was older than the wife.

Inequalities of age.

970. Some striking inequalities of age amongst the parties married appear in several of the columns, as, for instance, a man between 65 and 70, and one between 55 and 60 married girls of 19 ; a man between 65 and 70, another between 60 and 65, and five between 55 and 60 married women between 21 and 25 ; one man, aged 80, and two men between 70 and 80 married women between 30 and 35. On the other hand, one woman between 45 and 50, and three women between 40 and 45 married men between 21 and 25.

Extreme ages of marriage.

971. It will be noticed that two youths, aged 17, took upon themselves the cares and responsibilities of matrimony, their brides being 17 and 19 years of age; also that seven youths aged 18, and 41 aged 19

* All those of unspecified ages (except one male) are known to have been over 21 years of age.

undertook similar responsibilities, the wives of four of the former and nine of the latter being, however, somewhat older than themselves. On the other hand, it will be remarked that five men who had passed the age of 75, and five women who had passed the age of 70, entered the marriage state, the partners of three of the former being under 45 years of age.

Age at which marriage is contracted.

972. The next table has been designed for the purpose of showing the ages at which persons of either sex generally marry in Victoria,* the information being given for the year 1898, and for the quinquennial period 1891 to 1895 :—

PROPORTION OF MALES AND FEMALES MARRYING AT DIFFERENT AGES, 1891–95 AND 1898.

Ages.	Bridegrooms.			Brides.		
	Numbers, 1898.	Proportions per 1,000.		Numbers, 1898.	Proportions per 1,000.	
		Year 1898.	Five Years, 1891–95.		Year 1898.	Five Years, 1891–95.
Under 15 years ...	...	...	...	4	·53	·13
15 to 16 ,, ...	...	...	...	8	1·05	1·31
16 to 17 ,, ...	...	...	·08	31	4·08	5·70
17 to 18 ,, ...	2	·26	·16	122	16·08	17·21
18 to 19 ,, ...	7	·92	1·30	246	32·40	35·27
19 to 20 ,, ...	41	5·40	5·52	345	45·45	50·48
20 to 21 ,, ...	74	9·75	11·94	398	52·44	62·09
21 to 25 ,, ...	1,622	213·60	262·69	2,786	367·01	398·04
25 to 30 ,, ...	2,739	360·68	383·61	2,168	285·60	268·61
30 to 35 ,, ...	1,644	216·48	182·99	835	110·00	87·42
35 to 40 ,, ...	770	101·39	68·17	329	43·34	34·68
40 to 45 ,, ...	297	39·11	29·09	156	20·55	16·73
45 to 50 ,, ...	129	16·98	17·66	77	10·14	8·74
50 to 55 ,, ...	86	11·32	12·57	36	4·74	6·15
55 to 60 ,, ...	57	7·51	8·71	24	3·16	3·92
60 to 65 ,, ...	67	8·82	9·14	16	2·11	2·32
65 to 70 ,, ...	40	5·27	4·03	5	·66	·77
70 and upwards	19	2·51	2·34	5	·66	·43
Total ...	7,594†	1,000·00	1,000·00	7,591†	1,000·00	1,000·00

Increased age at marriage.

973. It will be noticed that 36 per cent. of the bridegrooms married in 1898 were between 25 and 30, as against an average of 38 per cent. in the five years 1891–5, and that 79 per cent.—nearly four-fifths—were between 21 and 35, as against an average of 83 per cent. Of the brides, 65 per cent. were between 21 and 30, as against an average of 67 per cent. It will also be noticed the marriages of bridegrooms between 20 and 30 were much below the average, whilst those of bridegrooms between 30 and 45 were much above the average ; and similar movements have taken place in regard to brides under and over 25. Whether such results are due to marriages being deferred to a later

* For table showing the proportion of males and females marrying at different ages in various countries, see *Victorian Year-Book*, 1892, Vol. I., paragraph 543.

† The bridegrooms and brides of unspecified ages being omitted, these numbers are less than those in the last table, the bridegrooms by 26 and the brides by 29.

age, or to changes in the numbers of marriageable persons living at various ages cannot be determined until after the Census of 1901 is taken.

Ages of Chinese bride-grooms and their brides.

974. In the case of the marriages of Chinese which took place in 1898, all the men were older than the females with whom they formed unions. All the former were over 25 years of age, but not one of the latter had reached the age of 22. The following table shows the ages of the Chinese bridegrooms and of their brides in combination :—

AGES OF CHINESE BRIDEGROOMS AND THEIR BRIDES IN COMBINATION, 1898.

Ages of Bridegrooms.	Ages of Brides.				Total Bridegrooms.
	18.	19.	20.	21.	
25	1	...	...	...	1
29	...	1	...	...	1
30	...	...	1	...	1
35	...	...	...	1	1
38	1	...	1	...	2
Total Brides ...	2	1	2	1	6

Ages of Aborigines marrying.

975. Of the three male Aborigines who married in 1898, two were widowers and one a bachelor, and of their partners two were widows and one a spinster. The ages of bridegroom and bride were set down as follow:—22 and 20, 44 and 49, 54 and 49.

Marriages of minors.

976. In almost all civilized countries, minors are not permitted to marry without the consent of their parents or guardians, but the youngest age at which persons may marry after obtaining such consent varies in different countries, ranging from 14 for males and 12 for females in the United Kingdom, Switzerland, Spain, Portugal, Greece, and the Roman Catholic portion of the population of Hungary, to 21 for males and 18 for females in the United States.* The minimum age in Victoria is the same as in the United Kingdom, viz., 14 for males and 12 for females ; but, as a matter of fact, marriages are seldom contracted at such early ages. Nine of the males, however, who married in 1898 had not completed their nineteenth year. Of the brides, twelve had not completed their sixteenth, and 31 more had not completed their seventeenth year. As many as 124 of the males, or one in every 61, and no fewer than 1,154 of the females, or two in every thirteen, had not attained the full age of 21 years.

Marriages of minors in Victoria and England.

977. From the experience of Victoria during the year 1898, and the periods 1881–90 and 1891–95, it would appear that, in proportion to the total numbers marrying, the males who marry under age are much less numerous in this colony than in England and Wales. The

* For table showing the minimum legal age of marriage in various countries, see *Victorian Year-Book*, 1889-90, Vol. I., paragraph 500.

proportion of females marrying under age, which was formerly higher in Victoria than in England, has fallen considerably, and in 1898, as well as in the previous quinquennial period—especially in the case of males—was lower than in England. This is shown by the figures in the following table*:—

MARRIAGES OF MINORS IN VICTORIA AND ENGLAND AND WALES.

Persons Married.	In every 100 Marriages, Numbers under 21 Years of Age.			
	In Victoria.			In England and Wales. Five Years: 1891 to 1895.
	Year 1898.	Five Years: 1891 to 1895.	Ten Years: 1881 to 1890.	
Bridegrooms ...	1·63	1·89	2·26	5·62
Brides ...	15·15	17·13	21·00	18·26
Mean ...	8·39	9·51	11·63	11·94

978. According to the census of 1891, the tendency of males to marry under age is far greater in Tasmania, and far less in New Zealand, than in any of the other Australasian Colonies, Victoria standing immediately above the latter. The following is the order in which the colonies stood in this particular, the colony in which the proportion of husbands and widowers under age per 1,000 minors of marriageable ages was largest being placed first, and the rest in succession:— Youthful husbands in Australasian Colonies.

RELATIVE PROPORTION OF MINORS MARRIED IN AUSTRALASIAN COLONIES, 1891.

(Exclusive of Aboriginals.)

Colony.	Male Population, aged 19 and 20.†	Husbands and Widowers under 21.	
		Number.	Proportion per 1,000 Minors of marriageable age.
Tasmania	2,840	78	27·5
Western Australia	1,100	20	18·2
New South Wales	22,017	400	18·2
South Australia	6,105	104	17·0
Queensland	8,500‡	116	13·6
Victoria	23,782	283	11·9
New Zealand	15,411	140	9·1

979. In continental Australia the proportion of husbands and widowers per 1,000 of marriageable minors was 15·0, and in continental and insular Australia combined the proportion was 14·3. Youthful husbands in Australasia.

* For a comparison of the marriages of minors with marriageable minors, see *Victorian Year-Book* 1889-90, Vol. I., paragraphs 503 to 506.

† As very few males marry below the age of 19, the lower ages are ignored.

‡ Computed number.

Youthful wives in Australasian Colonies.

980. The proportion of females marrying under age is greatest in Queensland, closely followed by Western Australia and New South Wales. Victoria stands fifth in this respect, and New Zealand last. The following are the proportions of wives and widows under 21 years of age per 1,000 marriageable minors in each colony, the colonies being placed in order according to the proportion:—

PROPORTION OF WIVES AND WIDOWS UNDER 21 PER 1,000 MARRIAGEABLE MINORS IN AUSTRALASIAN COLONIES, 1891.

(Exclusive of Aboriginals.)

Colony.	Female Population, ages 17 to 21.*	Wives and Widows under 21.	
		Number.	Proportion per 1,000 Minors of marriageable ages.
Queensland †	14,600	1,884	129·0
Western Australia	1,711	210	122·7
New South Wales	42,862	5,258	122·6
Tasmania	5,474	565	103·2
Victoria	46,936	3,484	74·2
South Australia	12,389	796	64·3
New Zealand	31,160	1,607	51·6

Youthful wives in Australasia.

981. In Australia as a whole the proportion of wives and widows under 21 years of age per 1,000 of marriageable minors was 98·1, and in Australasia as a whole the proportion was 88·9.

Births, 1898.

982. The births registered in Victoria during 1898 numbered 30,172, as against 31,310 in 1897. The decrease in the year under review, as compared with the previous one, was thus 1,138.

Births in 1898 and former years.

983. During the twenty years ended with 1883, the number of births in Victoria had remained almost stationary; but in 1884 a marked increase took place, which continued during the seven subsequent years, the number of births in 1891 being the highest recorded.‡ Each year since, however, shows a falling-off as compared with its predecessor, whilst the number in 1898 was 8,333 less than that in 1891. The following were the numbers registered in each of the last eight years:—

BIRTHS REGISTERED, 1891 TO 1898.

1891	38,505	1895	33,706
1892	37,831	1896	32,178
1893	36,552	1897	31,310
1894	34,258	1898	30,172

Birth rate

984. In proportion to population, the births decreased steadily for a number of years. The lowest point (30·06 per 1,000) was reached in 1882, since which year there was a gradual improvement until 1890

* As very few females marry below the age of 17, the lower ages have been ignored.
† Computed number.
‡ For number of births in each year, see Statistical Summary of Victoria (first folding sheet), to be published later on.

and 1891. Since the latter year, however, there has been a constant and uninterrupted falling-off, until in 1898 the rate stood at 25·72 per 1,000 of the mean population, as against 33·57 in 1891. The following are the birth rates for 1860 and each subsequent fifth year to 1890, also in each of the last eight years:—

ANNUAL BIRTH RATE,* 1860 TO 1898.

	Births per 1,000 of Mean Population.		Births per 1,000 of Mean Population.
1860	42·81	1893	31·23
1865	42·40	1894	29·16
1870	38·07	1895	28·56
1875	33·94	1896	27·33
1880	30·75	1897	26·69
1885	31·33	1898	25·72
1890	33·60		
1891	33·57	Mean of 39 years ...	34·56
1892	32·54		

985. Birth rates, based upon a comparison of the number of events with the total population, are, like marriage rates calculated upon a similar basis, apt to mislead, unless the population is in a normal condition. It must be quite evident that, if there is not a sufficient proportion of married women at the fruitful or child-bearing ages in a community, the birth rate is not likely to be high, but that an excess of such women would probably cause a high birth rate. This will be made apparent by the following table, which shows the birth rate, calculated upon the total population and upon the number of married women at the child-bearing period of life, according to the censuses of 1871, 1881, and 1891:— Proportion of births to population and to married women.

PROPORTION OF BIRTHS TO POPULATION AND TO MARRIED WOMEN.

Year of Census.	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

986. It will be noticed that although the proportion of legitimate births per 1,000 of the population fluctuated considerably at the three periods, the proportion per 1,000 of the married women at reproductive ages remained tolerably uniform, being 297 per 1,000 in 1891 as compared with 302⅔ at each of the two former periods. The increase in the birth rate, calculated in the ordinary way, since 1881, is therefore found to have been due merely to an increase in the proportion of married women in the community at the fruitful period of life. Reason for fluctuation of birth rate.

* For the birth rate of each of the 32 years ended with 1891, see *Victorian Year-Book*, 1892, Vol. I., paragraph 547.

† In each case these are the legitimate births which occurred during the twelve months of which the census was the middle.

Birth rates in Australasian Colonies.

987. The following table gives the birth rates of the different Australasian Colonies for 1865 and each subsequent fifth year until 1890, also for each year since 1890 :—

BIRTH RATES IN AUSTRALASIAN COLONIES, 1865 TO 1897.*

Year.	Number of Births per 1,000 of Mean Populations.						
	Victoria.	New South Wales.	Queensland.	South Australia.	Western Australia.	Tasmania.	New Zealand.
1865 ...	42·40	43·21	43·65	43·90	...	32·56	41·12
1870 ...	38·07	40·09	43·51	38·48	...	30·18	42·32
1875 ...	33·94	38·53	38·90	35·70	28·72	29·88	40·23
1880 ...	30·75	38·80	36·92	38·94	32·35	32·91	40·78
1885 ...	31·33	37·79	37·80	38·47	35·22	36·18	34·78
1890 ...	33·60	35·36	39·93	32·63	34·69	33·49	29·44
1891 ...	33·57	34·50	36·35	33·92	34·85	33·37	29·01
1892 ...	32·54	33·90	35·84	32·32	33·01	32·48	27·83
1893 ...	31·23	33·23	33·73	31·76	33·79	33·92	27·50
1894 ...	29·17	31·48	31·86	30·38	28·55	31·11	27·28
1895 ...	28·56	30·66	32·85	30·23	26·22	30·10	26·78
1896 ...	27·33	28·35	30·06	28·28	22·77	28·16	26·35
1897 ...	26·70	28·42	29·92	25·82	26·01	27·72	25·97
Mean of 33 years	33·48	37·18	38·24	36·34	32·86†	31·86	36·00

Low birth rates in Australasian Colonies in 1897.

988. In 1897 the birth rate was much below the average in all the colonies, and with the exception of Western Australia the rates were absolutely the lowest recorded during the whole period of 33 years.

Order of colonies in respect to birth rates.

989. The following is the order of the colonies in reference to their respective birth rates in the last year shown in the table and according to the average of the whole period of 33 years. It will be observed that Victoria stands fifth on the list for 1897, as well as for the 33 year series :—

ORDER OF AUSTRALASIAN COLONIES IN REFERENCE TO BIRTH RATES.

Order in 1897.	Order in a Series of Years.
1. Queensland.	1. Queensland.
2. New South Wales.	2. New South Wales.
3. Tasmania.	3. South Australia.
4. South Australia.	4. New Zealand.
5. Victoria.	5. Victoria.
6. New Zealand.	6. Western Australia.
7. Western Australia.	7. Tasmania.

Birth rate in Australia and Australasia.

990. On the Continent of Australia, taken as a whole, the birth rate in 1897 was the lowest recorded during the last 25 years ; and on that continent combined with Tasmania and New Zealand it was

* For the number of births in the various colonies during the 25 years ended with 1897, see General Summary of Australasian Statistics (third folding sheet) *post*, to be published later on. For the birth rates of those colonies in each of the 27 years ended with 1891, see *Victorian Year-Book*, 1892, Vol. I., paragraph 550.

† Mean of twenty-three years.

also the lowest during the whole period. The following are the figures for the period referred to :—

BIRTH RATE IN AUSTRALIA AND AUSTRALASIA, 1873 TO 1897.

Year.	Number of Births per 1,000 of Mean Populations.		Year.	Number of Births per 1,000 of Mean Populations.	
	Continent of Australia.	Australia with Tasmania and New Zealand.		Continent of Australia.	Australia with Tasmania and New Zealand.
1873 ...	37·36	37·19	1887 ...	35·36	34·79
1874 ...	36·46	36·70	1888 ...	35·38	34·60
1875 ...	35·29	35·82	1889 ...	34·62	33·84
1876 ...	35·20	36·04	1890 ...	34·97	34·00
1877 ...	34·15	35·16	1891 ...	34·34	33·43
1878 ...	34·31	35·51	1892 ...	33·43	32·23
1879 ...	34·55	35·42	1893 ...	32·38	31·63
1880 ...	35·33	36·20	1894 ...	30·49	29·98
1881 ...	35·22	35·63	1895 ...	30·02	29·48
1882 ...	34·24	34·77	1896 ...	28·00	27·73
1883 ...	34·50	34·83	1897 ...	27·72	27·43
1884 ...	35·25	35·46			
1885 ...	35·41	35·33	Means ...	33·96	33·92
1886 ...	35·11	34·78			

991. The birth rates in certain British Colonies outside Australasia including all those for which the information is available, are shown in the following table. The low birth rate in Hong Kong is probably owing to the small proportion of women in the population, the bulk of which consists of Chinese males. In Mauritius and Jamaica, considerably more than half the births are stated to be illegitimate :— Birth rates in British Possessions.

BIRTH RATES IN BRITISH POSSESSIONS.

Colonies.	Years.	Number of Births per 1,000 of the Population.
Malta	1892	39·4
Gibraltar	1897	24·4
Ceylon	1897	36·9
Straits Settlements	1897	20·8
Hong Kong	1897	5·5
Mauritius	1897	35·5
Seychelles	1894	36·1
Bermuda	1896	31·4
British Guiana	1896	32·5
West Indies—		
Leeward Islands *	1897	38·0
Bahamas	1897	40·5
Jamaica	1897	38·3
St. Lucia	1897	38·5
St. Vincent	1896	44·4
Barbados	1897	37·9
Grenada	1897	38·1
Trinidad and Tobago	1897	28·8

* Consisting of the following Presidencies :—Antigua, St. Kitts, Nevis, Dominica, Montserrat, and Virgin Islands.

Birth rates in European countries.

992. A statement of the birth rates in the United Kingdom, and certain Foreign countries, for each of the five years ended with 1897, is given in the following table. The figures have been taken from the reports of the Registrar-General of England or other official sources:—

BIRTH RATES IN EUROPEAN* COUNTRIES, 1893 TO 1897.

Countries.	Number of Births per 1,000 of Mean Population.					
	1893.	1894.	1895.	1896.	1897.	Mean of 5 Years.
Hungary	42·5	41·3	41·5	40·3	40·1	41·1
Austria	37·9	36·7	38·1	38·0	37·4	37·6
Prussia	37·5	36·6	36·9	36·9	36·6	36·9
German Empire ...	36·8	35·9	36·1	36·3	36·0	36·2
Italy	36·7	35·7	35·1	35·0	35·0	35·5
Holland	33·8	32·7	32·8	32·7	32·5	32·9
Scotland	31·0	30·2	30·4	30·9	30·5	30·6
Norway	30·7	29·8	30·6	30·4	30·0	30·3
Denmark	30·6	30·2	30·2	30·5	29·9	30·3
England and Wales ...	30·8	29·6	30·4	29·7	29·7	30·0
United Kingdom ...	29·9	28·9	29·5	29·2	29·1	29·3
Belgium	29·5	29·0	28·5	29·0	29·0	29·0
Japan	28·5	28·9	29·5	...	...	29·0†
Switzerland	28·3	27·9	27·9	28·9	29·2	28·4
Sweden	27·4	27·1	27·5	27·2	...	27·3‡
Ireland	23·0	22·9	23·2	23·6	23·5	23·2
France	22·9	22·4	21·9	22·7	22·4	22·5

NOTE.—In Russia in Europe and Poland in 1895 the rate was 47·1, and in Finland 33·3.

Low birth rates in France and Ireland.

993. Comparing this table with that showing the marriage rates in the same 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, although the marriage rate is high, the birth rate is lower than any of the countries named except Ireland, in which it is about the same. The low rate in the latter is attributed to the small proportion of women at child-bearing ages in the population,§ but the low birth rate in France cannot be accounted for by any such cause, as it is stated that the proportion of women at the reproductive period of life is higher in that than in any other European country; the chief though indirect cause is said to be—"the subdivision of land among the peasant proprietors. The better class of the labouring population aspire to become proprietors of small

* Japan is also included.

† Mean of three years.

‡ Mean of four years.

§ See 15th Detailed Report of the Registrar-General of Ireland, pages 12 and 29. For many years the registration of births in Ireland was admitted to be defective, but Dr. T. W. Grimshaw, the Registrar-General of that country, in a letter addressed to the Government Statist of Victoria, dated 6th May, 1886, stated that since the passing of the Public Health Amended Vaccination and Registration Acts (1878 to 1880) this is no longer the case, and the births occurring in Ireland are now very well recorded. It may be remarked, however, that this improvement has not been accompanied by any improvement in the birth rate as calculated from the published figures.

holdings; by thrift and industry they accumulate capital for this purpose, and avoid by their social philosophy the division of their property among a large family at their decease."*

994. During the five years, 1893–7, the mean birth rate in Hungary, Austria, Prussia, the German Empire, Italy, and Holland exceeded that of Queensland—which had the highest rate of all the Australasian Colonies; that in New South Wales was exceeded by that of Scotland and those of the countries previously mentioned; that of Tasmania by those of Norway and Denmark in addition; that of South Australia by all those countries together with England and Wales; whilst that of Victoria was below any of those named in the table except Switzerland, Sweden, Ireland, and France; that of Western Australia was below any except Sweden, Ireland, and France; and New Zealand, which has still the lowest rate in any of the Australasian Colonies, stood below all the countries named in the table, except Ireland and France. The following are the birth rates referred to :— Birth rates in Australasian colonies and European countries compared.

MEAN BIRTH RATES IN AUSTRALASIAN COLONIES, 1893 TO 1897.

	Number of Births per 1,000 of Mean Population.
Queensland	31·68
New South Wales	30·43
Tasmania	30·20
South Australia	29·48
Victoria	28·60
Western Australia	27·43
New Zealand	26·77

995. The following table shows the births and birth rates, together with the estimated mean population in the metropolis, the extra-metropolitan towns, and the country districts of Victoria during 1898; also the average birth rates in the same divisions during the ten years ended with 1890 :— Birth rates in town and country, 1898.

BIRTH RATE IN URBAN AND COUNTRY DISTRICTS, 1898.

Districts.	Estimated Mean Population, 1898.	Births.		
		Total Number, 1898.	Number per 1,000 of the Population.	
			1898.	Annual Mean, 1881 to 1890.
Melbourne and Suburbs (Greater Melbourne)	464,690	12,016	25·86	35·58
Extra-Metropolitan Towns	196,930	6,245	31·71	32·79
Country Districts ...	511,330	11,911	23·29	28·18
Total	1,172,950	30,172	25·72	31·38

* See 41st Report of the Registrar-General of England, page xlvi.

Birth rates in town and country, 1875 to 1898.

996. The next table shows the number of births per 1,000 of the population of the same three divisions of the colony for 1875 and each subsequent fifth year to 1895, also for 1896, 1897, and 1898:—

BIRTH RATES IN URBAN AND COUNTRY DISTRICTS, 1875 TO 1898.

Year.	Number of Births per 1,000 of the Population.			
	Greater Melbourne.	Extra-Metropolitan Towns.	Country Districts.	Total of 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 ...	29·64	34·57	25·40	28·56
1896 ...	28·27	33·32	24·31	27·33
1897 ...	27·05	32·61	24·15	26·69
1898 ...	25·86	31·71	23·29	25·72

Results compared.

997. It will be noticed that in 1875, 1880, 1895, and subsequent years, the proportion of births in extra-metropolitan towns was higher than that in the metropolis, but at all other periods the metropolitan rate has been the higher, and, moreover, that at all the periods the rate in the country districts has been lower than that in either the metropolitan district or the extra-metropolitan towns. Moreover, the birth rate in the extra-metropolitan towns compares favorably with those at former periods, but a marked fall has taken place in the other two districts—more especially in Melbourne and suburbs.

Birth rates in metropolitan sub-districts.

998. The mean population, the number of births, and the birth rate during 1898, also the mean annual birth rate during the five years 1891 to 1895, in the different municipalities, &c., forming the component parts of the district of Greater Melbourne are shown in the following table:—

BIRTHS IN GREATER MELBOURNE.

Sub-districts.	Estimated Mean Population, 1898.	Births.		
		Total Number, 1898.	Number per 1,000 of the Population.	
			1898.	Annual Mean, 1891 to 1895.
Melbourne City	69,304	1,209	17·44	21·37
North Melbourne Town... ...	17,202	510	29·65	35·90
Fitzroy City	29,616	672	22·69	30·31
Collingwood City	32,326	779	24·10	34·21
Richmond City	33,744	971	28·78	36·54
Brunswick Town	22,430	601	26·79	39·96
Northcote Town	7,493	233	31·10	43·36

Births in Greater Melbourne—*continued.*

Sub-districts.	Estimated Mean Population, 1898.	Births.		
		Total Number, 1898.	Number per 1,000 of the Population.	
			1898	Annual Mean, 1891 to 1895.
Prahran City	36,228	925	25·53	29·87
South Melbourne City	37,315	966	25·89	32·07
Port Melbourne Town	10,920	296	27·11	39·24
St. Kilda City	19,490	388	19·91	24·33
Brighton Town	9,631	200	20·77	28·43
Essendon Town	15,112	381	25·21	37·73
Flemington & Kensington Borough	10,403	283	27·20	38·19
Hawthorn City	20,033	445	22·21	30·07
Kew Borough	7,573	149	19·68	29·12
Footscray City	16,722	500	29·90	44·93
Williamstown Town	13,269	321	24·19	35·88
Oakleigh Borough	1,305	47	36·02	45·52
Caulfield Shire	9,123	151	16·55	26·99§
Malvern Shire	9,860	231	23·43	30·38§
Boroondara Shire	7,350	172	23·40	25·46§
Preston Shire	3,000	84	28·00	38·64§
Coburg Shire	6,100	156	25·57	30·59§
Remainder of District	12,780	374	29·26	38·38§
Shipping in Hobson's Bay and River	1,965	...	...	...
Total	460,294	11,044	24·00	31·93
*Hospitals, Asylums, &c.** ...	4,396	972	2·09†	1·85†
Grand Total‡	464,690	12,016	25·86	33·49

NOTE.—It should be specially noted that the births in public institutions are eliminated from the individual sub-districts, although included in the total line.

Birth rates in sub-districts, 1891 to 1895.

999. It will be observed that during the five years ended with 1895 the births in three municipalities, viz., Northcote, Oakleigh, and Footscray, averaged above 40 per 1,000 of the population; that in seven municipalities, viz., North Melbourne, Richmond, Brunswick, Port Melbourne, Essendon, Flemington, and Williamstown, they were between 35 and 40 per 1,000; in five municipalities, viz., Fitzroy, Collingwood, South Melbourne, and Hawthorn they were between 30 and 35 per 1,000; and that in five municipalities, viz., Melbourne City, St. Kilda, Prahran, Brighton, and Kew, they were below 30 per 1,000. The lowest rate was in Melbourne City, viz., 21⅓ per 1,000.

Birth rates in sub-districts, 1898.

1000. During 1898, the birth rates in all the sub-districts were lower—in the majority of them very much lower—than they were in the five years ended with 1895. The sub-districts with the highest birth rates in 1898 were Oakleigh with 36, Northcote with 31, and

* The population given is that of all the institutions, but the Women's Hospital is the only one in which births occurred.
† Per 1,000 of the population of the whole of Melbourne and Suburbs.
‡ In 1899, the population was 475,380, the births 12,435, and the birth rate, 26·16.
§ Mean of four years 1892--5.

Footscray and North Melbourne with nearly 30 per 1,000 ; those with the lowest rates were Caulfield, Melbourne City, Kew, and St. Kilda, in which the respective rates were only 16, 17, 19⅔, and 20 per 1,000.

Births in Australasian capitals.

1001. In 1899 the birth rate in Melbourne was lower than that in Perth, Brisbane, Sydney, and Adelaide, but above that in Wellington and Hobart, as is shown in the following table, which gives, for that year, a statement of the estimated population and the number of births, and number per 1,000 of the population, in each of those capital cities, the latter rates being also shown for every year since 1893 :—

BIRTHS IN AUSTRALASIAN CAPITAL CITIES, 1894 TO 1899.

Capital Cities.*	Estimated Mean Population, 1899.	Births, 1899.	Births per 1,000 of the Population.					
			1899.	1898.	1897.	1896.	1895.	1894.
Perth ...	36,000	1,266	35·17	33·64	...	...	34·68	39·25
Brisbane ...	109,396†	3,251	29·72	29·30	32·41	28·58	30·28	30·34
Sydney ...	432,625	12,239	28·29	28·22	29·28	30·02	30·67	31·65
Adelaide ...	148,644	4,165	28·02	26·74	28·64	29·98	31·05	30·65
Melbourne ...	475,380	12,435	26·16	25·86	27·05	28·27	29·64	30·94
Wellington ...	47,535	1,187	24·97	26·04	27·46	26·56	29·26	28·59
Hobart ...	41,040	842	20·52	21·53	22·60	24·20	26·01	29·28

Birth rate in London.

1002. The average birth rate in the Australasian capital cities in 1899 was 27·42, that being much lower than the rate in London according to the average of the ten years 1887–96, viz., 31·2, which was somewhat higher than that of England and Wales (30·7) during the same period. The rate in London was thus higher than that in any of the other Australasian cities named in the last table in 1899, except Perth.

Birth rates in Scotch towns.

1003. In the year 1897 the birth rate of the principal towns of Scotland was 31·95; of the large towns, 32·49; and of the small towns, 31·08. All these rates are above the mean birth rate of the Australasian capital cities or the birth rate of Melbourne.

Birth rates in British towns.

1004. By comparing the following statement of the birth rates in British towns during 1895 with the figures in the column for 1899 of the last table, it will be seen that with the exception of Perth, the rates prevailing in the Australasian capitals are lower than in the majority of British town rates ; the rate in Perth is lower than in 5 of these towns ; that of Brisbane, than in 18 ; that of Sydney, than in 22 ; and that of Adelaide, than in 23 ; whilst that of Melbourne exceeds only 3 ; that of Wellington, only 2 ; and that of

* With suburbs.
† Estimated.

Hobart is lower than in any of them. It should be pointed out, however, that the rates in the Australasian capital cities are exceptionally low at the present time :—

Birth Rates in Towns, 1895.*

	Births per 1,000 of the Population.		Births per 1,000 of the Population.
Liverpool	37·0	London	31·0
Sunderland	36·0	Birkenhead... ...	30·5
Salford	35·8	Nottingham ...	30·2
Wolverhampton ...	35·4	Derby	29·6
Sheffield	35·4	Plymouth	29·4
Cardiff	34·6	Bristol	29·0
Preston	34·1	Dublin	29·0
Glasgow	33·8	Portsmouth ...	28·1
Manchester	33·4	Oldham	28·0
Bolton	33·4	Edinburgh	27·7
Birmingham	32·7	Bradford	26·8
Norwich	31·8	Brighton	26·0
Leicester	31·7	Halifax	23·2
Newcastle	31·5	Huddersfield ...	21·4
Blackburn	31·4		

1005. Comparing the birth rates in the following Foreign towns (including two in British India) with those in the capital cities of Australasia for 1899, it will be found that the birth rate in Perth is above the rates in all but 5 of the towns named, but in Brisbane it is below those in 11, in Sydney and Adelaide below those in 12, in Melbourne and Wellington below all but 5, and in Hobart below all but two :— Birth rates in foreign towns.

Birth Rates in Foreign Towns.

	Births per 1,000 of Population.		Births per 1,000 of Population.
Alexandria (1890) ...	45·6	The Hague	30·3
Madras	40·7	Copenhagen	29·6
Buda-Pesth	37·8	Venice (1890)... ...	27·2
Hamburg (State) (1890)	37·3	Berlin	26·6
Rotterdam	35·7	Rome	26·3
Breslau	35·0	Brussels	24·9
Munich	34·9	Paris	24·4
Dresden	32·9	Boston (1892) ...	23·9
Amsterdam	31·4	Bombay	18·6
Vienna	30·6	Christiana	13·4

1006. The following are the birth rates in seven Victorian towns during 1898 ; the rate in the metropolis being, it will be observed, lower than in any of the others :— Birth rates in Victorian towns.

Birth Rates in Seven Victorian Towns, 1898.

	Births per 1,000 of Population.		Births per 1,000 of Population.
1. Stawell	39·27	5. Castlemaine ...	29·72
2. Bendigo	34·91	6. Ballarat	27·67
3. Geelong	31·20	7. Melbourne ...	25·86
4. Warrnambool ...	30·76		

* Obtained from Whitaker's Almanack, 1896.

Births of males and females.

1007. The births of males in Victoria during 1898 numbered 15,435, those of females 14,737. These numbers furnish a proportion of 104·74 boys to 100 girls. In 1897 the proportion was 104·68; in 1896 104·72; whilst in the five years 1891–95, 92,699 births of males and 88,153 births of females were registered, giving a proportion of 105·16 boys to 100 girls.

Births of males and females in Australasian Colonies.

1008. In every country in which births are registered, it is found that more boys are born than girls. This was the case in all the Australasian Colonies during the period of twenty-five years ended with 1897, although not in every one of those years so far as South Australia, Western Australia, and Tasmania are concerned. The following are the numbers of boys per 100 girls born in the respective colonies during 1875, and in each subsequent fifth year to 1890, also in each of the seven years ended with 1897:—

PROPORTION OF MALE TO FEMALE BIRTHS IN AUSTRALASIAN COLONIES, 1875 TO 1897.*

Year.	Number of Boys to 100 Girls Born.						
	Victoria.	New South Wales.	Queensland.	South Australia.	Western Australia.	Tasmania.	New Zealand.
1875 ...	104·95	102·08	104·01	103·85	98·95	109·51	107·80
1880 ...	104·44	104·99	103·63	110·98	92·37	101·56	104·71
1885 ...	106·44	104·88	102·50	101·57	108·00	104·36	103·59
1890 ...	104·19	104·27	102·19	101·56	95·13	105·07	103·43
1891 ...	103·65	106·89	104·12	104·28	110·61	101·99	105·41
1892 ...	105·31	105·24	108·00	98·31	107·87	108·88	103·72
1893 ...	106·17	106·67	104·52	103·91	97·38	107·23	104·88
1894 ...	104·44	105·39	106·45	106·67	109·37	103·95	104·59
1895 ...	106·35	105·19	104·57	105·28	100·93	103·14	104·97
1896 ...	104·72	104·92	102·24	103·21	106·53	106·41	104·61
1897 ...	104·68	104·00	103·43	104·88	102·57	112·86	105·07

Order of colonies in respect to sexes of those born.

1009. In the Australasian Colonies, taken as a whole, the proportion during the five years ended with 1897 was 105 male to 100 female infants. In the different colonies, the proportions ranged from 106·7 males per 100 females in Tasmania to 103·6 males per 100 females in Western Australia. The following is the order of the colonies in respect to these proportions:—

ORDER OF COLONIES IN REFERENCE TO PROPORTION OF MALE TO FEMALE BIRTHS, 1893 TO 1897.

	Boys to 100 Girls.		Boys to 100 Girls.
1. Tasmania ...	... 106·72	5. South Australia	... 104·79
2. Victoria ...	... 105·27	6. Queensland	... 104·24
3. New South Wales	... 105·23	7. Western Australia	... 103·62
4. New Zealand	... 104·83		

* For the relative proportions of male and female births in the colonies during each of the 19 years ended with 1891, see *Victorian Year-Book*, 1892, Vol. I., paragraph 572.

1010. The proportions of male to female births in the countries included in the following list have been derived from official sources. The averages for the Australasian Colonies extend over the five years 1893 to 1897, and those for the other countries named extend over periods of various lengths :— Births of males and females in certain countries.

PROPORTION OF MALE TO FEMALE BIRTHS IN VARIOUS COUNTRIES.

	Boys to 100 Girls.		Boys to 100 Girls.
Greece	112·0	Scotland	105·7
Roumania	111·0	Ireland	105·6
Connecticut	110·0	Victoria	105·3
Italy	107·1	Russia in Europe (1888)	105·3
Spain	107·0	New South Wales ...	105·2
Austria	106·8	Sweden	105·0
Tasmania	106·7	Denmark	105·0
France...	106·4	Vermont	105·0
Switzerland	106·3	Rhode Island	105·0
German Empire ...	106·2	New Zealand	104·8
Holland	106·1	South Australia ...	104·8
Norway	106·0	Japan (1882–91) ...	104·5
Servia...	106·0	Queensland	104·2
Massachusetts	106·0	Finland (1887) ...	104·1
Belgium	105·9	England and Wales ...	104·0
Russian Poland (1888) ...	105·9	Western Australia ...	103·6

1011. It will be observed that the proportion of boys born to girls is in Tasmania below that in six, in New South Wales below that in seventeen, in Victoria below that in eighteen, and in New Zealand and South Australia below that in 22 countries outside Australasia; whilst the proportion in Queensland is above that in only two, and that in Western Australia is the lowest of all. Australasian and other countries compared.

1012. In England and Wales the proportion of births of boys to those of girls is not only lower than that in any other European country, but it has for years past had a tendency to diminish. The proportion given in the table (104·0) is for the 50 years ended with 1897, but in the ten years ended with that year it was only 103·6. The Registrar-General of England states he is unable to offer any explanation of that "curious fact."* Low proportion of boys born in England.

1013. In 1898, 287 twin births and 1 triplet birth were registered, as against 318 twin births and 2 triplet births in 1897. In the ten years ended with 1890, 2,734 cases of twins and 20 cases of triplets were recorded, the total number of births in the same period having been 312,565. There were thus 309,791 confinements in the ten years, and it follows that 1 mother in every 113 gave birth to twins, and 1 mother in every 15,490 was delivered of three children at a birth. During the previous decade, 1871 to 1880, 1 mother in every 111, on the average, gave birth to twins, and one in every 12,796 was delivered of three children at a birth. Twins and triplets.

* See 43rd Report of the Registrar-General of England, page xvi.

Twins and triplets in Australasian Colonies.

1014. It appears that only three of the Australasian Colonies besides Victoria distinguish the double and treble births in their returns. The following are the numbers of such births in each of the four colonies during each of the ten years ended with 1897 :—

TWINS AND TRIPLETS IN FOUR AUSTRALASIAN COLONIES,* 1888 TO 1897.

Year.	Victoria.		New South Wales.		Queensland.		New Zealand.	
	Twins.	Triplets.	Twins.	Triplets.	Twins.	Triplets.	Twins.	Triplets.
1888	374	3	363	2†	130	1	192	1
1889	381	1	329	1	146	1	152	...
1890	353	3	398	1	154	1	190	2
1891	407	3	394	...	137	1	178	2
1892	302	5	328	6	142	1	172	1
1893	338	4	408	6†	142	1	188	1
1894	309	4	365	3	116	...	176	2
1895	326	3†	396	7†	133	2	198	...
1896	276	2	335	2	135	...	182	...
1897	318	2	417	1†	141	1	180	1

Still births.

1015. The still-born in Victoria are excluded from both the births and the deaths. In Melbourne and suburbs the number of such births was 437 in 1897, and 402 in 1898; which numbers furnish proportions of 3·55 and 3·35 per 100 living births registered in those years respectively.

Illegitimate births.

1016. The illegitimate children born in 1898 numbered 1,597, or 1 to every 19 births registered, the proportion being about the same as that of the preceding year. In the ten years 1881–90, out of 312,565 infants born, 14,916 were traced as having been born out of wedlock, which numbers furnish a proportion of 1 illegitimate child to every 21 births, as compared with an average during the ten years ended with 1880 of 1 to every 27 births.

Illegitimacy in Australasian Colonies.

1017. All the Australasian Colonies now publish statistics of illegitimacy. According to these, which probably does not in any case represent the whole truth, illegitimacy, over a series of years, was most rife in New South Wales and Western Australia, next in Victoria and Tasmania, next in Queensland, and least of all in South Australia and New Zealand. In most of the colonies, so far as figures are available, a marked increase has taken place in recent years in the proportion of illegitimate to total births, which is however accentuated by the fall in the birth rates. It might be stated that in Queensland, by an Act passed on 23rd December, 1899, illegitimate children may be legitimatized by registration after the marriage of their parents.‡ The

* For the proportion of twins and triplets in various countries, see *Victorian Year-Book*, 1892 paragraph 579.

† Including one case of quadruplets.

‡ A similar Bill was brought before the Legislative Assembly of New South Wales on 27th September, 1893, but did not become law. In Victoria it was recently discovered that in a single year there were 51 cases (which escaped notice) of births of illegitimate children being registered after the marriage of the parents, possibly with the idea that the children would thereby be legitimatized, which is not the case in Victoria.

following table shows the percentage of illegitimate to the total births in the various colonies during 1875 and each subsequent fifth year to 1890, also in each year from 1893 to 1897:—

ILLEGITIMACY IN AUSTRALASIAN COLONIES, 1875 TO 1897.*

Year.	Illegitimate Births to every 100 Children Born.						
	Victoria.	New South Wales.	Queensland.	South Australia.	Western Australia.	Tasmania.	New Zealand.
1875	2·92	4·20	3·43	...	...	...	1·36
1880	4·80	4·35	4·31	...	...	...	2·43
1885	4·36	4·60	4·08	2·42	...	4·55	3·20
1890	5·09	5·26	4·85	2·50	...	4·05	3·30
1893	5·46	6·22	4·91	2·84	4·16	4·40	3·70
1894	5·51	6·26	4·52	3·05	4·66	5·09	3·80
1895	5·33	6·51	4·93	3·13	4·47	4·97	4·53
1896	5·63	6·70	5·22	3·46	5·61	5·91	4·48
1897	5·42	6·58	6·02	3·53	5·27	5·74	4·48
Mean of 23 years	4·79	5·01	4·36	2·81†	5·01‡	4·75†	3·10

1018. Over a series of years the proportion of illegitimacy existing in England and Wales appears to be somewhat less than that prevailing in Victoria, New South Wales, Western Australia, and Tasmania. The proportion in Scotland, however, is much higher than that in any of the Australasian Colonies, whilst the proportion in Ireland is about equal to that in South Australia. This will be observed by comparing the following table with the last one:— Illegitimacy in United Kingdom.

ILLEGITIMACY IN ENGLAND, SCOTLAND, AND IRELAND, 1871 TO 1897.

Period.	Illegitimate Births to every 100 Children Born.		
	England and Wales.	Scotland.	Ireland.
1871–80	5·0	8·7	2·4
1881–85	4·8	8·2	2·7
1886	4·7	8·2	2·7
1887	4·8	8·3	2·8
1888	4·6	8·1	2·9
1889	4·6	8·0	2·8
1890	4·4	7·6	2·7
1891	4·2	7·6	2·7
1892	4·2	7·4	2·5
1893	4·2	7·4	2·6
1894	4·3	7·3	2·7
1895	4·2	7·3	2·7
1896	4·2	7·3	2·6
1897	4·2	7·0	2·6

* For similar results for each of the nineteen years ended with 1890, see *Victorian Year-Book*, 1892, Vol. I., paragraph 584.
† Mean of thirteen years.
‡ Mean of six years.

Illegitimacy in various countries.

1019. The following figures, taken from various sources, show certain countries arranged in order according to the extent of illegitimacy prevailing in each, the proportion of illegitimate births being also shown :—

ILLEGITIMACY IN VARIOUS COUNTRIES.*

Country.	Illegitimate Births to every 100 Children Born.
Austria	14·9
Bavaria	14·6
Saxony	13·0
Portugal	12·4
Sweden	10·7
German Empire	9·7
Denmark	9·6
Hungary	9·1
Belgium	8·3
France	8·8
Prussia	7·9
Norway	7·3
Scotland	7·0
Italy	6·4
Spain	5·5
Switzerland	4·7
England	4·2
New South Wales	4·6
Victoria	4·6
Western Australia	4·2
Queensland	4·2
Tasmania	4·0
Russian Poland (1888)	3·7
New Zealand	2·8
Holland	2·7
Ireland	2·6
Russia in Europe (1888)	2·6
South Australia	2·6
Greece	1·6

Position of Victoria in respect to illegitimacy.

1020. According to the figures, more illegitimacy prevails in Austria, Bavaria, Saxony, Portugal, and Sweden, and less in Greece, than in any other countries. In Victoria, illegitimacy appears to be less prevalent than in eighteen, and more so than in ten, of the countries.

Illegitimacy in town and country.

1021. It will be readily supposed that a larger proportion of illegitimacy prevails in Melbourne and suburbs than in any other district of Victoria, and that the proportion in the country districts is the smallest of all. In 1898, in the metropolitan district about 1 birth in 12, in the extra-metropolitan towns 1 birth in 20, but in country districts only one birth in 40 was registered as illegitimate. In the previous year the proportions were 1 in 12, 1 in 21, and 1 in 38 respectively.†

Illegitimate and ante-nuptially conceived births.

1022. Closely allied to illegitimate births are the births of children who have been conceived before marriage, but have been saved from the stigma of illegitimacy by the circumstance of the marriage of

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* The figures for the Australasian colonies relate to the 18 years ended with 1892.

† Statistics of illegitimacy in 32 foreign cities are given in the *Victorian Year-Book*, 1892, Vol. I., paragraph 589. In every one of these a larger amount of illegitimacy is shown than that prevailing in Melbourne. In some of the Austro-Hungarian cities the rate is extraordinarily high, viz., 44 per cent.

their parents having been celebrated before their birth. Such statistics have already been published for New South Wales, and an attempt was made to ascertain the results for Victoria by tracing from the birth registers the first births resulting within nine months of marriage from all marriages contracted in 1897. This investigation revealed the fact that the births of 51 children born before were registered after the marriages of their parents, and were, consequently, illegitimate, although their existence had hitherto escaped notice ; and that the births of 1,846—born to 1,832 mothers—more occurred before the expiration of nine calendar months after marriage,* and were presumably ante-nuptially conceived. As the marriages in 1,897 numbered 7,568 it follows that to less than 1 (·67) in every 100 marriages a child is known to have been born before marriage,† and to 24 marriages in every 100 the bride was *enceinte* at the time of marriage. Adding the births arising from such marriages to the illegitimate births in 1898 it appears that 3,494, or 11½ per cent., of the children born were conceived out of wedlock, and were all liable to become illegitimate, but that 1,846 of these, or more than half, escaped such social ostracism by the timely marriage of their parents, as will be seen by the following figures :—

ILLEGITIMATE AND ANTE-NUPTIALLY CONCEIVED BIRTHS, 1898.

Births.	Number.	Per 100 Births.
Illegitimate (first tabulation)	1,597	5·5
,, (which escaped notice) ...	51	
Legitimate, but ante-nuptially conceived	1,846‡	6·1
Total	3,494	11·6

Ante-nuptial births.

1023. Of the 51† births which preceded the marriage of the parents —and hence may be termed "ante-nuptial births"—more than half occurred within two months before the marriage, and the remainder within periods ranging from two to eleven months before, as shown by the subjoined figures :—

ANTE-NUPTIAL BIRTHS TO PARENTS MARRIED IN 1897.—PERIOD ELAPSING BETWEEN BIRTH OF CHILD AND MARRIAGE OF PARENTS.

Period (months.)	Number of Cases.	Period (months.)	Number of Cases.
0–1	14	7–8	—
1–2	14	8–9	—
2–3	6	9–10	1
3–4	4	10–11	1
4–5	2		—
5–6	2	Total ...	51
6–7	7		—

* This is equivalent to an average of 273 days *after marriage*. The birth of a mature child generally occurs in the 40th *post-menstrual* week, or between 273 and 280 days. Although a few cases may be included of post-nuptial conception, where the births were premature, there were, on the other hand, undoubtedly omitted some cases of ante-nuptial conceptions which occurred after the 273 days and others which were followed by abortion or miscarriage.

† This must not be taken as any indication whatever as to the subsequent marriages of the parents of illegitimate children, concerning which no information is at present available. The above must be regarded as merely accidental, which would not have occurred if the proper sequence in registering the events had been observed.

‡ Including ten cases of twins and two of triplets. Many of these births occurred in 1897, as well as 1898, but they may fairly be taken as representing the occurrences in a single year.

Ante-nuptial births.—Ages of parents.

1024. The following table shows the ages of the parents of these children. It will be noticed that only two of the mothers were under twenty, but that sixteen were between 20 and 25, and two were over 40; whilst of the fathers, only nine were under 25, but eighteen—or more than a third—were between 25 and 30, and thirteen were over 35:—

ANTE-NUPTIAL BIRTHS.—AGES OF PARENTS AT MARRIAGE.

Ages of Fathers. (Years.)	Ages of Mothers.								Total Fathers.
	17 to 18.	19 to 20.	20 to 21.	21 to 25.	25 to 30.	30 to 35.	35 to 40.	40 to 45.	
20 to 21	1	...	...	...	...	...	...	...	1
21 " 25	...	...	1	4	3	...	...	...	8
25 " 30	...	1	1	6	8	2	...	...	18
30 " 35	...	...	...	3	3	4	1	...	11
35 " 40	...	...	...	1	5	2	1	...	9
40 " 45	...	...	...	...	...	...	2	...	2
45 " 50	...	...	...	...	...	...	...	2	2
Total Mothers	1	1	2	14	19	8	4	2	51

Ante-nuptial conceptions.

1025. The various periods which elapsed between marriage and the birth of the first child in the 1,832 cases of ante-nuptial conception, together with the ratio of such cases to the total marriages in 1897, are subjoined:—

ANTE-NUPTIAL CONCEPTIONS, 1897.—PERIOD ELAPSING BETWEEN MARRIAGE OF PARENTS AND BIRTH OF FIRST CHILD.

Period after Marriage (calendar months).	Number of Cases.	Percentage of Total Marriages.
Under 1	117	1·5
1 to 2	143	1·9
2 to 3	175	2·3
3 to 4	211	2·8
4 to 5	197	2·6
5 to 6	214	2·8
6 to 7	235	3·1
7 to 8	227	3·0
8 to 9	313	4·1
Total	1,832	24·1

Chances of marriage after concubinal relations.

1026. It thus appears that the chance of marriage after illicit intercourse is greatest soon after conception, and gradually diminishes as the interval increases; about one-sixth of the conceptions having occurred within 1 month before marriage, and over one-half within 4 months, but only one-sixteenth between 8 and 9 months previously.

1027. The next table shows, in combination, the ages of the parents in such cases :— Ages of parents of ante-nuptially conceived children.

ANTE-NUPTIAL CONCEPTIONS, 1897.—AGES OF PARENTS IN COMBINATION.

Ages of Fathers at Marriage.	Ages of Mothers at Marriage.												
	Under 17.	17 to 18.	18 to 19.	19 to 20.	20 to 21.	21 to 25.	25 to 30.	30 to 35.	35 to 40.	40 to 45.	45 to 50.	Unspecified.	Total Fathers.
Under 20 ...	5	7	11	7	2	5	...	...	...	...	...	...	37*
20 to 21 ...	3	7	13	14	9	11	5	...	...	...	...	...	62
21 to 25 ...	19	34	60	88	79	245	44	4	1	...	...	...	574
25 to 30 ...	8	22	32	42	67	271	185	32	3	...	...	...	662
30 to 35 ...	5	3	7	12	26	91	78	59	9	4	...	...	294
35 to 40 ...	2	2	4	2	6	32	48	21	8	2	...	...	127
40 to 45 ...	...	...	...	2	...	7	11	4	7	3	...	...	34
45 to 50 ...	...	...	1	1	...	4	4	2	4	1	...	...	17
50 to 55 ...	...	...	...	...	...	2	1	3	4	2	1	...	13
55 and over...	...	...	...	...	...	3	...	1	...	2	...	...	6
Unspecified	...	...	...	...	...	...	...	...	...	...	...	6	6
Total Mothers	42†	75	128	168	189	671	376	126	36	14	1	6	1,832

1028. Of the 1,826 cases in which the age of both parties was specified, it may be ascertained that in 1,185 cases the husband was older than the wife, and in 518 cases both were about the same age, but in only 122 cases was the wife older than the husband. Of the mothers, 860, or nearly half, were between 20 and 25, and 413 were under 20, but only 51 were over 35 ; of the fathers, 1,298, or two-thirds, were between 20 and 30, but only 37 were under 20, and 6 were 55 years or over—of whom 4 were between 60 and 75. Of the 413 cases of mothers under 20, 238 were married by men between 20 and 25, and 104 by men between 25 and 30. Proportions at principal ages.

1029. Comparing the marriages, which were preceded by ante-nuptial intercourse (and which may therefore be called "post-concubinal" marriages) at various ages with the total marriages at the same ages, it appears that concubinal relations existed before marriage in the case of nearly three-fourths of the men who married under the age of 21, one-third of those between 21 and 25, one-fourth of those between 25 and 30, 19 per cent. of those between 30 and 40, and 13 or 14 per cent. of those between 40 and 50 ; also in the case of two-thirds of the women who married under 18, nearly half of those between 18 and 21, one-fourth of those between 21 and 25, over 17 per cent. of those between Proportion of post-concubinal to all marriages at different ages.

* Of whom 28 were aged 19.

† Of whom 1 was aged 13, 7 were aged 15, and 34 aged 16.

25 and 35, and 11 or 12 per cent. of those between 35 and 45. The following are the numbers and proportions at each age :—

PROPORTION OF POST-CONCUBINAL MARRIAGES* OF HUSBANDS AND WIVES AT EACH AGE, 1897.

Age-group.	Post-Concubinal Marriages according to Age of—			
	Husband.		Wife.	
	Number.	Percentage of all Marriages at at each Age.	Number.	Percentage of all Marriages at each Age.
Under 18 ...	101	72·7	118	66·7
18 to 21 ...			489	48·5
21 to 25	582	35·8	685	25·3
25 to 30	679	24·7	396	17·7
30 to 35	305	18·6	133	17·2
35 to 40	137	19·1	39	11·2
40 to 45	35	13·2	16	12·3
45 to 50	19	14·4	1	1·4
50 and upwards	19	6·9	...	...
Unspecified	6	...	6	...
Total ...	1,883	24·9	1,883	24·9

Illegitimate and ante-nuptially conceived births in Victoria and New South Wales.

1030. In New South Wales, very comprehensive statistics have been published bearing on the matters already alluded to,† and the results obtained are, in a remarkable degree, similar to those shown to exist in Victoria. Thus, the proportion of ante-nuptial conceptions to the total births is almost exactly the same in both colonies, viz., 6 per cent., although the proportion of illegitimate births is lower in Victoria than in New South Wales, the proportions being $5\frac{1}{2}$ and $6\frac{1}{2}$ per cent. respectively ; or, taking both classes of births together, it will be found that $11\frac{1}{2}$ per cent. of the births in Victoria, and $12\frac{1}{2}$ per cent. in New South Wales, were either born or conceived out of wedlock. This will be seen by the following figures, which relate to a period of only one year in the case of the former, but to a period of six years in the case of the latter colony :—

ILLEGITIMATE BIRTHS AND ANTE-NUPTIAL CONCEPTIONS IN VICTORIA AND NEW SOUTH WALES.

Births.	Numbers.		Proportions per cent.	
	Victoria, 1898.	New South Wales, 1893–98.	Victoria.	NewSouth Wales.
Illegitimate	1,648	14,779	5·5	6·5
Ante-nuptial Conceptions	1,846	13,366	6·1	5·9
Post-nuptial Conceptions	26,678	199,899	88·4	87·6
Total Births ...	30,172	228,044	100·0	100·0

* The number of concubinal marriages is understated, as there is no evidence to show to what extent concubinal relations may have existed in cases where no child was born within 9 months after marriage.

† *Vide* a pamphlet entitled "Childbirth in New South Wales," by Mr. T. A. Coghlan, Government Statistician of that colony, which is full of interesting information on this and other subjects.

Concubinage in Victoria and New South Wales.

1031. Assuming illegitimate births to be the offspring of recently fallen women, which, although not strictly true, is near enough for practical purposes, and that to every such birth in any year there are, at least, three women* who have during the same period entered upon a life of concubinage (exclusive of public prostitutes), the approximate number of women entering into a state of concubinage in any year may be ascertained. If to this be added the number of marriages in the same year, the sum will show the number of concubinages and marriages contracted. On this basis it is found that the number of concubinages entered into in Victoria in 1897† was 4,940, whilst the number of marriages was 7,568, of which 1,832 were preceded by a state of concubinage, making a grand total of concubinages and marriages of 12,508. Thus 39½ per cent. of the sexual alliances entered into in 1897 were concubinal, 14½ per cent. were matrimonial but preceded by concubinal relations, and only 46 per cent. were (there being no evidence to the contrary) orthodox marriages. The corresponding proportions in New South Wales for the same period were 46, 14¾, and 39¼ per cent. respectively. The following are the figures for both colonies :—

CONCUBINAGES AND MARRIAGES ENTERED INTO IN VICTORIA AND NEW SOUTH WALES, 1897.

Couples entering into a state of—	Numbers in—		Proportions per cent.	
	Victoria.	New South Wales.	Victoria.	New South Wales.
Concubinage	4,940	7,490	39·5	45·9
Marriage —				
Post-Concubinal ...	1,832	2,408	14·6	14·8
Orthodox	5,736	6,405	45·9	39·3
Total	12,508	16,303	100·0	100·0

Fecundity of women in Australasian Colonies.

1032. In order to ascertain the fruitfulness of the women of a country, it is usual to compare the legitimate births with the number of married women at the child-bearing age, which may be assumed to include all who have not passed their 45th year. Comparing the births with the total population, which is the ordinary means resorted to for the purpose of obtaining a knowledge of the reproductive strength of a community, is likely to mislead, as the population of different countries, or of the same country at different periods, varies considerably in regard to the sexes, ages, and conjugal condition of those forming its component parts. The number of legitimate, as distinguished from natural, births is published in all the Australasian Colonies except Western Australia. By comparing the former in 1891 with the number of

* This is approximately the ratio found to exist between the annual number of legitimate births and the number of married women living between the ages of 15 and 45, as shown in the next table.

† The births in any year have been assumed to result from unions contracted in the previous year.

married women at child-bearing ages returned at the census, as is done in the following table, the relative fecundity of the women of each of the colonies named is shown:—

PROPORTION OF BIRTHS TO MARRIED WOMEN IN SIX AUSTRALASIAN COLONIES, 1891.

(Exclusive of Aborigines.)

Colony.	Married Women under 45 years of age.	Legitimate Births, 1891.	
		Total Number.	Number per 100 Married Women under 45.
1. Tasmania	15,150	4,786	31·59
2. Queensland	44,537	14,031	31·50
3. South Australia ...	33,486	10,425	31·13
4. Victoria	120,630	36,441	30·21
5. New South Wales ...	125,056	37,343	29·86
6. New Zealand	63,172	17,635	27·92

Children to a marriage in Victoria.

1033. One method of determining the fecundity of women is to find the average number of children born to a marriage, which may be ascertained approximately by dividing the legitimate births in any year by the number of marriages in the preceding year. The following is the result of such a calculation for Victoria during 1875 and each subsequent fifth year to 1890, also during each of the last five years:—

CHILDREN TO A MARRIAGE, 1875 TO 1898.

Year.	Legitimate Births.	Marriages in Year prior to that named in first column.	Average Number of Children to a Marriage.
1875	25,941	4,925	5·27
1880	24,894	4,986	4·99
1885	28,667	7,218	3·97
1890	35,665	9,194	3·88
1894	32,372	7,004	4·62
1895	31,911	7,029	4·54
1896	30,366	7,181	4·23
1897	29,614	7,625	3·88
1898	28,575	7,568	3·78
Sums and Mean during 23 years	709,840	164,657	4·31

1034. It will be noticed that the average number per marriage fell off gradually from $5\frac{1}{4}$ in 1875 to a minimum of 3·88 in 1890, then gradually rose again to $4\frac{1}{2}$ or over in the three years 1893–5, after which it again fell off until the minimum was once more reached in 1897 and 1898. The above figures appear to indicate that the degree of fecundity falls off as the marriage rate increases, and *vice versâ*. It should be pointed out however that the above method is empirical, and to test the matter properly the ages of mothers and other factors would have to be taken into account.

Increase or decrease in children to a marriage in Victoria.

1035. According to this mode of reckoning, it would appear that there are, upon the average, fewer children to a marriage in Victoria than in any of the other Australasian Colonies. The following are the proportions in each colony for 1880 and each subsequent fifth year to 1890, also for the five years ended with 1897, as far as available:—

Children to a marriage in Australasian Colonies.

CHILDREN TO A MARRIAGE IN AUSTRALASIAN COLONIES, 1880 TO 1897.

Year.	Average Number of Children to a Marriage.						
	Victoria.	New South Wales.	Queensland.	South Australia.	West Australia.	Tasmania.	New Zealand.
1880 ...	4·99	5·00	4·89	4·61	...	...	5·54
1885 ...	3·97	4·68	4·39	4·60	...	4·62	5·18
1890 ...	3·88	4·90	4·69	4·90	...	4·78	4·87
1893 ...	4·47	4·72	5·70	4·90	4·91	5·01	4·38
1894 ...	4·62	5·03	5·59	4·80	5·16	5·24	4·80
1895 ...	4·54	5·06	5·29	4·87	4·70	5·72	4·44
1896 ...	4·23	4·55	4·97	4·72	4·15	5·66	4·53
1897 ...	3·88	4·39	4·95	4·72	3·54	4·86	3·87
Mean of 18 years	4·23	4·76	4·81	4·73	4·49*	4·96†	4·93

1036. Taking the average of the last three years, it appears the degree of fecundity was below the average in Victoria, New South Wales, New Zealand, and Western Australia, but above it in Queensland, South Australia, and Tasmania. It will also be noticed that in Victoria, New Zealand, and Western Australia the proportion of children to a marriage was unusually low in 1897.

Children to a marriage in each colony in recent years.

1037. The following statement of the average number of children born to a marriage in certain countries has been derived from various

Children to a marriage in various countries.

* Mean of five years. † Mean of thirteen years.

sources. The figures are generally for a series of years. The country having the highest average is placed first in order, and the remainder in succession :—

CHILDREN TO A MARRIAGE IN VARIOUS COUNTRIES.

	Children to each Marriage.
Russia in Europe (1888)	5·70
Ireland	5·46
Finland (1887)	5·03
Tasmania	4·96
New Zealand	4·93
Russian Poland (1888)	4·89
Queensland	4·81
New South Wales	4·76
South Australia	4·73
Italy	4·56
Western Australia	4·49
Scotland	4·43
Holland	4·34
Victoria	4·23
Belgium	4·21
England	4·16
Sweden	4·01
Denmark	3·55
Japan (1888–91)	3·50
France	2·98

Position of Victoria in reference to births to a marriage.

1038. Russia is at the head of the list, followed by Ireland,* Finland, Tasmania, and New Zealand. Next in order are Russian Poland and four Australasian Colonies, all of which, together with Italy, Scotland, and Holland, stand above Victoria, which colony, however, appears to have a higher rate of fecundity than England and five of the Foreign countries.

Probability of births within 18 months of marriage.

1039. The method just given for indicating approximately the fertility of married women is, as already stated, empirical. The best and most reliable method would be to compute the rates of natality at different ages—found by a comparison of the legitimate children born to (or better still, the confinements of) mothers of different ages with the numbers of all married women living at the same ages. This, however, could only be done at the time of a census, and then only if the necessary particulars were enumerated. A partial but reliable method is, however, available for intercensal years, at least in regard to the earlier periods of married life, by comparing the first births (or preferably confinements) resulting from the marriages in any year with the marriages in that year. Such information has been tabulated for Victoria in respect

* The high proportion in Ireland may be due to the defective registration of marriages. See footnote ‖ to table following paragraph 922 *ante*.

to marriages contracted in 1897. The marriages in that year were first tabulated according to the single ages of brides up to 35, and after that age according to quinquennial age-groups, and, a deduction having been made for concubinal marriages (previously dealt with), the apparent numbers of what may be called orthodox or chaste marriages at various ages were arrived at. Next, the numbers of confinements occurring to such marriages within periods of 9 to 12 and 12 to 18 months after marriage were ascertained from the Birth Registers of 1897, 1898, and 1899. In the course of the tabulation, it became evident that in many cases the ages given by women at marriage and those at the birth of their children were quite irreconcilable (a circumstance which was verified by the examination of individual cases), and this was especially noticeable at the younger ages, and at such ages as 20, 21, 25, and 30. At some periods, indeed, the number of confinements considerably exceeded the number of possible mothers ;* whilst another remarkable anomaly was the occurrence of a large and sudden rise (according to the original data) at the age of 20, followed at the next age (21) by an equally large and sudden fall, in the probability of issue. This clearly shows that numerous minors must have declared themselves to have been of full age at marriage so as to avoid the necessity of obtaining the consent of parents or guardians, whereas the correct ages were probably given at the birth of the children. The law as to the marriage of minors is thus evaded, even at the risk of punishment for perjury.† To neutralize these evident irregularities, a graduation was made by the graphical method, but even then the data for ages below 18 had to be abandoned as unreliable. The following table embodies the results arrived at for wives of various ages—termed by Körösi, the eminent Austro-Hungarian statistician, a "monogenous" table, as it deals only with the ages of either wives or husbands separately, as distinguished from a "bigenous" table, which deals with the ages of husbands and wives in combination. The ages shown are in all cases those at marriage, for, although the ages of the mothers were given in the Birth Registers as at the birth of the children, they were referred, by a suitable adjustment, to the ages at marriage.‡

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* Besides misstatement of age, another contributing cause of this is that some young mothers, who were single, returned themselves as married; for in 3 out of 38 individual cases, when a search was made, no marriage could be traced.

† There is reason to believe that this usually happens through the father disowning his erring daughter and refusing his consent to the marriage, in which case the girl, if a minor, cannot be legally married without making a false declaration as to age. The Social Secretary of the Salvation Army strongly advocates legislation in the direction of the State acting *in loco parentis* in such cases.

‡ The following approximate method was followed in making the necessary correction, not only for chaste, but also for concubinal marriages :—The births (or more strictly confinements) were dealt with in three groups—those of antenuptial conception, *i.e.*, born within 9 months of marriage; those born from 9 to 12 months after marriage; and those born from 12 to 18 months after marriage. It was first assumed that persons marrying at any age were equally distributed throughout that age, *i.e.*, that every month throughout any such year of age contained one-twelfth of the whole, whilst the intervals (in months) between marriage and birth were carefully computed from the tabulated data. From such assumption and data, a correction was carefully computed for application to the original figures in each of the three groups referred to. Thus, taking the group of antenuptial conceptions, it was computed that of 1,000 mothers at any year of age at the birth of the children, 475 would have been in the previous year of age at marriage, and 525 at the same age both at marriage and at the birth; in the group of births from 9 to 12 months after marriage the corresponding ratios were found to be 815 and 185 per 1,000 respectively; and in the group 12 to 18 months after marriage it was calculated that 651 would have been in the preceding year of age, and 339 in the second previous year.

PROBABILITY OF ISSUE OF CHASTE MARRIAGES, WITHIN EIGHTEEN MONTHS OF MARRIAGE, AT DIFFERENT AGES OF WIVES.—(Based on Marriages celebrated in 1897, and Issue therefrom within eighteen months).

Ages of Wives at Marriage.	Number of Chaste Marriages celebrated in 1897.	First Confinements within a period after marriage of—		Probability of Issue within a period after Marriage of—			
				9 to 12 months.		9 to 18 months.	
		9 to 12 months.	9 to 18 months.	Unadjusted.	Adjusted.	Unadjusted.	Adjusted.
				per cent.	per cent.	per cent.	per cent.
15	2	...	2	...	?	100·0	?
16	6	4	17	66·7	?	?	?
17	51	25	53	49·0	?	?	?
18	113	53	96	46·9	48·3	85·0	85·0
19	180	74	142	41·1	45·2	78·9	78·0
20	228	126	219	55·3	41·7	96·1	68·6
21	578	178	283	30·8	38·9	49·0	63·1
22	471	167	274	35·5	37·6	58·2	59·5
23	469	167	269	35·6	37·0	57·4	58·0
24	500	164	253	32·8	36·5	50·6	56·9
25	440	186	279	42·3	36·1	63·4	55·9
26	436	152	236	34·9	35·4	54·1	54·8
27	361	134	217	37·1	34·5	60·1	54·0
28	350	111	173	31·7	33·6	49·4	53·0
29	253	91	143	36·0	32·7	56·5	51·8
30	215	59	94	27·4	31·3	43·7	49·7
31	122	41	64	33·6	29·7	52·5	47·3
32	122	34	55	27·9	28·7	45·1	45·0
33	101	28	41	27·7	27·2	40·6	41·5
34	81	21	32	25·9	25·5	39·5	38·3
35–40	309	48	80	15·5	15·5	25·9	25·8
40–45	114	6	9	5·3	5·3	7·9	7·9
45–50	69	...	1	...	Nil	1·4	1·4
Over 50	94	...	...	...	...	...	Nil
Unspecified	20	4	11	...	...	...	...
Total..	5,685	1,873	3,043	...	...	...	...

Probability of issue at different ages.

1040. Taking the adjusted figures, it will be observed that the probability of issue in Victoria appears to be greatest at the youngest age at which the data can be accepted as at all reliable, viz., 18, and rapidly diminishes as the age of the mother advances. The probability of issue within 12 months of a woman marrying at 18 is 1 in every 2 marriages, at 28 it falls to 1 in 3, at 34 to 1 in 4, and at 40 to 45 to little more than 1 in 20; whilst the probability of issue within 18 months of the marriage of a woman marrying at the age of 18 is 6 in every 7 marriages, at 20 it falls to 2 in every 3, at 30 to 1 in every 2, at 35 to 40 to 1 in every 4, and at 40 to 45 to about 1 in every 13. The question as to what extent the ratios established would be affected by a desire on the part of some wives to evade the cares of

maternity would be difficult to determine, but it is probable that such desire is not nearly so great at the earlier as at later stages of married life, and that therefore the probability shown by the table would be but little affected from this cause

Probability of issue in Victoria and New South Wales compared.

1041. Summarizing the adjusted probabilities of issue within 12 months in age-groups, and comparing with similar results for New South Wales, which are available,* it will be found that, notwithstanding the apparently low position of Victoria according to the empirical methods already referred to, the probability of issue is really greater in Victoria than in New South Wales at every age-period, as will be seen by the following figures:—

PROBABILITY OF ISSUE OF CHASTE MARRIAGES WITHIN FIRST 12 MONTHS IN VICTORIA AND NEW SOUTH WALES.

Age of Wife.	Victoria, 1897-8.†	New South Wales, 1896–8.
	per cent.	per cent.
16 to 21	49·8	39·1
21 „ 25	37·5	33·4
25 „ 30	34·6	32·4
30 „ 35	29·1	24·2
35 „ 40	15·5	11·3
40 „ 45	5·3	3·8
45 „ 50	Nil	Nil
Total, 16–45 ...	34·0	31·5
Total, 16–45 for all marriages‡ ...	51·1	50·4

Marriages fruitful at various periods after marriage up to 18 months.

1042. The periods which elapsed between marriage and birth in the case of the 3,043 confinements of post-nuptial conception which occurred between 9 and 18 months after marriage, also the ratios to the total number of chaste marriages (viz., 5,685), were as follow. It will be observed that 15 per cent. of the chaste (or orthodox) marriages, without regard to age of wives, prove fruitful within 10 months, one-third within 12 months, and more than one-half within 18 months after the marriage.

CONFINEMENTS FROM THE 10TH TO THE 18TH MONTH AFTER MARRIAGE OF CHASTE MARRIAGES CONTRACTED IN 1897.

Period elapsed since Marriage.	Number of Cases.	Per 100 Chaste Marriages.	Period elapsed since Marriage.	Number of Cases.	Per 100 Chaste Marriages.
Calendar Months.			Calendar Months.		
9	852	15·0	14	215	3·8
10	617	10 9	15	158	2·8
11	404	7 1	16	129	2·3
			17	107	1·9
Total 9–12	1,873	33·0			
			Total 9–18	3,043	53·6
12	299	5·2			
13	262	4·6			

* See "Childbirth in New South Wales," by T. A. Coghlan, Government Statistician: Gullick, Sydney, 1899.——† Adjusted ratios.——‡ Including antenuptial conceptions. Compare with results for all married women, following paragraph 1832 *ante*.

Rates of Natality in European Countries, &c.

1042A. Some interesting results bearing on the rates of legitimate natality in the city of Buda-Pest are embodied in a paper by Dr. Körösi, of the Statistical Office of Buda-Pest, before the British Royal Society,* the principal conclusions being—(1) That the summit of legitimate fertility is reached very soon, so that the decline begins in the case of the man after 25, and in that of the woman after 18 years; (2) that legitimate fertility does not remain at the same level for many years together, but declines immediately after reaching the highest point—contrary to what might have been expected from physiological considerations alone, but then it was pointed out that there is a second factor, viz., the wish and the will to have offspring. These conclusions are practically borne out by Victorian experience (so far as available) derived from the first eighteen months of married life, except that the maximum in the case of the male appears to be about 27 years instead of 25. The following table, which has been selected from the paper referred to, shows, not only for Buda-Pest, but also for other European towns and countries, the rates of natality amongst married women living at different quinquennial age periods, all legitimate births (not first births only) being taken into account, and no deduction being made for antenuptial conceptions. A fair comparison cannot, therefore, be made with the Victorian figures, which relate to first births only, and would be very much higher if antenuptial conceptions had been taken into account.

RATES (PER CENT.) OF FEMALE NATALITIES IN EUROPEAN COUNTRIES AND TOWNS.

Age of the Mother.	Sweden.	Finland.	Norway.	Denmark.	Alsace and Lorraine.	Brunswick.	Edinburgh and Glasgow.	Berlin.	Buda-Pest.	General Average.
	1891.	1880–81.	1874–76.	1880–89.	1872.	1880–81.	1855.	1887–90.	1889–92.	
15—20	51·8	37·9	41·3	71·5(?)	46·5	58·1	50·0	50·3	42·8	47·4†
20—25	45·1	40·6	57·9	49·4	56·3	45·4	41·8	45·6	35·8	45·9
25—30	37·5	35·7	43·0	40·5	46·3	34·7	34·6	33·6	29·2	37·2
30—35	31·2	32·2	36·0	31·2	38·8	26·8	26·6	22·5	20·6	29·5
35—40	25·0	26·1	30·0	23·0	28·2	19·8	20·4	14·5	14·7	22·4
40—45	14·2	15·8	18·1	11·4	...	8·1	8·0	6·0	5·9	10·9‡
45—50	2·0	2·7	3·3	1·3	...	1·1	1·3	·7	·7	1·6‡
50—55	...	...	.16	...	...	...	...	·02	·07	?

* See extracts in the Journal of the Royal Statistical Society, Vol. lvii., Part 4, December, 1894

† Without taking into account the natality of Denmark, which seems improbably high.

‡ Original figures corrected, the average being for 8 countries, not 9.

1043. According to the registrations, births in Victoria * are nearly always most numerous in the winter quarter, and next so in the autumn quarter. The proportion of births in the spring and summer quarters varies in different years, the advantage being generally in favour of the former. The following are the numbers and percentage for the three years 1896 to 1898, and the percentages for the periods 1881–90 and 1891–5 :— Births in each quarter.

BIRTHS IN EACH QUARTER.

Seasons.	Quarter ended on the last day of—	Year 1896.		Year 1897.		Year 1898.		Percentages.	
		No. of Births.	Per centage.	No. of Births.	Per-centage.	No of Births.	Per-centage.	1881 to 1890.	1891 to 1895.
Summer	March ...	8,026	24·94	7,666	24·48	7,698	25·52	23·63	23·65
Autumn	June ...	8,196	25·47	8,014	25·60	7,654	25·36	25·49	25·92
Winter ...	September	8,416	26·16	8,228	26·27	7,941	26·32	26·73	26·08
Spring ...	December	7,540	23·43	7,402	23·65	6,879	22·80	24·15	24·35
	Year ...	32,178	100·00	31,310	100·00	30,172	100·00	100·00	100·00

1044. The deaths registered in 1898 numbered 18,695, as against 15,126 in 1897. There was thus an increase in the year under notice of 3,569, or 24 per cent. Deaths, 1898.

1045. The deaths in 1898 were more numerous than in any previous year except 1889, when they exceeded 19,000, although in 1887 and 1888 they did not much exceed 16,000.† The high mortality in 1898 was due chiefly to the prevalence of measles in an epidemic form, accompanied with an increased mortality from typhoid fever, diarrhœal diseases and enteritis, and diseases of the respiratory system, which latter are always fatal during an experience of measles. Deaths, 1898 and former years.

1046. The births in 1898 exceeded the deaths by 11,477, or 61 per cent., the corresponding proportion being 107 per cent. in the previous year. In the ten years ended with 1890 the proportion averaged 107 per cent.; and in the ten years ended with 1880 it averaged 119 per cent.; whilst during the 34 years ended with 1898 the average was 115 per cent. The following were the births and deaths in 1865 and in Excess of births over deaths.

* A table showing the proportion of births occurring in each quarter in various countries was given in the *Victorian Year-Book*, 1892, Vol. I., paragraph 597.

† For the number of deaths during each year since the first settlement of Port Phillip, see Statistical Summary of Victoria (first folding sheet), to be published later on.

each subsequent fifth year to 1890, also in each of the last six years, and the excess of the former over the latter :—

EXCESS OF BIRTHS OVER DEATHS, 1865 TO 1898.

Year.	Births.	Deaths.	Excess of Births over Deaths.	
			Numerical.	Centesimal.
				Per cent.
1865 ...	25,915	10,461	15,454	148
1870 ...	27,151	10,420	16,731	161
1875 ...	26,720	15,287	11,433	75
1880 ...	26,148	11,652	14,496	124
1885 ...	29,975	14,364	15,611	109
1890 ...	37,578	18,012	19,566	109
1893 ...	36,552	16,508	20,044	121
1894 ...	34,258	15,430	18,828	122
1895 ...	33,706	15,636	18,070	116
1896 ...	32,178	15,714	16,464	105
1897 ...	31,310	15,128	16,182	107
1898 ...	30,172	18,695	11,477	61
Total in 34 years	1,012,754	471,219	541,535	115

Years in which births doubled deaths.

1047. It may be remarked that the births more than doubled the deaths in all the years except 1875, 1876, 1882, 1889, and 1898.

Excess of births over deaths in Australasian Colonies.

1048. Of the Australasian Colonies, New Zealand is the one in which the births almost invariably exceed the deaths by the highest proportion, although an exception to this rule took place in 1891 and 1895, when the proportion was highest in Queensland, and in 1892, when the proportion was higher not only in that colony, but in South Australia and New South Wales. The position of Victoria in regard to the proportionate increase of births over deaths, although higher than that in most countries, is below that in any of the other colonies of the group except Western Australia. The following table shows the percentage of excess of births over deaths in each of the Australasian Colonies during the respective years 1888 to 1897, both inclusive. The colonies are arranged in order, that with the highest mean percentage being placed first, and that with the lowest last:—

EXCESS OF BIRTHS OVER DEATHS IN AUSTRALASIAN COLONIES, 1888-97.

Colony.	Excess per cent. of Births over Deaths.										
	1888.	1889.	1890.	1891.	1892.	1893.	1894.	1895.	1896.	1897.	Mean of 10 years.
New Zealand ...	231	220	205	180	177	169	168	170	189	184	189
Queensland ...	158	135	173	185	183	153	164	189	148	164	165
South Australia	180	195	164	155	184	136	160	169	148	140	163
New South Wales	168	151	174	142	178	151	156	160	130	161	157
Tasmania ...	135	127	127	122	140	152	150	164	142	140	140
Victoria ...	112	88	109	107	139	121	122	116	105	107	113
Western Australia	126	161	189	106	99	123	96	48	38	51	104

1049. In 1899 the percentage of excess of births over deaths in Melbourne was below that in all the other capital cities except Hobart, as may be seen by the following figures:— Excess of births over deaths in Australasian capitals.

EXCESS OF BIRTHS OVER DEATHS IN AUSTRALASIAN CAPITAL CITIES, 1899.

	Per cent.
1. Brisbane	148
2. Wellington	130
3. Sydney	122
4. Perth	109
5. Adelaide	84
6. Melbourne	70
7. Hobart...	46

1050. The following table shows the percentage of excess of births over deaths in certain European countries* during each of the five years ended with 1897. The countries are arranged in order according to the means of the quinquennial period shown in the last column, the country with the highest mean being placed first, and the rest in succession:— Excess of births over deaths in European countries.

EXCESS OF BIRTHS OVER DEATHS IN EUROPEAN COUNTRIES, 1893 TO 1897.

Countries.	Excess per cent. of Births over Deaths.					
	1893.	1894.	1895.	1896.	1897.	Mean.
Norway	88	76	95	100	95	91
Holland	76	77	76	90	93	82
Denmark	62	73	79	74	80	74
Sweden	63	65	81	74	...	71†
England and Wales ...	60	78	63	74	70	69
Prussia	55	68	65	78	75	68
Scotland	60	76	54	82	63	67
United Kingdom ...	57	72	57	71	64	64
German Empire ...	49	61	63	74	69	63
Belgium	46	56	46	66	68	56
Switzerland	39	36	42	58	60	47
Italy	45	42	39	45	58	46
Japan	26	44	46	40	52	42
Austria	39	32	37	44	46	40
Hungary	37	36	40	41	41	39
Ireland	28	26	26	42	27	30
Spain	19	14	...	...	...	16‡
France	4	4	−2	12	14	6

NOTE.—The minus sign (−) implies that the deaths were more numerous than the births.

* Japan is also included.

† Mean of four years.

‡ Mean of two years.

Excess of births over deaths in Australasia and elsewhere.

1051. It will be observed that deaths bear a much larger proportion to births in all the countries named than they do in any of the Australasian Colonies, part of which difference is probably due to the Australian climate being more healthy and the circumstances of the colonies more favorable to longevity, and part to the fact that the countries named usually contain a larger proportion than the colonies of the young and the very old. In not one of those countries did the births double the deaths in any year of the period. On the other hand, in the Australasian Colonies, it is the exception for the births not to double the deaths, and in one of them (New Zealand) the births are nearly three times as numerous as the deaths. It will, moreover, be noticed that the deaths exceeded the births in France in 1895, whilst on the average the excess of births over deaths was only 6 per cent.

Natural increase of population.

1052. During the sixteen years 1883–98, the population of Victoria increased at the average annual rate of 1·60 per cent. by excess of births over deaths, at which rate, irrespective of immigration, the population would double itself in 44 years. The rates at first gradually rose from 1·62 per cent. in 1883 to 1·77 in 1890—although once (viz., in 1889) it fell to as low as 1·58 ; but subsequently it fell off, slowly at first, but rapidly since 1893, to 1·37 per cent. in 1897, and further in 1898 to less than 1 per cent.—which, however, was due to an exceptionally high mortality. During the period of decline, a sudden rise took place in 1892 to 1·90 per cent., which was the highest during the last sixteen years. These results will be seen by the following figures:—

INCREASE OF POPULATION BY EXCESS OF BIRTHS OVER DEATHS, 1883 TO 1898.

	Per cent.		Per cent.
1883	1·62	1893	1·72
1884	1·67	1894	1·60
1885	1·65	1895	1·54
1886	1·64	896	1·39
1887	1·70	1897	1·37
1888	1·76	1898	0·98
1889	1·58		
1890	1·77		
1891	1·76	Mean of 16 years ...	1·60
1892	1·90		

Natural increase in Australasian Colonies.

1053. Comparing the mean of the ten years ended with 1890 and that of the seven years ended with 1897 with similar means for the other Australasian Colonies during the same periods, the figures are as follow:—

MEAN ANNUAL RATE OF INCREASE BY EXCESS OF BIRTHS OVER DEATHS IN AUSTRALASIAN COLONIES.

1881-90.

	Per cent.		Per cent.
1. New Zealand ...	2·34	5. Tasmania	1·92
2. South Australia ...	2·26	6. Western Australia ...	1·91
3. New South Wales ...	2·23	7. Victoria	1·64
4. Queensland	2·06		

Mean Annual Rate of Increase by Excess of Births over Deaths in Australasian Colonies—*continued.*

1891–7.

	Per cent.		Per cent.
1. Queensland	2·09	5. New Zealand ...	1·76
2. New South Wales ...	1·93	6. Victoria	1·61
3. Tasmania	1·85	7. Western Australia ...	1·27
4. South Australia ...	1·84		

Natural increase in various countries.

1054. Sir Rawson W. Rawson, in his opening address as President of the Statistical Society of London in 1885, gave the following as the mean annual rates of increase by excess of births over deaths in various countries, the averages extending generally over the nineteen years ended with 1883. The countries have here been arranged in order according to the rate of increase shown in each country:—

Mean Annual Rate of Increase by Excess of Births over Deaths in Various Countries.

	Per cent.		Per cent.
Servia	1·69	Ireland	·86
Poland (Russian) ...	1·51	Finland	·85
England and Wales ...	1·37	Alsace-Lorraine ...	·80
Russia in Europe ...	1·37	Italy	·77
Norway	1·36	Greece	·76
Saxony	1·34	Connecticut	·76
Scotland	1·33	Austria	·74
German Empire ...	1·24	Switzerland	·71
Prussia	1·23	Rhode Island	·69
Thuringia	1·19	Vermont	·67
Denmark	1·16	Croatia and Slavonia ...	·66
Sweden	1·13	Massachusetts	·65
Holland	1·13	Spain	·48
Würtemburg	1·11	Hungary	·48
Baden	1·05	Roumania	·32
Belgium	·91	France	·16
Bavaria	·89		

Results in various countries compared.

1055. According to the figures, the rate of natural increase (excess of births over deaths) in Victoria in the period 1881–90 was about equal to that in Servia over a series of years, and much higher in every one of the Australasian Colonies than in any of the other countries named. It will be noticed that England stands near the head of the list, Scotland lower, and Ireland very much lower; also that in France the rate of natural increase is much below that in any other country.

Deaths of males and females.

1056. In Victoria, deaths of males in 1898 numbered 10,533, and those of females 8,162. These numbers furnish a proportion of about 77 females to every 100 males; as against a proportion to every 100 males of 74 females in the ten years 1882–91, and of 75 females in the ten years 1872–81. Females in the total population were in the proportion of 98 to every 100 males during 1898, 90 during the decade ended with 1891, and 88 during the preceding decade; therefore at each period more males and fewer females died than their relative numbers in the population might have given reason to expect.

Annual death rate.

1057. The following table shows the estimated mean population of either sex, the number of deaths of either sex, and the death rate of males and females, and of both sexes, during 1860 and each subsequent fifth year, also in each of the last five years :—

ANNUAL DEATH RATE, 1860 TO 1898.

Year.	Estimated Mean Population.		Number of Deaths.		Deaths per 1,000 of the Mean Population.		
	Males.	Females.	Males.	Females.	Males.	Females.	Total.
1860 ...	331,979	202,475	7,134	4,927	21·49	24·33	21·49
1865 ...	347,083	264,135	6,158	4,303	17·74	16·29	17·11
1870 ...	392,159	321,036	6,114	4,306	15·59	13·41	14·61
1875 ...	419,779	367,558	8,563	6,724	20·40	18·29	19·42
1880 ...	446,445	403,898	6,610	5,042	14·81	12·48	13·70
1885 ...	504,000	452,880	8,300	6,064	16·47	13·39	15·01
1890 ...	589,310	529,190	10,369	7,643	17·60	14·44	16·10
1894 ...	606,160	568,570	8,897	6,533	14·68	11·49	13·14
1895 ...	605,810	574,230	8,881	6,755	14·66	11·76	13·25
1896 ...	599,147	578,288	8,902	6,812	14·72	11·78	13·35
1897 ...	593,180	579,610	8,534	6,592	14·39	11·37	12·90
1898 ...	592,025	580,925	10,533	8,162	17·79	14·05	15·94
Average of 39 years					16·62	14·08	15·43

NOTE.—In 1860, 1875, and 1898, especially in the former year, the death rate was swelled by epidemics of measles and scarlatina.

Male and female death rate compared.

1058. It will be noticed that in all the years shown, except 1860, death bore more hardly upon males than upon females. The figures in the lowest line of the table show that, over a period of 39 years, the deaths of males per 1,000 of the same sex living exceeded by about $2\frac{1}{2}$ the deaths of females per 1,000 of that sex living.

Abnormal fluctuations in death rates.

1059. It should, however, be borne in mind that as the population of newly settled countries is rarely in a normal condition as regards age—immigration tending to swell, and the sudden cessation of it to lower, the proportion of adults in the prime of life—the death rates based merely upon the total population, in common with birth and marriage rates, calculated upon a like basis, are not fair tests of the hygienic condition of a community any more than the birth and marriage rates,

computed on a similar basis, are fair tests of its reproductive power. If the proportion of very young or old people is high, the death rate will also be high ; but if, on the other hand, the number of the persons at the middle ages is excessive, the death rate will be low. It is largely owing to such causes that the general death rates in these colonies are so much lower than in other countries where the population is in a more normal condition, and where they are but little affected by such fluctuations ; and the extreme variations which took place in Victoria during the period shown in the above table (irrespective of epidemic periods)—from 17 per 1,000 in some years, to 13 per 1,000 in others—are certainly due to similar influences. Thus the recent decline in the death rate from 16 per 1,000 in 1890 to less than 13 per 1,000 in 1897 was probably consequent on a decline in the birth rate, which lowered considerably the proportion of infants and young children, amongst whom the mortality is always very large.

Death rate in Australasian Colonies.

1060. The proportion which the deaths that occurred in each Australasian colony bore to the total population of that colony during 1865 and each subsequent fifth year, also in 1894, 1895, 1896, and 1897, will be found in the following table:—

DEATH RATES IN AUSTRALASIAN COLONIES, 1865 TO 1897.

Year.	Number of Deaths per 1,000 of Mean Population.						
	Victoria.	New South Wales.	Queensland.	South Australia.	Western Australia.	Tasmania.	New Zealand.
1865 ...	17·11	16·49	21·42	14·30	...	13·40	15·13
1870 ...	14·61	13·38	14·59	13·94	...	13·88	11·13
1875 ...	19·42	18·42	23·80	19·45	17·88	20·00	15·92
1880 ...	13·70	15·47	13·59	14·85	13·24	16·12	11·46
1885 ...	15·01	16·48	20·19	12·73	17·61	15·89	10·74
1890 ...	16·10	12·90	14·61	12·40	12·00	14·74	9·66
1894 ...	13·14	12·30	12·08	11·60	14·54	12·43	10·19
1895 ...	13·25	11·79	11·38	11·25	17·72	11·38	9·91
1896 ...	13·35	12·30	12·10	11·41	16·53	11·63	9·10
1897 ...	12·90	10·88	11·33	11·14	16·96	11·53	9·13
Means ...	15·27	14·86	16·51	13·96	16·12	14·81	11·25

Order of colonies in respect to death rates.

1061. According to the average of a series of years, the death rate of Queensland was much higher, and that of New Zealand much lower, than that of any of the other colonies ; next to Queensland in point of mortality stood Western Australia, and then followed—with death rates

which differed but slightly from one another—Victoria, New South Wales, and Tasmania; whilst the average death rate in South Australia was lower than that in any except New Zealand. In the four years ended with 1897 the death rates were, as compared with 1890 and former years, extremely low in all the colonies, except Western Australia—owing probably to such causes as have already been alluded to* ; and in 1897, the relative positions of the colonies were somewhat changed—Queensland falling from the head of the list to a position below Tasmania and New South Wales from the fourth to the sixth place. The following is the order of the colonies in reference to their respective death rates in 1897, and over a series of years, the colony with the highest rate being placed first, and that with the lowest last:—

Order of Australasian Colonies in reference to Death Rates.

Order in 1897.	Order over a Series of Years.
1. Western Australia.	1. Queensland.
2. Victoria.	2. Western Australia.
3. Tasmania.	3. Victoria.
4. Queensland.	4. New South Wales.
5. South Australia.	5. Tasmania.
6. New South Wales.	6. South Australia.
7. New Zealand.	7. New Zealand.

Death rate in Australia and Australasia.

1062. The death rate of the colonies situated upon the continent of Australia taken in combination, and the death rate of those colonies with the addition of Tasmania and New Zealand, are shown in the following table for the 25 years ended with 1897 :—

Death Rate in Australia and Australasia, 1873 to 1897.

Year.	Number of Deaths per 1,000 of Mean Population.		Year.	Number of Deaths per 1,000 of Mean Population.	
	Continent of Australia.	Australia with Tasmania and New Zealand.		Continent of Australia.	Australia with Tasmania and New Zealand.
1873 ...	14·43	14·20	1887 ...	14·43	13·78
1874 ...	15·73	15·36	1888 ...	14·49	13·64
1875 ...	19·08	18·63	1889 ...	15·39	14·37
1876 ...	17·12	16·37	1890 ...	14·25	13·51
1877 ...	15·23	14·77	1891 ...	14·75	14·04
1878 ...	15·72	14·94	1892 ...	12·77	12·36
1879 ...	14·06	13·84	1893 ...	13·62	13·06
1880 ...	14·47	14·01	1894 ...	12·54	12·15
1881 ...	14·62	14·01	1895 ...	12·35	11·91
1882 ...	15·82	15·01	1896 ...	12·69	12·06
1883 ...	15·05	14·50	1897 ...	11·93	11·45
1884 ...	16·35	15·30			
1885 ...	15·98	15·02			
1886 ...	15·27	14·44	Mean of 25 years	14·73	14·11

* See paragraph 1059 *ante*.

1063. It will be noticed that in 1875 and 1876 the mortality on the Australian continent exceeded 17 per 1,000, but in no other years; also that it exceeded that rate upon the continent combined with the colonies of Tasmania and New Zealand only in 1875. It will further be noticed that the rate for the continent, as well as that for the whole of Australasia, shows an unusual fall from over 14 per 1,000 in 1891, to less than 12 per 1,000 in 1897. Fall in death rate in Australia and Australasia.

1064. The following table shows the death rates in as many British colonies outside Australasia as the particulars are available for. In few, if any, of the colonies are the conditions affecting the duration of human life similar to those prevailing in the Australasian group:— Death rates in certain British Possessions.

DEATH RATES IN BRITISH POSSESSIONS.

Colonies.	Years.	Number of Deaths per 1,000 of the Population.
Gibraltar	1897	20·6
Malta	1894	26·7
British India	1880–88*	24·9
Ceylon	1897	23·2
Straits Settlements	1894	32·2
Hong Kong	1897	18·8
Mauritius	1897	29·5
Seychelles	1894	14·8
St Helena	1894	18·7
Gambia	1882	51·5
Sierra Leone	1893	17·3
Nova Scotia	1871–5	12·1
Bermudas	1897	24·1
British Guiana	1896	26·3
West Indies—		
Bahamas	1897	22·6
Jamaica	1897	22·0
St. Lucia	1897	24·6
St. Vincent	1896	23·3†
Barbados	1897	26·1
Grenada	1897	22·8†
Leeward Islands ‡	1897	23·3
Trinidad and Tobago	1897	25·3

1065. In all the European countries of which the information is at hand, except Sweden and Norway, the mean annual death rates are higher than in Queensland, and much higher than in any of the other Australasian Colonies. Moreover, in all, with the exception of Sweden and Norway, the mean rate is above 17 per 1,000, and, with the exception of those countries and England and Wales, Scotland, Ireland, and Denmark, in not one of them did the rate during any of the Death rates in European countries.

* In 1897 the rates varied from 20·6 to 49·3 in different provinces. The returns, however, are known to be defective.

† Inclusive, it is believed, of still-births, which are recorded as deaths.

‡ Consisting of the following Presidencies:—Antigua, St. Kitts-Nevis, Dominica, and Montserrat.

years named ever fall as low as 17 per 1,000; whilst in Hungary, on the other hand, the average rate amounts to nearly 30 per 1,000. In the following table the countries are arranged in the order of their mean death rates, as shown in the last column:—

DEATH RATES IN EUROPEAN* COUNTRIES, 1893 TO 1897.

Countries.	Number of Deaths per 1,000 of Mean Population.					
	1893.	1894.	1895.	1896.	1897.	Mean of Five Years.
Hungary	31·1	30·4	29·6	28·8	28·5	29·7
Austria	27·2	27·8	27·7	26·4	25·6	26·9
Italy...	25·3	25·1	25·2	24·2	22·2	24·4
German Empire ...	24·6	22·3	22·1	20·8	21·3	22·2
Prussia	24·2	21·7	21·8	20·8	21·2	21·9
France	22·8	21·4	22·3	20·2	19·9	21·3
Japan	22·7	20·1	20·2	21·4	20·3	20·9
Switzerland	20·5	20·5	19·7	18·4	18·3	19·5
Belgium	20·3	18·6	19·5	17·5	17·2	18·6
Scotland	19·4	17·2	19·7	16·9	18·7	18·4
Holland	19·2	18·5	18·6	17·2	16·9	18·1
United Kingdom ...	19·1	16·8	18·8	17·1	17·7	17·9
Ireland	17·9	18·2	18·4	16·6	18·4	17·9
England and Wales ...	19·2	16·6	18·7	17·1	17·4	17·8
Denmark	18·9	17·5	16·9	15·7	16·6	17·1
Sweden	16·8	16·4	15·2	15·6	...	16·0†
Norway	16·4	16·9	15·7	15·2	15·4	15·9

Death rates in town and country, 1898.

1066. In every country the death rate is higher in towns than it is in extra-urban 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 serious illness for the sake of the superior nursing and medical attendance to be obtained in town. Of recent years the death rate has been much lower in Melbourne and suburbs than in the country towns, which is contrary to the experience in the ten years 1881–90, whilst in the former it has been nearly twice as high and in the latter nearly two and a half times as high as in the country districts. In 1898, the rates in Melbourne and the country towns were considerably above, and the rate for rural districts was also slightly above, the average of the five years ended with 1895. The following are the figures for the last

* Japan is also included.
† Mean of four years.

three years, and the means for the periods 1881–90 and 1891–5 respectively :—

DEATHS IN URBAN AND COUNTRY DISTRICTS.

Districts.	Estimated Mean Population. 1898.	Deaths.					
		Total Number. 1898.	Number per 1,000 of the Population.				
			1898.	1897.	1896.	Annual Mean.	
						1891–95.	1881–90.
Melbourne and suburbs (Greater Melbourne)	464,690	8,523	18·34	15·02	15·76	16·74	20·65
Extra-metropolitan Towns	196,930	4,968	25·23	20·12	20·84	20·63	19·90
Country districts ...	511,330	5,204	10·18	8·31	8·45	9·02	8·90
Total ...	1,172,950	18,695	15·94	12·90	13·35	14·06	15·20

1067. The number of deaths per 1,000 of the estimated population of the metropolis and suburbs (Greater Melbourne), the extra-metropolitan towns, and the country districts of Victoria is given in the following table for 1875 and each subsequent fifth year, also for each of the five years ended with 1898 :— Death rates in town and country, 1875 to 1898.

DEATH RATES IN URBAN AND COUNTRY DISTRICTS, 1875 TO 1898.*

Years.	Number of Deaths per 1,000 of the Estimated Population.			
	Greater Melbourne.†	Extra-Metropolitan Towns.	Country Districts.	Total of Victoria.
1875 ...	25·82	26·03	11·24	19·42
1880 ...	18·70	17·65	8·13	13·70
1885 ...	20·15	18·88	9·03	15·01
1890 ...	19·63	21·58	10·09	16·10
1894 ...	15·55	19·72	8·55	13·14
1895 ...	15·88	20·13	8·46	13·25
1896 ...	15·76	20·84	8·45	13·35
1897 ...	15·02	20·12	8·31	12·90
1898 ...	18·34	25·23	10·18	15·94

1068. In thirteen of the seventeen years ended with 1889,* the death rate in Melbourne and suburbs was higher than that in the other town districts ; but in every year since 1889, and the other four years Normal death rate in town and country.

* For the death rates in urban and country districts during each of the nineteen years ended with 1891, see *Victorian Year-Book*, 1892, Vol. I., paragraph 626.

† The death rate in Greater Melbourne would be considerably reduced if the deaths which occurred in the metropolitan hospitals, asylums, &c., the patients in which come from all parts of the colony, should be eliminated from the total. In 1891, it would be reduced to 15·75, in 1892 to 13·13, in 1893 to 14·21, in 1894 to 12·46, in 1895 to 12·46, in 1896 to 12·25, in 1897 to 11·49, and in 1898 to 13·63 per 1,000 persons living.

the death rate in the extra-metropolitan towns was the higher. A greater mortality in proportion to population prevailed in the urban than in the country districts in all the years. In the former the mortality was frequently as high as 19 or 20 per 1,000—although in Melbourne and suburbs since 1893 it usually fluctuated between 15 and 16 per 1,000, whilst in country districts it was usually below 10, and in recent years below 8½ per 1,000. In 1898, the death rate in both town and country districts was considerably above the average of the four preceding years.

Death rates in town and country districts of England.

1069. In England and Wales, during the ten years 1881–90, the death rate in urban districts was 20·3 per 1,000, and in country districts 17·3 per 1,000; the difference between these rates being not nearly so great as in similar divisions of Victoria.*

Death rates in Melbourne and suburbs.

1070. The following table shows the mean population, and the number of deaths in 1898, also the number of deaths to every 1,000 persons living during the period of five years ended with 1895 and for the year 1898, in each of the different municipalities and other sub-districts forming the component parts of the district of Melbourne and suburbs (Greater Melbourne). In order to render the rates of the various districts comparable, as far as possible, the deaths in hospitals and similar institutions have been eliminated from the districts in which they occurred, and are shown separately near the foot of the table:—

DEATHS IN GREATER MELBOURNE.

Sub-Districts.	Estimated Mean Population, 1898.	Deaths.		
		Total Number, 1898.	Per 1,000 of the Population.†	
			1898.	Annual Mean, 1891 to 1895.
Melbourne City	69,304	989	14·27	13·47
North Melbourne Town ...	17,202	268	15·58	13·40
Fitzroy City	29,616	478	16·14	14·17
Collingwood City	32,326	571	17·66	14·98
Richmond City	33,744	608	18·02	16·25
Brunswick Town	22,430	316	14·09	14·88
Northcote Town	7,493	146	19·48	12·94
Prahran City	36,228	554	15·29	13·66
South Melbourne City	37,315	549	14·71	14·31
Port Melbourne Town	10,920	148	13·55	14·77
St. Kilda City	19,490	232	11·90	12·63
Brighton Town	9,631	137	14·22	13·81
Essendon Town	15,112	199	13·17	12·08
Flemington and Kensington Borough	10,403	140	13·46	13·42
Hawthorn City	20,033	257	12·83	12·24
Kew Borough	7,573	77	10·17	10·47
Footscray City	16,722	268	16·03	15·01

* See 53rd Report of the Registrar-General of England, page li.

† In order to compare the death rate with density of population, see table following paragraph 101 *ante*.

Deaths in Greater Melbourne—*continued.*

Sub-Districts.	Estimated Mean Population, 1898.	Deaths.		
		Total Number, 1898.	Per 1,000 of the Population.*	
			1898.	Annual Mean, 1891 to 1895.
Williamstown Town	13,269	169	12·74	13·67
Oakleigh Borough	1,305	21	16·09	17·09
Caulfield Shire	9,123	70	7·67	7·22§
Malvern Shire	9,860	80	8·11	10·30§
Boroondara Shire	7,350	77	10·48	8·58§
Preston Shire	3,000	45	15·00	11·80§
Coburg Shire	6,100	81	13·28	11·11§
Remainder of district	12,780	198	15·49	13·91§
Shipping in Hobson's Bay and River	1,965	3	1·53	4·68
Total	460,294	6,681	14·51	13·55
Hospitals, Asylums, &c.† ...	4,396	1,842	3·97‡	3·20‡
Grand Total	464,690	8,523	18·35	16·75

1071. It will be observed that in 1898 the death rates were above the average of the quinquennial period in all the sub-districts, except Brunswick, Port Melbourne, St. Kilda, Kew, Williamstown, Oakleigh, and Malvern. In the majority of these a low rate of mortality prevailed, more especially in the shires of Caulfield, Boroondara, Malvern, and Coburg, the cities of Hawthorn and St. Kilda, and the borough of Kew. Death rates in 1898 and series of years.

1072. The only sub-districts which, according to the average of five years, had a higher death rate than 15 per 1,000‖ are Oakleigh, Richmond, and Footscray; the next highest death rate prevailed in the densely populated suburbs of Collingwood and Brunswick and in Port Melbourne, and the next in South Melbourne and Fitzroy. In 1898 the highest death rate was in Northcote, which, with Richmond and Collingwood Cities, were the only districts with a rate exceeding 17 per 1,000; then followed Oakleigh, Footscray, and Fitzroy with over 16 per 1,000. Of the other sub-districts only North Melbourne, Prahran, Preston, and the "Remainder of District" had as high a mortality as 15 per 1,000. Places in which death rate was highest.

* See footnote (†) on previous page.

† Includes the Melbourne, Alfred, St. Vincent's, Women's, and Children's Hospitals, and the Immigrants' Home (partly also in South Melbourne), all situated in Melbourne City; the Benevolent Asylum, which is on the boundary between North Melbourne and Melbourne City; the Homœopathic Hospital, which is in South Melbourne; the Home of the Little Sisters of the Poor, which is in Northcote; the Metropolitan Lunatic Asylum, which is in Kew; and the Yarra Bend Lunatic Asylum and the Austin Hospital for Incurables, which are in "Remainder of district."

‡ Per 1,000 of the population of the whole of Melbourne and suburbs.

§ Average of 4 years.

‖ It should be remembered that the deaths in hospitals, asylums, &c., have been eliminated from the various sub-districts. If this had not been done, the death rates of several sub-districts would have been much higher than those shown in the table.

Death rate in Greater Melbourne, excluding hospitals, &c.

1073. The death rate of Greater Melbourne, taken as a whole, in the calculation of which the deaths in charitable institutions are included, was 18⅓ per 1,000 persons living in 1898, or about 1½ per 1,000 higher than the average during the period of five years. It will be borne in mind that the deaths in hospitals, asylums, &c., are excluded from the returns of the individual districts ; if such deaths should also be excluded from the total, the deaths in Greater Melbourne would give a proportion of only 14·51 per 1,000 living, a similar proportion for the five years ended with 1895 being 13·55.

Deaths in Australasian capitals, 1891-99.

1074. In 1891, the year of the last census, when the population was accurately ascertained, the death rate was as high as 27 per 1,000 in Perth, and 24 per 1,000 in Hobart, and as low as 14, or thereabouts, in Brisbane and Wellington ; whilst in Melbourne it was 19 per 1,000, as against 17 in Adelaide and 16½ in Sydney. Since 1891, however, there has, according to the statistics based on estimates of population, been a most remarkable fall in the rates in all the capital cities, which it is difficult to believe could have actually occurred, although some diminution was to be expected from the fall in the birth rates, and hence one is forced to the conclusion that there must be some error in the estimates of population, which of course cannot be decided until after the taking of the next census. Thus in 1899 the former excessive rates of Perth and Hobart fell to the moderate ones of 17 and 14 per 1,000 respectively, the rates in Melbourne and Adelaide to a little over 15, that in Sydney to below 13, that in Brisbane to 12, and that in Wellington to less than 11. The following are the actual rates in 1891, and the estimated rates in each of the six years ended with 1899. It will also be noticed that in Melbourne, Adelaide, Sydney, and Brisbane the mortality in 1898 was exceptionally high as compared with the averages for recent years :—

Deaths in Australasian Capital Cities, 1891 and 1894 to 1899.

Capital Cities.*	Estimated Mean Population, 1899.	Deaths.							
		Total Number, 1899.	Number per 1,000 of the Population.						
			1899.	1898.	1897.	1896.	1895.	1894.	1891 (Census).
Perth	36,000†	607	16·9	18·6	21·7	..	26·1	21·8	27 0
Melbourne	475,380	7,317	15·4	18·3	15·0	15·8	15·9	15·5	19·0
Adelaide	148,644	2,260	15·2	17·3	14·9	14·7	14·9	13·8	17·0
Hobart	41,040	576	14·0	14 8	16·4	15·7	16·1	18·0	24·1
Sydney	432,625	5,511	12·7	15·1	12·6	13·7	13·2	14·1	16·4
Brisbane	109,396†	1,313	12·0	15·3	11·8	12·2	11·6	10·9	14·0
Wellington	47,535	516	10·9	11·9	11·2	11·0	12·5	11·4	14·4

Death rates in towns of United Kingdom.

1075. According to the following figures, showing the death rates in the principal towns in the United Kingdom, and those showing the death rates in Australasian capital cities, in 1891 (the census year), the death rate was lower in Wellington, Brisbane, and Sydney

* With Suburbs.
† Estimated.

than in any of the British towns named, in Adelaide than in any except two, and in Melbourne than in any except eight of such towns. On the other hand, the death rate of Perth was higher than that in any of the towns named except Dublin and Liverpool, and that of Hobart higher than in any except Dublin, Liverpool, Preston, and Manchester :—

DEATH RATES IN BRITISH TOWNS*.

	Deaths per 1,000 of the Population.		Deaths per 1,000 of the Population.
Dublin	27·8	Bradford	19·8
Liverpool	27·3	Brighton	19·8
Preston	24·5	Plymouth	19·6
Manchester	24·3	London	19·5
Glasgow	24·1	Birmingham	19·4
Bolton	23·6	Halifax	19·1
Salford	23·5	Norwich	19·1
Wolverhampton	23·5	Nottingham	18·7
Sunderland	22·6	Birkenhead	18·5
Blackburn	21·7	Portsmouth	18·3
Oldham	21·6	Bristol	18·0
Edinburgh	21·4	Cardiff	17·7
Leeds	20·8	Huddersfield	17·4
Hull	20 6	Derby	17·0
Newcastle	20·2	Leicester	16·8
Sheffield	20·1		

Towns having highest and lowest death rates.

1076. It will be noticed that the death rate is higher in Dublin than in any other large town in the United Kingdom. In this respect it contrasts very unfavorably with London, which is one of the towns in which the death rate is lowest. Manchester is one in which the death rate has always been one of the highest; and Liverpool, which some years previously stood seventh on the list, has now only one town above it, viz., Dublin. In Birmingham the mortality is comparatively low, and approximates closely to that of London.

Death rates in Foreign towns.

1077. The death rates in all the Australasian capitals in 1891, with the exception of Perth and Hobart, will be found to have been considerably lower than the average death rates of most of the 26 foreign cities named in the subjoined list:—

DEATH RATE IN 26 FOREIGN TOWNS, 1895.*

	Annual Deaths per 1,000 of the Population.		Annual Deaths per 1,000 of the Population.
Calcutta	38·8	Paris	21·1
Madras	38·4	Rome	20·8
Moscow	35·9	Dresden	20·6
Bombay	30·8	Brooklyn	20·5
Trieste	30·1	Philadelphia	20·5
New Orleans	30·0	Brussels	20·2
Breslau	27·4	Rotterdam	19·7
St. Petersburg	27·2	Berlin	19·0
Buda-Pest	25·7	The Hague	18·8
Prague	25·5	Stockholm	18·6
Munich	25·4	Copenhagen	18·3
Vienna	23·1	Amsterdam	17·6
New York	22·4	Christiania	17·6

* The figures are taken from Whitaker's Almanack, 1896.

Death rates in Victorian towns.

1078. Of the six principal towns in Victoria next in importance to Melbourne, all had a higher death rate than that city. This will be seen by the following figures:—

DEATH RATES IN SEVEN VICTORIAN TOWNS, 1898.

	Deaths per 1,000 of the Population.		Deaths per 1,000 of the Population.
1. Stawell	33·64	5. Geelong	22·07
2. Bendigo	26·07	6. Warrnambool ...	20·15
4. Ballarat	23·97	7. Melbourne ...	18·35
3. Castlemaine ...	23·75		

Deaths in each month.

1079. The mortality of Victoria is usually highest in the first five months and in the last month of the year. The relative mortality of the various months fluctuates, however, in different years. In the decennium ended with 1890, the months in which most deaths occurred were January, March, and December, and then April, February, May, in the order named; whereas in the succeeding quinquennium the order was January, March, October, December, April, and February. In the year under review the largest number of deaths occurred in January and March, and the lowest in September and October. The number of deaths in each month of 1898, and their proportion to the total number in the year, also the proportion of the deaths in each month of 1896, 1897, and the periods 1881–90 and 1891–5 to the total number of deaths during the same periods, will be found in the following table:—

DEATHS IN EACH MONTH.

Months.	Year 1898.		Percentage in—			
	Number of Deaths.	Per-centage.	1897.	1896.	Five Years: 1891 to 1895.	Ten Years: 1881 to 1890.
January	1,984	10·60	8·71	10·44	9·31	10·05
February ...	1,647	8·81	7·74	8·78	8·34	8·69
March	1,813	9·70	7 83	8·61	8·96	9·46
April	1,782	9·53	7·81	8·15	8·44	8·77
May	1,600	8·56	8·34	7·50	7·74	8·52
June	1,391	7·44	8·54	8·20	7·44	7·51
July	1,522	8·14	8·08	8·22	8·07	7·78
August	1,405	7·52	7·91	8 58	8·09	7·93
September ...	1,217	6·51	7·56	6·90	7·84	7·17
October	1,283	6·86	7·38	6·84	8·96	7·04
November ...	1,392	7·45	7·74	7·90	7·87	7·62
December ...	1,659	8·88	12·36	9·88	8·94	9·46
Total ...	18,695	100·00	100·00	100·00	100 00	100·00

Deaths at different seasons.

1080. In Victoria the summer is the most trying portion of the year, especially to invalids and young children. It is not astonishing therefore that most deaths usually occur during that period. Next to the summer, the autumn quarter is usually the most fatal, then the spring, and lastly the winter. In the United Kingdom the greatest mortality

occurs in the winter, and the least in the summer quarter. A statement of the relative mortality of the different seasons in Victoria, according to the experience of the past year and the two periods 1881–90, and 1891–5; in England and Wales, according to the experience of 31 years; in Scotland, according to the experience of ten years; and in Ireland, according to the experience of five years; together with the mean temperature in each quarter in Melbourne and Greenwich, will be found in the following table :—

RELATIVE MORTALITY OF EACH QUARTER IN VICTORIA, ENGLAND, SCOTLAND, AND IRELAND.

Seasons.*	Mean Temperature in Shade.		Percentage of Deaths at each Season.					
			Victoria.			England and Wales.	Scotland.	Ireland.
	Melbourne, Victoria.	Greenwich, England.	Year 1898.	Average of Ten Years, 1881 to 1890.	Average of Five Years, 1891 to 1895.	Average of Thirty-one Years.	Average of Ten Years.	Average of Five Years.
Summer	65°·2	60°·5	29·12	28·20	26·61	23·24	22·34	20·21
Autumn	53·8	44·3	25·53	24·80	23·62	24·65	24·71	23 45
Winter	50·2	40·0	22·17	22·90	23·99	27·49	27·95	30·19
Spring	60·3	52·8	23·18	24·10	25·78	24·62	25·00	26·15
Year	57·6	49·4	100·00	100·00	100·00	100·00	100·00	100·00

Deaths of Chinese and Aborigines.

1081. The Chinese who died in 1898 numbered 232, of whom only 1 was a female, as against 160 in 1897, 181 in 1896, 153 in 1895, and 185 in 1894; and the Aborigines who died in 1898 numbered 10, of whom 6 were females, as against 7 in 1897, 8 in 1896, 8 in 1895, and 13 in 1894. Supposing the Chinese living in the colony to number 9,000, and the Aborigines 700; it follows that there were 26 deaths per 1,000 Chinese living in 1898, as against an average of 19 in the preceding four years; and 14 deaths per 1,000 Aborigines living in 1898, as compared with an average of 13 in the previous four years. In the same periods the proportions of deaths of all races to every 1,000 living were 15·94 and 13·16 respectively.

Ages at death of Chinese and Aborigines.

1082. Of the Chinese who died in 1898, only 1 was under 25 years of age, only 16 between 25 and 55, but as many as 215 were over 55—of whom 74 were stated to have been upwards of 70, and 13 over 80 years of age; whilst out of 679 deaths in the preceding four years, only 6 were under 25 years of age, of whom 1 was under 12 months, 3 between 5 and 15, 102 (including 45 between 50 and 55) between 25 and 55, and the remainder over 55 years of age. Of the Aborigines who died in 1898, none were under 5, and only 3 were under 15 years of age; whilst out of 36 deaths in the preceding period of four

* The summer, autumn, winter, and spring seasons in Victoria approximate to the quarters ending on the last day of March, June, September, and December respectively; and in the United Kingdom to those ending on the last day of September, December, March, and June respectively.

years, 8 were under 2 years, and 12 in all were under 15, and 9 were stated to have been over 70—of whom 4 were entered as having passed their 80th year.

Deaths at each age, 1898 and 1891-95.

1083. The following table shows the number of deaths at various periods of age registered in Victoria during the year 1898, and during the quinquennial period 1891–95 ; also the proportion of the deaths at each age to the total at all ages :—

DEATHS AT EACH AGE, 1898 AND 1891–95.

Ages.	Number of Deaths at each Age.			Percentage of Deaths at each Age.		
	Males.	Females.	Total.	Males.	Females.	Total.
YEAR 1898.						
Under 5 years	3,283	2,805	6,088	31·17	34·37	32·57
5 years to 10 years ...	322	315	637	3·04	3·86	3·41
10 „ 15 „ ...	162	162	324	1·54	1·98	1·73
15 „ 20 „ ...	222	241	463	2·11	2·95	2·48
20 „ 25 „ ...	300	279	579	2·85	3·42	3·10
25 „ 35 „ ...	688	749	1,437	6·53	9·18	7·69
35 „ 45 „ ...	709	660	1,369	6·73	8·09	7·32
45 „ 55 „ ...	645	490	1,135	6·12	6·00	6·07
55 „ 65 „ ...	1,105	729	1,834	10·49	8·93	9·81
65 „ 75 „ ...	1,768	913	2,681	16·79	11·19	14·34
75 years and upwards ...	1,329	819	2,148	12·63	10·03	11·48
Total	10,533	8,162	18,695	100·00	100·00	100·00
FIVE YEARS, 1891–95.						
Under 5 years	14,996	12,752	27,748	31·84	36·47	33·82
5 years to 10 years ...	1,151	971	2,122	2·45	2·78	2·59
10 „ 15 „ ...	676	612	1,288	1·44	1·75	1·57
15 „ 20 „ ...	957	992	1,949	2·03	2·84	2·38
20 „ 25 „ ...	1,499	1,553	3,052	3·18	4·44	3·72
25 „ 35 „ ...	3,570	3,386	6,956	7·58	9·68	8·48
35 „ 45 „ ...	2,964	2,454	5,418	6·30	7·02	6·60
45 „ 55 „ ...	3,617	2,450	6,067	7·68	7·01	7·39
55 „ 65 „ ...	6,588	3,409	9,997	13·99	9·75	12·18
65 „ 75 „ ...	6,600	3,464	10,064	14·01	9·91	12·26
75 years and upwards ...	4,475	2,920	7,395	9·50	8·35	9·01
Total	47,093	34,963	82,056	100·00	100·00	100·00

Proportion of deaths at different ages.

1084. It will be noticed that in the period of five years, nearly one-third of the males and nearly two-fifths of the females who died had not reached the age of 5 years ; that nearly a fourth of the males and not quite a third of the females were between 5 and 45 years of age ; that nearly a fourth of the males, but only a sixth of the females, were between 45 and 65 years of age ; and that nearly a fourth of the males and between a fifth and a sixth of the females were over 65 years of age. In 1898, the principal age groups where there was a marked deviation from the average were 5 to 10, and 65 and upwards, in which the proportion was much above the average ; and 45 to 65, in which the proportion was much below it.

Proportion of deaths at each age to population.

1085. Amongst the influences which tend to impair the efficacy of the ordinary death rate as a standard for comparing the hygienic conditions of one country with those of another, or those of the same country at different periods, the most important is the variation in the age constitution of the living population, a disturbing influence which can only be eliminated by ascertaining the death rates at various age-periods. The exact ages of the population of Victoria having been ascertained at the censuses of 1881 and 1891, accurate results for comparisons are obtainable for this colony. These are shown in the following table by taking into account at successive age-periods the numbers of the population and the deaths for the year 1898, and for the ten years 1881 to 1890:—

PROPORTION OF DEATHS TO POPULATION AT EACH AGE, 1881–90 AND 1898.

Ages.	Mean Population.		Deaths.		Deaths per 1,000 living at each age.	
	Ten years, 1881 to 1891. *	Year 1898.	Mean of ten years, 1881 to 1890.	Year 1898.	Mean of ten years, 1881 to 1890.	Year 1898.
MALES.						
Under 5 years ...	66,730	70,052	2,989	3,283	44·79	46·87
5 to 10 „ ...	60,082	73,894	244	322	4·06	4·36
10 to 15 „ ...	56,580	65,048	150	162	2·65	2·49
15 to 20 „ ...	53,303	51,715	215	222	4·03	4·29
20 to 25 „ ...	52,124	38,705	331	300	6·35	7·75
25 to 35 „ ...	80,591	99,124	622	688	7·72	6·94
35 to 45 „ ...	52,622	82,883	591	709	11·23	8·56
45 to 55 „ ...	49,844	41,101	961	645	19·28	15·69
55 to 65 „ ...	35,220	36,885	1,171	1,105	33·25	29·96
65 to 75 „ ...	14,100	25,968	862	1,768	61·13	68·09
75 and upwards	4,053	6,650	556	1,329	137·18	199·90
All Ages ...	525,249	592,025	8,692	10,533	16·55	17·79
FEMALES.						
Under 5 years ...	65,082	68,011	2,568	2,805	39·46	41·25
5 to 10 „ ...	58,977	72,562	231	315	3·92	4·34
10 to 15 „ ...	55,848	64,799	143	162	2·56	2·50
15 to 20 „ ...	54,483	53,421	227	241	4·17	4·51
20 to 25 „ ...	52,870	46,522	307	279	5·81	6·00
25 to 35 „ ...	71,983	109,126	569	749	7·90	6·86
35 to 45 „ ...	45,362	71,625	496	660	10·93	9·22
45 to 55 „ ...	36,867	38,574	547	490	14·84	12·70
55 to 65 „ ...	22,606	32,656	531	729	23·49	22·32
65 to 75 „ ...	9,142	18,504	460	913	50·32	49·34
75 and upwards	2,907	5,125	375	819	129·00	159·80
All Ages ...	476,127	580,925	6,454	8,162	13·56	14·05

* The figures in the first of these columns, being derived from the numbers returned at the censuses of 1881 and 1891, both of which were taken at the beginning of April, represent the mean of a decennial period commencing and ending three months later than that for which the deaths are given in the next column but one, viz., that ended with the 31st December, 1890; those in the second column are based on the census figures 1891, together with the births and deaths at each age, and the recorded and estimated unrecorded immigration which has since taken place.

Death rates at each age, 1898, compared with average.

1086. It appears from the figures shown in the last two columns that the death rate in 1898 was above the average in the age-periods under 10 years, and between 15 and 25, in the case of both sexes; also in those over 65 in the case of males, and over 75 in the case of females; but that at all other periods—except the groups 10–15 and 65–75 in the case of females, where the mortality was nearly equal at both periods—the rates in 1898 were much below the average.

Death rates at each age, 1894 to 1898.

1087. The mortality of 1898 was, however, exceptionally high, as compared with the years immediately preceding, at all periods of life, in consequence of the prevalence of epidemics of measles and influenza, and an excessive mortality from typhoid fever, diarrhœal diseases, and enteritis. Thus the computed rates of mortality amongst males were higher in 1898 than in any of the preceding four years at all age-groups under 35 and over 65, especially at the age-periods under 10, between 20 and 35, and over 65; whilst they were above the average in all cases. The rates amongst females were also above the average at all periods of life, and higher than in any of the previous four years at all periods except 20 to 25, and 55 to 75—the excess being especially marked at the age-groups under 10 and 75 and upwards. The following are the rates in each of the last five years, based on the estimated population at various ages, which, although carefully and independently computed for each year from the best sources of information available, cannot be implicitly relied on, owing to some uncertainty as to the migration returns, and the correction applied to them to cover unrecorded emigration:—

Proportion of Deaths to Population at each Age, 1894 to 1898.

Ages.	Deaths per 1,000 living at each Age.				
	1894.	1895.	1896.	1897.	1898.
Males.					
Under 5 years ...	34·6	32·8	34·1	32·4	46·9
5 to 10 „ ...	3·4	2·7	2·7	3·4	4·4
10 to 15 „ ...	2·3	2·0	2·2	2·2	2·5
15 to 20 „ ...	3·4	3·3	3·9	3·4	4·3
20 to 25 „ ...	5·9	5·5	5·4	5·2	7·8
25 to 35 „ ...	5·9	5·8	5·9	5·9	6·9
35 to 45 „ ...	8·6	8·7	8·3	8·0	8·6
45 to 55 „ ...	14·5	16·2	14·5	15·3	15·7
55 to 65 „ ...	29·2	30·2	31·0	27·4	30·0
65 to 75 „ ...	64·1	60·6	60·1	57·1	68·1
75 and upwards ...	143·9	158·9	157·8	156·7	199·9
All ages ...	14·68	14·7	14·7	14·39	17·79

Proportion of Deaths to Population at each Age, 1894 to 1898—*continued.*

Ages.	Deaths per 1,000 living at each Age.				
	1894.	1895.	1896.	1897.	1898.
Females.					
Under 5 years ...	29·2	28·0	29·3	28·6	41·3
5 to 10 „ ...	2·8	2·6	2·6	3·1	4·3
10 to 15 „ ...	1·9	1·9	1·8	2·3	2·5
15 to 20 „ ...	3·7	3·4	4·2	3·6	4·5
20 to 25 „ ...	5·5	6·0	5·3	5·5	6·0
25 to 35 „ ...	6·2	6·4	6·2	5·9	6·9
35 to 45 „ ...	8·4	8·3	8·7	7·6	9·2
45 to 55 „ ...	12·1	11·7	11·9	11·6	12·7
55 to 65 „ ...	20·0	22·4	22·2	20·4	22·3
65 to 75 „ ...	45·3	51·0	46·7	45·8	49·3
75 and upwards ...	136·2	143·8	137·2	134·6	159·8
All Ages ...	11·49	11·76	11·78	11·37	14·05

1088. In the next table the death rates of males and females at different ages in Victoria, England and Wales, Germany, and France are compared—the observations being in all cases for periods of ten years :— Death rates in Victoria, England, Germany, and France.

Death Rate at each Age in Victoria, England, Germany, and France.

Ages.	Annual Deaths per 1,000 of the Population.							
	Victoria.		England and Wales.		Germany.		France.	
	1881 to 1890.		1881 to 1890.		1871 to 1881.		Average of 10 Years.	
	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.
All ages ...	16·55	13·56	20·3	18·0	28·45	25·29	23·80	23·19
Under 5 years	44·79	39·46	58·7	49·7	81·4	73·2	84·55	75·45
5 to 10 „	4·06	3·92	5·2	5·2	8·8	8·7	10·49	11·04
10 to 15 „	2·65	2·56	3·0	3·2	3·9	4·2	5·36	6·41
15 to 20 „	4·03	4·17	4·4	4·5	5·3	4·9	10·34	8·41
20 to 25 „	6·35	5·81	5·8	5·7	8·2	7·0		
25 to 35 „	7·72	7·90	7·9	7·5	9·3	9·6	10·02	9·69
35 to 45 „	11·23	10·93	12·5	10·7	13·5	12·0	10·96	11·03
45 to 55 „	19·28	14·84	19·7	15·2	21·4	16·0	14·76	14·88
55 to 65 „	33·25	23·49	34·0	28·2	38·7	32·9	29·19	27·27
65 to 75 „	61·13	50·32	71·2	62·0	83·4	77·3	60·69	63·49
75 to 85 „	125·19	110·75	146·5	133·0	186·9	180·0	160·22	153·76

Death rate in Victoria and other countries compared.

1089. It will be noticed that the mortality of males at the age-period 20 to 25, and that of females at the age-periods 25 to 45, is higher in Victoria than in England; it is higher than in France in the case of males at from 35 to 75, but lower in the case of females at all age-periods, although the excess at the age-period 45 to 55 is very slight; and it is much lower than in Germany, in the case of both males and females, at all periods of life.

Death rate of children less in Victoria than elsewhere.

1090. It is very commonly believed that the conditions of life in Victoria are more fatal to children than those conditions in older countries; but the figures in the table prove the fallacy of this opinion so far as England, France, and Germany are concerned—the low mortality in Victoria, as compared with that obtaining in any of those countries, being especially marked at the age-periods under ten years.

Death rate of males and females in Victoria and other countries.

1091. According to the table, the death rate during a term of ten years of females exceeds that of males at from 15 to 20 and from 25 to 35 in Victoria; at from 10 to 20 in England and Wales; at from 10 to 15 and from 25 to 35 in Germany; and at from 5 to 15, from 35 to 55, and from 65 to 75 in France; moreover, in England and Wales, at from 5 to 10, the death rates of males and females are equal. At every other period of life the death rate of males exceeds that of females in the countries named.

"Ordinary" and "Adjusted" death rates.

1092. For the two decades ended with 1880 and 1890 respectively, the quinquennium 1891–95, and for the years 1892 to 1898, the "Adjusted death rates"* of males and females are, in the following table, placed side by side with the "Ordinary death rates," or those obtained by comparing the deaths with every 1,000 of the population of the same sex irrespective of age variations:—

"Ordinary" and "Adjusted" Death Rates, 1871 to 1898.

Period.	Death Rates.			
	Males.		Females.	
	Ordinary.†	Adjusted.‡	Ordinary.†	Adjusted‡
1871 to 1880	16·45	16·48	14·15	14·64
1881 to 1890	16·55	15·97	13·56	13·85
1891 to 1895	15·55	13·48	12·45	11·52
1892	14·99	14·07	12·15	12·06
1893	15·72	14·48	12·36	12·12
1894	14·68	13·24	11·49	11·00
1895	14·66	13·41	11·76	11·58
1896	14·72	13·01	11·78	11·22
1897	14·39	12·52	11·37	10·83
1898	17·79	15·72	14·05	13·55

* For the method of calculating the "Adjusted death rate" see *Victorian Year-Book*, 1892, Vol. I., paragraph 655 *et seq.*

† Per 1,000 of the actual population.

‡ Per 1,000 of the standard population.

1093. Comparing the death rates in 1881–90 with those in the previous decade, it is found that, according to the "Ordinary" and less reliable method of computation, there was an apparent increase in the mortality of males, amounting to ·10 per 1,000, but a decrease in that of females, amounting to ·59 per 1,000; whereas according to the "Adjusted," or more correct method, there was a decrease in the case of both sexes, viz., of ·51 per 1,000 in the case of the males, and of ·79 per 1,000 in the case of females. Results of the two methods in 1881-90 and 1871-80.

1094. On comparing the rates for males from 1892 onwards, it would appear by the "Ordinary" method as if there were considerable uniformity in the mortality of the different years from 1892 to 1897 (1893 being an exception), whereas in reality, according to the "Adjusted" rates, there has been a steady fall (with the exception of 1893) from 14 in 1892 to $12\frac{1}{2}$ per 1,000 in 1897, and a still greater fall as compared with an average of over $16\frac{1}{4}$ which prevailed in the period of twenty years ended with 1890. In the case of females, the discrepancy between the two methods was not so marked; neither was the fall in the mortality, as indicated by the "Adjusted" rates, viz., from 12 in 1893 to $10\frac{4}{5}$ in 1897, so great as in the case of males, although it was quite as considerable when compared with the average of the twenty years 1871–90, when it was $14\frac{1}{4}$ per 1,000. The sudden rise in the mortality in 1898 is also shown by the "Adjusted" rates, although—contrary to what is indicated by the "Ordinary" rates—it was below the average of the period of twenty years. Results by the two methods 1892 and subsequent years.

1095. The average mortality of both males and females at all ages is much lower in Victoria than in England, Germany, or France, but the difference is not so great when the new method of comparison is used ("Adjusted" death rate) as it is when the old one is used ("Ordinary" death rate). Thus, according to the old method, deaths of males per 100,000 living are, in England 375, in Germany 1,190, and in France 725, more than in Victoria; but, according to the new method, only 265 more in England, 775 more in Germany, and 718 more in France. And, according to the old method, deaths of females per 100,000 living are, in England, 440, in Germany, 1,173, and in France, 963, more than in Victoria; but, according to the new method, only 226 more in England, 749 more in Germany, and 782 more in France. The following are the figures:— Death rates by the two methods in Victoria England Germany, and France.

ORDINARY AND ADJUSTED DEATH RATES IN VICTORIA, ENGLAND, GERMANY, AND FRANCE.

Country.	Period.	Ordinary Death Rate.		Adjusted Death Rate.	
		Males.	Females.	Males.	Females.
Victoria ...	1881–90	16·55	13·56	15·97	13·85
England ...	"	20·30	18·00	18·62	16·11
Germany ...	1871–81	28·45	25·29	23·72	21·34
France	10 years	23·80	23·19	23·15	21·67

Infantile mortality, 1898.

1096. The mortality of infants in 1898, in proportion to the number born, was much above the average. The total number under 1 year of age who died in 1898 was 4,047, and as the births numbered 30,172, it follows that 1 infant died to every 7·5 births, or 13·41 infants to every 100 births. In the 32 years 1866 to 1897, the proportion of infants dying before completing their first year was 12·15 to every 100 births.*

Mortality of male and female infants.

1097. It has already been stated that more boys are born than girls, but the balance of the sexes is to a certain extent maintained by more male than female infants dying. This is shown in the following table, which contains a statement, for two recent decades, for the quinquennium 1891–5, and for each of the last seven years, of the number of births of boys and girls, and of the deaths of each before completing their first year, together with the proportion of deaths of infants of either sex to the births of the same sex:—

MORTALITY OF MALE AND FEMALE INFANTS, 1871 TO 1898.†

Period.	Annual Births.		Deaths at under 1 Year of Age.			
			Annual Number.		Number per 100 Births.	
	Boys.	Girls.	Boys.	Girls.	Boys.	Girls.
1871–80 ...	13,728	13,144	1,782	1,482	12·98	11·28
1881–90 ...	16,006	15,251	2,158	1.805	13·48	11·83
1891–95 ...	18,540	17,626	2,198	1,846	11·85	10·47
1892 ...	19,405	18,426	2,196	1,845	11·32	10·01
1893 ...	18,823	17,729	2,338	1,964	12·42	11·08
1894 ...	17,501	16,757	1,960	1,607	11·20	9·59
1895 ...	17,372	16,334	1,919	1,531	11·05	9·37
1896 ...	16,460	15,718	1,950	1,590	11·85	10·12
1897 ...	16,013	15,297	1,753	1,482	10·95	9·69
1898 ...	15,435	14,737	2,228	1,819	14·43	12·34

Mortality of male greater than of female infants.

1098. According to a previous paragraph,‡ the births of male infants in a series of years were in the proportion of about 105 to 100 female infants, and the numbers in this table point to a proportion of 120 deaths of the former to 100 of the latter. It will be noticed that in every one of the years deaths of male infants very much exceeded those of female infants; and as the numbers living were about equal (the excess, if any, being slightly in favour of male infants), the greater tendency of boys than of girls to die before completing one year of life may be considered to be invariable.

Proportion of infants dying to births.

1099. In proportion to every 1,000 born, the number of male infants dying varied from 110 in 1895 and 1897 to 151 in 1875 and 1882, and 160 in 1889, and that of female infants dying from 97 in 1897 to 134 in 1875, and 145 in 1889—the mean number dying per 1,000 births during the ten years ended with 1880 being 130 of the former and 113 of the latter; in the ten years ended with 1890, 135 and 118 respectively;

* See table following paragraph 1104 *post.*

† For detailed particulars relating to each year, see *Victorian Year-Book* for 1890-91, Vol. I., paragraph 579.

‡ See paragraph 1067 *ante.*

and in the five years ended with 1895, 118 and 105 respectively. In 1898, deaths of male infants occurred in the proportion of 144, and deaths of female infants in the proportion of 123, to every 1,000 of either sex born.

Deaths of infants at different ages.

1100. 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 numbers of these during 1898, and the ten years ended with 1890, 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 1898 the mortality of male infants under 1 month and of female infants under 3 months was below, but that of those at all other age-periods was above, the average of the ten years ended with 1890 :—

AGE AT DEATH OF MALE AND FEMALE INFANTS.

Ages.	Deaths at under 1 Year of Age.				
	Year 1898.			Average of 10 Years, 1881-90.*	
	Number.	Percentage at each Age.	Number per 100 Births.	Percentage at each Age.	Number per 100 Births.
BOYS.					
Under 1 month ...	638	28·64	4·13	30·99	4·20
1 to 3 months ...	376	16·87	2·44	17·92	2·37
3 to 6 months ...	477	21·41	3·09	22·26	3·01
6 to 12 months ...	737	33·08	4·77	28·83	3·90
Total ...	2,228	100·00	14·43	100·00	13·48
GIRLS.					
Under 1 month ...	433	23·80	2·94	27·41	3·24
1 to 3 months ...	302	16·60	2·05	18·68	2·21
3 to 6 months ...	443	24·35	3·01	23·01	2·73
6 to 12 months ...	641	35·25	4·35	30·90	3·66
Total ...	1,819	100·00	12·35	100·00	11·84

More deaths of male than female infants at all ages.

1101. During the period of ten years, the mortality of male infants in proportion to the number born exceeded that of female infants at each of the age-periods. This was more especially the case in the first month of life, when the excess of the former was nearly a third; in the next two months this excess was reduced to about a fourteenth, in the next three months to about a tenth, and in the next six months to about a fifteenth.

Periods at which infants die.

1102. In the same period of ten years, nearly a third of the male and nearly two-sevenths of the female infants who died before they were a year old died in the first month after birth; about two-elevenths of both males and females in the next two months; between a fourth and

* For corresponding average for 1871-81, see *Victorian Year-Book*, 1889-90, Vol. I., table following paragraph 635.

fifth of both males and females in the next three months; between a third and a fourth of the males, and not quite a third of the females, in the next six months.

Probable mortality of infants.

1103. According to the experience of the ten years 1881–90, it appears that of every 20,000 newly-born boys and girls in equal numbers, 420 of the former and 324 of the latter may be expected to die before they are a month old; 237 more boys and 221 more girls may be expected to die between one and three months of age; 301 more boys and 273 more girls between three and six months; 390 more boys and 366 more girls between six and twelve months. At the end of a year it is probable that 1,348 of the boys and 1,184 of the girls will have died, and 8,652 of the former and 8,816 of the latter, or 17,468 of mixed sexes, will be still living. In more recent years, however, there appears to have taken place a very marked improvement in the expectation of infantile life, for, according to the experience of the five years 1891–5, the probability of surviving their first year was 8,814 (out of 10,000) for males, and 9,212 for females—which shows a saving of 558 lives in every 20,000 infants of both sexes.

Infantile mortality in Australasian Colonies.

1104. The following table shows the number of births, the number of deaths of infants under the age of one year, and the proportion of the latter to the former, in each of the colonies of the group, for each year from 1891 to 1897, also for one quinquennial and two successive decennial periods (except in regard to Western Australia, for which the information is given at the foot of the table for the twelve years ended with 1897). All the calculations were made in the office of the Government Statist, Melbourne :—

INFANTILE MORTALITY IN AUSTRALASIAN COLONIES.

Period.*	Annual Births.	Annual Deaths at under 1 Year of Age.		Annual Births.	Annual Deaths at under 1 Year of Age.		Annual Births.	Annual Deaths at under 1 Year of Age.	
		Number.	Proportion to 100 Births.		Number.	Proportion to 100 Births.		Number.	Proportion to 100 Births.
	VICTORIA.			NEW SOUTH WALES.			QUEENSLAND.		
1866–70	26,210	3,383	12·91	18,529	1,945	10·50	4,524	575	12·71
1871–80	26,871	3,265	12·15	23,411	2,566	10·96	6,681	866	12·96
1881–90	31,257	3,963	12·68	34,718	4,130	11·90	11,913	1,506	12·64
1891 ...	38,505	4,861	12·62	39,458	4,691	11·89	14,715	1,489	10·12
1892 ...	37,831	4,041	10·68	40,041	4,245	10·60	14,903	1,591	10·68
1893 ...	36,552	4,302	11·77	40,342	4,640	11·50	14,394	1,691	11·75
1894 ...	34,258	3,567	10·41	38,951	4,248	10·91	13,977	1,369	9·79
1895 ...	33,706	3,450	10·23	38,774	4,106	10·59	14,874	1,356	9·12
1896 ...	32,178	3,540	11·00	36,506	4,435	12·15	14,017	1,486	10·60
1897 ...	31,310	3,235	10·33	37,247	3,801	10·20	14,313	1,354	9·46
Mean of 32 Years.	29,896	3,631	12·15	29,539	3,339	11·30	9,680	1,154	11·92

* For information relating to individual years prior to 1891, see issue of this work for 1890-91, Vol. I., table following paragraph 586.

Infantile Mortality in Australasian Colonies—*continued.*

Period.*	Annual Births.	Annual Deaths at under 1 Year of Age.		Annual Births.	Annual Deaths at under 1 Year of Age.		Annual Births.	Annual Deaths at under 1 year of Age.	
		Number.	Proportion to 100 Births.		Number.	Proportion to 100 Births.		Number.	Proportion to 100 Births.
	South Australia.			Tasmania.			New Zealand.		
1866–70	7,013	1,092	15·57†	2,936	294	10·01	9,354	907	9·70
1871–80	8,270	1,227	14·84†	3,248	339	10·44	14,810	1,481	10·00
1881–90	10,682	1,319	12·01†	4,515	477	10·56	19,055	1,666	8·74
1891 ...	10,737	976	9·09	4,971	470	9·45	18,273	1,667	9·12
1892 ...	10,570	1,022	9·67	4,965	492	9·91	17,876	1,594	8·92
1893 ...	10,683	1,245	11·66	5,216	546	10·47	18,187	1,600	8·80
1894 ...	10,476	984	9·39	4,852	438	9·03	18,528	1,507	8·13
1895 ...	10,537	1,000	9·49	4,790	391	8·16	18,546	1,637	8·83
1896 ...	10,012	1,015	10·14	4,603	410	8·91	18,612	1,439	7·73
1897 ...	9,535	1,040	10·91	4,684	411	8·77	18,737	1,354	7·23
Mean of 32 Years.	9,094	1,194	13·13	3,949	400	10·13	16,068	1,463	9·10

Note.—In Western Australia the proportions for the last twelve years were as follow:—1886, 15·48; 1887, 15·68; 1888, 12·38; 1889, 8·79; 1890, 8·97; 1891, 11·98; 1892, 14·07; 1893, 11·84; 1894, 12·62; 1895, 14·33; 1896, 18·44; and in 1897, 18·35; or an average of 13·58 for the twelve years.

1105. In the following lists the colonies are placed in order according to their respective rates of infantile mortality, the colony with the highest rate being placed first, and the rest in succession. The rate in 1897 was highest in Western Australia, South Australia standing second, and Victoria third. Over a series of years the order of the colonies was the same as in 1897, except that New South Wales and Queensland changed places :— Order of colonies in respect to infantile mortality.

Order of Colonies in reference to Infantile Mortality.

Order in 1897.	Order over a Series of Years.
1. Western Australia.	1. Western Australia.‡
2. South Australia.	2. South Australia.
3. Victoria.	3. Victoria.
4. New South Wales.	4. Queensland.
5. Queensland.	5. New South Wales.
6. Tasmania.	6. Tasmania.
7. New Zealand.	7. New Zealand.

1106. 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 Infantile mortality in various countries.

* See footnote (*) on previous page.

† Overstated, in consequence of some children over one year having been erroneously included. See issue of this work for 1889-90, Vol. I., paragraph 640.

‡ According to an average of twelve years only.

within twelve months—whilst it is lowest in Sweden, Ireland, and the Australasian Colonies. The following table shows the various rates :—

INFANTILE MORTALITY IN VARIOUS COUNTRIES.

	Deaths under 1 Year of Age to 100 Births.		Deaths under 1 Year of Age to 100 Births.		Deaths under 1 Year of Age to 100 Births.
Russia ...	... 30·0	Italy ...	... 19·0	New South Wales	11·1
Bavaria	... 27·0	Belgium	... 17·0	Queensland	... 10·3
Austria	... 25·0	France	... 17·0	Sweden	... 10·0
Wurtemburg	... 25·0	Great Britain	... 15·0	Ireland	... 10·0
Prussia	... 21·0	Greece	... 15·0	South Australia	9·9
Holland	... 20·0	Denmark	... 14·0	Tasmania	... 9·4
Roumania	... 20·0	Western Australia	13·0*	New Zealand	... 8·8
Switzerland	... 19·0	Victoria	... 11·1		

NOTE.—The information respecting all the countries except the Australasian Colonies is for the year 1895, and was obtained from *Mulhall* (page 685). That respecting the Australasian Colonies is based on the average of the five years ended with 1895.

Infantile mortality in Melbourne and country.

1107. The infantile mortality of large towns is naturally always above that in country districts. Thus the deaths at under the age of one year in Melbourne and suburbs (Greater Melbourne) during the 26 years ended with 1898 averaged nearly 16 per 100 births, whilst in the extra-metropolitan districts of Victoria the mortality of infants at the same period of life averaged less than 10 per 100 births. In Greater Melbourne the rate in 1897 was exceptionally low, but that in 1898 was far higher than in any previous year since 1891; whilst in the extra-metropolitan districts the rate in 1898 was exceptionally high. The following table shows the death rate of infants in the metropolis and in the other districts of the colony during the eight years 1873 to 1880 and in the two subsequent quinquennial periods, also in each year from 1891 to 1898 :—

INFANTILE MORTALITY IN AND OUTSIDE OF GREATER MELBOURNE, 1873 TO 1898.

Period.	Births.	Deaths at under 1 Year of Age.		Births.	Deaths at under 1 Year of Age.	
		Total Number.	Number to 100 Births.		Total Number.	Number to 100 Births.
	GREATER MELBOURNE.			VICTORIA, OUTSIDE GREATER MELBOURNE.		
1873 to 1880	66,787	11,252	16·85	147,138	14,946	10·16
1881 to 1885	51,883	8,847	17·05	88,375	8,196	9·16
1886 to 1890	77,962	13,411	17·20	94,345	9,171	9·72
1891 ...	18,018	2,862	15·88	20,487	1,999	9·76
1892 ...	17,399	2,237	12·86	20,432	1,805	8·83
1893 ...	15,338	2,210	14·41	21,214	2,092	9·86
1894 ...	13,672	1,675	12·25	20,586	1,892	9·20
1895 ...	13,208	1,644	12·44	20,498	1,806	8·81
1896 ...	12,769	1,672	13·09	19,409	1,868	9·62
1897 ...	12,303	1,464	11·90	19,007	1,771	9·32
1898 ...	12,016	1,919	15·97	18,156	2,128	11·72
Sums and means	311,355	49,192	15·80	489,647	47,674	9·74

* The rate in this colony has since apparently risen to 18.

1108. In Brisbane and Adelaide the rate of infantile mortality is higher, and in Hobart and Wellington lower, than in Melbourne and Sydney—the rate in these two being nearly identical. In the four last-named cities the rate of infantile mortality compares favorably with that in the majority of the following towns, which are arranged in order according to the extent to which infantile mortality prevails in each:— Infantile mortality in English and Australasian towns.

INFANTILE MORTALITY IN TOWNS OF ENGLAND AND AUSTRALASIA, 1877 TO 1886.

	Deaths under 1 Year of Age to 100 Births.		Deaths under 1 Year of Age to 100 Births.
Preston	21·8	Sheffield	16·3
Leicester	20·1	Bradford	16·2
Blackburn	18·7	Hull	16·1
Liverpool	18·3	Twenty-eight English Towns	16·1
Salford	17·8	Newcastle	16·0
Bolton	17·7	Wolverhampton ...	15·9
Nottingham	17·5	Halifax	15·9
Manchester	17·4	Sunderland	15·7
Brisbane (1883 to 1887)	17·4	Plymouth	15·7
Norwich	17·3	London	15·2
Adelaide (1884 to 1887)	17·2	Brighton	14·8
Leeds	17·2	Bristol	14·5
Cardiff	16·9	Hobart (1883 to 1887) ...	14·5
Huddersfield	16·9	Derby	14·3
Oldham	16·9	Wellington (1883 to 1887)	14·2
Melbourne (1878 to 1888)	16·9	Portsmouth	13·8
Sydney (1878 to 1888) ...	16·8	Birkenhead	13·7
Birmingham	16·4		

1109. In, or in connexion with, the Women's Hospital, Melbourne, 1,068 children were born alive during the year ended with 30th June, 1898, and of these 46, or about $4\frac{1}{3}$ per cent., died whilst under the care of the institution. In the previous year, $3\frac{1}{2}$ per cent.; in 1895–6, 4 per cent.; in 1894–5 and 1893–4, 5 per cent.; in 1892–3, 1891–2, and 1890–91, 3 per cent.; an average of about 4 per cent. in the five years ended with 1889–90; and in the $4\frac{1}{2}$ years ended with 1884–5 an average of nearly 9 per cent. of the infants born in the Women's Hospital, or outside under the supervision of its medical officers and committee, died before the mother had been discharged. The high proportion last referred to was fortunately most exceptional. Deaths of infants in Women's Hospital.

1110. In the year 1898 deaths of male children under 5 years of age numbered 3,283, and deaths of female children under that age numbered 2,805—the former being in the proportion of about 31 per cent., and the latter of about 34 per cent., to the total number of deaths at all ages. These proportions are much above the average of recent years. Comparing the average of the last decade with that of the previous one, a marked falling-off took place in the mortality of children relatively to that of persons of all ages, which is accounted for by the fact that the proportion of children to the total population has been diminishing from year to year, and is now very much lower than it was in the earlier period referred to; and a further sudden fall from 40 to 30 per cent. has taken place since 1893, probably owing to a similar cause. The Deaths of children under 5.

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 eight years and during the two decennial periods ended with 1880 and 1890 respectively :—

Deaths of Children under Five Years of Age, 1871 to 1898.

Period.	Years of Age at Death (last birthday).					Total Deaths 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 ...	2,575	498	145	122	103	3,443	32·33
1892 ...	2,196	438	142	99	71	2,946	32·38
1893 ...	2,338	613	211	117	81	3,360	35·18
1894 ...	1,960	421	152	91	68	2,692	30·26
1895 ...	1,919	363	122	91	60	2,555	28·77
1896 ...	1,950	365	127	71	65	2,578	28·96
1897 ...	1,753	307	124	93	94	2,371	27·78
1898 ...	2,228	627	204	119	105	3,283	31·16
Females.							
1871–80 ...	1,482	482	198	139	106	2,407	46·06
1881–90 ...	1,805	423	151	105	84	2,568	39·61
1891 ...	2,286	463	146	103	77	3,075	38·57
1892 ...	1,845	392	151	81	66	2,535	37·55
1893 ...	1,964	517	166	92	70	2,809	40·38
1894 ...	1,607	343	116	77	71	2,214	33·90
1895 ...	1,531	318	113	85	72	2,119	31·37
1896 ...	1,590	329	115	76	47	2,157	31·67
1897 ...	1,482	277	103	86	76	2,024	30·70
1898 ...	1,819	623	178	94	91	2,805	34·37

More boys die than girls.

1111. During the ten years ended with 1890, deaths of male children under 5 numbered 29,884, and deaths of female children under 5 numbered 25,679, and thus the former exceeded the latter by 4,205, or by 16 per cent. The deaths of male children in all the years bore a much smaller proportion to the total deaths of males than the deaths of female children did to the total deaths of females, a circumstance mainly due to the small proportion of adults in the female as compared with that in the male population. During the same period the mortality of boys under 5 amounted to over 34 per cent., and that of girls under 5 amounted to nearly 40 per cent. of the whole mortality of their respective sexes. In none of the years to which the table relates did the former exceed 45 per cent., or the latter exceed 53 per cent., of that mortality.

Number of children under 5 and their deaths.

1112. The average number of male and female children at each year of age under 5 living, during the period of ten years ended with 1890, are 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:—

NUMBER AND DEATHS OF CHILDREN UNDER FIVE YEARS OF AGE, 1881 TO 1890.

Age last Birthday.	Males.				Females.			
	Mean Number Living, 1881 and 1891.	Mean Annual Deaths, 1881 to 1890.	Per-centage of Deaths at each age.	Deaths per 1,000 Children Living.	Mean Number Living, 1881 and 1891.	Mean Annual Deaths, 1881 to 1890.	Per-centage of Deaths at each age.	Deaths per 1,000 Children Living.
0 ...	14,229	2,158	72·20	151·66*	13,891	1,805	70·29	129·94*
1 ...	13,123	464	15·52	35·36	12,778	423	16·47	33·10
2 ...	13,453	161	5·39	11·97	12,938	151	5·88	11·67
3 ...	13,005	114	3·81	8·77	12,818	105	4·09	8·19
4 ...	12,727	92	3·08	7·23	12,506	84	3·27	6·72
Total...	66,537	2,989	100·00	44·92	64,931	2,568	100·00	39·55

Proportion of children dying annually.

1113. During the period to which the table refers, the mean number of children of both sexes under 5 living was 131,468, and the mean number of deaths of such children was 5,557, whence it results that 42 in every 1,000 children under 5, or about 1 in 24, died annually, as compared with 44 per 1,000 in the previous 11 years. In every 1,000 boys the proportion who died annually was 45, or 1 in 22, whilst in every 1,000 girls it was 40, or 1 in 25, whereas in the previous eleven years the proportion per 1,000 was 47 for males and 41 for females.

Proportion of infants dying annually.

1114. Of every 1,000 boys under 1 year of age, 152, and of every 1,000 girls under 1 year of age, 130, died annually in the decade under notice; the corresponding proportions for the previous ten years being 146 and 125 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 135 deaths of male infants and 118 deaths of female infants to every 1,000 births of infants of those sexes respectively during the recent decade, and 130 and 113 respectively during the previous one.†

More boys died than girls.

1115. 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 22 at under 1,‡ but only about 2 at from 1 to 2, and less than 1 at subsequent ages.

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* These results, being based upon infants living at any one time instead of the total number of annual births, are naturally in excess of those given for the corresponding period in the last two columns of table following paragraph 1100 *ante*.

† See table following paragraph 1097 *ante*; also footnote (*).

‡ See also paragraph 1112 *ante*.

Boys and girls dying under 1.

1116. 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.

Proportion of deaths of children at each age.

1117. Of the whole number of children who died before they attained the age of 5, nearly three-fourths, viz., 72 per cent. of the boys, and 70 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 18 of the boys and about 1 in 17 of the girls were between 2 and 3; 1 in 26 of the boys and 1 in 24 of the girls were between 3 and 4; 1 in 32 of the boys and 1 in 30 of the girls were between 4 and 5.

Probable mortality of children under 5.

1118. It results from actuarial calculations, based upon the figures for the decade 1881–90 in the last and a previous table,* that of every 20,000 boys and girls in equal numbers born in Victoria, 1,348 boys and 1,184 girls may be expected to die before they complete a year of life, 301 more boys and 287 more girls before they complete 2 years, 99 more boys and 99 more girls before they complete 3 years, 72 more boys and 69 more girls before they complete 4 years, and 59 more boys and 56 more girls before they complete 5 years. At the end of that period it is probable that 1,879 of the boys and 1,695 of the girls will have died; and 8,121 of the boys and 8,305 of the girls will be still living. This result is more favorable than that deduced from the mortality of the decade 1871–80, which showed the number of survivors at the end of the first five years of life to be 8,015 for boys and 8,195 for girls, or 16,210 for children of mixed sexes. There is also evidence of a further improvement having taken place since 1890.

Probable mortality of children in England and Victoria.

1119. The results thus obtained for Victoria from the experience of the decennial period 1881–90 compare most favorably with those for England and Wales during the same period. Thus, according to the latest English life table (contained in the supplement to the Fifty-fifth Annual Report of the Registrar-General), of 10,000 males and 10,000 females born, 1,610 males and 1,311 females will die before attaining their first year of age; 481 males and 458 females will die between the ages 1 and 2; 188 males and 189 females between ages 2 and 3; 119 males and 122 females between ages 3 and 4; and 87 males and 87 females between ages 4 and 5. So that of the 10,000 infants of each sex born 7,515 males and 7,833 females will survive their fifth birthday. In Victoria the corresponding numbers are 8,121 and 8,305 respectively.

Deaths of octogenarians.

1120. The year 1898 was especially fatal to old people, as many as 1,073 having died at the age of 80 or upwards in that year, as against 850 in 1897, 860 in 1896, 838 in 1895, and 708 in 1894. Those in 1898 consisted of 643 males and 430 females. Eighty-four of the males and 57 of the females had passed the age of 90, and 4 males and 3 females had passed the age of 100—one of the latter being

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* See table following paragraph 1100, from which probable deaths at under 1 year of age have been deduced; also paragraph 1103 *ante*. Probability of death at other ages under 5 has been calculated from the numbers in the last table.

recorded as having attained the age of 116. The following are the exact registered ages of such persons in the last 18 years :—

DEATHS OF OCTOGENARIANS, 1881 TO 1898.

Years of Age.	1894.		1895.		1896.		1897.		1898.		Eight Years, 1891 to 1898.		Ten Years, 1881 to 1890.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
80 ..	67	46	91	57	81	48	84	43	100	65	631	394	503	338
81 ..	35	28	61	33	71	47	49	32	69	26	439	264	283	212
82 ..	48	33	51	37	55	29	65	51	83	61	481	321	351	211
83 ..	34	32	57	36	36	32	40	25	55	40	346	248	271	175
84 ..	55	37	54	27	49	36	56	32	62	48	390	256	324	217
85 ..	43	23	37	31	41	41	41	29	62	32	325	228	228	170
86 ..	29	24	33	26	46	21	37	31	42	31	268	185	170	154
87 ..	19	14	23	21	26	20	32	30	31	23	202	167	148	131
88 ..	15	13	16	12	15	19	16	21	36	30	153	129	109	111
89 ..	14	6	15	12	12	12	14	15	19	17	111	106	74	71
90 ..	16	5	8	16	15	23	16	14	25	13	124	108	82	74
91 ..	4	6	10	9	10	4	7	7	14	9	73	65	43	40
92 ..	9	5	8	5	12	10	5	8	13	8	79	64	37	40
93 ..	5	5	6	6	6	5	5	5	4	10	47	46	28	33
94 ..	8	9	7	6	5	2	4	4	1	1	36	35	24	21
95 ..	3	4	3	5	4	5	4	2	4	..	30	21	20	19
96 ..	1	3	3	2	4	6	4	4	7	4	25	22	14	7
97 ..	2	1	4	2	..	2	5	6	1	6	18	21	9	8
98 ..	..	2	2	1	1	2	..	..	6	3	12	12	10	8
99 ..	..	1	1	..	1	2	..	1	5	..	12	4	10	10
100 ..	..	..	..	..	1	1	..	1	2	2	..	6	5	12	7
101 ..	..	..	..	..	..	2	..	..	1	..	1	3	4	3	4
102 ..	1	..	..	1	..	..	1	..	2	1	5	4	6	3
103 ..	1	1	..	..	..	..	..	..	..	..	3	1	3	3
104 ..	..	..	..	1	..	..	..	..	..	..	1	1	2	3
105 ..	..	..	..	..	..	..	..	..	..	..	..	..	2	2
106 ..	..	..	..	..	..	..	1	..	..	..	2	..	3	1
107 ..	..	..	..	..	..	..	..	..	..	..	..	..	..	2
108 ..	1	..	1	..	..	..	..	..	..	..	2	..	1	..
109 ..	..	..	..	..	..	..	..	..	..	..	..	..	1	..
110 ..	..	..	..	..	1	..	..	..	..	..	1	..	..	1
111 ..	..	..	..	..	..	..	..	..	..	..	..	..	1	..
114 ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
116 ..	..	..	..	..	..	..	..	..	..	1	..	1	..	..
Unspecified	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Total ..	410	298	491	347	494	366	487	363	643	430	3,825	2,712	2,772	2,076

Deaths of octogenarians, 1881 to 1898.

1121. In the 10 years ended with 1890, 2,772 males and 2,076 females died in Victoria at the age of 80 or upwards. The deaths of males and females at all ages during the same period numbered 86,915 and 64,544 respectively, therefore 1 male in every 31 males who died, and 1 female in every 31 females who died, had lived to be upwards of 80 years of age. In the same period, 311 of the males, or 1 in 279, and 286 of the females, or 1 in 226, had lived to be 90 years of age or upwards; and 34 of the males, or 1 in 2,556, and 26 of the females, or 1 in 2,482, had lived to be upwards of 100 years of age. Owing to the rapidly increasing proportion of old people in the population, these proportions (except in regard to centenarians, who apparently are not so numerous as formerly) are much lower than those prevailing in the succeeding period of 8 years ended with 1898, when 1 male in every 20 males and 1 female in every 21 females who died were upwards of 80 years of age ; 1 male in 157, and 1 female in 137, were upwards of 90 years ; and only 1 male in 3,263, and only 1 female in 3,533 were

upwards of 100 years. In fact, the proportion, relatively to population, of persons dying over 80 years of age increased by over 50 per cent. in the last 8 as compared with the previous 10 years.

Average age at death.

1122. The average age at death in 1898 was nearly 35½ years. For males the average was 37·71 years, or about 37 years and 9 months, and for females it was 32·52 years, or about 32 years and 6 months; the females being thus on the average about 5⅕ years younger than the males. The following figures show the average age at death according to the means of the 23 years 1852–74, the mean of each of the three succeeding quinquennial periods, and each of the nine years ended with 1898:—

AVERAGE AGE AT DEATH IN VICTORIA.

	Males. Years.	Females. Years.
23 years—1852 to 1874	21·70 ...	15·01
5 years—1875 to 1879	27·98 ...	22·22
,, 1880 to 1884	32·15 ...	26·59
,, 1885 to 1889	32·59 ...	27·10
1890	33·57 ...	27·57
1891	35·86 ...	29·98
1892	35·45 ...	30·19
1893	34·34 ...	28·78
1894	37·21 ...	32·31
1895	38·86 ...	34·42
1896	38·83 ...	34·21
1897	39·38 ...	38·77
1898	37·71 ...	32 52

Expectation of life in Victoria and England.

1123. The gradually increasing average age at death is mainly due to the increasing proportion of elderly persons in the population—already referred to*—and also of recent years to the smaller proportion of children. It should, however, be explained that the average age of death, as given above, would not give a correct idea of the average duration of life, even if the ages of the population were in a normal condition. In an increasing population the former must be always considerably below the latter, in consequence of the undue proportion of children, which tends to lower the average age. A knowledge of the average duration of life can only be accurately obtained from a life table. According to a life table constructed by Mr. A. F. Burridge, F.I.A., of London, based upon the mortality experienced in the ten years 1870–81, the average duration of life (technically called "expectation of life" or "mean after lifetime") of males in Victoria is 46·37 years. Mr. Burridge did not publish a table for females in Victoria separately, but he gave a table for Victoria, New South Wales, and Queensland combined, according to which the "expectation of life" in the three colonies is 46·47 years for males and 49·64 years for females.† In England and Wales, according to the most recent life table, the "expectation of life" is 43·7 years for males and 47·2 years for females, so that, if the figures relating to the two countries hold

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* See last paragraph but one.

† See *Journal of the Institute of Actuaries*, Vol. XXIV., page 351. Prior to this (Vol. XXIII., page 325), Mr. Burridge published a life table for both sexes, based, however, upon the results of only one year (1879). According to this table the "expectation of life" in Victoria would be—males 49·20, females 52·33 years.

good, an Australian male may expect to live nearly 3 years longer than an Englishman, and an Australian female nearly $2\frac{1}{2}$ years longer than an Englishwoman.

Classification of diseases in Victoria.

1124. The system of classifying the causes of death in Victoria was changed in 1886 in accordance with a system which had been adopted in England a few years previously. This new mode of classification was based upon one devised by a committee composed of members of the Royal College of Physicians, London, and was published by them, first in 1869, and afterwards, in a revised form, in 1885. This system of classification superseded that of the late Dr. Farr, which, until the present system was introduced, had been the mode used for classifying the causes of death both in England and Wales and in the Australasian Colonies. A full account of the difference between the two systems was given in the *Victorian Year-Book*, 1886-7.* Owing to more recent discoveries as to the causation of disease, due to bacteriological investigations, even the last classification is in many respects unsatisfactory, and another system has been framed by M. le Dr. Bertillon (chief of the Municipal Statistical Office of Paris), and suggested for general adoption, which has received wide commendation, but up to the present it has been adopted only by the city of Paris, and by a few American states. No doubt the matter of an improved method of classification will receive universal attention at an early date.

Causes of death classified.

1125. The following table shows the causes of death in classified arrangement; the total number who died from each cause during each of the last five years, also the total number who died from each cause during the ten-year period ended with 1890:—

Causes of Death in Classified Arrangement.

(10 Years: 1881 to 1890; and Years 1894 to 1898.)

Class.	Sub-Class.	Causes of Death.†	Number of Deaths.					
			Ten Years.	Year.				
			1881-90.	1894.	1895.	1896.	1897.	1898.
		All Causes	151,459	15,430	15,636	15,714	15,126	18,695
		Classes.						
I.	...	Specific Febrile or Zymotic Diseases:—Zymotici (ζύμη, leaven). Diseases of the whole body, dependent on morbid poisons.	23,270	1,846	1,733	1,511	1,537	2,780
II.	...	Parasitic Diseases:—Parasitici (παράσιτος, parasite). Diseases dependent on animal or vegetable parasites.	764	60	55	70	69	66

* Paragraph 635 *et seq.*

† The definitions given in this column are chiefly those of the late Dr. Farr.

Causes of Death in Classified Arrangement—*continued.*

(10 Years: 1881 to 1890; and Years 1894 to 1898.)

Class.	Sub-Class.	Causes of Death.*	Number of Deaths.					
			Ten Years.	Year.				
			1881-90.	1894.	1895.	1896.	1897.	1898.
		Classes—*continued.*						
III.	...	Dietic Diseases:—Dietici (*δίαιτα*, way of life; diet). Diseases produced by errors of diet.	2,163	159	150	158	171	215
IV.	...	Constitutional Diseases:—Cachectici (*κακεξία*, bad habit of body).† This class, according to the nomenclature of the Royal College of Physicians, is designated "Diseases of the whole body — not classed." The term used by Dr. Farr in the old classification, however, is retained; Dr. Farr's definition being as follows:—"Sporadic diseases affecting several organs in which new morbid products are often deposited; sometimes hereditary."	24,011	2,841	2,911	2,821	2,761	3,076
V.	...	Developmental Diseases:—Metamorphici (*μεταμόρφωσις*, change of form). Special diseases, the incidental result of the formative and nutritive processes.	10,617	1,243	1,239	1,275	1,365	1,565
VI.	...	Local Diseases:—Monorganici (*μόνος*, alone, without others; *ὄργανον*, organ). Sporadic diseases, in which the functions of particular organs or systems are disturbed or obliterated, with or without inflammation.	69,213	7,451	7,776	8,096	7,517	9,152
VII.	...	Violent Diseases or Deaths:—Thanatici (*θάνατοι*, violent deaths). Diseases which are the evident and direct results of physical or chemical forces, acting either by the will of the sufferer, of other persons, or accidentally.	9,678	1,042	956	984	930	941
VIII.	...	Ill-defined and Not Specified Causes. This group includes several diseases which were formerly classed under specific heads, such as dropsy, debility, tumor, abscess, &c.	11,743	788	816	799	776	900

* See footnote (†) on previous page.

† The principal disease in this class—Phthisis—would now more properly be classed as a Zymotic disease.

Causes of Death in Classified Arrangement—*continued.*

(10 Years : 1881 to 1890 ; and Years 1894 to 1898.)

Class.	Sub-Class.	Causes of Death.*	Number of Deaths.					
			Ten Years.	Year.				
			1881–90.	1894.	1895.	1896.	1897.	1898.
		Sub-Classes.						
I.	1	Miasmatic diseases ...	10,949	1,114	996	769	806	1,814
	2	Diarrhœal diseases ...	10,375	546	503	538	486	746
	3	Malarial diseases ...	72	2	5	3	1	2
	4	Zoogenous diseases ...	8	1	3	...	1	...
	5	Venereal diseases ...	425	60	61	55	50	70
	6	Septic diseases	1,441	123	165	146	193	148
II.	...	Parasitic diseases ...	764	60	55	70	69	66
III.	...	Dietic diseases	2,163	159	150	158	171	215
IV.	...	Constitutional diseases ...	24,011	2,841	2,911	2,821	2,761	3,076
V.	...	Developmental diseases ...	10,617	1,243	1,239	1,275	1,365	1,565
VI.	1	Diseases of the nervous system	15,999	1,537	1,483	1,482	1,432	1,567
...	2	Diseases of the organs of special sense	80	13	17	20	19	27
	3	Diseases of the circulatory system	10,651	1,465	1,544	1,519	1,521	1,705
	4	Diseases of the respiratory system	21,285	1,811	2,033	2,050	1,897	2,431
	5	Diseases of the digestive system	14,949	1,786	1,783	2,063	1,751	2,480
	6	Diseases of the lymphatic system and ductless glands	105	22	12	27	20	23
	7	Diseases of the urinary system	3,767	580	602	637	601	653
	8	Diseases of the organs of generation	339	45	59	54	41	35
	9	Diseases of parturition ...	1,213	115	138	121	125	118
	10	Diseases of the organs of locomotion	375	38	55	67	55	56
	11	Diseases of the integumentary system	450	39	50	56	55	57
VII.	1	Accident or negligence ...	8,274	875	790	826	777	789
	2	Homicide	290	46	37	41	34	22
	3	Suicide	1,101	116	127	116	118	129
	4	Execution	13	5	2	1	1	1
VIII.	...	Ill-defined causes, or unspecified	11,743	788	816	799	776	900
		Diseases, etc.						
I.	1	Small-pox	7	...	...	...	...	...
		Chicken-pox	14	2	1	...	...	2
		Measles...	534	32	...	3	7	671
		Epidemic rose rash ...	8	...	...	1	2	8
		Scarlet fever	430	67	32	44	87	42
		Influenza	398	201	422	205	166	261
		Whooping-cough ...	1,392	262	125	77	11	61
		Mumps	7	...	...	...	1	...

* See footnote (†) on page 701.

Causes of Death in Classified Arrangement—*continued.*

(10 years: 1881 to 1890; and Years 1894 to 1898.)

Class.	Sub-Class.	Causes of Death.*	Number of Deaths.					
			Ten Years.	Year.				
			1881-90.	1894.	1895.	1896.	1897.	1898.
		Diseases, etc.—*continued.*						
I.	1	Diphtheria†	2,566	169	133	121	263	212
		Cerebro-spinal fever ...	7	1	...	...	...	...
		Simple continued fever / Typhoid (or enteric) fever	5,585	380	283	318	269	557
		Others	1	...	...	...	...	...
	2	Cholera (simple)	834	59	52	35	34	47
		Diarrhœa	8,304	392	359	430	372	537
		Dysentery	1,237	95	92	73	80	162
	3	Remittent fever	42	1	2	1	...	1
		Ague	27	1	3	1	1	1
		Beri-beri	3	...	...	1	...	...
	4	Cow-pox and other effects of vaccination	8‡	1	3	...	1	...
	5	Syphilis	332	51	56	50	44	62
		Gonorrhœa, stricture of the urethra	93	9	5	5	6	8
	6	Phagedæna	5‡	1	1	...	1	...
		Erysipelas	426	18	44	36	41	35
		Pyæmia, septicæmia § ...	370	37	67	42	74	61
		Puerperal fever ‖ ...	640	67	53	68	77	52
II.	...	Thrush	220	8	6	12	5	12
		Others from vegetable parasites	1‡	...	1	...	...	...
		Hydatids	537	51	48	58	64	53
		Others from animal parasites	6	1	...	...	...	1
III.	...	Starvation, want of breast-milk	1,192	104	102	114	121	160
		Scurvy ¶	6‡	...	1	1	3	1
		Intemperance	950	51	44	41	45	48
		Other dietic diseases ...	15	4	3	2	2	6
IV.	...	Rheumatic fever, rheumatism of heart / Rheumatism ...	799	25 / 46	27 / 53	16 / 66	35 / 68	33 / 64
		Gout	197	36	36	38	25	35
		Rickets	16	11	8	3	5	12
		Cancer, malignant disease**	4,864	744	760	789	774	864
		Tabes mesenterica ...	1,192	35	38	37	23	29

* See footnote (†) on page 701.

† Exclusive of diphtheritic croup, classed with croup, prior to 1897. Such cases numbered 15 in 1894, 12 in 1895, and 16 in 1896. See also Croup (VI., 4).

‡ For five years only.

§ A fewcases of mumps and other miasmatic diseases probably included under this head prior to 1886.

‖ See also accidents of childbirth (Class VI., Sub-class 9), *post*

¶ Included with purpura (IV.) prior to 1886.

** Including lupus prior to 1886.

Causes of Death in Classified Arrangement—*continued.*

(10 Years : 1881 to 1890 ; and Years 1894 to 1898.)

Class.	Sub-Class.	Causes of Death.*	Number of Deaths.					
			Ten Years.	Year.				
			1881–90.	1894.	1895.	1896.	1897.	1898.
		Diseases, etc.—*continued.*						
		Tubercular meningitis (acute hydrocephalus)	1,714	195	200	201	204	209
		Phthisis	14,090	1,548	1,567	1,428	1,375	1,520
		Other forms of tuberculosis, scrofula, &c.	594	92	112	119	137	170
		Purpura, hæmorrhagic diathesis †	114	11	24	11	14	17
		Anæmia, chlorosis, leucocythæmia‡	136‖	26	33	44	50	38
		Diabetes mellitus § ...	268	72	53	68	50	85
		Other constitutional diseases	27‖	...	...	1	1	...
V.	...	Premature birth ...	3,860	463	446	441	430	448
		Atelectasis ¶	191‖	47	48	52	68	72
		Cyanosis	275	19	33	50	45	55
		Spina bifida	105	17	9	11	15	7
		Imperforate anus	334	6	3	1	...	4
		Cleft palate, harelip		8	4	6	3	11
		Other congenital defects		34	27	30	23	35
		Old age	5,852	649	669	684	781	933
VI.	1	Inflammation of brain or its membranes	2,265	105	113	103	121	128
		Apoplexy	3,520	419	384	402	363	390
		Softening of brain ...	393‖	52	67	59	54	61
		Hemiplegia, brain paralysis	2,661	44	66	55	44	59
		Paralysis, undefined		167	167	166	169	179
		Insanity (general paralysis of insane)		175	176	190	164	213
		Chorea	21	...	2	1	2	3
		Epilepsy	851	71	68	75	66	72
		Convulsions	3,471	304	256	244	213	201
		Laryngismus stridulus ...	15‖	...	1	4	6	5
		Idiopathic tetanus	2,802	16	13	7	5	8
		Paraplegia, diseases of spinal cord		56	47	46	65	66
		Other diseases of nervous system		128	123	130	160	182
	2	Otitis, otorrhœa ** ...	61‖	9	5	13	14	15
		Epistaxis and diseases of nose **	14‖	...	5	3	2	4

* See footnote (†) on page 701.
† Including scurvy prior to 1886.
‡ Distributed over other heads prior to 1886, viz., anæmia, with dropsy (VIII.), chlorosis with disorders of menstruation (VI., 8), and leucocythæmia with other diseases of the circulatory system (VI., 3) prior to 1886.
§ Includes diabetes insipidus prior to 1886, and diabetes undefined.
‖ For five years only.
¶ Included with debility (VIII.) prior to 1886.
** Included with other diseases of nervous system prior to 1886.

Causes of Death in Classified Arrangement—*continued.*

(10 Years: 1881 to 1890; and Years 1894 to 1898.)

Class.	Sub-Class.	Causes of Death.*	Number of Deaths.					
			Ten Years.	Year.				
			1881–90.	1894.	1895.	1896.	1897.	1898.
		Diseases, etc.—*continued.*						
		Ophthalmia and diseases of eye ‡	5†	4	7	4	3	8
	3	Endocarditis, valvular disease	1,405	289	293	341	368	444
		Pericarditis ...		134	113	124	123	128
		Hypertrophy of heart § ...	90†	11	7	14	12	13
		Angina pectoris § ...	51†	11	13	15	16	19
		Syncope §	619†	272	216	189	163	196
		Aneurism	670	71	70	58	56	56
		Senile gangrene ‖ ...	69	20	22	14	18	13
		Embolism, thrombosis	7,747	48	35	37	37	28
		Phlebitis ...		5	5	5	5	2
		Varicose veins ...		1	3	...	6	4
		Other diseases of the circulatory system		603	767	722	717	802
	4	Laryngitis	518	20	39	26	46	42
		Croup ¶	2,004	56	53	53	56	35
		Other diseases of larynx and trachea	26†	2	2	2	2	1
		Asthma, emphysema ..	635	70	77	85	68	69
		Bronchitis	6,574	589	610	598	568	640
		Pneumonia	7,875	801	940	1,013	898	1,314
		Congestion of the lungs ...	1,955	92	105	101	94	102
		Pleurisy	1,127	145	161	134	106	153
		Others	571	36	46	38	59	75
	5	Stomatitis **	64	6	12	8	6	11
		Dentition	1,273	144	122	89	80	104
		Sore throat, quinsy ...	130	8	12	10	25	14
VI.	5	Dyspepsia ...	3,861	16	13	13	9	15
		Hæmatemesis ...		7	9	10	5	8
		Melæna ...		7	10	9	8	7
		Diseases of stomach		113	127	103	133	188
		Enteritis	2,838	839	817	1,124	846	1,467
		Ulceration of intestines ...	231	44	84	83	73	93
		Ileus, obstruction of intestine	621	93	81	96	76	82
		Stricture or strangulation of intestine	83	10	14	19	14	18
		Intussusception of intestine	139	13	15	10	11	15
		Hernia	304	31	33	39	32	31
		Fistula	22	3	3	4	2	3
		Peritonitis	1,014	103	106	109	137	127
		Ascites	113	8	4	5	9	15

* See footnote (†) on page 701.
† For five years only.
‡ Included with other diseases of the nervous system prior to 1886.
§ Included with other diseases of the circulatory system prior to 1886.
‖ Included with mortification (VIII.) prior to 1886.
¶ Including diphtheritic croup prior to 1897. Such cases numbered 15 in 1894, 12 in 1895, aud 16 in 1896.
** The great majority of cases of stomatitis for years prior to 1886 are included with diseases of stomach.

CAUSES OF DEATH IN CLASSIFIED ARRANGEMENT—*continued.*

(10 Years: 1881 to 1890; and Years 1894 to 1898.

Class.	Sub-Class.	Causes of Death.*	Number of Years. Ten Years.	Year.				
			1881–90.	1894.	1895.	1896.	1897.	1898.
		DISEASES, ETC.—*continued.*						
VI.	5	Gallstones ...	4,176	17	25	18	8	14
		Cirrhosis of liver		114	91	116	107	114
		Other diseases of liver		168	186	171	142	137
		Other diseases of the digestive system	80	42	19	27	28	17
	6	Diseases of lymphatic system	36†	14	7	13	12	6
		Disease of spleen ...	39	1	...	4	4	3
		Bronchocele	15	1	...	3	...	1
		Addison's disease‡ ...	15†	6	5	7	4	13
	7	Nephritis	536	158	159	177	162	195
		Bright's disease	1,837	222	249	268	258	227
		Uræmia‡	156†	30	40	36	37	48
		Suppression of urine ...	76	6	6	8	12	10
		Calculus	104	17	13	18	8	11
		Hæmaturia‡	15†	3	6	2	1	2
		Diseases of bladder and prostate	520	118	102	97	93	115
		Other diseases of the urinary system	523	26	27	31	30	45
	8	Ovarian disease	125	24	23	18	17	13
		Diseases of the uterus and vagina	132	15	30	27	20	19
		Disorders of menstruation	47	2	1	4	...	...
		Pelvic abscess§	13†	3	4	3	...	2
		Perineal abscess§ ...	8†	...	...	2	4	...
		Diseases of the testes, penis, scrotum, &c.	14	1	1	...	...	1
	9	Abortion, miscarriage	1,213	20	35	28	27	19
		Puerperal mania		3	2	2	2	1
		Puerperal convulsions		8	15	2	4	2
		Placenta prævia, flooding		21	31	37	22	20
		Phlegmasia dolens		1	2	...	2	1
		Other accidents of childbirth		62	53	52	68	75
	10	Caries, necrosis‖	123†	19	28	38	29	18
		Arthritis, ostitis, periostitis	132	10	15	21	19	24
		Other diseases of the organs of locomotion	120	9	12	8	7	14

* See footnote (†) on page 701.
† For 5 years only.
‡ Included with other diseases of urinary system prior to 1886.
§ Included with abscess (VIII.) prior to 1886.
‖ Included with "Other diseases," in same sub-class prior to 1886.

Causes of Death in Classified Arrangement—*continued.*

(10 Years; 1881 to 1890; and Years 1894 to 1898.)

Class.	Sub-Class.	Causes of Death.*	Number of Deaths.					
			Ten Years.	Year.				
			1881-90.	1894.	1895.	1896.	1897.	1898.
VI.	11	Carbuncle	53	7	3	14	6	8
		Phlegmon, cellulitis ...	61	10	10	15	17	17
		Lupus‡	11†	1	4	3	1	1
		Ulcer, bedsore	107	5	10	10	8	9
		Eczema ...	218	10	15	10	13	12
		Pemphigus ...		1	2	1	5	6
		Other diseases of the integumentary system		5	6	3	5	4
VII.	1	Fractures, contusions ...	3,564	401	336	369	327	322
		Wounds	274	21	22	25	16	24
		Burn, scald	941	86	124	128	110	107
		Sunstroke	233	29	12	32	66	98
		Lightning	26	2	1	1	1	2
		Poison	204	14	24	22	19	17
		Bite of snake or insect§ ...	38	2	5	6	3	5
		Drowning	2,064	223	172	161	169	140
		Suffocation	648	81	83	71	47	61
		Otherwise	282	16	11	11	19	13
	2	Murder and Manslaughter	290	46	37	41	34	22
	3	Gunshot wounds ...	203	24	33	27	19	24
		Cut, stab	181	16	21	20	24	16
		Poison	183	16	15	22	19	16
		Drowning	206	17	23	21	18	25
		Hanging	278	34	28	22	35	39
		Suicide by other means ...	50	9	7	4	3	9
	4	Judicial hanging ...	13	5	2	1	1	1
VIII.	...	Dropsy‖	457	23	24	14	19	13
		Debility, atrophy, inanition¶	10,309	702	671	623	582	717
		Mortification	92	7	4	10	8	10
		Tumour	325	13	24	14	22	24
		Abscess	95	6	16	15	11	13
		Hæmorrhage ...	465	4	13	8	7	13
		Sudden (causes unascertained)		13	7	8	8	10
		Causes not specified		20	57	107	119	100

* See footnote (†) on page 701.

† For five years only.

‡ Included with cancer (IV.) prior to 1886.

§ At least five of the deaths in the ten years 1881–90 were cases of insect-bite, but in most of those years such cases were not distinguished; one of the deaths in 1894, 2 in 1897, and 2 in 1898 were due to insect-bite.

‖ Including anæmia (IV.) prior to 1886.

¶ Including atelectasis (V.) prior to 1886.

1126. The next table shows the same causes of death, arranged in the order of their fatality, during 1898, with the numbers who died from each cause in that year, and during the decennial periods ended with 1890 and 1880, and the quinquennial period 1891–5; also the order of fatality of the different causes during those periods:— Causes of death in order of fatality.

Causes of Death in Order of Fatality.

(10 Years: 1871–80, and 1881–90; 5 Years, 1891–5; and Year 1898.)

Order of Fatality.				Causes of Death.	Number of Deaths.			
Ten Years: 1871–80.	Ten Years: 1881–90.	Five Years: 1891–5.	Year 1898.		Ten Years: 1871-80.	Ten Years: 1881–90.	Five Years. 1891–5.	Year 1898.
1	1	1	1	Phthisis	10,155	14,090	7,751	1,520
19	15	4	2	Enteritis	2,134	2,838	4,335	1,467
5	5	3	3	Pneumonia	5,077	7,875	4,781	1,314
4	2	2	4	Heart disease, &c., exclusive of aneurism, pericarditis, endocarditis, and valvular disease	5,642	8,576	5,044	1,077
16	7	8	5	Old age	2,727	5,852	3,307	933
12	9	6	6	Cancer, malignant disease	2,957	4,864	3,621	864
3	4	5	7	Accidents	7,447	8,274	4,262	789
20	46	25	8	Measles	2,080	534	696	671
6	6	7	9	Bronchitis	4,588	6,574	3,602	640
48	25	13	10	Endocarditis and valvular disease and pericarditis	377	1,405	1,952	572
8	8	17	11	Typhoid (or enteric) and simple continued fever	3,973	5,585	1,579	557
2	3	9	12	Diarrhœa	7,667	8,304	2,450	537
26	17	14	13	Hemiphlegia, paralysis, insanity	1,596	2,661	1,864	451
17	12	10	14	Premature birth ...	2,715	3,860	2,394	448
15	13	11	15	Apoplexy	2,750	3,520	1,996	390
9	10	15	16	Liver disease not classed	3,623	4,176	1,655	265
52	52	12	17	Influenza	276	398	1,975	261
14	16	21	18	Diseases of spinal cord and other diseases of nervous system	2,805	2,787	963	248
36	23	19	19	Bright's disease ...	749	1,837	1,071	227
22	11	23	20	Dyspepsia, and other diseases of the stomach	1,971	3,861	864	218
11	18	20	21	Diphtheria	3,040	2,566	994	212
28	24	18	22	Tubercular meningitis (acute hydrocephalus)	1,394	1,714	1,072	209
10	14	16	23	Convulsions	3,390	3,471	1,646	201
54	45	28	24	Nephritis	218	536	644	195
41	34	27	25	Malformation	600	905	662	184
25	22	22	26	Childbirth, and puerperal fever	1,728	1,853	919	170
34	42	34	26	Forms of tuberculosis, scrofula, &c., not classed	780	594	485	170

Causes of Death in Order of Fatality—*continued.*

(10 Years: 1871–80, and 1881–90; 5 Years, 1891–5; and Year 1898.)

Order of Fatality.				Causes of Death.	Number of Deaths.			
Ten Years: 1871-80.	Ten Years: 1881-90.	Five Years: 1891-5.	Year 1898.		Ten Years: 1871–80.	Ten Years: 1881-90.	Five Years: 1891-5.	Year 1898.
13	28	36	27	Dysentery	2,846	1,237	468	162
29	29	37	28	Starvation, want of breast milk	1,322	1,192	466	160
32	30	31	29	Pleurisy	811	1,127	623	153
30	31	30	30	Suicide	951	1,101	630	129
18	19	32	31	Inflammation of brain and its membranes	2,383	2,265	616	128
35	32	33	32	Peritonitis	771	1,014	595	127
55	48	35	33	Diseases of bladder and prostate	203	520	478	115
27	27	26	34	Dentition	1,469	1,273	683	104
24	21	29	35	Congestion of the lungs ...	1,812	1,955	640	102
31	38	38	36	Rheumatic fever and rheumatism	817	799	465	97
62	59	49	37	Ulceration of intestines ...	160	231	248	93
64	58	48	38	Diabetes mellitus ...	146	268	267	85
45	41	40	39	Ileus, obstruction of intestine	424	621	417	82
42	43	54	40	Diseases of the respiratory system not classed	598	571	178	75
43	36	44	41	Epilepsy	588	851	366	72
46	40	41	42	Asthma, emphysema ...	392	635	414	69
51	55	50	43	Syphilis	286	332	223	62
...	53	46	44	Softening of brain * ...	?	393†	319	61
21	26	24	44	Whooping-cough ...	1,974	1,392	851	61
53	54	52	44	Pyæmia, septicæmia ...	264	370	191	61
33	39	43	45	Aneurism	785	670	369	56
47	44	47	46	Hydatids	379	537	285	53
38	33	46	47	Intemperance	646	950	319	48
...	63	53	47	Uræmia	?	156†	190	48
44	37	42	48	Cholera (simple) ...	523	834	372	47
39	47	63	49	Diseases of the urinary system not classed	628	523	119	45
7	50	55	50	Scarlet fever	4,101	430	172	42
49	49	57	50	Laryngitis	359	518	165	42
...	65	61	51	Anæmia, chlorosis, leucocythæmia	?	136†	135	38
23	20	39	52	Croup (including diphtheritic croup)	1,897	2,004	458	35
65	62	58	52	Gout	133	197	154	35
40	51	60	52	Erysipelas	619	426	139	35
56	56	56	53	Hernia	191	304	168	31
37	29	45	54	Tabes mesenterica ...	723	1,192	325	29

* Included with diseases of spinal cord and other diseases of nervous system prior to 1886.

† For 5 years only.

Causes of Death in Order of Fatality—*continued.*

(Ten Years: 1871–80, and 1881–90; 5 Years, 1891–5; and Year 1898.)

Order of Fatality.				Causes of Death.	Number of Deaths.			
Ten Years: 1871–80.	Ten Years: 1881–90.	Five Years: 1891–5.	Year 1898.		Ten Years: 1871–80.	Ten Years: 1881–90.	Five Years: 1891–5.	Year 1898.
...	77	67	55	Diseases of the eye and ear (and nose ?)	?	80*	85	27
69	66	74	56	Arthritis, ostitis, periostitis	87	132	54	24
57	57	51	57	Murder and manslaughter	190	290	213	22
58	61	65	57	Eczema ...	185	218	106	12
				Pemphigus ...				6
				Integumentary diseases not classed				4
60	66	64	58	Diseases of the uterus and vagina	170	132	107	19
...	69	62	59	Caries, necrosis ...	?	123*	134	18
73	76	78		Stricture or strangulation of intestine	44	83	45	18
83	77	59		Diseases of the digestive system not classed	3	80	152	17
66	71	68	60	Pupura, hæmorrhagic diathesis	100	114	79	17
77	80	75		Phlegmon, cellulitis ...	20	61	52	17
67	64	69	61	Intussusception of intestine	93	139	70	15
59	72	78		Ascites	184	113	45	15
55	70	72	62	Diseases of the organs of locomotion not classed	203	120	63	14
63	67	70		Sore throat, quinsy ...	153	130	69	14
73	68	66	63	Ovarian disease... ...	44	125	94	13
...	91	81		Addison's disease ...	?	15*	24	13
...	90	80	64	Rickets	?	16*	27	12
50	60	72		Thrush	327	220	63	12
72	74	71	65	Calculus	48	104	66	11
83	79	76		Stomatitis	3	64	48	11
75	78	79	66	Suppression of urine ...	29	76	40	10
70	73	81	67	Ulcer, bedsore	86	107	24	9
...	91	73	68	Idiopathic tetanus ...	?	15*	62	8
...	95	96		Epidemic rose rash ...	?	8*	1	8
74	81	80		Carbuncle	37	53	27	8
68	75	77		Gonorrhœa, stricture of urethra	91	93	46	8
...	85	79	69	Diseases of the lymphatic system	?	36*	40	6
81	91	83		Dietetic diseases not classed	11	15	17	6
...	91	88	70	Laryngismus stridulus ...	?	15*	10	5
79	88	87	71	Fistula	17	22	11	3
73	84	87		Disease of spleen ...	44	39	11	3
77	89	88		Chorea	20	21	10	3
...	91	88	72	Hæmaturia	?	15*	10	2
...	93	82		Pelvic abscess	?	13	22	2
80	92	88		Chicken-pox	13	14	10	2

Causes of Death in Order of Fatality—*continued.*

(Ten Years: 1871-80, and 1881-90; 5 Years, 1891-5; and Year 1898.)

Order of Fatality.				Cause of Death.	Number of Deaths.			
Ten Years: 1871-80.	Ten Years: 1881-90.	Five Years: 1891-5.	Year 1898.		Ten Years: 1871-80.	Ten Years: 1881-90.	Five Years: 1891-5.	Year 1898.
78	93	84		Judicial hanging ...	19	13	16	1
...	87	89		Diseases of the larynx and trachea not classed	?	26*	9	1
76	96	94		Parasitic diseases not classed	28	7*	3	1
...	91	90	73	Bronchocele	?	15*	8	1
...	94	86		Lupus	?	11*	12	1
75	92	92		Diseases of testes, penis, scrotum, &c.	29	14	5	1
61	83	90		Remittent fever ...	169	42	8	1
73	86	85		Ague	44	27	13	1
...	97	92		Scurvy	?	6*	5	1
71	82	90		Disorders of menstruation	52	47	8	...
...	98	92		Phagedæna	?	5*	5	...
...	96	95		Cerebro-spinal fever ..	?	7*	2	...
...	95	91		Cow-pox and other effects of vaccination	?	8*	6	...
...	100	96		Miasmatic diseases not classed	...	1	1	...
84	96	...	...	Small-pox	2	7	...	...
...	99	93		Beri-beri	?	3*	4	...
...	95	95		Perineal abscess ...	?	8*	2	...
...	96	91		Mumps	?	7*	6	...
...	86	92		Constitutional diseases not classed	...	27*	5	...
85	...	...		Glanders	1	...	...	...
				Deaths from well-defined causes	114,206	139,716	77,147	17,795
				Deaths from "atrophy and debility" and other ill-defined and unspecified causes	8,364	11,743	4,909	900
				Deaths from all causes ...	122,570	151,459	82,056	18,695

Death rate from various causes in Victoria and England.

1127. The fatality of the different circumstances which cause death in this colony, as compared with the fatality resulting from similar causes in England and Wales, is shown by the following table, in which the number of persons dying from each cause in either country is compared with the number of persons living in the same country. The total of each class and order is given, as also are some of the principal diseases. The Victorian results relate to the years 1894 to 1898, and

* For 5 years only.

the decennial period ended with 1890, and the results for England and Wales to the five years ended with 1895:—

ANNUAL DEATH RATE FROM EACH GROUP OF CAUSES AND CERTAIN DISEASES IN VICTORIA AND ENGLAND AND WALES.

Causes of Death.	Number of Annual Deaths per 100,000 of Mean Population.						
	Victoria.						England and Wales.
	1894.	1895.	1896.	1897.	1898.	Average of 10 Years: 1881–90.	Average of 5 Years: 1891–5.
All causes	1,313·5	1,325·0	1,334·6	1,289·7	1,593·7	1,512·5	1,873·8
CLASSES.							
I.—Specific febrile or zymotic	157·1	146·9	128·3	131·1	237·0	232·4	274·7
II.—Parasitic ...	5·1	4·7	5·9	5·9	5·6	7·6	1·9
III.—Dietic... ...	13·5	12·7	13·4	14·6	18·3	21·6	8·0
IV.—Constitutional ...	241·8	246·7	239·8	235·4	262·2	239·8	318·1
V.—Developmental...	105·8	105·0	108·3	116·4	133·4	106·0	160·9
VI.—Local... ...	634·3	659·0	687·6	641·0	780·2	691·2	960·0
VII.—Violent deaths...	88·6	81·0	83·5	79·3	80·1	96·6	66·3
VIII.—Ill-defined and not specified causes	67·3	69·0	67·8	66·0	76·9	117·3	83·9
SUB-CLASSES AND DISEASES.							
Of Class I.							
1. Miasmatic diseases ...	94·8	84·4	65·3	68·7	154·6	109·3	187·2
Measles	2·7	...	·3	·6	57·2	5·3	40·8
Scarlet fever ...	5·7	2·7	3·7	7·4	3·6	4·3	18·2
Influenza ...	17·1	35·8	17·4	14·2	22·2	4·0	41·4
Diphtheria * ...	14·4	11·3	10·3	22·4	18·1	25·6	25·3
Whooping-cough ...	22·3	10·6	6·5	·9	5·2	13·9	39·8
Typhoid (enteric) fever	32·3	24·0	27·0	22·9	47·5	55·8	18·5
2. Diarrhœal diseases ...	46·5	42·6	45·7	41·4	63·6	103·6	65·2
Diarrhœa ...	33·4	30·4	36·5	31·7	45·8	82·9	63·0
Dysentery ...	8·1	7·8	6·2	6·8	13·8	12·3	
3. Malarial	·2	·4	·3	·1	·2	·7	·4
4. Zoogenous ...	·1	·2	...	·1	...	·1	·2
5. Venereal	5·1	5·2	4·7	4·3	6·0	4·2	8·0
6. Septic	10·5	14·0	12·4	16·5	12·6	14·4	13·8
Puerperal fever (see also Childbirth and Puerperal fever *infra*)	5·7	4·5	5·8	6·6	4·4	6·4	7·7

* Deaths from diphtheritic croup are not included with those from diphtheria prior to 1897, but under the nead of croup, which is classed as a disease of the respiratory system, Class VI., Sub-Class 4. In 1897 and subsequent years they have been included with diphtheria.

Annual Death Rate from each Group of Causes and certain Diseases in Victoria and England and Wales—*continued.*

Causes of Death.	Number of Annual Deaths per 100,000 of Mean Population.						
	Victoria.						England and Wales.
	1894.	1895.	1896.	1897.	1898.	Average of 10 Years: 1881-90.	Average of 5 Years: 1891-5.
Of Class IV.							
Constitutional diseases—							
Rheumatism, rheumatic fever, and gout	9·1	9·8	10·2	10·9	11·2	10·0	12·0
Cancer, malignant disease	63·3	64·4	67·0	66·0	73·7	48·6	71·2
Phthisis	131·8	132·8	121·3	117·2	129·6	140·7	146·4
Other tubercular and scrofulous diseases	27·4	29·7	30·3	31·0	34·8	35·0	66·0
Of Class V.							
Developmental diseases—							
Of children (premature birth or malformation)	50·6	48·3	50·2	49·8	53·9	47·6	64·7
Of old age	55·2	56·7	58·1	66·6	79·5	58·4	92·9
Of Class VI.							
Diseases of the systems—							
1. Nervous (brain diseases, &c.)	130·8	125·7	125·8	122·1	133·6	159·8	228·8
2. Organs of special sense (nose, ear, and eye diseases)	1·1	1·4	1·7	1·6	2·3	?	2·8
3. Circulatory (heart diseases, &c.)	124·7	130·8	129·0	129·7	145·4	106·4	167·7
4. Respiratory (lung diseases, &c.)*	154·2	172·3	174·1	161·7	207·2	212·6	374·7
5. Digestive (stomach, bowel, liver diseases, &c.)	152·0	151·2	175·2	149·3	211·4	149·3	111·6
6. Lymphatic, and ductless glands	2·0	1·0	2·3	1·8	2·0	1·0	2·3
7. Urinary (kidney, bladder diseases, &c.)	49·4	51·0	54·1	51·2	55·7	37·6	45·3
8. Generative (diseases of ovary, uterus, and vagina, &c.)	3·8	5·0	4·6	3·5	3·0	3·4	4·9
9. Childbirth (see also Childbirth and puerperal fever *infra*)	9·8	11·7	10·3	10·7	10·0	12·1	9·1

* There is some difficulty in making comparisons in the case of diphtheria, as diphtheritic croup, which was formerly classed with croup, is now classed with diphtheria. See footnote on previous page.

Annual Death Rate from each Group of Causes and certain Diseases in Victoria and England and Wales—*continued.*

Causes of Death.	Number of Annual Deaths per 100,000 of Mean Population.						
	Victoria.						England and Wales.
	1894.	1895.	1896.	1897.	1898.	Average of 10 Years: 1881–90.	Average of 5 Years: 1891–5.
10. Locomotive (arthritis, ostitis, &c.)	3·2	4·7	5·7	4·7	4·8	3·7	6·2
11. Integumentary (carbuncle, phlegmon, ulcer, &c.)	3·3	4·2	4·8	4·7	4·8	4·5	6·4
Of Class VII.							
1. Accident or negligence	74·4	67·0	70·2	66·3	67·3	82·6	56·4
2. Homicide ...	3·9	3·1	3·5	2·9	2·2	2·9	1·0
3. Suicide	9·9	10·8	9·9	10·1	11·0	11·0	8·9
4. Execution ...	·4	·2	·1	·1	·1	·1	·04
Of Class I. (6), *and Class VI.* (9). Childbirth and puerperal fever	15·5	16·2	16·1	17·3	14·4	18·5	16·8

NOTE.—See notes to table following paragraph 1125, *ante*.

Diseases more fatal in Victoria than in England.

1128. By means of this table, it is found that, over a series of years, the mortality from the following causes is greater in Victoria than in England and Wales:—Diphtheria* (slightly), typhoid fever, diarrhœal diseases, malarial diseases, dietic diseases (including want of breast milk and alcoholism), parasitic diseases (including thrush, hydatids, &c.); diseases of the stomach, bowels, and liver; violent deaths of all kinds; and the consequences of childbirth. From every other specified cause shown, also from all causes combined, the death rate is, on the average, higher in England and Wales than in Victoria.

New nosology prevents returns from being strictly comparable.

1129. It should be explained that under the existing nosological classification, which has now been in force for thirteen years, the increased number of distinct diseases specified, and the numerous changes made in the grouping of diseases, have rendered it difficult in some instances to compare correctly the number of deaths resulting from many diseases now stated separately, with the deaths which resulted from the same diseases before the change took place, when they were grouped with other complaints in such a way as to be now indistinguishable. Such discrepancies have, as far as possible, been pointed out in the footnotes to a previous table, by means of which it will generally be found possible to institute a fair comparison.

* See footnote (*) on page 713, *ante*.

Specific febrile or zymotic diseases.

1130. Per 100,000 of the population, 237 deaths in 1898 were set down to specific febrile or zymotic diseases. The proportion was slightly above the average of the decade 1881–90, but 68 per cent. higher than the average of the preceding four years. Of the 237 deaths per 100,000 persons referred to, 155 were set down to miasmatic, 64 to diarrhœal, 12 to septic, 6 to venereal diseases, and only a small fraction to malarial and zoogenous diseases. Measles, which caused only 7 deaths in 1897, caused as many as 671 deaths, or 57 per 100,000 persons living, in 1898. Influenza, which caused about 14 deaths per 100,000 persons living in 1897, caused 22 such deaths in 1898; typhoid fever caused 47 such deaths, as against 23 in 1897, 27 in 1896, 24 in 1895, and 53 according to the average of twenty years. This disease is always much more prevalent in the colony than in England. The mortality from diphtheria in 1898 was 18 per 100,000, as compared with 22 in 1897, 10 in 1896, and 17 for the period 1891–5; the average during the ten years 1881–90 was only 26, and that of the previous decade 38. The mortality from diarrhœal diseases in 1898 (64 per 100,000) was greater than that of any year since 1892, but was a little less than two-thirds of that in the decade 1881–90, and less than half of that in the decade 1871–80. It is certain, however, that the mortality from diarrhœal diseases is understated, in consequence of many deaths being set down to gastro-enteritis, which are of an epidemic character, and should have been described as diarrhœa. The mortality from most of the other zymotic diseases, except venereal diseases, was below the average.

Zymotic diseases, &c., in Australasian Colonies.

1131. The following is a statement of the number of deaths from zymotic diseases under the old classification, which now corresponds as nearly as possible with the zymotic, parasitic, and dietic classes of diseases together, and of the proportion of such deaths to the total mortality and to the population over a series of years in all the Australasian Colonies. The colonies are placed in order according to the death rate from diseases of this class prevailing in each :—

ORDER OF COLONIES IN REFERENCE TO MORTALITY FROM ZYMOTIC, PARASITIC, AND DIETIC DISEASES, 1878–87.

Colony.	Deaths from Zymotic, Parasitic, and Dietic Diseases, 1878–87.		
	Total Number.	Percentage of Total Deaths.	Annual Proportion per 10,000 Persons Living.
1. Queensland ...	13,190	28·11	49·5
2. Western Australia ...	1,099	20·34	34·2
3. South Australia ...	8,425	20·53	29·3
4. New South Wales ...	22,909	18·13	27·7
5. Victoria	23,776	17·71	26·2
6. Tasmania	2,793	14·59	22·7
7. New Zealand ...	11,544	20·25	22·3

1132. It will be observed that in Victoria, during the 10 years 1878 to 1887, the mortality from zymotic, parasitic, and dietic diseases was less in proportion to the mortality from all causes than it was in any of the other Australasian Colonies except Tasmania, and less in proportion to population than in any of them except Tasmania and New Zealand. Queensland was much above the other colonies in these respects, and was the only one of the colonies in which the death rate from this class of complaints was higher than that in England. In New South Wales, on the other hand, the proportion was only slightly higher than in Victoria. Results compared in different colonies.

1133. Small-pox has never prevailed as an epidemic amongst the people of Victoria. On several occasions persons sickening from or affected by that complaint have arrived in vessels, and before the nature of the malady was discovered it has been caught by others; but in every case the patients have been promptly isolated by order of the Government, and the disease has soon disappeared. No death from small-pox has occurred in the last thirteen years, and since the registration system was first introduced, in 1853, only 26 deaths from it have been recorded, five of which occurred in 1884. Material for giving some statistics of deaths from small-pox in other countries is at hand in the valuable paper contributed by Dr. E. Raseri to the International Statistical Institute at its session held at Rome in the month of April, 1886. The following are the figures referred to, which relate generally to the mean of the four years 1881 to 1884:— Small-pox in various countries.

ANNUAL DEATH RATE FROM SMALL-POX IN VARIOUS COUNTRIES*

	Deaths from Small-pox Annually per 10,000 Persons Living.		Deaths from Small-pox Annually per 10,000 Persons Living.
Spain (principal towns) ...	13·07	Holland	·57
Spain	8·46	Sweden	·41
Austria (principal towns)...	8·43	Switzerland	·33
Austria	7·05	Prussia	·29
Belgium	4·09	Germany (principal towns)	·23
Belgium (principal towns)	3·15	Ireland	·20
Russia	2·96	Massachusetts	·18
Italy	1·63	Denmark (towns) ...	·08
Switzerland (principal towns)	·80	Scotland (eight towns) ...	·05
Sweden (principal towns) ...	·69	Scotland	·03
England and Wales ...	·67		

1134. Although cases of small-pox have rarely occurred in Victoria, parents are required by law to cause their children to be vaccinated.† In 1898 the number of cases of successful vaccination performed in Victoria was 14,665; and, as the number of births was 30,172, it appears that 49 per cent. of the children born were vaccinated, which is by far the lowest proportion recorded in the last 23 years. Part of the remainder are accounted for by death—2,669, or 9 per cent., of Vaccinations.

* For an account of the mortality from small-pox amongst the Australian aborigines, see *Victorian Year-Book*, 1888-9, Vol. II., paragraph 228.

† An interesting report on the efficacy of vaccination was published in the *Victorian Year-Book*, 1890-91, Vol. I., paragraph 615.

those born having died before they were six months old. The average proportions of vaccinations to infants born is 73 per cent., as is seen by reference to the following figures, which indicate the proportions during each of the 23 years ended with 1898 :—

PROPORTION OF VACCINATIONS TO BIRTHS, 1876 TO 1898.

	Vaccinations per 100 Births.		Vaccinations per 100 Births.
1876	80	1889	70
1877	87	1890	68
1878	82	1891	66
1879	82	1892	71
1880	73	1893	70
1881	100*	1894	74
1882	75	1895	70
1883	67	1896	76
1884	74	1897	69
1885	69	1898	49
1886	70		
1887	78	Mean of 23 years	73
1888	67		

Vaccinations in various countries

1135. Dr. Raseri† gives the following as the proportions of successful vaccinations to births in different countries, generally during the years 1880 to 1884. To these have been added the proportions in such of the Australasian Colonies as the information is available for :—

PROPORTION OF VACCINATIONS TO BIRTHS IN VARIOUS COUNTRIES.

	Vaccinations per 100 Births.		Vaccinations per 100 Births.
Ireland	89	Poland (1887)	77
Scotland	88	Italy	73
Norway	87	Germany	71
England and Wales	86	South Australia (1878 to 1887)	69
Hungary	86	New Zealand (1886 to 1887)	68
Holland	82	France	64
Sweden	80	Russia in Europe (1887)	59
Austria	78	Tasmania (1878 to 1887)	55
Victoria (1878 to 1887)	77	New South Wales (1878 to 1887)	25

Vaccinations in Australasia and elsewhere.

1136. It appears by the figures that the proportion of infants vaccinated is larger in Ireland than in any other country, and next so in Scotland ; and that whilst in Victoria more than three-fourths of the children born during the period named were vaccinated, in South Australia and New Zealand little more than two-thirds, in Tasmania little more than half, and in New South Wales only one-fourth of the infants were vaccinated.

Cost of vaccination.

1137. The number of public vaccinators in Victoria is 213, and the amount paid in 1898 for vaccinations, including fees to deputy registrars and travelling allowances of vaccinators, was £2,551.

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* In this year, owing to an alarm occasioned by an outbreak of small-pox, first in Sydney and subsequently on board vessels arriving at Melbourne, the vaccinations exceeded the births by 100.

† *Bulletin*, &c., page 189.

1138. The five zymotic diseases which chiefly affect children are measles, scarlet fever, diphtheria, whooping-cough, and diarrhœa, to which may be added croup, which is classed as a complaint of the respiratory system. The following table shows the number of deaths from such diseases which occurred during the years 1891 to 1898 inclusive; the annual means of the seven years 1864–70, of the decades 1871–80 and 1881–90, and of the quinquennium 1891–5, being also given :— Zymotic diseases affecting children.

DEATHS FROM ZYMOTIC DISEASES CHIEFLY AFFECTING CHILDREN, 1864 TO 1898.*

Year or Period.	Annual Number of Deaths from—						
	Measles.	Scarlet Fever.	Diphtheria.	Croup.	Whooping-cough.	Diarrhœa.	Total.
1864–70 ...	161	326	410	148	185	801	2,031
1871–80 ...	208	410	304	190	197	767	2,076
1881–90 ...	54	43	257	200	139	830	1,523
1891–5 ...	139	34	199	92	170	490	1,124
1891 ...	4	25	326	170	168	655	1,348
1892 ...	1	26	246	117	179	549	1,118
1893 ...	659	21	120	62	117	495	1,474
1894 ...	32	67	169	56	262	392	978
1895 ...	...	32	133	53	125	359	702
1896 ...	3	44	121	53	77	430	728
1897 ...	7	87	263	56	11	372	796
1898 ...	671	42	212	35	61	537	1,558

NOTE.—Croup is included in this table, although not now classed as a zymotic disease, since a large number of deaths are set down to diphtheria and croup conjointly. Since 1896 cases of diphtheritic croup have been classed as diphtheria.

1139. As compared with the previous year, a decrease took place in 1898 in the mortality from scarlet fever, diphtheria, and croup, but a large increase in that from measles, diarrhœa, and whooping-cough. Taken as a whole, these diseases caused 762 more deaths than in 1897, or an increase of more than 95 per cent. It will be observed that an epidemic of measles took place in 1898. Children's zymotic diseases, 1898.

1140. This epidemic, it will be noticed, caused 671 deaths. The latest previous visitations of measles in an epidemic form had been in 1893, and 1884–5, which resulted in 659 and 302 deaths respectively, or 12 and 369 respectively less than the number in 1898. Epidemics of this complaint also occurred in 1880–81, 1874–5, and Measles.

* For the numbers in each year, see *Victorian Year-Book*, 1890-91, Vol. I., paragraph 616.

1866–7, when the deaths resulting therefrom numbered 314, 1,797, and 1,057 respectively. Between the epidemic periods the deaths from measles are but few, only 153, or an average of 22 per annum having been reported in the seven years ended with 1892 ; and only 42 in the period between 1893 and 1898, an average of 10 per annum. Per 10,000 of the population, the proportion of deaths from measles was ·82 in the ten years ended with 1887, that proportion being lower than in any of the following European countries, but very slightly higher than that in the other Australasian Colonies, except South Australia, as is shown by the following figures :—

Annual Death Rate from Measles in Various Countries, 1881 to 1884.

	Deaths from Measles per 10,000 Persons Living.		Deaths from Measles per 10,000 Persons Living.
Spain (principal towns)	11·44	Switzerland (principal towns)	2·46
Spain	8·84	Sweden	2·40
Italy	7·04	Austria (principal towns)	2·32
Scotland (eight towns)	5·34	Ireland	1·81
Belgium	5·24	Massachusetts	1·16
Austria	4·60	Russia in Europe	1·09
England and Wales	4·01	South Australia (1878 to 1887)	1·00
Denmark (towns)	3·66	Switzerland	·88
Scotland	3·58	Victoria (1878 to 1887)	·82
Prussia	3·51	New Zealand „	·64
Sweden (principal towns)	3·27	New South Wales „	·63
Germany (principal towns)	3·15	Tasmania „	·54
Holland	2·88	Queensland „	·27
Belgium (principal towns)	2·80		

NOTE.—A useful circular issued under the direction of the Central Board of Health, describing the symptoms of measles, the precautions necessary to be taken to prevent its spread, and mode of treatment in the absence of medical aid, was published in the *Victorian Year-Book*, 1887-8, Vol. I., paragraph 661.

Scarlet fever.

1141. On the occasion of the earlier visitations of measles in 1866–7 and 1874–5, the epidemic was accompanied or followed by one of scarlet fever, which proved to be even more fatal than the former complaint; but no such calamity has attended the last four outbreaks of measles, during the whole of which, especially the last, the mortality from scarlet fever was exceedingly low. The fatality attending this complaint has very much diminished of late years, the deaths from it—notwithstanding the increased population—having numbered only 430 in the ten years 1881–90, or an average of 43 per annum ; as against 4,101, or an average of 410 per annum, in the preceding ten years ; and 2,284, or an average of 326 per annum, in the seven years ended with 1870. In 1898, scarlet fever caused 42 deaths, or ·36 per 10,000 of the population, as against ·74 in 1897, ·37 in 1896, ·27 in 1895, ·57 in 1894, ·43 in the ten years ended with 1890, and 5·15 in the ten years ended with 1880. Whilst the death rate from this complaint in the ten years 1881–90 was lower than the average prevailing in any of the following countries except Queensland,

that in the decade preceding those years was higher than in most of the countries named :—

ANNUAL DEATH RATE FROM SCARLET FEVER IN VARIOUS COUNTRIES, 1881 TO 1884.*

	Deaths from Scarlet Fever per 10,000 Persons Living.		Deaths from Scarlet Fever per 10,000 Persons Living.
Sweden (principal towns)	6·10	Spain	2·00
Austria	5·86	Russia in Europe	1·79
Prussia	5·30	Belgium (principal towns)	1·58
England and Wales	5·29	Switzerland (principal towns)	1·49
Germany (principal towns)	5·09	Spain (principal towns)	1·46
Sweden	4·85	South Australia (1878 to 1887)	1·27
Scotland (8 towns)	4·77	Holland	1·15
Austria (principal towns)	4·45	Switzerland	1·01
Scotland	4·44	New South Wales (1878 to 1887)	·89
Ireland	3·00	New Zealand „	·75
Italy	2·94	Victoria „	·58
Belgium	2·90	Tasmania „	·49
Denmark (towns)	2·64	Queensland „	·13
Massachusetts	2·54		

NOTE.—A useful circular on scarlet fever, issued by the Central Board of Health, was published in the *Victorian Year-Book*, 1888-9, Vol. II., paragraph 238.

Diphtheria and croup.

1142. In consequence of the similarity of the complaints, and the number of deaths set down to a combination of both, it is misleading to consider the deaths caused by diphtheria apart from those caused by croup. Taking the two affections together, they were to every 10,000 of the population in the proportion of 2·11 in 1898, 2·74 in 1897, 1·48 in 1896, 1·57 in 1895, 1·92 in 1894, 1·56 in 1893, 4·54 in the ten years ended with 1890, and 6·19 in the ten years ended with 1880. The proportion, over a series of recent years, is lower than that for any of the foreign countries of which information is at hand, except Ireland, England, Holland, and Belgium, as will be seen by the following figures:—

ANNUAL DEATH RATE FROM DIPHTHERIA AND CROUP IN VARIOUS COUNTRIES, 1881 TO 1884.*

	Deaths from Diphtheria and Croup per 10,000 Persons Living.		Deaths from Diphtheria and Croup per 10,000 Persons Living.
Austria	16·63	Sweden (principal towns)	9·74
Prussia	15·45	Italy	9·18
Spain (principal towns)	11·83	Switzerland (principal towns)	8·49
Germany (principal towns)	11·54	Belgium	7·72
Massachusetts	11·13	Spain	6·85
Austria (principal towns)	10·36	Denmark (towns)	6·28
Sweden	9·79	Switzerland	6·09
South Australia (1878 to 1887)	5·93	Victoria (1878 to 1887)	4·17
Scotland (8 towns)	4·99	Belgium (principal towns)	3·79
New South Wales (1878 to 1887)	4·77	Holland	3·76
Queensland „	4·75	England and Wales	3·05
Russia in Europe	4·67	Ireland	2·70
Scotland	4·55	New Zealand (1878 to 1887)	2·42
Tasmania (1878 to 1887)	4·46		

NOTE.—A circular giving the symptoms of diphtheria and directions for its management in the absence of medical assistance, was issued by the Central Board of Health during the early part of 1888, and was republished in the *Victorian Year-Book*, 1887-8, Vol. I., paragraph 664.

* These proportions, except those for the Australasian Colonies, have been taken and re-arranged from Dr. Raseri's paper already alluded to, page 193.

Whooping-cough.

1143. Deaths from whooping-cough in 1898 were in the proportion of ·52, in 1897 of ·09, in 1896 of ·65, in 1895 of 1·06, in 1894 of 2·23, in 1893 of 1·00, in the ten years ended with 1890 of 1·39, and in the ten years ended with 1880 of 2·48 per 10,000 persons living. All these proportions, as well as those in the other Australasian Colonies, are lower than those generally prevailing in most of the foreign countries named in the following table:—

ANNUAL DEATH RATE FROM WHOOPING-COUGH IN VARIOUS COUNTRIES, 1881 TO 1884.*

	Deaths from Whooping-cough per 10,000 Persons Living.		Deaths from Whooping-cough per 10,000 Persons Living.
Austria	10·63	Austria (principal towns) ...	2·74
Scotland (8 towns)	9·64	Spain (principal towns) ...	2·68
Belgium	7·18	Italy	2·45
Denmark	6·62	New Zealand (1878 to 1887)	2·42
Scotland	6·23	Switzerland	2·31
Prussia	5·40	South Australia (1878 to 1887)	2·19
England and Wales	4·67	New South Wales ,,	1·93
Holland	3·82	Sweden	1·80
Germany (principal towns) ...	3·48	Victoria (1878 to 1887) ...	1·79
Belgium (principal towns) ...	3·37	Queensland ,, ...	1·51
Ireland	3·18	Tasmania ,, ...	1·44
Spain	3·14	Massachusetts	1·16
Sweden (principal towns) ...	2·98	Russia in Europe	·23
Switzerland (principal towns)...	2·74		

NOTE.—A circular on whooping-cough and its treatment, issued by the Central Board of Health, was republished in the *Victorian Year-Book*, 1887-8, Vol. I., paragraph 666.

Typhoid fever.

1144. Typhoid fever caused as many as 557 deaths in 1898, which was more than twice as many as in the previous year, and were far more numerous than in any year since 1890. During the last 33 years the death rate from typhoid fever has fluctuated considerably, but, nevertheless, there were four well-marked maximum periods, viz., 1866–7, 1877–8, 1883, and 1889, when the rates rose to over 6½ per 10,000 persons living. The minimum periods are not so well marked; but the principal ones appear to be 1871–3, 1880–81, and 1891–7, —average rate being below 4 per 10,000 at the two former periods, and below 3 at the latter period; and 1885, when it was 4½. Typhoid fever caused in 1898 nearly 3 per cent. of the total deaths from all causes, and over 17 per cent. of those occurring at between 10 and 25 years of age. The following table shows the number of deaths from

* Except those for the Australasian Colonies, the figures have been taken and re-arranged from Dr. Raseri's paper, page 193.

typhoid fever, and their proportion to the population, during each of the past 33 years :—

DEATHS FROM TYPHOID FEVER, 1866 TO 1898.*

Year.	Deaths from Typhoid Fever.		Year.	Deaths from Typhoid Fever.	
	Total Number.	Number per 10,000 Persons Living.		Total Number.	Number per 10,000 Persons Living.
1866	528	8·39	1883	661	7·26
1867	455	7·06	1884	456	4·89
1868	295	4·45	1885	424	4·43
1869	360	5·24	1886	530	5·38
1870	416	5·83	1887	631	6·21
1871	269	3·65	1888	541	5·13
1872	323	4·29	1889	910	8·35
1873	282	3·68	1890	611	5·46
1874	470	6·04	1891	356	3·10
1875	455	5·78	1892	301	2·59
1876	375	4·71	1893	259	2·21
1877	532	6·58	1894	379	3·23
1878	532	6·48	1885	283	2·40
1879	438	5·25	1896	318	2·70
1880	297	3·49	1897	269	2·29
1881	351	4·04	1898	557	4·75
1882	472	5·30	Mean ...	434	4·87

NOTE.—A useful circular issued under the direction of the Central Board of Health, describing the symptoms of typhoid fever, the precautions necessary to be taken to prevent its spread, and mode of treatment in the absence of medical aid, was published in the *Victorian Year-Book*, 1888-9, Vol. II., paragraph 242.

Typhoid fever in Australasian Colonies.

1145. According to the average of the ten years ended with 1890, the death rate from typhoid fever ranged from 2·5 per 10,000 persons living in New Zealand to 5·7 in Victoria and 9·6 in Queensland. The following table shows the mortality from that complaint in the Australasian Colonies during the periods 1873–80 and 1881–90, also for

* In the new classification, simple continued fever is entered as a separate complaint from typhoid fever, but as no such distinction was observed in former years, cases occurring in 1886 and subsequent years, which might possibly have been placed under the former head, have, for the sake of comparison, been still placed under the latter.

each of the six years ended with 1897, except in the case of Western Australia, for which the information is given for the last six years only :—

Deaths from Typhoid Fever* in Australasian Colonies, 1873 to 1897.

Period.	Deaths from Typhoid Fever Annually.							
	Number	Proportion per 10,000 Persons Living.	Number	Proportion per 10,000 Persons Living.	Number	Proportion per 10,000 Persons Living.	Number	Proportion per 10,000 Persons Living.
	Victoria.		New South Wales.		Queensland.		South Australia.	
1873 to 1880	423	5·25	337†	4·12†	108	5·79	88	3·89
1881 to 1890	559	5·69	448	4·77	301	9·61	128	4·18
1892 ...	301	2·59	332	2·81	127	3·05	88	2·70
1893 ...	259	2·21	221	1·83	109	2·55	62	1·84
1894 ...	379	3·23	329	2·66	102	2·32	85	2·47
1895 ...	283	2·40	286	2·26	72	1·59	73	2·08
1896 ...	318	2·70	509	3·95	130	2·79	96	2·71
1897 ...	269	2·29	327	2·49	183	3·82	110	3·08
	Western Australia.		Tasmania.		New Zealand.			
1873 to 1880	...	...	38	3·53	184	4·74		
1881 to 1890	...	...	62	4·76	140	2·48		
1892	55	9·83	46	3·01	141	2·20		
1893	28	4·48	23	1·50	97	1·47		
1894	73	9·72	33	2·12	115	1·69		
1895	325	36·02	46	2·89	94	1·36		
1896	400	32·57	45	2·75	124	1·75		
1897	407	26·13	47	2·78	106	1·47		

Deaths from typhoid fever in the colonies, 1897 and previous years compared.

1146. In 1897 the death rate from typhoid fever was much below the average in all the colonies except Western Australia, in which as in the two preceding years, it was very much above it. In Western Australia in 1895 the mortality per 10,000 living suddenly rose to the extremely high proportion of 36 ; and although it has since somewhat declined, it is still very much higher than in any other colony.

Typhoid fever in England and Wales.

1147. In England and Wales the mortality from typhoid or enteric fever‡ has been considerably reduced of late years, and it is now lower than in any of the Australasian Colonies, except New Zealand. During the ten years ended with 1880 the mean death rate therefrom was 4·30, in the ten years ended with 1890 only 2·23, but in the ten

* Including simple continued and ill-defined fever. It is possible that in some of the colonies a few cases of remittent fever may be returned under one or other of these heads. For mortality in each year since 1872, see *Victorian Year-Book*, 1890-91, Vol. I., paragraph 623.

† Years 1875 to 1880.

‡ The English figures quoted are those of enteric, or typhoid, and simple continued fever, which probably correspond with the fevers tabulated as typhoid in Victoria.

years ended with 1896 only 1·75 per 10,000 persons living, the latter being lower than even the minimum rate (2·21) recorded in Victoria during the last 33 years.*

Typhoid and typhus in various countries.

1148. In the returns of most European countries deaths from typhoid fever are not distinguished from those caused by typhus, the latter being a complaint which it is said does not exist in the Australasian Colonies. In England and Wales these fevers have been returned separately since 1869, and it is probable the following figures, so far as they relate to that country, apply to typhoid only, whilst those for most of the other countries, it is believed, refer to the two descriptions of fever combined :—

ANNUAL DEATH RATE FROM TYPHOID AND TYPHUS IN VARIOUS COUNTRIES, 1881 TO 1884.†

	Per 10,000 Persons Living.		Per 10,000 Persons Living.
Italy	9·37	Sweden (principal towns) ...	3·95
Spain (towns)	8·35	Denmark (towns) ...	3·85
Austria	7·31	Scotland	3·77
Belgium	6·17	Scotland (8 towns) ...	3·62
Spain	5·63	Ireland	3·57
Massachusetts	5·30	Germany (principal towns)	3·56
Prussia	5·14	Sweden	2·87
Belgium (principal towns) ...	4·69	England and Wales ...	2·70
Austria (15 towns) ...	4·49	Switzerland	2·30
Switzerland (17 towns) ...	4·31	Russia in Europe ...	2·07
Holland	4·24		

Influenza.

1149. Influenza has been more or less prevalent in Victoria, as well as in most other countries, since 1890. In this colony, whilst it proved fatal to persons of all ages, it pressed most hardly upon the old and the very young. The following is a statement of the deaths at various ages set down to this complaint in the nine years ended with 1898 :—

DEATHS AT EACH AGE FROM INFLUENZA IN VICTORIA, 1890 TO 1898.

Ages.	1890 to 1893.	1894.	1895.	1896.	1897.	1898.	Total in Nine Years.	
							Number.	Percentage.
Under 5 Years...	243	39	59	36	33	35	445	16·06
5 to 15 „ ...	57	11	19	10	5	5	107	3·86
15 to 25 „ ...	92	10	22	14	11	7	156	5·63
25 to 35 „ ...	137	12	32	16	13	24	234	8·44
35 to 45 „ ...	124	14	29	15	9	22	213	7·69
45 to 55 „ ...	153	14	36	16	11	19	249	8·99
55 to 65 „ ...	294	33	63	28	25	33	476	17·18
65 to 75 „ ...	256	37	89	38	36	59	515	18·58
75 and upwards	160	31	73	32	23	57	376	13·57
Total ...	1,516	201	422	205	166	261	2,771	100·00

* See paragraph 1144, *ante.*

† See Dr. Raseri's paper, page 193. The fevers referred to are there termed "Febbre tifoide e tiof esantematico."

Complaints supervening on influenza.

1150. It may be remarked that, besides the deaths set down to influenza, many deaths were registered as from bronchitis, pneumonia, and other diseases of the respiratory system which originated in attacks of influenza, and were complications of that complaint.

Venereal diseases.

1151. Deaths from venereal diseases averaged annually 38 in the ten years ended with 1880, and 43 in the ten years ended with 1890, and numbered 70 in 1898, being in the ratio per 10,000 of the population of ·47 during the first period, of ·42 during the second period, and of ·60 in the last year. If deaths from syphilis be considered apart from those caused by other venereal diseases, the annual numbers at the same periods would be 29, 33, and 62, and the proportions ·36, ·33, and ·51, which contrast favorably with those in six of the ten following countries. It should be mentioned that in a considerable proportion of cases occurring in Victoria the disease was congenital:—

ANNUAL DEATH RATE FROM SYPHILIS IN VARIOUS COUNTRIES, 1881 TO 1884.*

	Per 10,000 Persons Living.
Italy	1·65
Sweden (towns)	1·16
Scotland (eight towns)	1·01
Denmark (towns)	·94
England and Wales	·84
Scotland	·63
Massachusetts	·32
Switzerland	·24
Ireland	·16
Holland	·11

Venereal disease amongst the Aborigines.

1152. Venereal disease has long prevailed amongst the Australian Aborigines, and was no doubt first communicated to them by Europeans. The late Mr. Curr † gave it as his opinion that "it was first introduced into Australia by the whites many years ago, and has never since ceased to commit terrible ravages among our tribes. Probably this disease alone would suffice to exterminate them."

Parasitic diseases.

1153. In 1898, parasitic diseases, chief amongst which are thrush and hydatids, caused about $5\frac{1}{2}$ deaths per 100,000 of the population, which was 2 below the average of the ten years ended with 1890, and about $3\frac{1}{2}$ below the average of the ten years 1871 to 1880. These diseases are far more prevalent in Victoria than in England.

Hydatids.

1154. Hydatid disease, which is said to be communicated to man by reason of the ova of the tape-worm in dogs (Tænia Echinococcus) being taken into the stomach, generally in water, and to prove fatal to 25 per cent. of the human victims it attacks, during the 26 years ended with 1898 has caused 1,332 deaths, or an average of 51 per annum. Per 100,000 of the population, deaths from this disease ranged from 3·79 in 1873 to 7·19 in 1879, the average for the first eight years being 5·18, for the ten succeeding years 5·50, for the last eight 4·92, and for the whole period 5·22. There does not thus appear to be any appreciable reduction in the mortality from this

* See Dr. Raseri's paper, page 193.
† *The Australian Race,* Vol. I., page 227.

preventable disease. The following are the figures for the last 26 years :—

DEATHS FROM HYDATIDS, 1873 TO 1898.

Year.	Deaths from Hydatid Disease.		Year.	Deaths from Hydatid Disease.	
	Total Number.	Number per 100,000 Living.		Total Number.	Number per 100,000 Living.
1873 ...	29	3·79	1887 ...	51	5·02
1874 ...	41	5·27	1888 ...	53	5·03
1875 ...	47	5·97	1889 ...	61	5·61
1876 ...	36	4·52	1890 ...	53	4·75
1877 ...	37	4·57	1891 ...	58	5·06
1878 ...	37	4·50	1892 ...	63	5·42
1879 ...	60	7·19	1893 ...	65	5·55
1880 ...	48	5·64	1894 ...	51	4·34
1881 ...	48	5·50	1895 ...	48	4·07
1882 ...	58	6·52	1896 ...	58	4·93
1883 ...	56	6·16	1897 ...	64	5·46
1884 ...	59	6·33	1898 ...	53	4·52
1885 ...	47	4·92			
1886 ...	51	5·18	Mean ...	51	5·22

Hydatids in Australasian Colonies.

1155. According to the returns of the sixteen years ended with 1897, as embodied in the following table, hydatids in a fatal form appear to be much more common in Victoria than in any of the other Australasian Colonies. It should be mentioned, however, that medical men sometimes enter the cause of death simply as "disease of the liver, lungs, kidney, &c.," and, of course, in such cases, the real cause escapes notice :—

DEATHS FROM HYDATIDS IN AUSTRALASIAN COLONIES, 1882 TO 1897.

Year.	Number of Deaths from Hydatids.					
	Total.	Per 100,000 Persons Living.	Total.	Per 100,000 Persons Living.	Total.	Per 100,000 Persons Living.
	VICTORIA.		NEW SOUTH WALES.		QUEENSLAND.	
1882 ...	58	6·52	12	1·50	3	1·26
1883 ...	56	6·16	10	1·19	4	1·50
1884 ...	59	6·33	20	2·26	8	2·71
1885 ...	47	4·92	28	3·02	3	·97
1886 ...	51	5·18	23	2·37	Nil	...
1887 ...	51	5·02	27	2·69	1	·29
1888 ...	53	5·03	22	2·12	Nil	...
1889 ...	61	5·61	24	2·25	3	·80
1890 ...	53	4·75	35	3·18	2	·52
1891 ...	58	5·06	33	2·89	3	·74
1892 ...	63	5·42	33	2·79	Nil	...
1893 ...	65	5·55	49	4·05	8	1·21
1894 ...	51	4·34	44	3·56	6	1·37
1895 ...	48	4·07	47	3·72	7	1·55
1896 ...	58	4·93	56	4·35	6	1·29
1897 ...	64	5·46	48	3·66	3	·63
Means ...	56·0	5·27	31·9	2·85	3·6	·93

Deaths from Hydatids in Australasian Colonies, 1882 to 1897 —*continued.*

Year.	Number of Deaths from Hydatids.					
	Total.	Per 100,000 Persons Living.	Total.	Per 100,000 Persons Living.	Total.	Per 100,000 Persons Living.
	South Australia.		Tasmania.		New Zealand.	
1882 ...	12	4·14	4	3·35	7	1·37
1883 ...	6	2·01	4	3·35	1	·19
1884 ...	13	4·21	6	4·79	3	·55
1885 ...	5	1·60	2	1·56	3	·53
1886 ...	18	5·78	2	1·53	4	·68
1887 ...	9	2·89	3	2·24	3	·50
1888 ...	13	4·16	2	1·46	5	·83
1889 ...	11	3·51	5	3·56	2	·33
1890 ...	8	2·53	Nil	...	3	·48
1891 ...	12	3·78	3	2·01	3	·48
1892 ...	12	3·68	8	5·23	13	2·02
1893 ...	11	3·27	5	3·25	8	1·21
1894 ...	11	3·20	7	4·49	9	1·32
1895 ...	15	4·29	9	5·66	13	1·88
1896 ...	10	2·83	7	4·28	7	0·99
1897 ...	11	3·08	3	1·78	8	1·11
Means ...	11·1	3·43	4·4	3·03	5·7	·90

NOTE.—In Western Australia only 1 death in 1888, and 1 in 1893, were set down to this disease.

Hydatids in England.

1156. Hydatid disease is much more fatal in all the Australasian Colonies than it is in England and Wales, where there were only 71 deaths from it in 1897, or a proportion of ·24 per 100,000 persons living, as compared with a mean of ·20 in the five years 1881 to 1885.*

Dietic diseases.

1157. Dietic diseases, consisting principally of want of breast milk and alcoholism, caused in 1898 about 18 deaths per 100,000 persons living, the proportion being nearly 4 more than in 1897, and 3 below the average of the ten years ended with 1890. Over a series of years these diseases have been nearly three times as fatal in Victoria as in England.

Intemperance.

1158. In 1898, 48 deaths were set down to intemperance—of which 11 ended with delirium tremens—as against 45 in 1897, 41 in 1896, 44 in 1895, 51 in 1894, and an average of 95 during the ten years 1881–90, and of 65 in the ten years preceding that period. These figures furnish annual proportions per million persons living of 41 for 1898, 38 for 1897, 35 for 1896, 37 for 1895, 43 for 1894, 95 for the decennium 1881 to 1890, and 81 for the decennium 1871 to 1880, and would appear to indicate that the mortality from this cause has fallen considerably in recent years. As a matter of fact, however, returns of the mortality from intemperance are of doubtful value, as comparatively few deaths are set down to alcoholism pure and simple, although a large number of complaints are no doubt brought on or aggravated, and many lives are doubtless shortened, from that cause,

* For further information respecting hydatid disease, see *Victorian Year-Book*, 1888-9, Vol. II., paragraphs 253 and 254.

which, however, is not mentioned in the returns. By the following figures, taken from Dr. Raseri's paper*—which must only be accepted for what they may be worth—the mortality from alcoholism would appear to be as high in Victoria as that prevailing in most of the countries and towns named:—

ANNUAL DEATH RATE FROM ALCOHOLISM IN VARIOUS TOWNS AND COUNTRIES.

	Deaths from Alcoholism per 1,000,000 Persons Living
Denmark (towns)	274
Sweden (principal towns)	99
Paris	95
Switzerland	88
Scotland (8 towns)	83
Connecticut	80
Belgium	76
London	74
Russia in Europe	70
Massachusetts	65
Scotland	61
Italy	47
England and Wales	46
Berlin	40
Vienna	36
Sweden	34
Ireland	30
Holland	21

Constitutional diseases.

1159. Of complaints classed under the head of "Constitutional Diseases," the most prominent are phthisis and other tubercular diseases, and cancer; also rheumatism, gout, and diabetes mellitus. It is now known that tubercular diseases should be classified as Zymotic—being caused by rod-shaped micro-organisms termed bacilli; and, when the nosological classification is again revised, this will be one of the principal alterations. Under this class there were, in 1898, 262 deaths per 100,000 of the population, or 27 more than in 1897, 22 more than in 1896, 15 more than in 1895, 20 more than in 1894, 16 more than in 1893, 22 above the average of the decade 1881–90, and 42 above the average of the decade 1871–80. Of the 262 deaths per 100,000 referred to, 129 resulted from phthisis, or pulmonary consumption; 74 were set down to cancer; 35 to tabes mesentèrica, acute hydrocephalus, and other tubercular or scrofulous diseases; and 24 to other constitutional diseases.

Deaths of males and females from phthisis.

1160. Phthisis in Victoria generally affects males more heavily than females. In 1898, 864 of the former, and 656 of the latter, died of that complaint; the males being in the proportion of 14·59, but the females of only 11·29, per 10,000 of their respective sexes living.

Ages at death from phthisis.

1161. The following tables give the number of deaths from phthisis at each age in each of the last five years; also the proportion which such deaths bore to the total deaths from all causes in those years, also

* Page 186.

in the decennial period 1881–90, and in the quinquennial period 1891–5:—

DEATHS FROM PHTHISIS, 1894 TO 1898—AGES AT DEATH.

Ages in Years.	Number who died from Phthisis.									
	1894.		1895.		1896.		1897.		1898.	
	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.
Under 5	10	15	3	5	8	3	...	5	3	7
5 to 10	4	2	4	7	5	3	4	2	6	6
10 " 15	12	12	3	14	3	8	1	23	3	11
15 " 20	36	67	37	65	29	67	30	66	46	68
20 " 25	104	119	86	133	84	92	72	85	89	79
25 " 35	263	195	225	229	204	213	209	184	213	226
35 " 45	147	106	150	111	131	97	160	102	151	138
45 " 55	108	45	107	44	98	58	92	61	113	61
55 " 65	163	38	165	39	166	41	121	37	128	43
65 " 75	73	14	94	23	78	20	83	20	98	13
75 and over ...	10	5	18	5	18	2	17	1	14	4
Total ...	930	618	892	675	824	604	789	586	864	656

Ages in Years.	Percentage of Deaths from Phthisis to those from all Causes.						
	1894.	1895.	1896.	1897.	1898.	Ten years: 1881-90.	Five years: 1891-5.
Under 5	·51	·17	·23	·11	·16	·40	·34
5 to 10	1·41	3·00	2·10	1·27	1·88	2·40	2·54
10 " 15	9·52	7·27	4·44	8·48	4·32	7·91	7·76
15 " 20	26·61	28·57	22·70	26·37	24·62	21·96	24·83
20 " 25	36·14	37·31	34·92	33·40	29·01	31·91	35·58
25 " 35	33·73	32·85	31·02	30·87	30·55	31·42	33·15
35 " 45	24·54	23·81	19·77	23·21	21·11	22·16	23·49
45 " 55	14·19	13·51	14·87	14·37	15·33	15·33	14·25
55 " 65	11·07	10·63	10·83	9·29	9·32	9·06	9·97
65 " 75	4·21	5·31	4·39	4·58	4·14	3·32	4·23
75 and over ...	1·00	1·35	1·15	1·04	·84	·74	·92
Total ...	10·03	10·02	9·09	9·09	8·13	9·30	9·44

Phthisis most fatal to adults.

1162. From a comparison of the figures in the last two columns, it will be observed that, in proportion to the total deaths, the mortality from phthisis in 1891–5 at all age-periods—except under 5, 10 to 15, and 45 to 55—was above the average of 1881–90. In the quinquennial period about one-third of all deaths between the ages of 20 and 35, about one-fourth of those between 15 and 20 and between 35 and 45, and about

a seventh of those between 45 and 55, were caused by phthisis. All these proportions except the last, were appreciably higher than those during the previous decade.

1163. Phthisis, or pulmonary consumption, caused 1,520 deaths in 1898, or 145 more than in the previous year, when the mortality from this disease was exceptionally low. Except during the prevalence of epidemics, phthisis is the cause of more deaths in Victoria than any other disease;* next to phthisis, diarrhœa† is usually the most fatal disease on the list (although in the quinquennial period 1891–5 seven, and in 1898 ten, causes of death stood before it); but the latter complaint usually causes barely three-fifths—but in the last five years less than two-sevenths—of the number of deaths set down to phthisis. It should, moreover, be borne in mind, as showing the baneful effects of phthisis as compared with those of the other diseases named, that the deaths ascribed to diarrhœa are for the most part those of infants and young children, whilst the majority of the victims of phthisis are at the adult period of life. The following table shows the number of deaths from phthisis, and their proportion to the total population, in 1860 and each subsequent fifth year to 1890, also in each of the last eight years. Phthisis

DEATHS FROM PHTHISIS IN VICTORIA, 1860 TO 1898.

Year.	Deaths from Phthisis.		Year.	Deaths from Phthisis.	
	Total Number.	Number per 10,000 Persons Living.‡		Total Number.	Number per 10,000 Persons Living.‡
1860 ...	772	14·46	1893 ...	1,572	13·43
1865 ...	741	12·12	1894 ...	1,548	13·18
1870 ...	888	12·45	1895 ...	1,567	13·28
1875 ...	1,027	13·04	1896 ...	1,428	12·13
1880 ...	1,175	13·82	1897 ...	1,375	11·72
1885 ...	1,384	14·46	1898 ...	1,520	12·96
1890 ...	1,631	14·58			
1891 ...	1,483	12·93	Total in 39 years	44,025	13·32
1892 ...	1,581	13·60			

NOTE.—Deaths registered as occurring from hæmoptysis are included in this table.

1164. During the whole period of thirty-nine years the deaths from this complaint were in the proportion of 13·32 to every 10,000 persons living; during the first ten of those years that proportion was about 12·68, in the second ten it was 12·64, in the third ten it was 14·25, and in the last nine it was 13·09. In regard to the increased rate between 1870 and 1890, it will be borne in mind that the proportions living at the ages at which phthisis is most fatal, viz., between 15 and 45, increased during that period, but there is reason to believe that the proportions have since 1890 again fallen off.§ It will be observed that Death rate from phthisis.

* See table following paragraph 1126, *ante*.

† During recent years heart diseases (undefined) caused more deaths than diarrhœa.

‡ For figures of mean population used in making these calculations, see table "Breadstuffs Available for Consumption" in Part "Production," *post*.

§ In 1871, the proportion of persons living between the ages referred to was 45 per cent., and in 1891 48½ per cent., and in 1898 (it is estimated) about 47 per cent., of the whole population.

the death rate from phthisis in 1898 (12·96 per 10,000) was higher than in the two previous years, but was lower than in any other years since 1891.

Death rate from phthisis by age-groups 1861 to 1891.

1165. To ascertain with any degree of certainty whether the mortality from phthisis is increasing in Victoria, it is necessary to compute the rates at different age-groups for various periods, which has been done in the following table for the last four decennial census periods, at which alone the population at each age-group is accurately known :—

DEATH RATES FROM PHTHISIS AT DIFFERENT AGES AT FOUR CENSUS PERIODS.

Ages. (Years.)	Enumerated Population 1891.	Mean Annual Deaths from Phthisis 1890–2.	Annual Mortality from Phthisis per 10,000 of the Population.			
			1860–2.	1870–2.	1880–2.	1890–2.
Males.						
0 to 15	199,599	18	2·55	1·22	1·74	·90
15 " 20	57,264	31	7·72	5·71	6·88	5·41
20 " 25	63,413	116	12·23	18·75	21·19	18·29
25 " 35	110,944	263	16·53	22·21	30·33	23·70
35 " 45	55,858	158	21·63	21·83	25·11	28·28
45 " 55	44,915	140	23·14	22·24	28·65	31·17
55 " 65	42,477	155	25·63	27·86	31·41	36·48
65 and upwards ...	23,619	60	23·20	19·56	18·08	25·40
Total ...	598,089	941	13·33	12·89	15·33	15·73
Females.						
0 to 15	195,315	28	3·70	·98	1·76	1·43
15 " 20	57,859	55	14·07	12·37	12·50	9·51
20 " 25	61,655	114	18·95	19·28	21·00	18·49
25 " 35	95,060	207	24·76	22·02	26·56	21·77
35 " 45	47,938	108	25·62	21·65	24·06	22·53
45 " 55	39,037	63	25·01	19·60	20·72	16·13
55 " 65	29,135	36	22·59	10·51	14·26	12·35
65 and upwards ...	15,752	13	18·03	12·61	13·12	8·25
Total ...	541,751	624	14·46	10·62	12·75	11·51

Rise or fall in adjusted death rate from phthisis.

1166. It will be noticed—in the case of males—that in the age-groups under 20 the rate was highest at the first period, and lowest at the last period, especially in the age-group under 15; but at higher age-groups it was, as a rule, lowest at the first period, and highest at the last period. In the age-group 20–25, however, it was higher at the second and third periods, and in that from 25 to 35 it was higher at the third period than at the fourth. In the case of females, the death rate at nearly all age-groups was highest at the first, and lowest at the fourth period; and was generally higher at the third than at the second period. By applying the rates to a normal population—as has already been done for the mortality from all

causes*—a single ratio may be obtained, termed the "Adjusted Death Rate," by which the growth of this disease may be better indicated. The following are the computed ratios for each sex, which show that the rate of mortality for males has steadily increased from period to period, the increase in the last two periods being especially noticeable; but the rate for females has, on the whole, shown a decline since 1861, although it was much higher in 1881 than in 1871:—

"ADJUSTED DEATH RATE" FROM PHTHISIS PER 10,000 LIVING, 1861 TO 1891.

Period.	Males.	Females.
1860–2	12·15	15·22
1870–2	12·83	11·84
1880–2	15·59	13·57
1890–2	16·10	11·31

Phthisis in Melbourne and country.

1167. Of the 1,520 deaths from phthisis in 1898, 801 occurred in Melbourne and suburbs (Greater Melbourne) and 719 in other parts of the colony. In proportion to population, the deaths from phthisis have always been much more numerous in the metropolis than in the remainder of the colony, as is shown by the following figures, which are the results for 1861, 1865, and each subsequent fifth year to 1890, also for each of the nine years ended with 1898:—

DEATHS FROM PHTHISIS PER 10,000 PERSONS LIVING IN AND OUTSIDE GREATER MELBOURNE, 1861 TO 1898.

Year.	Greater Melbourne.	Extra-Metropolitan Districts.
1861	23·44	10·63
1865	22·11	8·57
1870	22·49	8·56
1875	21·46	9·25
1880	23·95	8·92
1885	23·92	9·12
1890	20·02	10·59
1891	17·27	9·68
1892	19·21	9·63
1893	18·50	10·18
1894	17·61	10·51
1895	18·27	10·25
1896	15·98	9·73
1897	16·25	8·86
1898	17·24	10·15
Mean of 38 years	21·19	9·27

Death rate from phthisis in England.

1168. In England and Wales, in the 30 years ended with 1896, the death rate from phthisis, per 10,000 persons living, ranged from 24·10 in 1870 to 13·07 in 1896, the mean of the first five years of the period having been as high as 23·42, whilst that of the last five years was as low as 13·80.† The latter proportion, though considerably lower

* See paragraph 1092, *ante*.

† In the 53rd Report of the Registrar-General of England, page xl., it was stated that nearly one-third of the apparent decrease in the death rate from phthisis was due to a large number of deaths formerly classed as resulting from that complaint being then set down to bronchitis, which disease consequently appears to have become more fatal than formerly. Thus the death rate from diseases of the respiratory system (except croup) rose from 33·94 in 1886-70 to 36·39 in 1886-90 per 10,000 living.

than that of Greater Melbourne, is still somewhat higher than that of Victoria taken as a whole. It may be remarked that there is no doubt the death rate from phthisis in the metropolis has for years past been swelled by the presence of persons who started from Europe whilst suffering from the disease in an advanced stage, and who were induced to take the voyage under the hope that benefit might be derived from the Australian climate, but have landed in Melbourne only to die there.

Phthisis among Chinese.

1169. Of the 232 Chinese who died in Victoria in 1898, 16, or about 7 per cent., fell victims to phthisis. In the ten years ended with 1890 16 per cent. of the deaths of Chinese were from phthisis.

Phthisis among Aborigines.

1170. Five of the 10 deaths of Aborigines in 1898 were set down to phthisis. It is stated on good authority that phthisis is the chief cause of the death of the Australian Aborigines, who, when once affected, very seldom recover.

Phthisis in Australasian Colonies.

1171. The rate of mortality from phthisis is generally higher in Victoria than in any other of the Australasian Colonies. In Queensland, however, during the seven years ended with 1889, the rate in Queensland was much higher than that in Victoria, which was owing to the high mortality from phthisis which prevailed amongst the Polynesian labourers resident in the former.* Since 1889 the rate in Queensland has fallen, and has been below that in Victoria, although above that in any other colony except on two occasions (viz., in 1894 and 1895), when the rate was higher in South Australia :—

Deaths from Phthisis in Australasian Colonies, 1873 to 1897.

Period.	Deaths from Phthisis.					
	Annual Number.	Per 10,000 Persons Living.	Annual Number.	Per 10,000 Persons Living.	Annual Number.	Per 10,000 Persons Living.
	Victoria.		New South Wales.		Queensland.*	
1873 to 1880 ...	1,055	13·10	671	8·22	233	12·52
1885	1,384	14·46	1,078	11·58	593	19·20
1890	1,631	14·58	1,029	9·34	515	13·35
1891	1,483	12·93	1,053	9·21	501	12·38
1892	1,581	13·60	1,018	8·62	423	10·17
1893	1,572	13·43	1,069	8·83	476	11·15
1894	1,548	13·18	1,042	8·42	446	10·17
1895	1,567	13·28	1,016	8·04	420	9·27
1896	1,428	12·13	1,027	7·98	444	9·52
1897	1,375	11·72	964	7·36	418	8·74

* It is pointed out by the Registrar-General of Queensland, in his Annual Reports, that the death rate from phthisis as well as from other complaints in that colony is considerably swelled by the high mortality amongst the Polynesians. Nearly half the deaths from phthisis in 1884 and 1885, nearly two-fifths in 1886 and 1887, nearly one-third in 1889, nearly one-fourth in 1890, more than one-third in 1891, nearly one-third in 1892, and in each subsequent year up to 1897 about one-fourth were of Polynesians, although they form a very small section (about 1 4-5 per cent.) of the total population. Excluding the Polynesians from the calculation, the death rate from phthisis in Queensland in 1886 was only 9·2, in 1887 only 10·2, in 1888 only 8·75, in 1889 only 8·87, in 1890 only 10·47, in 1891 only 7·94, in 1892 only 7·24, in 1893 only 8·41, in 1894 only 7·50, in 1895 only 7·17, in 1896 only 7·25, and in 1897 only 6·84 per 10,000. The general death rate of Polynesians in Queensland during 1890 was 48, during 1891 it was 62, during 1892 it was 43, during 1893 it was 52·5, during 1894 it was 43·9, during 1895 it was 36·0, during 1896 it was 36·5, and during 1897 it was 33·9 per 1,000.

Deaths from Phthisis in Australasian Colonies, 1873 to 1897—*continued.*

Period.	Deaths from Phthisis.							
	Annual Number.	Per 10,000 Persons Living.	Annual Number.	Per 10,000 Persons Living.	Annual Number.	Per 10,000 Persons Living.	Annual Number.	Per 10,000 Persons Living.
	South Australia.		Tasmania.		New Zealand.		West Australia.	
1873 to 1880	223	9·84	110	10·25	328	8·44	...	...
1885	307	9·80	145	10·97	514	9·08	29	8·51
1890	294	9·29	138	9·60	520	8·38	43	8·97
1891	329	10 36	134	9·00	495	7·86	49	9·56
1892	307	9·41	129	8·44	524	8·16	47	8·40
1893	340	10·11	137	8·91	545	8·24	44	7·04
1894	362	10·43	142	9·11	576	8·48	53	7·06
1895	339	9·60	113	7·10	553	7·99	57	6·30
1896	313	8·79	110	6 73	523	7·40	83	6·79
1897	311	8·69	135	7·99	596	8·26	87	5·59

Tubercular diseases.

1172. Deaths from tubercular diseases, viz., tabes mesenterica, tubercular meningitis (acute hydrocephalus), phthisis, and "other forms of tuberculosis,"* taken as a whole, numbered 13,052 in the ten years 1871 to 1880, 17,590 in the ten years 1881 to 1890, 1,870 in 1894, 1,917 in 1895, 1,785 in 1896, 1,739 in 1897, and 1,928 in 1898. These numbers furnish proportions per 10,000 of the population of 16·38 deaths annually at the first period, and 17·57 at the second, 15·92 in 1894, 16·25 in 1895, 15·16 in 1896, 14·83 in 1897, and 16·44 in 1898. These rates are all lower than the proportions relating to any of the subjoined countries except Spain:—

Annual Death Rate from Tubercular Diseases in Various Countries, 1881 to 1884.†

	Deaths from Tubercular Diseases per 10,000 Persons Living.		Deaths from Tubercular Diseases per 10,000 Persons Living.
Austria (principal towns) ...	72·20	Denmark (towns) ...	30·42
Austria	38·39	Spain (towns) ...	29·24
Belgium (towns)	35·11	Scotland	25·93
Germany (principal towns)	34·40	Italy	25·54
Massachusetts	34·25	Ireland	22·43
Switzerland (towns) ...	32·50	Switzerland	21·79
Sweden (towns)	31·61	England and Wales ...	21·09
Scotland (8 towns) ...	31·12	Holland	19·73
Prussia	30·88	Spain	12·32
Belgium	30·48		

* For an interesting report on the causes and methods of prevention of tuberculosis, see *Victorian Year-Book* for 1890-91, Vol. I., paragraph 647.

† See Dr. Raseri's paper, page 193. The diseases referred to are there termed "Tubercolosi diffusa, Tisi polmonare, Tubercolosi meningea, ed Idrocefalo."

Deaths from cancer in Victoria.

1173. Next to phthisis, the most fatal of the constitutional diseases is cancer. This complaint caused 864 deaths in 1898, or 90 more than in the previous year. Cancer in a fatal form has *apparently* been fast increasing of late years, for during the ten years ended with 1880 it caused only one death in every 41 from all causes, but in the ten years ended with 1890 the proportion had risen to 1 in 29; moreover since 1861 the death rate from it has increased steadily from less than 2 to about 7 per 10,000 of the population. The following table shows the annual number of deaths from cancer, and the number per 10,000 persons living, in the three decades ended with 1890, and in each of the last five years:—

DEATHS FROM CANCER, 1861 TO 1898.

Period.	Annual Deaths from Cancer.			
	Total Number.			Number per 10,000 Persons Living.
	Males.	Females.	Total.	
1861 to 1870 ...	68	70	138	2·23
1871 to 1880 ...	158	138	296	3·73
1881 to 1890 ...	253	233	486	4·95
1894	375	369	744	6·33
1895	418	342	760	6·44
1896	422	367	789	6·70
1897	396	378	774	6·60
1898	445	419	864	7·37
Total in 38 years ...	8,011	7,238	15,249	4·29

Proportions of the sexes who died of cancer.

1174. Cancer is a complaint which generally affects females more than males.* In the thirty-eight years to which the table relates, 90½ of the former have died of it to every 100 of the latter, whereas the proportion of females to males at ages at which cancer is most prevalent (*i.e.*, above 30 years of age) has over the whole period† been considerably below the proportion named. In the year 1898, 94 females died of cancer to every 100 males, females over the age of 30 in the total population being in the proportion of about 90 to every 100 males.

Proportion of deaths due to cancer at each age

1175. The number of males and females of different ages who died of cancer during the five years ended with 1898, and at each age the

* The difference may not really be so great as it appears to be from the figures. See *Victorian Year-Book*, 1887-8, Vol. I., paragraph 699.

† At the age referred to, females in the population were in the proportion of 42 at the census of 1861, of 59 at the census of 1871, of 74 at the census of 1881, and of 80 at the census of 1891, to every 100 males.

proportion of deaths from cancer to those from all causes were as follow:—

PROPORTION OF DEATHS FROM CANCER TO THOSE FROM ALL CAUSES. 1894 TO 1898.

Ages.	Deaths from Cancer.					Total.	
	1894.	1895.	1896.	1897.	1898.	Number.	Percentage of Deaths from all Causes.
Males.							
Under 5 years ...	3	3	1	3	2	12	·09
5 to 15 „ ...	4	1	1	2	1	9	·47
15 to 25 „ ...	4	1	1	4	6	16	·71
25 to 35 „ ...	13	14	10	14	15	66	1·98
35 to 45 „ ...	22	32	27	16	30	127	4·10
45 to 55 „ ...	50	56	64	78	69	317	10·10
55 to 65 „ ...	115	149	133	115	108	620	10·82
65 to 75 „ ...	119	117	140	118	153	647	8·66
75 and upwards ...	45	45	45	46	61	242	4·55
All ages ...	375	418	422	396	445	2,056	4·54
Females.							
Under 5 years ...	4	...	2	1	4	11	·10
5 to 15 „ ...	3	1	1	2	...	7	·40
15 to 25 „ ...	2	3	1	4	3	13	·52
25 to 35 „ ...	19	15	14	13	18	79	2·28
35 to 45 „ ...	38	40	40	48	50	216	8·09
45 to 55 „ ...	85	80	78	69	80	392	17·02
55 to 65 „ ...	104	102	108	122	116	552	16·02
65 to 75 „ ...	76	76	94	82	104	432	10·94
75 and upwards ...	38	25	29	37	44	173	4·99
All ages ...	369	342	367	378	419	1,875	5·38

Percentage of deaths due to cancer greatest at ages 45 to 65.

1176. It will be seen that the proportion of deaths from cancer to deaths from all causes attains its maximum between the ages of 45 and 65 in the case of both males and females. At these age-periods between 10 and 11 per cent. of all deaths of males, and from 16 to 17 per cent. of those of females, are due to cancer. Under 25 years of age not 1 per cent. of the deaths of persons of either sex is so caused, and between 25 and 35 the proportion is only 2 per cent., after which it rapidly runs to the maximum, and then falls to $4\frac{1}{2}$ or 5 per cent. at the age of 75 and upwards, which is about the same as the average for all ages.

Death rate from cancer at each age, 1881 and 1891.

1177. Although present, to some extent, at lower ages, cancer does not materially affect the mortality until after middle age is reached, or after the 35th year. Then the rate of mortality rapidly increases, with advancing age, from 4 to 59—which occurs after the 75th year—per 10,000, in the case of males, and from 7 to 54 per 10,000 at the age-period 65–75 in the case of females—the rate of mortality often doubling, and occasionally even trebling, at successive age-groups. The highest rate is not reached until the last age-period (75 and upwards) in the case of males, and at the age-group 65–75 in the case of females. Comparing the rates for the average of the three

years about the time of the last census with those for the corresponding period ten years previously, there has been apparently a large increase in the case of each sex at all age-periods over 45, and a slight increase at the age-period 35 to 45, but at some age-periods under 35—especially in the case of females between 25 and 35—there has been a falling-off. There is no doubt, however, that a large proportion, if not the whole, of the apparent increase in the mortality from this dreaded disease, is accounted for by more skilled diagnosis on the part of medical men. The mortality is very much greater amongst females than males at age-periods between 25 and 55, and also higher on the average at the age-period 55 to 65 (although in 1890–2 it was slightly lower); it is about the same for both sexes at the age-period 65 to 75; but it is very much greater amongst males than females at the age of 75 and upwards, and also greater at the two age-periods under 15. These results are derived from the following table :—

DEATH RATE FROM CANCER AT EACH AGE AT LAST TWO CENSUS PERIODS.

Ages.	Estimated Population.		Mean Annual Deaths from Cancer for Three Years.		Annual Deaths per 100,000 of Population at Each Age.	
	1881.	1891.	1880–2.	1890–2.	1880–2.	1890–2.
Males.						
Under 5 years ...	57,846	75,185	1·67	1·33	2·9	1·8
5 to 15 " ...	109,173	124,414	2·33	1·33	2·1	1·1
15 " 25 " ...	90,038	120,677	1·33	3·00	1·5	2·5
25 " 35 " ...	50,115	110,944	4·00	9·00	8·0	8·1
35 " 45 " ...	49,382	55,858	20·33	24·00	41·2	43·0
45 " 55 " ...	54,793	44,915	55·67	66·67	101·6	148·4
55 " 65 " ...	28,013	42,477	61·33	135·67	218·9	319·4
65 " 75 " ...	9,842	18,384	34·00	97·00	345·5	527·6
75 and upwards ...	2,881	5,235	13·00	30·67	451·2	585·9
All ages ...	452,083	598,089	193·67	368·67	42·8	61·6
Females.						
Under 5 years ...	56,359	73,471	·67	·67	1·2	·9
5 to 15 " ...	108,384	121,844	1·00	1·00	·6	·8
15 " 25 " ...	94,515	119,514	3·00	2·00	3·2	1·7
25 " 35 " ...	48,946	95,060	13·00	16·00	26·5	16·8
35 " 45 " ...	42,816	47,938	31·33	35·67	73·2	74·4
45 " 55 " ...	34,735	39,037	52·00	70·33	149·7	180·2
55 " 65 " ...	16,126	29,135	47·33	92·67	293·5	318·1
65 " 75 " ...	6,325	11,984	20·67	64·67	326·8	539·6
75 and upwards ...	2,057	3,768	5·67	18·67	275·6	495·5
All ages ...	410,263	541,751	174·67	301·67	42·6	55·7

Cancer in Australasian Colonies.

1178. Judging from the following figures it would appear that, whilst formerly cancer was more prevalent in Tasmania than in any other Australasian Colony, it has of late years been more so in Victoria and New Zealand. In recent years, it was apparently lowest in Western Australia, and next lowest in Queensland; but it is questionable whether persons suffering from the disease are attended by skilled medical men to the same extent in those as in the other colonies,

and hence many cases of cancer may pass unrecognised. It will, moreover, be observed that in all the colonies except Western Australia (where the rate has fluctuated considerably) and Tasmania, the death rate from cancer has apparently increased:—

DEATHS FROM CANCER IN AUSTRALASIAN COLONIES, 1882 TO 1897.

Colony.	Period.	Annual Deaths from Cancer.	
		Number.	Proportion per 10,000 Persons Living.
Victoria	1882 to 1884	423	4·64
	1885	445	4·65
	1890	626	5·60
	1893	734	6·27
	1894	744	6·33
	1895	760	6·44
	1896	789	6·70
	1897	774	6·60
New South Wales ...	1882 to 1884	221	2·65
	1885	267	2·87
	1890	392	3·56
	1893	489	4·04
	1894	516	4·17
	1895	556	4·39
	1896	621	4·82
	1897	686	5·23
Queensland	1882 to 1884	73	2·69
	1885	53	1·71
	1890	117	3·03
	1893	121	2·84
	1894	157	3·58
	1895	189	4·17
	1896	183	3·92
	1897	187	3·91
South Australia	1882 to 1884	95	3·16
	1885	100	3·19
	1890	129	4·08
	1893	171	5·08
	1894	163	4·73
	1895	167	4·79
	1896	187	5·25
	1897	186	5·20
Western Australia ...	1882 to 1884	10	3·08
	1885	17	4·99
	1890	15	3·15
	1893	19	3·04
	1894	22	2·95
	1895	25	2·77
	1896	30	2·27
	1897	51	3·27
Tasmania	1882 to 1884	64	5·14
	1885	60	4·54
	1890	79	5·50
	1893	79	5·14
	1894	80	5·13
	1895	75	4·71
	1896	95	5·81
	1897	81	4·79

Deaths from Cancer in Australasian Colonies, 1882 to 1897—*continued.*

Colony.	Period.	Annual Deaths from Cancer.	
		Number.	Proportion per 10 000 Persons Living.
New Zealand	1882 to 1884	165	3·12
	1885	177	3·13
	1890	295	4·75
	1893	332	5·02
	1894	408	6·01
	1895	383	5·53
	1896	389	5·50
	1897	395	5·47

Deaths from cancer in England and Wales.

1179. In England and Wales there has for years past been a progressive increase in the death rate from cancer. This rate, in the five years ended with 1895, was much higher than that prevailing in any Australasian Colony. The following figures are taken from the reports of the Registrar-General, who, however, indicated that he entertained doubts as to whether the increase shown by the figures was not partly due to improved diagnosis and more careful statement of the cause*:—

Death Rate from Cancer per 10,000 Living in England and Wales.

1861 to 1865	...	...	3·68	1886 to 1890	...	...	6·32
1866 to 1870	...	...	4·04	1891 to 1895	...	...	7·12
1871 to 1875	...	...	4·46	1896 to 1897	...	...	7·77
1876 to 1880	...	...	4·95				
1881 to 1885	...	...	5·48	Mean	...	...	5·43

Deaths from cancer in various countries.

1180. According to the following figures, cancer would appear to be less fatal in Victoria and Tasmania than in any of the countries named except Prussia, Ireland, and Austria; as fatal in South Australia as in Prussia; and, apparently, less fatal in New Zealand, Western Australia, Queensland, and New South Wales than in any one of the countries referred to:—

Annual Death Rate from Cancer per 10,000 Living in Various Countries, 1881 to 1884.†

Austria (15 principal towns)	11·20	Massachusetts	5·30
Denmark (towns) ...	10·98	Scotland (8 towns) ...	5·27
Sweden (towns)	8·71	Scotland	5·26
Switzerland	8·46	Austria	4·23
Italy	6·13	Ireland	3·69
Holland	5·82	Prussia	3·13
England and Wales ...	5·35		

Seat of cancer.

1181. Any part of the body is liable to be affected by cancer. The affected part is seldom mentioned in the Victorian returns, but the Registrar-General of England‡ succeeded in obtaining information as to the seat of the complaint in 23,220 out of 24,443 fatal cases which occurred in England and Wales during 1897. The figures are

* See 46th and 60th Annual Reports of the Registrar-General of England, page xviii and xxv respectively. He also adds—"It is impossible to ascertain the exact proportion of the recent increase in cancer mortality that is justly attributable to improvement in medical diagnosis; but whatever this may be, it is evident that as regards the future there are limits to any possible effects of such improvement." See also *Victorian Year-Book*, 1887-8, Vol. I., paragraph 699.—† See Dr. Raseri's paper, page 193.—‡ See 60th Report of the Registrar-General of England, page xxix.

re-arranged in the following table, the sexes being distinguished, and the number placed in the order of the frequency of their occurrence in different parts of the body:—

SEAT OF CANCER IN MALES AND FEMALES.

Parts affected.	Deaths from Cancer.		Parts affected.	Deaths from Cancer.	
	Number.	Proportions per cent.*		Number.	Proportions per cent.*
MALES.			FEMALES.		
Stomach ...	1,978	21·77	Uterus ...	3,495	24·73
Liver, Gall-bladder	1,358	14·94	Breast ...	2,303	16·30
Rectum ...	827	9·09	Stomach ...	1,983	14·04
Intestine ...	607	6·68	Liver, Gall-bladder	1,972	13·95
Œsophagus ...	546	6·01	Rectum ...	785	5·56
Tongue ...	477	5·25	Intestine ...	779	5·51
Bladder, Urethra	319	3·51	Abdomen ...	361	2·55
Jaw	287	3·16	Peritoneum ...	263	1·86
Neck	261	2·87	Ovary ...	256	1·81
Pharynx, Throat	221	2·43	Œsophagus ...	215	1·52
Face	188	2·07	Pancreas ...	133	·94
Larynx, Trachea	177	1·95	Arm, Leg ...	130	·92
Abdomen ...	173	1·91	Bladder, Urethra	121	·86
Lip	149	1·64	Brain ...	120	·85
Penis, Testis ...	146	1·61	Kidney ...	106	·75
Brain	138	1·52	Face ...	100	·71
Lungs	132	1·45	Neck ...	95	·67
Arm, Leg ...	132	1·45	Jaw	89	·63
Mouth	130	1·43	Lungs ...	82	·58
Pancreas ..	122	1·34	Larynx, Trachea	80	·57
Kidney ...	91	1·00	Pharynx, Throat	80	·57
Peritoneum ...	87	·96	Tongue ...	73	·52
Mediastinum ...	68	·75	Pelvis ...	50	·36
Prostate ...	65	·72	Mediastinum ...	46	·33
Pelvis	42	·46	Mesentery ...	33	·23
Eye	34	·37	Thyroid ...	33	·23
Groin	33	·36	Eye	30	·21
Mesentery ...	27	·30	Groin ...	28	·20
Spine	26	·29	Mouth ...	27	·19
Parotid ...	25	·28	Spleen ...	27	·19
Spleen ...	22	·24	Hip	27	·19
Thorax ...	21	·23	Heart ...	23	·16
Lymphatic glands	21	·23	Skin	23	·16
Hip	20	·22	Nose	21	·15
Shoulder ...	17	·19	Lip	19	·13
Nose	17	·19	Thorax ...	19	·13
Breast	16	·18	Lymphatic glands	17	·12
Skull	16	·18	Axilla ...	17	·12
Ear	13	·14	Shoulder ...	13	·09
Thyroid ...	12	·13	Parotid ...	12	·09
Axilla	11	·12	Rib, Sternum ...	12	·09
Scalp	8	·09	Scalp ...	10	·07
Pleura	7	·08	Ear	7	·05
Spinal cord ...	6	·06	Skin	6	·04
Heart	6	·06	Buttock ...	3	·02
Rib, Sternum ...	5	·05	Skull ...	3	·02
Skin	2	·02	Spinal cord ...	3	·02
Buttock ...	2	·02	Pleura ...	2	·01
Total specified	9,088	100·00	Total specified	14,132	100·00
Parts unspecified	485	...	Parts unspecified	738	...
Grand Total ...	9,573	...	Grand Total ...	14,870	...

* These calculations have been made in the office of the Government Statist, Melbourne.

Chief seats of cancer.

1182. It would appear from the above figures that among males the stomach is the part most liable to cancer, the liver and gall-bladder being next, and the rectum next. Amongst females the part most effected is the uterus, then the breast, the stomach, and the liver and gall-bladder. It will also be noticed that 43 per cent. of the cases amongst females occur in the generative and mammary organs, which more than accounts for the greater frequency of the disease amongst females than males.

Developmental diseases.

1183. Developmental diseases,* Class V., caused 133 deaths in 1898 to every 100,000 of the population. Of these 53 were due to diseases peculiarly affecting infants, such as premature births and malformations, and 80 to old age. The rate of mortality from the whole class in 1898—viz., 133 per 100,000—appears to have been 27 above the average of the ten years 1881–90, and 57 above that of the ten years ended with 1880; the increase, as compared with the last-named period, being to a large extent confined to deaths from old age. The death rate from this class of complaints is always much higher in England than in Victoria.

Local diseases.

1184. Local diseases, Class VI., or diseases of special organs or systems, usually cause a much higher mortality than any other class of complaints; thus, in 1898, 9,152 deaths, or 49 per cent. of the deaths from all causes, were ascribed to them, or the same proportion that existed in the ten years 1881 to 1890. The deaths from diseases placed in this class in 1898 were in the proportion of 780 to every 100,000 of the population, or 89 above the average of the decade. Nearly a sixth of these diseases was due to affections of the brain and nerves; between a sixth and a fifth to those of the circulatory system (including heart diseases, &c.); a little more than a fourth to lung and throat diseases—viz., croup, bronchitis, pneumonia, pleurisy, &c.; a similar proportion to diseases of the digestive organs; over 7 per cent. to diseases of the urinary organs; $1\frac{1}{4}$ per cent. to accidents of childbirth; and the remainder to diseases of the generative, locomotive, and integumentary systems, of the organs of special sense, and of the lymphatic and ductless glands. In the year 1898 the death rates from complaints of the nervous and generative systems and from accidents of childbirth were lower, and from those of the circulatory, digestive, lymphatic, urinary, locomotive, and integumentary systems higher, than the average of either of the decennial periods named; whilst the rate from complaints of the respiratory system was higher than the average of the decade 1871–80, but lower than that of the decade 1881–90. In England the death rate from local diseases is, on the average, fully 40 per cent. higher than the death rate from that class of complaints in Victoria.

Diseases of respiratory system.

1185. The mortality from diseases of the respiratory system in 1898, although considerably higher than in any of the previous four years, was still below the average of the decennial period 1881–90. The proportion in 1898 was 207 deaths to every 100,000 persons living,

* This class of diseases differs from that under the old nosology; dentition, paramenia and childbirth, and atrophy and debility not being now classed as developmental diseases.

while it was 162 in 1897, 174 in 1896, 172 in 1895, 154 in 1894, 213 in the ten years 1881–90, and 195 during the ten years 1871–80. The diseases in this group cause, on the average, half as many deaths again as phthisis (which is not included amongst "lung diseases," being classed as a "constitutional disease"*). The victims are, for the most part, both young children and old people, the majority dying in the winter quarter (July to September). In the year under review the actual number of deaths from these causes was 2,431, being equal to nearly one-eighth of the total mortality; and of these pneumonia caused 1,314, bronchitis 640, pleurisy 153, congestion of the lungs 102, and croup 35. Of those who died from these complaints, 812 were under five years—432, or more than half of these, being under 1 year—and 1,080 were over 50 years of age. If deaths from phthisis be added to those from diseases of the respiratory system, it will be found that altogether 3,951 deaths in 1898 (or 679 more than in 1897) were from diseases particularly affecting the organs of respiration, which is between one-fourth and one-fifth of the total mortality.

Bronchitis and pneumonia in various countries.

1186. Bronchitis and pneumonia, with congestion of the lungs, caused 11,477 deaths in the ten years ended with 1880, 16,404 in the ten years ended with 1890, 9,023 in the five years ended with 1895, 1,712 in 1896, 1,560 in 1897, and 2,056 in 1898, which numbers furnish proportions per 10,000 of the population of 14·40 deaths annually for the first period, of 16·38 annually for the second period, of 15·45 annually for the third period, of 14·54 for 1896, of 13·30 for 1897, and of 17·53 for 1898. The complaints referred to are, according to the following figures, much less fatal here than in any of the countries named, it being assumed that congestion of the lungs is included with bronchitis and pneumonia in the returns of the various countries:—

ANNUAL DEATH RATE FROM BRONCHITIS AND PNEUMONIA PER 10,000 LIVING IN VARIOUS COUNTRIES, 1881 TO 1884.†

Spain (principal towns)	53·15
Italy	45·31
Scotland (eight towns)	38·06
Austria (principal towns)	37·95
Holland	36·32
Scotland	34·13
Belgium	32·87
England and Wales	32·25
Switzerland	31·52
Austria	28·09
Germany (principal towns)	27·87
Denmark (towns)	27·47
Belgium (principal towns)	27·06
Ireland	26·76
Switzerland (principal towns)	26·69
Spain	24·12
Sweden (principal towns)	24·10
Massachusetts	21·03
Prussia	16·63

* See paragraph 1159, *ante*.

† See Dr. Raseri's paper, page 193. The complaints referred to are there termed "Bronchite de Polmonite."

Deaths in childbed.

1187. The death rate from a given complaint is usually ascertained by comparing the number of deaths from it with the number of persons living, but the death rate of women in childbed is better realized 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 childbearing without specific disease, it is set down under the head of childbirth, Class VI., Sub-class 9; but, if it should arise from puerperal fever, it is placed under that head, Class I., Sub-class 6. In 1898 the proportion of deaths of child-bearing women to the number of children born was lower than that recorded in 1897 or 1896, or the decennial periods 1871–80 and 1881–90, but was higher than that in the septennial period 1864–70 or the quinqennial period 1891–5. The proportions which prevailed in each of those periods, and in the last five years, are shown in the following table :—

DEATHS OF WOMEN IN CHILDBIRTH, 1864 TO 1898.*

Period.	Number of Mothers who died annually of—			Deaths of Mothers to every 10,000 Children born alive.
	Childbirth.	Puerperal Fever (Metria).	Total.	
1864–70	108	20	128	49·06
1871–80	127	46	173	64·38
1881–90	121	64	185	59·19
1891–5	118	66	184	50·87
1894	115	67	182	53·13
1895	138	53	191	56·66
1896	121	68	189	58·74
1897	125	77	202	64·52
1898	118	52	170	56·34

Deaths in childbed in Victoria and United Kingdom.

1188. The proportion of women dying in childbed during the period of twenty-seven years ended with 1890 was 1 to 171 births of living children, and in 1898 the proportion was 1 to every 177 such births.

* For number in each year see *Victorian Year-Book*, 1890-91, Vol. I., table following paragraph 657.

In the quinquennial period ended with 1895, the proportion was 1 to every 197 births; in the decennial period ended with 1890, it was 1 to every 169 births; in that ended with 1880, it was as high as 1 in every 155 births; and in the septennial period 1864–70 it was as low as 1 to every 204 births. The average proportion for the latest period is somewhat lower than that in England and Wales, where, in the seven years ended with 1897, 189 births occurred to each recorded death of a mother.* In Scotland, 1 woman died in childbirth to every 149 births in 1874, 1 to every 197 births during 1889, and 1 to every 224 births during 1896; and in Ireland, during the ten years 1869–78, 1 woman died in childbirth to every 151 births, in 1890, 1 to every 152, and in 1898, 1 to every 187.

Deaths from childbirth in Women's Hospital.

1189. In the Midwifery Department of the Melbourne Women's Hospital, 1,106 women were confined, and 1,068† infants were born alive, during the year ended 30th June, 1898, as against 976 confinements and 927 children born alive during the year ended 30th June, 1897, 969 and 913 respectively for the year 1895–6, 941 and 900 respectively for 1894–5, and 963 and 926 respectively for 1893–4. In 1897–8 fourteen deaths of mothers occurred during or shortly after parturition, or 1 death of a mother to every 79 deliveries, or to every 76 births, as compared with 1 such death to 89 deliveries, or 84 births in 1896–7; to 81 deliveries, or 76 births, in 1895–6; to 134 deliveries, or 129 births, in 1894–5; and to 75 deliveries, or 71 births, in 1893–4. The average in the hospital during the five years referred to (viz., 1 to every 83 births) was more than twice that for the whole colony, where a proportion of 1 to every 173 births prevailed during the corresponding period; but it should be mentioned that, all over the world, maternity hospitals are subject to receive a worse class of cases than the average of those dealt with outside, women not unfrequently being brought in such a state as to render their recovery from the first almost hopeless; therefore, in all such institutions, the death rate of the inmates is higher than that which prevails amongst child-bearing women in the general population.

Deaths in childbed in Australasian Colonies.

1190. In proportion to the number of confinements, deaths of lying-in women appear to be on the average more common in Victoria than in any other Australasian Colony.‡ During the five years ended with 1895, however, the mean annual proportion was higher in New South Wales and New Zealand than in Victoria. This was also the case in regard to New South Wales in later years, but in New Zealand the proportion has fallen off considerably. The following table contains a statement of the deaths recorded as having occurred from childbirth and puerperal fever in the Australasian Colonies according to the average of three periods since 1872, and in each of the five years ended with

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* There is reason to believe that the mortality from childbirth and metria in England is much understated, as the sending out of letters of inquiry in 1882—an exceptional proceeding—respecting certain ill-defined causes of death had the effect of increasing the recorded mortality from childbirth and metria 10 per cent. If this correction be applied to the average above stated, the proportion would be 1 death of a mother to as few as 185 births.—See 45th Annual Report of the Registrar-General of England, page xvii.

† There were twelve cases of twins.

‡ It is certain that in most, if not all, countries many deaths occurring from circumstances connected with childbirth are not certified to by medical men as due to that cause. For remarks on this subject, see *Victorian Year-Book*, 1889-90, Vol. I., paragraph 719.

1897, also the proportion of such deaths to every 10,000 children born alive in each colony :—

Deaths from Childbirth and Puerperal Fever in Australasian Colonies, 1873 to 1897.

Period.	Deaths from Childbirth and Puerperal Fever.							
	Annual Number.	Per 10,000 Births.	Annual Number.	Per 10,000 Births.	Annual Number.	Per 10,000 Births.	Annual Number.	Per 10,000 Births.
	Victoria.		New South Wales.		Queensland.		South Australia.	
1873 to 1880	186	69·50	128*	51·17*	39	55·91	42	49·33
1881 to 1890	185	59·28	148	42·70	64	54·14	48	44·09
1891 to 1895	184	50·87	217	55·01	71	48·99	51	47·70
1893	179	48·97	221	54·78	67	46·55	56	52·42
1894	182	53·13	267	68·55	65	46·51	42	40·10
1895	191	56·68	278	71·70	72	48·41	48	45·55
1896	189	58·74	249	68·20	56	40·00	78	77·91
1897	202	64·52	321	86·20	57	39·82	39	40·90
Mean of 25 yrs.	186	61·08	170‡	51·05‡	57	52·54	47	47·71

Period.	Deaths from Childbirth and Puerperal Fever.					
	Annual Number.	Per 10,000 Births.	Annual Number.	Per 10,000 Births.	Annual Number.	Per 10,000 Births.
	Western Australia.		Tasmania.		New Zealand.	
1873 to 1880	...	...	21	63·60	76	48·06
1881 to 1890	3†	27·20†	15	33·89	106	55·78
1891 to 1895	7	36·56	20	40·02	98	53·37
1893	5	23·67	16	30·68	78	42·89
1894	8	37·69	27	55·64	111	59·90
1895	8	33·71	14	29·22	101	54·45
1896	15	53·91	27	58·65	87	46·74
1897	22	54·72	22	46·97	82	43·76
Mean of 25 yrs.	8§	36·38§	19	46·14	93	51·98

* Average of years 1875-80. † Mean of twenty-three years. ‡ Average of years 1887-90.
§ Mean of eleven years.

1191. The above figures show that, in proportion to the children born alive, the number of deaths of child-bearing women in 1897 was below the average in Queensland, South Australia, and New Zealand, but above the average in Victoria, New South Wales, Western Australia, and Tasmania. In New South Wales the rate was exceptionally high. Low death rate from childbirth in colonies, 1897.

1192. Comparing the deaths of child-bearing women in Victoria with every 10,000 of the population, the proportions annually were 2·17 for the decennial period 1871 to 1880, 1·85 for the decennial period 1881 to 1890, 1·58 for the quinquennial period 1891–5, 1·55 for 1894, 1·62 for 1895, 1·61 for 1896, 1·72 for 1897, and 1·45 for 1898. These and the following figures show that in regard to the mortality of women in childbed as compared with many other countries Victoria stands below the average :— Deaths from child-bearing in various countries.

DEATH RATE PER 10,000 OF POPULATION FROM DISEASES OF PREGNANCY AND CHILD-BEARING IN VARIOUS COUNTRIES, 1881–4.*

Spain†	3·77	Massachusetts	1·80
Spain	3·56	Denmark †	1·76
Belgium	2·32	Belgium †	1·72
Prussia	2·20	Ireland	1·65
Italy	2·13	England and Wales ...	1·60
Scotland †	2·10	Holland	1·43
Switzerland	2·06	Sweden	1·29
Switzerland †	2·02	Sweden †	1·27
Scotland	1·87	Germany †	1·23

1193. Deaths from external causes, Class VII., in proportion to population, were formerly twice as numerous in Victoria as in England and Wales ; but in recent years, as the number of individuals engaged in mining operations has decreased, and greater precautions are taken for the prevention of accidents, the rate in the former has fallen considerably. Over a series of twenty-seven years, the average annual number of violent deaths per 100,000 of the population was 136, but during the ten years 1871–80 it was only 108, in the subsequent ten years it fell to 97, in the quinquennium 1891–5, it fell to 88, and in 1898 to as low as 80. The last-named rate is still higher—by nearly a third—than the rate prevailing in England and Wales, where it averages only 66. The greater frequency of violent deaths in Victoria than in England appears in all classes of such deaths, those from accidents being in proportion to population, half as numerous again, homicides thrice as numerous, suicides a fifth more numerous, and executions twice as numerous. Violent deaths.

1194. The number of violent deaths recorded in Victoria during 1898 was 941, of which 789, or 84 per cent., were ascribed to accident ; 22, or 2 per cent., to homicide ; and 129, or 14 per cent., to suicide. Deaths from accidents were formerly more numerous than those from any single disease, and more recently in excess of those from any specific disease except phthisis and diarrhœa.‡ Forty-one per cent. of the deaths from accidents in 1898 were due to fractures, 18 per cent. Violent deaths, 1898 and previous years.

* See Dr. Raseri's paper, page 193 ; the complaints referred to are there termed "Malattie di gravidanza, parto e puerperio."

† Principal towns only.

‡ See table following paragraph 1126, *ante*. In 1898, the exceptions were enteritis, pneumonia, phthisis, cancer, and heart disease.

to drowning, 14 per cent. to burns and scalds, and 12 per cent. to sunstroke. Allowing for increase of population, homicides were 12 below, and suicides 2 below, the average of the ten years ended with 1890; and 21 below, and 2 above, respectively, the average of the five years ended with 1895. The following table shows the number of deaths and the exact modes of death under the heads of accident and suicide, also the number of deaths from homicide and execution, during the year 1898, the five years ended with 1895, and the ten years ended with 1890, the sexes of those who died being distinguished :—

VIOLENT DEATHS.

Causes of Death.	Year 1898.			Five Years : 1891–5.			Ten Years : 1881 to 1890.		
	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.
Accidents—									
Fractures, contusions	276	46	322	1,583	214	1,797	3,175	389	3,564
Gunshot wounds ...	12	1	13	76	10	86	138	12	150
Cuts, stabs, &c. ...	11	...	11	34	7	41	94	30	124
Burns and scalds ...	44	63	107	223	281	504	400	541	941
Sunstroke	59	39	98	51	28	79	161	72	233
Lightning	1	1	2	5	...	5	23	3	26
Poison	11	6	17	63	34	97	142	62	204
Snake, insect-bite ...	2	3	5	15	12	27	32	6	38
Drowning	118	22	140	901	158	1,059	1,691	373	2,064
Suffocation ...	39	22	61	272	180	452	402	246	648
Others	6	7	13	79	36	115	222	60	282
Total	579	210	789	3,302	960	4,262	6,480	1,794	8,274
Homicide	12	10	22	106	107	213	163	127	290
Suicide—									
Gunshot wounds ...	23	1	24	138	2	140	196	7	203
Cuts, stabs, &c. ...	13	3	16	86	9	95	159	22	181
Poison	12	4	16	73	36	109	122	61	183
Drowning	19	6	25	66	29	95	153	53	206
Hanging	28	11	39	131	17	148	258	20	278
Otherwise	7	2	9	31	12	43	41	9	50
Total	102	27	129	525	105	630	929	172	1,101
Execution	1	...	1	13	3	16	13	...	13
Grand Total ...	694	247	941	3,946	1,175	5,121	7,585	2,093	9,678

Violent deaths in proportion to total deaths.

1195. During the ten years ended with 1890, 80,559 males and 59,157 females died of specified causes; and it results, from these figures and those in the foregoing table, that 1 in every 11 males died a violent death, 1 in every 13 died of an accident, 1 in every 494 was a victim to homicide, 1 in every 87 committed suicide, and 1 in every 6,197 was executed. Of the females, 1 in every 28 died a violent death, 1 in every 33 died of an accident, 1 in every 466 died by the hand of another, 1 in every 344 committed suicide, but,

happily, not one was executed. During the five years ended with 1895, of the males who died, 1 in every 12 died a violent death, 1 in every 14 died of accident, 1 in every 444 was a victim to homicide, 1 in every 90 committed suicide, and 1 in every 3,623 was executed. Of the females, 1 in every 30 died a violent death, 1 in every 36 died from accident, 1 in every 327 was a victim to homicide, 1 in every 333 committed suicide, and 1 in every 11,654 was executed.

Violent deaths of males and females.

1196. Males are, for obvious reasons, much more subject to violent deaths than females. Of those who so died in 1898, 694, or 74 per cent., belonged to the male, and 247, or 26 per cent., to the female sex. These proportions correspond closely with those which prevailed during the ten years ended with 1890, and the five years ended with 1895.

Violent deaths—proportion of males and females.

1197. Omitting fractions, it may be roughly stated that, where 1 female dies a violent death in Victoria, 4 males die violent deaths; where 1 female dies of an accident, 4 males die of accidents; where 1 female commits suicide, 5 males do so; and about one-third more males are murdered than females. Up to the end of 1898 only 4 women had been executed in the colony since its first settlement, and of these 2 were executed during 1894 and one in 1895; but in the 47½ years since Victoria has been an independent colony as many as 148 males have been executed.

Burns and scalds.

1198. The only violent deaths which habitually affect females more than males are those resulting from burns and scalds.* All other circumstances which occasion such deaths, as a rule, bear more hardly upon males than upon females.

Sunstroke.

1199. Deaths from sunstroke, or heat apoplexy, were exceptionally numerous in 1898, no fewer than 98 cases having occurred as against 66 in 1897, 32 in 1896, 12 in 1895, 29 in 1894, an average of 16 in the five years 1891–5, and of 23 in the ten years 1881–90.

Suicidal deaths.

1200. One hundred and twenty-nine persons took their own lives in 1898, as compared with 118 in 1897, 116 in 1896, 127 in 1895, and 116 in 1894. During the ten years ended with 1890 the mean annual number of deaths by suicide was 110, and during the five years ended with 1895 the mean annual number was 126.

Modes of suicide in Victoria.

1201. Hanging is the most common mode by which men commit suicide, shooting the next, cutting or stabbing and drowning, with almost equal frequency, the next, and taking poison the next. Females most frequently take their lives by drowning or by taking poison, next by stabbing or hanging, but only seven times in the 172 cases which occurred during the ten years ended with 1890 by shooting. In 1898, however, women most frequently committed suicide by hanging, next by drowning, and next by poisoning. It may be mentioned that suicide by shooting is much more common now than formerly, the cases in that decennial period being nearly three times as numerous as in the preceding one.

Modes of suicide in England.

1202. The Registrar-General of England, in his 60th Report, gives a table, showing the different methods of effecting suicide in England and Wales during 1897. The relative frequency of each method

* In 1893 more males than females died of burns or scalds, the numbers being 57 and 54. The circumstance was quite exceptional.

follows substantially the same order as that obtaining in Victoria, except that in England shooting is less frequent than stabbing, drowning, and taking poison, in the case of males ; and hanging more frequent than stabbing in the case of females.

MODES OF COMMITTING SUICIDE IN ENGLAND AND WALES.

Methods.	Number by each Method per 1,000 by all Methods.	
	Males.	Females.
Hanging or strangulation	299	185
Drowning	190	326
Cut or stab	183	83
Poison	138	306
Shooting	103	6
Railway train...	43	18
Jump from height	17	43
Otherwise	27	33
Total	1,000	1,000

Suicides of Chinese.

1203. Suicide frequently occurs amongst the Chinese. Four men of this race committed that act in 1898, as against 2 in 1897, 1 in 1896, 3 in 1895, and 2 in 1894. Of the twelve referred to, six hanged themselves. The estimated number of Chinese males in the colony was about 9,000; so that those who committed suicide during the five years were in the proportion of 1 to 3,750 annually. In the general male population the proportion of persons committing self-destruction averages 1 in about 5,818.

Suicides in Australasian Colonies.

1204. According to the results in the following table, it would appear that, in proportion to population, suicide over a series of years is more common in Victoria than in any other Australasian Colony except Western Australia and Queensland. It should, however, be stated that the death records frequently do not upon the surface show that the death has been suicidal, and close examination, with sometimes further inquiry, is therefore necessary to determine that fact. It is hence likely that the full extent to which suicide prevails in some of the colonies is not ascertained. The following are the average annual suicides and their proportion to every 100,000 of the population during the twenty-five years ended with 1897, divided into two periods

of eight and ten years, also during each of the last seven years, recorded in all the Australasian Colonies except Western Australia, for which the information is obtainable for only seventeen of those years :—

DEATHS FROM SUICIDE IN AUSTRALASIAN COLONIES, 1873 TO 1897.

Period.	Deaths from Suicide.							
	Annual Number.	Per 100,000 Persons Living.	Annual Number.	Per 100,000 Persons Living.	Annual Number.	Per 100,000 Persons Living.	Annual Number.	Per 100,000 Persons Living.
	VICTORIA.		NEW SOUTH WALES.		QUEENSLAND.		SOUTH AUSTRALIA.	
1873–80	99	12·3	58	9·3	25	13·2	19	8·2
1881–90	110	11·2	95	10·1	47	15·0	28	9·2
1891	119	10·4	119	10·4	73	18·0	31	9·8
1892	134	11·5	127	10·7	65	15·6	27	8·3
1893	134	11·4	153	12·6	67	15·7	41	12·2
1894	116	9·9	151	12·2	76	17·4	34	9·7
1895	127	10·8	163	12·9	68	15·0	24	6·8
1896	116	9·9	182	14·1	70	15·0	31	8·7
1897	118	10·1	187	14·3	80	16·7	50	13·8
Mean of 25 years	110	11·4	100	10·5	47	14·8	27	9·1

Period.	Deaths from Suicide.					
	Annual Number.	Per 100,000 Persons Living.	Annual Number.	Per 100,000 Persons Living.	Annual Number.	Per 100,000 Persons Living.
	WESTERN AUSTRALIA.		TASMANIA.		NEW ZEALAND.	
1873–80	...	...	7	6·4	32	8·4
1881–90	4	10·8	7	5·3	53	9·3
1891	6	11·7	9	6·0	56	8·9
1892	11	19·6	9	5·9	59	9·2
1893	13	20·8	17	11·1	70	10·6
1894	17	22·6	14	9·0	73	10·7
1895	26	28·8	14	8·8	81	11·7
1896	25	20·3	13	8·0	70	9·9
1897	35	22·5	14	8·3	55	7·6
Mean of 25 years	10*	14·9*	9	6·5	50	9·2

Proportion of suicides in different colonies.

1205. It will be observed that, according to the records of the ten years 1881–1890, the suicides which take place annually in Queensland are on the average equivalent to $1\frac{1}{2}$ per 10,000 persons living ; those in Victoria, New South Wales, and Western Australia are somewhat

* Mean of seventeen years.

above, and those in South Australia and New Zealand somewhat below, 1 per 10,000; whilst those in Tasmania averaged only one-half that proportion. In the last five years suicides were much above the average in nearly all the colonies except Victoria.

Suicides in various countries.

1206. By the following figures, which have been derived from various sources, it appears that suicide is more common in seven countries out of Australasia than in Queensland, in ten than in Western Australia, Victoria, New South Wales, New Zealand, or South Australia, whilst there are only ten out of the twenty-four countries named in which suicide is less common than it is in Tasmania :—

ANNUAL DEATHS FROM SUICIDE IN DIFFERENT COUNTRIES.

	Per 100,000 Persons Living.		Per 100,000 Persons Living.
Saxony	31·1	Bavaria	9·1
Denmark	25·8	Sweden	8·1
Schleswig-Holstein ...	24·0	England and Wales ...	7·9
German Empire ...	20·8	Norway	7·5
France	20·5	Tasmania	5·3
Switzerland	20·2	Hungary	5·2
Austria	15·9	Italy	4·5
Queensland	15·0	Finland	4·5
Hanover	14·0	Scotland	4·0
Prussia	13·3	Netherlands	3·6
Belgium	13·0	United States... ...	3·5
Victoria	11·2	Russia in Europe* ...	2·8
Western Australia ...	10·8	Ireland	2·5
New South Wales ...	10·1	Poland	2·3
New Zealand	9·3	Spain	1·4
South Australia ...	9·2		

NOTE.—The figures for the Australasian Colonies refer to the ten years 1881–90.

Violent deaths in Australasian Colonies.

1207. According to the following figures, violent deaths in Victoria, during the ten years ended with 1890, as also in the seven years ended with 1897, occurred in a higher proportion to the population than in South Australia, Tasmania, and New Zealand, but were less common than in any of the other Australasian Colonies—more especially Western Australia and Queensland, where the proportions were fully 50 per cent. higher:—

VIOLENT DEATHS IN AUSTRALASIAN COLONIES, 1881 TO 1897.

Colony.	Period.	Violent Deaths.	
		Annual Number.	Per 10,000 Persons Living.
Victoria	1881 to 1890	968	9·86
	1891	1,079	9·41
	1892	1,047	9·00
	1893	997	8·52
	1894	1,042	8·87
	1895	956	8·10
	1896	984	8·36
	1897	930	7·93

* Exclusive of Poland and Finland.

ANNUAL DEATHS IN AUSTRALASIAN COLONIES, 1881 TO 1897— *continued.*

Colony.	Period.	Violent Deaths.	
		Annual Number.	Per 10,000 Persons Living.
New South Wales ...	1881 to 1890	1,040	11·06
	1891	1,165	10·19
	1892	1,153	9·76
	1893	1,133	9·36
	1894	1,094	8·84
	1895	1,128	8·92
	1896	1,367	10·61
	1897	1,166	8·90
Queensland	1881 to 1890	520	16·60
	1891	562	13·88
	1892	546	13·13
	1893	627	14·69
	1894	555	12·65
	1895	519	11·46
	1896	621	13·31
	1897	556	11·62
South Australia	1881 to 1890	228	7·49
	1891	207	6·52
	1892	197	6·04
	1893	236	7·02
	1894	232	6·64
	1895	238	6·82
	1896	271	7 65
	1897	263	7·37
Western Australia... ...	1881 to 1890	54	14·60
	1891	61	11·90
	1892	92	16·44
	1893	102	16·32
	1894	109	14·66
	1895	123	13·58
	1896	155	12·62
	1897	255	16·37
Tasmania...	1881 to 1890	109	8·25
	1891	121	8·12
	1892	111	7·26
	1893	104	6·76
	1894	122	7·82
	1895	118	7·41
	1896	137	8·38
	1897	142	8·41
New Zealand	1881 to 1890	519	9·11
	1891	506	8·03
	1892	529	8·24
	1893	545	8·24
	1894	697	10·26
	1895	597	8·62
	1896	588	8 32
	1897	545	7·55

Death rate from violence in various countries.

1208. In the following table, the Australasian Colonies and certain European countries are arranged in accordance with the proportion of deaths from violence to the population of each country which have occurred during a series of years; the proportion of such deaths from accident or negligence, homicide, and suicide being also shown. The figures relating to European countries have been partly derived from the 40th Report of the Registrar-General of England:—

DEATH RATE FROM VIOLENCE IN VARIOUS COUNTRIES.

Countries.	Proportion per 100,000 Living of Deaths from—			
	Violence of all kinds.	Accident or Negligence.	Homicide.*	Suicide.
Queensland	166·0	144·3	6·4	15·0
Western Australia	146·0	124·4	8·1	10·8
New South Wales	110·6	92·7	3·2	10·1
Victoria	98·6	84·3	3·0	11·2
Switzerland	92·4	68·9	3·9	20·2
New Zealand	91·1	80·5	1·3	9·3
Tasmania	82·5	75·0	1·5	5·3
United Kingdom†	77·5	69·7	1·6	6·2
England and Wales ...	75·7	66·7	1·7	6·9
South Australia	74·9	64·4	1·3	9·2
Norway	72·4	64·1	1·3	7·5
Scotland	72·0	68·2	·1	4·0
Sweden	61·9	50·7	2·0	8·1
Finland	54·7	47·0	3·2	4·5
France	54·0	...	...	...
Bavaria	51·9	37·7	3·9	9·1
Belgium	48·3	38·5	1·6	6·9
Russia in Europe	47·0	40·4	3·8	2·8
Austria	45·0	25·8	...	15·9
Ireland	39·1	35·3	1·7	1·7
Poland	33·7	27·3	4·1	2·3
Italy	24·0	14·9	5·4	3·7

NOTE.—In some instances the proportions of deaths from accident, homicide, and suicide are not for the same period as those from violence of all kinds. The figures for the Australasian Colonies relate to the period 1881-90.

Proportion of violent deaths in different countries.

1209. It will be seen that the list is headed by four Australasian Colonies, in all of which the proportion of violent deaths is higher than in any of the European countries named. Victoria, however, stands below the other three colonies referred to, and immediately above Switzerland, which, with New Zealand and Tasmania, stands immediately above the United Kingdom. According to the figures, the countries in which the proportion of accidents is greatest are Queensland and Western Australia; the country in which the proportion of homicides is greatest is Western Australia; and the countries in which the proportion of suicides is greatest are Austria and Switzerland.

Railway accidents.

1210. The following table gives a statement of the number of cases of death and injury from accidents on the Government lines of

* Not including executions.
† Including the Shipping.

railway during the 40½ years ended with 30th June, 1899, embracing the whole period of the existence of railways in Victoria :—

DEATHS FROM RAILWAY ACCIDENTS, 1859 TO 1898–9.

Year.	Total Number.	Passengers.			Servants of the Railway Department or of Contractors.			Others.			
		From causes beyond their own control.	From their own misconduct or want of caution.	Total.	From causes beyond their own control.	From their own misconduct or want of caution.	Total.	At crossings.	Trespassers.	Miscellaneous.	Total.
1859 to 1868	37	...	...	...	3	19	22	1	14	...	15
1869 to 1878	97	...	1	1	10	38	48	5	35	8	48
1879 to 1887–8*	322	10	14	24	8	126	134	41	111	12	164
1888–9 ...	78	1	4	5	4	23	27	7	37	2	46
1889–90 ...	74	1	8	9	9	21	30	7	22	6	35
1890–91 ...	72	...	3	3	7	14	21	9	37	2	48
1891–2 ...	52	1	5	6	1	14	15	3	21	7	31
1892–3 ...	29	...	...	...	...	6	6	2	19	2	23
1893–4 ...	36	...	5	5	3	9	12	3	8	8	19
1894–5 ...	42	...	2	2	1	12	13	10	14	3	27
1895–6 ...	36	...	3	3	1	8	9	4	17	3	24
1896–7 ...	35	...	1	1	1	5	6	11	12	5	28
1897–8 ...	37	1	2	3	3	7	10	4	16	4	24
1898–9 ...	35	...	4	4	...	9	9	6	14	2	22
Total ...	982	14	52	66	51	311	362	113	377	64	554

PERSONS INJURED BY RAILWAY ACCIDENTS, 1859 TO 1898–9.

Year.	Total Number.	Passengers.			Servants of the Railway Department or of Contractors.			Others.			
		From causes beyond their own control.	From their own misconduct or want of caution.	Total.	From causes beyond their own control.	From their own misconduct or want of caution.	Total.	At crossings.	Trespassers.	Miscellaneous.	Total.
1859 to 1868	84	22	2	24	5	45	50	1	7	2	10
1869 to 1878	165	87	6	93	24	30	54	1	10	7	18
1879 to 1887–8	1,415	679	142	821	101	369	470	26	36	62	124
1888–9 ...	358	116	82	198	24	107	131	5	12	12	29
1889–90 ...	401	20	115	135	49	186	235	5	13	13	31
1890–91 ...	345	19	82	101	60	133	193	6	8	37	51
1891–2 ...	342	37	86	123	63	115	178	7	13	21	41
1892–3 ...	326	17	117	134	33	111	144	7	7	34	48
1893–4 ...	301	27	85	112	26	121	147	4	10	28	42
1894–5 ...	282	12	89	101	26	107	133	10	11	27	48
1895–6 ...	325	25	78	103	29	123	152	6	13	51	70
1896–7† ...	518	35	102	137	55	240	295	9	2	75	86
1897–8† ...	424	47	78	125	53	160	213	13	15	58	86
1898–9† ...	372	14	86	100	12	210	222	11	10	29	50
Total ...	5,658	1,157	1,150	2,307	560	2,057	2,617	111	167	456	734

NOTE.- For the number of deaths and injuries from railway accidents in each year from 1869 to 1890-91, see *Victorian Year-Book*, 1892, Vol. I., table following paragraph 774.

* The high mortality in this period was chiefly due to the Windsor railway accident, which occurred on the 11th May, 1887. So far as the numbers killed and injured are concerned, this was the worst railway accident which has occurred in Victoria.

† Includes minor injuries not previously shown in this return.

Railway passengers and servants killed and injured.

1211. It will be observed that, in the whole period of 40½ years, 982 persons were killed and 5,658 were injured on the State lines of railway, and that, exclusive of trespassers, persons crossing the lines, &c., 363 of the former and 3,207 of the latter met their death or injury in consequence of their own misconduct or want of caution. Of the persons killed throughout the period, 66 were passengers, and as many as 362 railway or contractors' servants; 52 of the former, and 311 of the latter, having suffered in consequence of their own carelessness. The passengers injured numbered 2,307, and the railway servants 2,617; as many as 2,057 of the latter, but only 1,150 of the former, suffered from their own action. At crossings, 113 persons were killed, and 111 injured. As many as 377 trespassers were killed; these no doubt include persons who committed suicide by placing themselves in the way of trains. The trespassers injured numbered 167. Comparing the number of passengers carried by the railways since 1871–2, with the number of fatalities and injuries, it appears that 1 out of every 11,980,000 passengers carried is killed, and 1 out of every 346,000 is injured.

Railway accidents in United States.

1212. On the railways of the United States, where the extent open was 184,428 miles, the number of persons killed in 1896–7, was 6,437, consisting of 222 passengers (of whom 93 met their deaths by collisions or accidents), 1,693 railway employés, and 4,522 trespassers and others; whilst those injured numbered 36,731, consisting of 2,795 passengers (of whom 1,011 were injured through collisions or accidents), 27,667 railway employés, and 6,269 trespassers and others. There was 1 passenger killed to every 2,205,000 passengers carried, or to every 55 million passenger miles run; and 1 injured to every 175,000 passengers carried, or to every 4⅓ million passenger miles run. Of the employés, 1 out of every 486 was killed, and 1 out of every 30 injured. Of the employés killed, 58 per cent. were train-men (enginemen, firemen, conductors, &c.), 12 per cent. switch-flag-watch-men, and 30 per cent. others, whereas the proportions of those grades injured were 50, 9, and 41 per cent. respectively, whilst those most subject to casualties were trainmen, of whom 1 in every 165 was killed, and 1 in every 12 injured. The operation of coupling cars occasioned 13 per cent. of the fatalities, and 22½ per cent. of the injuries to railway servants; and falling from trains 24 per cent. of the fatalities, and 13 per cent. of the injuries. In the United States, it is pointed out, the general practice is to report every accident, whereas, in some other countries, a casualty is not counted unless it occasions an absence from work varying from three to fourteen days.

Gold-mining accidents.

1213. In the twenty-five years ended with 1898, embracing the whole period during which the Regulation and Inspection of Mines and Machinery Statutes* have been in operation, 1,188 persons lost their lives, and 2,645 persons were injured, from accidents connected with gold-mining operations. The following were the numbers and their proportions to the number of miners at work in the periods embracing

* 37 Vict. No. 480, 41 Vict. No. 583, 45 Vict. No. 719, and 47 Vict. No. 783, now consolidated under 54 Vict. No. 1120.

the first seven and the next ten of those years, also in each year from 1891 to 1898 :—

Deaths and Injuries from Gold-mining Accidents, 1874 to 1898.

Year.	Miners at work in periods named.	Number of Persons—			Numbers per 1,000 Miners at work—		
		Killed.	Injured.	Total.	Killed.	Injured.	Total.
1874 to 1880 ...	281,444	430	1,093	1,523	1·47	3·75	5·22
1881 to 1890 ...	290,194	455	880	1,335	1·57	3·03	4·60
1891 ...	23,763	21	57	78	·88	2·39	3·27
1892 ...	23,370	34	70	104	1·45	2·99	4·44
1893 ...	24,850	35	95	130	1·40	3·82	5·22
1894 ...	27,877	50	83	133	1·79	2·97	4·76
1895 ...	29,790	44	79	123	1·47	2·65	4·12
1896 ...	32,368	38	99	137	1·18	3·06	4·24
1897 ...	31,897	37	91	128	1·12	2·85	3·97
1898 ...	32,095	44	98	142	1·37	3·05	4·42
Mean of 25 years	31,906	47	106	153	1·49	3·32	4·81

Note.—For the number of deaths and injuries from gold-mining accidents during each of the eighteen years ended with 1891, see *Victorian Year-Book*, 1892, Vol. I., table following paragraph 776.

Gold-mining accidents, 1898.

1214. In 1898, fatal mining accidents numbered 7, and non-fatal 7, more than in the previous year. In both classes the proportion to the number of miners at work was less, during the last four years, than the mean proportion prevailing during the whole period of twenty-five years to which the table refers.

Gold-mining accidents in Victoria and England.

1215. According to the mean of the twenty-five years to which reference is made, 1 gold-miner in every 679 loses his life annually. In 1898 the proportion was 1 in 729. These proportions contrast favorably with the proportions of fatal accidents in the metalliferous mines of Great Britain and Ireland, where, according to the report of Her Majesty's Inspectors of Mines for 1883, 1 person in every 584 employed in and about mines lost his life by accident during the year, and 1 in every 607 during the ten years 1874 to 1883. This is exclusive of coal mines, in respect to which the proportion of fatal accidents is much higher. Dr. Raseri says that in Italy, during the six years 1879 to 1884, 1 miner in 450 lost his life annually by accident.

Causes of gold-mining accidents.

1216. It appears by the following table that, in the twenty-five years named, 1,937, or about half the gold-mining accidents in Victoria, were caused by the fall of earth or materials; 713, or 19 per cent., by falling down shafts, &c., and cage accidents; 501, or 13 per cent., by explosions, principally of blasting charges; and the balance, or 18 per cent., by timber and truck accidents, machinery in motion, foul air, flooding, and unspecified casualties :—

CAUSES OF GOLD-MINING ACCIDENTS, 1874 TO 1898.

Nature of Accident.	Number of Persons.		
	Killed.	Injured.	Total.
Fall of earth or rock underground	509	914	1,423
„ „ on surface...	131	96	227
„ materials down shafts, passes, &c. ...	69	212	281
„ „ winzes, &c.	2	4	6
Falling down shafts	158	214	372
„ „ winzes, shoots, &c.	27	120	147
Cage accidents	56	138	194
Truck accidents	9	63	72
Machinery in motion	32	138	170
Explosion of blasting compounds	92	307	399
„ stored explosives	7	42	49
„ boilers	2	8	10
„ fire damp	3	40	43
Foul air	17	3	20
Flooding of mines	35	...	35
Miscellaneous	42	349	391
Total	1,191	2,648	3,839

Coal-mining accidents.

1217. Two miners were injured through a coal-mining accident in 1898. During the ten years 1889–98 twenty-six persons were injured at coal mines, and twelve were killed.

Accidents in factories.

1218. Under the *Factories and Shops Act* 1890 (54 Vict. No. 1091) it is prescribed, under a penalty not exceeding £5 for non-compliance, that notices shall be sent to the Inspector of Factories, and to the certifying medical practitioner for the district, of any accident causing loss of life to a person employed in a factory or work-room, also of any accident whereby a person so employed receives bodily injury, provided it is produced either by machinery moved by steam, water, or other mechanical power, or through a vat, pan, or other structure, filled with hot liquid or molten metal or other substance, or by escape of gas, steam, or metal, and is of such a nature as to prevent the person injured by it from returning to his work in the factory or work-room within

forty-eight hours of the occurrence of the accident. The following cases of injury were reported in the last five years :—

ACCIDENTS IN FACTORIES OR WORK-ROOMS, 1894 TO 1898.

Nature of Injury.	Males.					Females.				
	1894.	1895.	1896.	1897.	1898.	1894.	1895.	1896.	1897.	1898.
Death	5	5	2	3	1	...	...	...	...	...
Loss of arm or hand ...	2	1	4	1	4	...	1	...	...	...
Loss of fingers or toes ...	12	14	24	20	21	...	...	3	1	1
Fractures	4	6	7	6	10	...	...	...	1	...
Lacerations, contusions, &c.	31	30	38	47	42	2	1	3	3	6
Total	54	56	75	77	78	2	2	6	5	7

Ill-defined and unspecified causes of death.

1219. In 1898 there were no fewer than 900 deaths in Victoria from ill-defined or unspecified causes, or $4\frac{3}{4}$ per cent. of the deaths from all causes, as compared with from 5 up to nearly $5\frac{1}{4}$ per cent. for the years 1894 to 1897, $7\frac{3}{4}$ per cent. in the ten years ended with 1890, and 7 per cent. in the ten years ended with 1880. The great majority of these —viz., 717 in 1898—were returned as from atrophy and debility; whilst 24 were set down to tumours, 13 to dropsy, 13 to abscess, 10 to other ill-defined causes, and in 100 cases the causes of death were altogether unspecified.

Atrophy and debility in Victoria.

1220. The mortality under the head of atrophy and debility is almost entirely confined to infants and young children—thus, of the 717 deaths set down thereto in 1898, 657 were under 5 years, 570 were under 1 year, and 156 were under 1 month of age. It is probable that a large number of these deaths might have been returned more definitely if medical men had attached to accuracy of record the importance it merits. The following are the numbers of both sexes recorded as having died from atrophy and debility in each of the last five years; also the averages for three periods between 1867 and 1890 :—

ANNUAL DEATHS FROM ATROPHY AND DEBILITY, 1867 TO 1898.

Period.	Males.	Females.	Total.
1867–70 (Annual mean) ...	386	345	731
1871–80 „ ...	377	322	699
1881–90 „ ...	557	474	1,031
1894	376	326	702
1895	366	305	671
1896	348	275	623
1897	327	255	582
1898	372	345	717

NOTE.—For the number of deaths set down to atrophy and debility in the 24 years ended with 1890, see *Victorian Year-Book*, 1890-91, Vol. I., table following paragraph 690.

Sex of those who died of atrophy, &c.

1221. Notwithstanding the proportions of the sexes of persons at ages likely to be affected by atrophy and debility were about equal, it happened that in every one of the last 32 years, except the year 1890, more males died than females. During the last five years, females died of these complaints in the proportion of about 84 to every 100 males.

Atrophy and debility in Australasian Colonies.

1222. The practice of returning atrophy and debility as causes of death appears to be generally no less frequent in most of the other Australasian Colonies than in Victoria; but in Queensland for some years past comparatively few deaths were so recorded. The following are the figures for all those colonies during the five years ended with 1897, and the average for the nine years 1882–90:—

DEATHS FROM ATROPHY AND DEBILITY IN AUSTRALASIAN COLONIES, 1882 TO 1897.

Colony.	Period.	Annual Deaths from Atrophy and Debility.	
		Number.	Proportion Per 10,000 Persons Living.
Victoria	1882 to 1890	1,064	10·74
	1893	931	7·96
	1894	702	5·98
	1895	671	5·69
	1896	623	5·29
	1897	582	4·96
New South Wales ...	1882 to 1890	863	9·03
	1893	855	7·06
	1894	755	6·10
	1895	680	5·38
	1896	784	6·09
	1897	688	5·25
Queensland	1882 to 1890	233	7·85
	1893	76	1·78
	1894	64	1·46
	1895	47	1·04
	1896	52	1·11
	1897	58	1·21
South Australia ...	1882 to 1890	287	9·29
	1893	269	8·00
	1894	201	5·82
	1895	223	6·40
	1896	238	6·72
	1897	217	6·08
Western Australia ...	1882 to 1890	42	10·93
	1893	45	7·20
	1894	57	7·67
	1895	73	8·06
	1896	141	11·54
	1897	162	10·40
Tasmania	1882 to 1890	135	9·91
	1893	136	8·84
	1894	104	6·67
	1895	86	5·40
	1896	100	6·12
	1897	115	6·81
New Zealand	1882 to 1890	284	4·99
	1893	195	2·95
	1894	252	3·71
	1895	223	3·22
	1896	225	3·18
	1897	225	3·12

NOTE.—For the number and proportion to population of deaths from atrophy and debility in each Australasian Colony during each of the nine years ended with 1890, see *Victorian Year-Book*, 1890-91, Vol. I., table following paragraph 692.

1223. The number of deaths of persons over 80 years of age, and their exact ages at death, have been already quoted for the year 1898, and the two preceding periods of eight and ten years respectively.* The following table shows the causes of death of these persons :— Causes of death of octogenarians.

CAUSES OF DEATH OF OCTOGENARIANS, 1881 TO 1898.

Causes of Death.	Year 1898.		Eight Years ended with 1898.		Ten Years ended with 1890.	
	Males.	Females.	Males.	Females.	Males.	Females.
Measles	...	...	...	1	...	...
Influenza, Coryza, Catarrh ...	17	13	96	91	9	4
Diphtheria	...	...	...	...	1	...
Typhoid Fever, &c.	...	...	...	1	6	3
Cholera	...	...	1	...	4	4
Dysentery and Diarrhœa ...	26	20	105	109	93	68
Splenic Fever	...	...	1	...	...	...
Venereal Diseases	...	...	4	...	2	...
Erysipelas, Pyœmia	2	...	10	3	7	4
Hydatids	...	...	1	...	...	...
Privation	...	...	4	1	2	...
Scurvy	...	...	...	...	...	...
Intemperance	...	...	...	...	...	...
Rheumatism	2	...	17	10	9	11
Gout	1	...	7	4	6	2
Cancer	20	17	115	88	62	43
Tabes Mesenterica	...	...	...	...	1	...
Phthisis	4	2	24	7	16	3
Purpura, Hæmorrhagic Diathesis	...	...	4	...	1	...
Anæmia, Chlorosis, Leucocythæmia	...	...	1	3	2	1
Diabetes Mellitus	4	2	7	6	1	2
Old Age	258	180	1,503	1,144	1,376	1,191
Brain Diseases, &c.	53	45	351	269	263	182
Ear and Nose Diseases ...	...	...	...	...	...	3
Heart Diseases, &c.	80	62	566	389	237	155
Lung Diseases, &c.	104	51	548	350	360	256
Quinsy	...	...	1	...	...	...
Stomach Diseases, &c. ...	23	9	116	101	96	58
Kidney Diseases	25	11	199	47	107	16
Addison's Disease	...	1	...	1	...	...
Genetic Diseases	...	...	...	4	1	1
Bone Diseases	1	...	4	...	2	...
Carbuncle, Boil	...	...	3	...	2	1
Skin Diseases, &c.	...	3	7	11	1	1
Accidents	11	8	81	50	62	43
Homicide	...	...	1	1	...	...
Suicide	2	...	12	2	7	2
Dropsy	2	3	10	7	12	15
Mortification	2	...	4	1	6	2
Tumour	...	1	3	6	3	1
Abscess, &c.	...	...	...	...	2	...
Unspecified Causes	6	2	27	9	5	...
Total	643	430	3,833	2,716	2,764	2,072

* See table following paragraph 1120 *ante*.

Complaints most fatal to octogenarians, 1881–98.

1224. It will be noticed that during the 18 years referred to, no complaint was set down except old age in the case of 44 per cent. of the males and 49 per cent. of the females. Little is to be learnt from such a vague definition, and it is very desirable that medical men would endeavour to describe the causes of death with more precision. Of the remainder, between a seventh and an eighth of the whole died of diseases of the organs of respiration, chiefly pneumonia and bronchitis, about an eighth died of affections of the heart, and between a tenth and an eleventh died of affections of the brain and nerves.

Sickness and death in general hospitals.

1225. There are 44 general hospitals in Victoria, 9 of which are also benevolent asylums. The total number of patients discharged from these institutions during the year ended 30th June, 1898, was 17,766, and the number of deaths was 2,264. There was thus 1 death to every 7·8 discharges during the year 1898, as against 1 death to every 8·6 discharges in the previous year. The following table gives a list of the various hospitals throughout the colony, also a statement of the number of discharged, the number of deaths which occurred in the year ended 30th June, 1898, and the proportion of deaths to cases in each hospital during that year and the previous quinquennial period :—

SICKNESS AND MORTALITY IN GENERAL HOSPITALS.

Name of Hospital.	Year ended 30th June, 1898.			Percentage of Mortality to Discharges. Five Years ended 30th June, 1897.
	Number of Patients Discharged.*	Number of Deaths.	Percentage of Mortality to Discharged.	
Alexandra	33	7	21·21	11·05
Amherst	446	34	7·62	8·45
Ararat†	283	32	11·30	11·12
Bairnsdale	138	19	13·76	14·19
Ballarat	1,235	138	11·17	12·16
Beechworth	385	42	10·91	9·27
Belfast (Port Fairy)† ...	38	4	10·52	17·01
Bendigo	1,646	192	11·66	9·31
Castlemaine	426	53	12·44	8·85
Clunes	128	18	14·06	9·91
Colac	130	19	14·61	9·73
Creswick	277	32	11·55	7·75
Daylesford†	132	35	26·51	17·88
Dunolly	364	41	11·26	8·85
Echuca	262	13	4·96	9·23
Geelong†	918	46	5·01	11·22
Hamilton†	301	18	5·98	10·10
Heathcote	106	10	9·44	12·40
Horsham	209	15	7·18	10·18
Inglewood	324	43	13·27	8·79
Kilmore	129	8	6·20	11·74
Kyneton	384	39	10·15	8·27
Maldon†	69	10	14·49	13·07

* Including deaths.

† These institutions are also benevolent asylums.

Sickness and Mortality in General Hospitals—*continued.*

Name of Hospital.	Year ended 30th June, 1898.			Percentage of Mortality to Discharges. Five Years ended 30th June, 1897.
	Number of Patients Discharged.*	Number of Deaths.	Percentage of Mortality to Discharged.	
Mansfield	79	12	15·19	7·94
Maryborough... ...	343	22	6·41	9·54
Melbourne	3,889	737	18·95	15·75
Melbourne (Alfred) ...	1,564	188	12·02	11·59
Melbourne (Austin)† ...	125	96	76·80	73·73
Melbourne (Homœopathic)	748	62	8·29	7·91
Mildura	70	2	2·86	9·87
Mooroopna	568	48	8·45	8·88
Nhill	103	9	8·74	10·04
Omeo	34	6	17·64	10·97
Pleasant Creek (Stawell)‡	262	29	11·06	12·97
Portland‡	87	6	6·90	23·13
Sale	320	36	11·25	11·52
St. Arnaud	278	43	15·46	10·09
Swan Hill	144	20	13·89	6·51
Walhalla	4	1	25·00	...
Wangaratta	399	38	9·53	6·44
Warracknabeal ...	111	21	18·92	9·36
Warrnambool‡ ...	145	15	10·34	12·40
Williamstown ...	42	4	9·52	8·82
Wood's Point	88	1	1·14	5·77
Total	17,766	2,264	12·74	11·63

Highest and lowest death rates.

1226. In proportion to the cases discharged in 1897–8, the greatest mortality occurred in the Austin (Melbourne),† Daylesford, Walhalla, Alexandra, and Melbourne Hospitals; and the lowest in the Wood's Point, Mildura, Echuca, Geelong, Hamilton, Kilmore, Maryborough, Portland, Horsham, and Amherst Hospitals; but, according to the average of the five years, the greatest mortality occurred in the Austin (Melbourne), Portland, Daylesford, Belfast, Melbourne, and Bairnsdale Hospitals, and the lowest (except Walhalla—where no deaths occurred) in the Wood's Point, Wangaratta, Swan Hill, Creswick, Homœopathic (Melbourne), and Mansfield Hospitals. The Portland, Belfast, and Daylesford Hospitals are also benevolent asylums, which may account for the high mortality in those institutions. In 1897–8, as compared with the average of the five previous years, the mortality in 25 hospitals show an increase, and in the remaining 19 a decrease.

Period of residence in hospitals.

1227. Taking the general hospitals as a whole, the average time patients, discharged during 1894–8, remained in those institutions was 36 days; but the duration of their stay was found to vary according to the complaint, the period of residence having averaged as much as 171 days in the case of patients afflicted with paralysis, and as little as 9 or 11 days in the case of those suffering from croup or intemperance. In the following table the principal diseases are arranged in order,

* Including deaths. † For incurables. ‡ These institutions are also benevolent asylums.

according to the average number of days the patients suffering from such disease, who were discharged during the five years 1894 to 1898, were resident in hospital:—

DURATION OF RESIDENCE IN HOSPITALS OF PATIENTS SUFFERING FROM VARIOUS COMPLAINTS, 1894 TO 1898.

Disease.	Average Number of Days.	Disease.	Average Number of Days.
Paralysis	171	Nephritis	32
Scurvy	99	Bright's Disease	31
Old Age	77	Venereal Diseases	31
Hemiplegia, Brain Paralysis	76	Scarlet Fever	29
Diseases of Spinal Cord	64	Pleurisy	29
Scrofula, &c.	57	Anæmia, Chlorosis, Leucocythæmia	27
Brain Diseases	53	Accidents	27
Asthma, Emphysema	53	Diarrhœal Diseases	27
Phthisis	46	Epilepsy	27
Ulcer, Bedsore	46	Pyæmia, Septicæmia	26
Gout	45	Abscess	26
Rheumatism	45	Diseases of Generative System	26
Atrophy, Debility, and Inanition	45	Diseases of Digestive Organs	23
Hydatids	43	Whooping Cough	21
Cancer	40	General Paralysis of Insane	21
Diabetes Mellitus	40	Diseases of Parturition	21
Typhoid Fever	39	Influenza	21
Heart Diseases	39	Pneumonia	20
Rheumatic Fever, &c.	39	Erysipelas	20
Calculus	38	Laryngitis	18
Tumour	37	Beri Beri	17
Diseases of Eye	36	Ague	17
Dropsy	35	Simple Continued Fever	16
Apoplexy	35	Remittent Fever	15
Congenital Defects	35	Uræmia	15
Eczema	34	Measles	14
Bronchitis	33	Diphtheria	13
Disease of Bladder and of Prostate	33	Intemperance	11
		Croup	9

Deaths of infants in Women's Hospital.

1228. The infants born alive in the Women's Hospital numbered 927 in the year 1896–7, and 1,068 during the year 1897–8, and of these 32 in the former, and 46 in the latter year died before being taken from the institution.*

Sickness and deaths in Children's Hospital.

1229. In the Melbourne Hospital for Sick Children the discharges numbered 781, and the deaths 83, in the year 1896–7; there were, moreover, 699 discharges, and 81 deaths, during the year 1897–8. These numbers furnish a proportion of 1 death to every 10 patients in each year.

Deaths in lunatic asylums.

1230. In hospitals for the insane during 1897 the cases discharged numbered 801, and during 1898 they numbered 834. The deaths amounted to 324 at the former period, and 366 at the latter, or an average of 2 deaths to every 5 cases discharged in both years.

* See paragraph 1109 *ante*.

1231. In gaols and penal establishments 1,481 cases of sickness occurred in 1897, and 1,525 in 1898. The deaths in the same years were 46 and 39 respectively, exclusive of those by execution. Thus 1 death occurred to every 32 cases of sickness in the former, and 1 in every 39 cases in the latter year. Sickness and deaths in gaols.

1232. Altogether the number of deaths in penal or charitable institutions during 1897–8 * was 3,374, being in the proportion of 1 to every 5·6 deaths which took place in Victoria during the year; as against an average of 1 in every 5·0 deaths in the two previous years, and 1 in every 5·6 in the two years ended with 1894–5. The deaths in such institutions in the ten years ended with 1890 were in the proportion of 1 to every 6·4 deaths; and in the four years 1877–80, in that of 1 to every 6 deaths which took place in the whole colony. The following are the names of the institutions and the number of deaths which occurred in each during the years 1893–4 to 1897–8 :— Deaths in public institutions.

Deaths in Public Institutions, 1893–4 to 1897–8.

Kind of Institution.	Number of Deaths.				
	1893–4.	1894–5.	1895–6.	1896–7.	1897–8.
General hospitals	1,886	1,812	2,108	1,995	2,264
Women's Hospital—					
Infirmary Department ...	9	13	15	12	8
Midwifery Department † ...	60	55	50	43	60
Hospital for Sick Children ...	82	74	83	82	81
Benevolent asylums	222	259	265	348	356
Melbourne Immigrants' Home ..	82	78	88	57	72
Orphan asylums	7	4	4	5	7
Eye and Ear Hospital	4	3	2	2	2
Royal Victorian Institute for the Blind	1	...	...	...	3
Deaf and Dumb Institution ...	...	...	...	1	...
Hospitals for the Insane ...	325	325	360	324	366
Female refuges ‡	15	20	37	20	16
Victorian Infant Asylum ...	9	6	15	7	11
Industrial and reformatory schools§	36	36	50	44	77
Consumptive Sanatorium of Victoria	4	1	3	5	5
Salvation Army Rescue Homes ...	3	8	...	...	7
Gaols (inclusive of Police gaols and Penal establishment)	68	56	56	46	39
Total	2,813	2,750	3,136	2,991	3,374

* The figures relating to hospitals for the insane, industrial and reformatory schools, gaols, and penal establishments are for the year ended 31st December, and those relating to the other institutions are for the year ended 30th June, 1898.

† Including the deaths of infants born in the institution, viz., 47, 48, 38, 32, and 46 in the five years respectively.

Of the numbers in this line, the following were of infants who were admitted with their mothers, viz., 10, 12, 23, 12, and 9 respectively.

§ Including deaths of boarded-out and licensed children.

Proportions of deaths in hospitals in various countries.

1233. The following figures, calculated from numbers given in Dr. Raseri's paper,* show the proportions of deaths to inmates of hospitals in various countries; those for Victoria during the six years ended with 1885 being added :—

PROPORTIONS OF DEATHS TO INMATES OF HOSPITALS IN VARIOUS COUNTRIES.

	Period.	Per cent.
Victoria	1880–85 ...	11·85
England and Wales	1884 ...	11·11
Austria	1883 ...	10·43
Italy	1885 ...	10·22
Saxony	1882 ...	9·40
Norway	1883 ...	9·36
France	1883 ...	9·14
Portugal	1884 ...	9·02
Hungary	1882 ...	8·68
Prussia	1882 ...	8·24
German Empire	1882 ...	7·18
Sweden	1883 ...	6·23
Baden	1882 ...	4·86
Bavaria	1882 ...	3·86
Würtemburg	1882 ...	3·49

Deaths in Victorian and other hospitals.

1234. The rate of mortality in hospitals would appear by the figures to be higher in Victoria than in any of the other countries named. In the absence of information, it is impossible to say whether the cases treated in the hospitals of this colony may not be of a worse class than those in the other countries, or whether hospitals for special complaints —ophthalmic, maternity, &c., where the mortality would naturally not be so great as in general hospitals—may not be included with the latter in the returns of some of the countries.

Sickness and deaths in Women's Infirmary Department.

1235. The patients discharged† from the Infirmary Department of the Women's Hospital numbered 386 during the year 1896–7, and 377 in 1897–8. The deaths in the same institution numbered 12 in the former, and 8 in the latter year. Therefore, 1 patient in 32 died in the institution in 1896–7, and 1 in 47 in 1897–8.

Deaths of mothers in Women's Midwifery Department.

1236. In the Midwifery Department of the Women's Hospital, Melbourne, 976 women were confined in 1896–7, and 1,106 in 1897–8. Eleven died in the former period, and 14 in the latter. Thus, 1 woman in 89 died in 1896-7, and 1 woman in 79 in 1897–8. From the founding of the institution to the end of June, 1898, 22,936 women were accouched therein,‡ of whom 349 died, which is equivalent to 1 death to every 66 confinements.§

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* Page 195.

† The discharges referred to in this and the following paragraphs in all cases include deaths.

‡ Including women accouched outside the hospital by midwives connected with the institution.

§ See paragraph 1109 *ante*.

Medical men in various countries.

1237. As bearing upon the rate of sickness, as also upon that of the mortality, it is important to consider whether the number of medical men is sufficient to minister to the health of the population. In 1891 there were in Victoria 835 legally qualified medical practitioners, which number gives a proportion of 1 to every 1,366 persons, or to every 105 square miles. The first of these proportions compares most favorably with that in other countries, the only one known to have a higher proportion being Switzerland. In regard to the second proportion, in consequence of Victoria being much more thinly peopled than any of the countries of the old world, it is naturally low; lower, in fact, than in any other countries respecting which the information is at hand, except Sweden, Norway, and Russia. These results are shown in the following table, in which the countries are arranged in order according to the proportion of medical men to the population and to the area of each country :—

MEDICAL MEN IN PROPORTION TO POPULATION AND AREA IN VARIOUS COUNTRIES.

Countries.	Year.	Medical Men per 100,000 Persons Living.	Countries.	Square Miles to a Medical Man.
Switzerland ...	1880	75	England and Wales	3·9
Victoria	1891	73	Belgium	4·7
Italy	1885	60	Italy	6·2
England and Wales	1881	58	Holland	6·9
Scotland ...	1881	50	Switzerland ...	7·3
Ireland	1881	48	Ireland	13·2
Holland	1884	43	France	13·9
Belgium... ...	1884	42	Germany	15·1
France	1883	39	Austria	15·8
Germany ...	1876	32	Scotland	15·9
Austria	1884	32	Hungary	33·6
Norway	1882	32	Spain	37·1
Spain	1877	31	Portugal	43·4
Hungary ...	1876	24	Victoria	105·3
Portugal ...	1880	18	Russia in Europe ...	148·4
Russia in Europe...	1882	16	Norway	205·0
Sweden	1883	13	Sweden	294·9

NOTE.—The figures, except those relating to Victoria, have been taken (with some corrections) from a table given by Dr. Raseri. The area per medical man is there stated in square kilometres, which have been converted into square miles on the assumption that one of the former is equal to ·386 of one of the latter.

Meteorological observations, 1894 to 1898.

1238. The following are the results of meteorological observations taken at different stations throughout the colony during the last five years. These places are arranged in the table in the order of their altitude above the level of the sea. The last three are situated in the interior, but the others are on the sea-board. The times at which the observations for mean temperature and mean atmospheric pressure are

obtained differ at the various stations ; but a correction is applied, in order to make the results equivalent to those which would be derived from hourly observations taken throughout the day and night :—

Meteorological Observations at Various Stations, 1894 to 1898.

Stations.	Height above Sea-level.	Year.	Temperature in the Shade.		
			Max.	Min.	Mean.
	Feet.		°	°	°
Portland	37·0	1894	99·0	30·0	56·0
		1895	98·0	32·0	56·3
		1896	103·0	30·0	56·0
		1897	105·0	32·0	56·4
		1898	105·0	30·0	57·1
Gabo Island	50·0	1894	85·0	39·0	57·7
		1895	89·0	32·0	57·0
		1896	90·0	33·0	56·8
		1897	91·0	31·0	57·1
		1898	91·0	37·0	57·5
Melbourne	91·3	1894	105·7	37·1	58·4
		1895	100·6	29·5	58·5
		1896	108·0	32·9	57·8
		1897	107·3	31·5	57·6
		1898	109·4	32·3	58·7
Cape Otway	270·0	1894	100·0	37·0	55·8
		1895	103·0	35·0	56·2
		1896	103·0	35·0	55·9
		1897	105·0	38·0	55·8
		1898	103·0	35·0	55·8
Wilson's Promontory ...	300·0	1894	93·0	39·0	54·9
		1895	82·0	33·0	54·8
		1896	88·0	41·0	54·7
		1897	97·0	40·0	54·3
		1898	102·0	37·0	55·5
Echuca	314·0	1894	106·0	30·0	63·3
		1895	100·0	28·0	61·5
		1896	112·0	26·0	61·6
		1897	113·0	29·0	61·1
		1898	109·0	30·0	62·0
Bendigo	701·0	1894	...	...	...
		1895	102·4	29·0	58·6
		1896	109·0	27·8	59·2
		1897	111·6	30·0	58·6
		1898	109·8	29·8	59·3
Mount Pleasant (Ballarat)	1,636·0	1894	98·0	32·0	53·6
		1895	96·0	31·0	54·0
		1896	102·0	31·5	54·1
		1897	108·5	31·5	53·9
		1898	105·0	31·0	55·4

Meteorological Observations at Various Stations, 1894 to 1898—*continued.*

Stations.	Year.	Mean Atmospheric Pressure.	Days on which Rain fell.	Amount of Rainfall.	Mean Humidity.
		Inches.	No.	Inches.	0 — 1.
Portland	1894	29·981	187	34·04	0·81
	1895	29·982	178	38·74	0·79
	1896	30·011	179	33·34	0·77
	1897	29·991	194	27·25	0·75
	1898	29·975	167	31·34	0·76
Gabo Island	1894	29·916	167	36·50	0·85
	1895	29·888	134	28·57	0·85
	1896	29·871	129	48·24	0·87
	1897	29·874	115	30·94	0·83
	1898	29·875	108	28·03	0·83
Melbourne	1894	29·925	138	22·61	0·73
	1895	29·928	131	17·04	0·69
	1896	29·948	124	25·16	0·72
	1897	29·939	117	25·85	0·71
	1898	29·914	102	15·61	0·67
Cape Otway	1894	29·643	175	36·56	0·85
	1895	29·643	171	31·29	0·81
	1896	29·675	178	32·71	0·82
	1897	29·654	184	25·68	0·85
	1898	29·655	171	26·20	0·76
Wilson's Promontory ...	1894	29·585	159	46·65	0·79
	1895	29·603	151	42·43	0·73
	1896	29·634	176	43·24	0·75
	1897	29·656	162	42·86	0·77
	1898	29·624	150	39·32	0·74
Echuca	1894	29·690	96	22·37	...
	1895	29·576	65	12·75	0·60
	1896	29·652	73	13·87	0·65
	1897	29·651	76	14·89	0·68
	1898	29·654	80	13·64	0·65
Bendigo	1894	...	121	28·81	...
	1895	29·274	97	20·91	0·61
	1896	29·205	95	16·25	0·61
	1897	29·200	98	18·67	0·62
	1898	29·192	101	19·67	0·62
Mount Pleasant (Ballarat)	1894	28·391	180	32·90	0·81
	1895	28·386	155	22·86	0·79
	1896	28·408	163	23·76	0·78
	1897	28·401	175	23·89	0·82
	1898	28·407	145	20·12	0·85

Meteorology in Melbourne, 1864 to 1898.

1239. The following are the results for Melbourne in each of the thirty-five years ended with 1898 :—

Meteorological Observations at Melbourne—Return for Thirty-five Years.

(Observatory 91·3 feet above the Sea-level.)

Year.	Temperature in the Shade.			Mean Atmospheric Pressure.	Days on which Rain fell.	Amount of Rainfall.	Mean Relative Humidity.	Mean Amount of Cloud.
	Max.	Min.	Mean.					
	°	°	°	inches.	No.	inches.	0 — 1.	0 — 10.
1864	96·6	30·5	57·1	29·94	144	27·40	·72	6·1
1865	103·4	30·9	56·5	29·94	119	15·94	·68	5·6
1866	108·2	28·0	57·8	29·95	107	22·41	·70	5·5
1867	108·4	29·7	57·7	29·92	133	25·79	·72	5·7
1868	110·0	27·4	57·1	29·98	120	18·27	·70	5·7
1869	108·4	27·0	57·2	29·94	129	24·59	·71	6·0
1870	109·0	29·6	57·4	29·93	129	33·76	·74	5·8
1871	106·0	32·1	57·7	29·93	125	30·17	·74	5·9
1872	103·3	32·5	57·6	29·92	136	32·52	·74	6·4
1873	102·4	30·2	58·0	29·94	134	25·61	·72	6·0
1874	102·7	29·3	56·6	29·93	134	28·10	·72	6·1
1875	110·4	31·1	56·6	29·89	158	32·87	·72	6·2
1876	110·7	29·0	57·0	29·93	134	24·04	·70	5·8
1877	100·7	31·0	56·7	29·99	124	24·10	·70	5·8
1878	103·4	31·1	57·4	29·90	116	25·36	·71	6·0
1879	106·0	30·5	56·8	29·92	127	19·28	·71	5·8
1880	106·5	29·0	57·8	29·92	147	28·48	·72	6·0
1881	99·9	31·9	57·1	29·97	134	24·08	·68	5·9
1882	110·5	31·5	57·4	29·90	131	22·39	·68	5·6
1883	104·9	31·7	58·0	29·92	130	23·71	·69	5·9
1884	100·7	29·9	56·7	29·94	128	25·85	·71	6·2
1885	101·6	29·9	57·1	30·00	123	26·94	·71	6·3
1886	104·1	28·1	57·1	29·96	128	24·00	·71	6·0
1887	104·9	33·0	58·1	29·94	153	32·39	·74	6·1
1888	104·0	28·3	57·5	29·99	123	19·42	·71	5·5
1889	99·8	31·3	58·5	29·94	125	27·14	·71	5·8
1890	103·4	29·0	58·7	29·92	140	24·24	·72	6·2
1891	103·0	33·9	57·6	29·98	126	26·73	·73	5·8
1892	104·0	31·0	57·4	29·92	124	24·96	·74	6·1
1893	105·5	31·0	57·9	29·88	140	26·81	·74	6·0
1894	105·7	31·7	58·4	29·92	138	22·61	·73	5·8
1895	100·6	29·5	58·5	29·93	131	17·04	·69	5·5
1896	108·0	32·9	57·8	29·95	124	25·16	·72	5·9
1897	107·3	31·5	57·6	29·94	117	25·85	·71	5·6
1898	109·4	22·3	58·7	29·91	102	15·61	·67	5·4
Means	104·9	30·5	57·5	29·94	130	24·96	·71	5·9

Exceptional meteorological conditions in 1898.

1240. Meteorologically, 1898 was a record year, for the number of wet days, the amount of rainfall, the mean amount of cloud, and the mean relative humidity in that year, were absolutely the lowest during the last 35 years shown in the table ; whilst the mean temperature in the shade was never exceeded, and only once (viz., 1890) equalled ; and the maximum temperature recorded was the fifth highest, but the mean barometric pressure was the fifth lowest during the same period. In 1898, the mean temperature was 1⅕° above, but the mean atmospheric

pressure one-thirtieth of an inch below, the average of the period referred to; while the amount of rain was 9⅓ inches less than usual, and there were 28 fewer wet days.

Recurrence of drought at ten-years intervals.

1241. It is remarkable that the greatest droughts in Victoria, during the last 35 years, have usually occurred at intervals of about ten years; thus there were exceptional droughts in 1868, 1879, 1888, and 1898, but they also occurred in 1865 and 1895—or three years before the first and the last (respectively) of the decennial drought years referred to. Such a coincidence has also been noticed in England, India, and elsewhere, and has given rise to the "Sun-spot Theory" of droughts and commercial crises.

Mean rainfall in Melbourne and elsewhere.

1242. The mean rainfall in Melbourne (24·96 inches) corresponds approximately with that of Ventnor in England, Bathurst in New South Wales, and Toulouse in France. It is somewhat above that in in London, Paris, or Berlin, is 1½ inches above that in Hobart, is 4 inches above that in Adelaide, but is little more than half as much as that in Sydney or Brisbane. The following is the average rainfall in some of the principal Australasian towns and in a few British and foreign towns:—

Average Rainfall in Principal Towns.

Australasian Towns.

Name of City or Town.	Days' Rain.	Rainfall.	Name of City or Town.	Days' Rain.	Rainfall.
		Inches.			Inches.
Wellington ...	180	53·76	Castlemaine ...	122	25·19
Sydney	152	49·47	Melbourne ...	130	24·96
Brisbane ...	133	49·36	Bathurst ...	84	24·54
Newcastle ...	127	48·44	Hobart	144	23·52
Dunedin ...	165	44·61	Warrnambool ...	122	23·25
Auckland ...	185	42·66	Wagga Wagga ...	84	22·96
Orange	107	38·93	Bendigo ...	103	21·36
Portland ...	183	33·13	Stawell ...	84	21·25
Perth	107	33·10	Adelaide ...	121	20·86
Albury	92	29·05	Geelong ...	94	20·47
Belfast	160	28·54	Echuca	75	17·86
Ballarat ...	135	27·88	Deniliquin ...	66	16·97
Goulburn ...	86	26·41	Bourke ...	45	16·88

Average Rainfall in Principal Towns—*continued.*

Extra-Australasian Towns.

Name of City or Town.	Rainfall.	Name of City or Town.	Rainfall.
	Inches.		Inches.
Bombay	75	Geneva	32
Lake District of Wales ...	75	Rome	31
New York	47	Dublin	30
Boston	45	Brussels	29
Florence	41	Ventnor (England) ...	25½
Washington	41	Toulouse	24¾
Cork	40	Berlin	24
Naples	39	London	24
Plymouth	39	Paris	23
Milan	38	Marseilles	19
Liverpool	37	Madrid	9
Manchester	33		

NOTE.—The average in this table, which in most cases refer to a long series of years, have been derived, for all the towns except Melbourne, Auckland, Dunedin, Wellington, Ventnor, and Toulouse, from a work entitled *Results of Rain, River, and Evaporation Observations made in New South Wales*, by H. C. Russell, C.M.G., Government Astronomer of that colony: Gullick, Sydney, 1898.

Meteorology elsewhere treated on.

1243. An extended account of the meteorology and climate of Victoria will be found in the *Victorian Year-Book*, 1874, paragraphs 54 to 95.