

PART IV.—VITAL STATISTICS.

422. The marriages returned to the Registrar-General in 1890 numbered 9,187, as against 9,194 in the previous year. There was thus an excess of 7 in favour of 1889. Marriages, 1890.

423. The marriages returned in 1889 and 1890 were more numerous than those in any previous year. The number returned annually had been almost stationary during the seven years prior to 1880, but in that year an advance was made which has been more than sustained since. In 1882, for the first time, the marriages returned exceeded 6,000; in 1884, they exceeded 7,000; in 1888, they nearly realized 9,000; and in 1889 and 1890 they exceeded that number by nearly 200.* Marriages, 1890 and former years.

424. The proportion which the number of marriages bear to the total population is generally called the marriage rate. This for many years was declining in Victoria, for, whilst in the three years prior to 1863 it was above 8 per 1,000 of both sexes, and all ages; from 1863 to 1865 it was between 7 and 8, and between 1868 and 1878 it was between 6 and 7 per 1,000. It reached its lowest point, 5·98 per 1,000, in 1879; then gradually revived, until in 1888 it reached the maximum of the last 31 years, viz., 8·5 per 1,000. Since 1888 it has slightly declined, but in 1890 it was still higher than in any other year since 1859, except 1889, 1888, 1862, and 1861. The following table gives the number of marriages and number of persons married per 1,000 of the population during each of the thirty-one years ended with 1890:— Marriage rate.

ANNUAL MARRIAGE RATE, 1860 TO 1890.

Year.	Per 1,000 of the Mean Population.	
	Number of Marriages.	Number of Persons Married.
1860	8·15	16·30
1861	8·21	16·42
1862	8·26	16·52
1863	7·51	15·02
1864	7·77	15·54

* For the number of marriages during each year since the first settlement of Port Phillip, see Statistical Summary of Victoria (first folding sheet) published in the second volume of this work.

ANNUAL MARRIAGE RATE, 1860 TO 1890—*continued.*

Year.	Per 1,000 of the Mean Population.*	
	Number of Marriages.	Number of Persons Married.
1865	7·36	14·72
1866	6·76	13·52
1867	6·97	13·94
1868	7·08	14·16
1869	6·89	13·78
1870	6·63	13·26
1871	6·37	12·74
1872	6·36	12·72
1873	6·50	13·00
1874	6·33	12·66
1875	6·33	12·66
1876	6·21	12·42
1877	6·31	12·62
1878	6·20	12·40
1879	5·98	11·96
1880	6·22	12·44
1881	6·79	13·58
1882	7·09	14·18
1883	7·44	14·88
1884	7·74	15·48
1885	7·73	15·46
1886	7·86	15·72
1887	7·64	15·28
1888	8·48	16·96
1889	8·43	16·86
1890	8·21	16·42
Mean of 31 years	7·15	14·30

Victorian,
French,
and Swiss
marriage
rates.

425. Marriageable males may be considered to comprise bachelors of 20 and upwards, and widowers of all ages, and marriageable females to comprise spinsters of 15 and upwards and widows of all ages. The compilation of the returns of the census of 1891 is not sufficiently advanced to enable a statement to be given of the present proportion of marriageable men and women who marry annually in Victoria; but according to the returns of the census of 1881, the former then married at the annual rate of 57, and the latter of 48 per 1,000. Similar proportions for France are 57 and 46, and for Switzerland 49 and 38; the former approximating very closely to, but the latter, as regards both males and females, being much lower than, the proportions for Victoria.†

* The marriage rates for 1881 and subsequent years have been revised in accordance with fresh estimates of population based on the results of the recent census.

† The French and Swiss male and female marriage rates are taken from papers read by M. Toussaint Loua before the Statistical Society of Paris in September and December, 1884.

426. 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 year from 1865 to 1890, except Western Australia, for which colony it is given for the last nineteen of those years:—

MARRIAGE RATES IN AUSTRALASIAN COLONIES, 1865 TO 1890.*

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
1866	6.76	8.26	11.61	8.12	...	5.93	10.32
1867	6.97	7.84	9.54	8.20	...	6.10	9.69
1868	7.08	8.23	8.33	7.37	...	6.57	9.35
1869	6.89	8.04	8.31	6.78	...	6.44	8.32
1870	6.63	7.85	7.80	6.90	...	6.62	7.62
1871	6.37	7.78	8.06	6.77	...	5.90	7.15
1872	6.36	7.46	8.70	7.20	5.56	6.17	6.85
1873	6.50	8.05	9.66	8.00	6.25	6.36	7.91
1874	6.33	7.70	8.62	8.00	6.96	6.83	8.87
1875	6.33	7.88	8.63	8.01	7.26	6.63	8.94
1876	6.21	7.66	7.57	8.49	7.07	7.13	8.25
1877	6.31	7.94	7.57	8.66	6.38	7.79	7.63
1878	6.20	8.08	6.98	9.47	6.50	7.96	8.03
1879	5.98	7.80	7.49	8.81	7.57	7.23	7.60
1880	6.22	7.68	6.97	8.69	7.42	7.38	6.71
1881	6.79	8.27	7.71	8.33	6.60	7.30	6.65
1882	7.09	8.74	8.56	8.73	7.07	8.03	7.07
1883	7.44	8.88	8.93	8.49	6.95	9.01	6.82
1884	7.74	8.49	8.91	8.28	7.11	7.81	6.88
1885	7.73	8.18	9.20	7.82	7.51	7.97	6.73
1886	7.86	7.97	8.38	6.31	7.99	7.27	5.99
1887	7.64	7.42	8.21	6.31	7.58	6.71	5.97
1888	8.48	7.37	8.63	6.56	7.18	6.59	5.97
1889	8.43	6.82	7.87	6.42	6.97	6.50	5.92
1890	8.21	6.57	7.70	6.94	6.18	6.20	6.08
Means	7.00	7.92	8.58	7.81	6.95	6.95	7.61

427. 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 twenty-six years:—

* The rates for Victoria have been amended in accordance with revised estimates of population based on the results of the census of 1891; those for the other colonies have not yet been similarly corrected, and are, in most cases, too low, in consequence of the populations having been over-estimated. Whilst these pages were passing through the press, it was ascertained that the true rates for 1890 were as follow:—New South Wales, 7.14; Queensland, 8.49; South Australia, 7.06; Western Australia, 5.80; Tasmania, 6.64; New Zealand, 6.11. For the number of marriages in the various colonies during the eighteen years ended with 1890, see General Summary of Australasian Statistics (third folding sheet) published in the second volume of this work.

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

ORDER OF COLONIES IN REFERENCE TO MARRIAGE RATES.

Order in Latest Year.

1. Victoria.
2. Queensland.
3. South Australia.
4. New South Wales.
5. Tasmania.
6. Western Australia.
7. New Zealand.

Order in a Series of Years.

1. Queensland.
2. New South Wales.
3. South Australia.
4. New Zealand.
5. Victoria.
6. Western Australia.
7. Tasmania.

Marriage rates in Australia and Australasia.

428. 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, shows a falling-off since 1883 or 1884,* when it was at a maximum, and was lower in 1890 than in any year since 1880; it was, however, higher than in any other year since 1873 on the continent, but, taking Australasia as a whole, it was lower in 1890 than in any of those years except 1879 and 1880, as is shown by the following figures:—

MARRIAGE RATES† IN AUSTRALIA AND AUSTRALASIA, 1873 TO 1890.

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	1883	8·20	8·03
1874	7·07	7·32	1884	8·22	7·72
1875	7·12	7·38	1885	8·07	7·83
1876	6·93	7·15	1886	7·78	7·45
1877	7·05	7·18	1887	7·47	7·19
1878	7·08	7·27	1888	7·84	7·48
1879	6·88	7·01	1889	7·46	7·18
1880	7·15	7·08	1890	7·33	7·08
1881	7·62	7·41	Means	7·48	7·40
1882	8·04	7·87			

Marriage rates in certain British possessions.

429. 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 rate in Barbados is explained by the fact that the negro population as a rule ignore the marriage ceremony. The same circumstance, to a greater or less extent, doubtless also affects the marriage rate in Trinidad, and perhaps also in the Mauritius, although the low

* In Australasia in 1883; in Australia in 1884.

† The rates for all the years since 1881 are liable to correction when the estimates of population have been amended in accordance with the results of the census of 1891.

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

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

MARRIAGE RATES IN CERTAIN BRITISH COLONIES.

Annual Rate per 1,000 of the Population.*			Annual Rate per 1,000 of the Population.*		
Years.			Years.		
Ceylon ...	1867-76	7.3	West Indies—		
Cape of Good Hope	1890	3.9	St. Lucia ...	1878-79	5.2
Mauritius ...	1871-75	2.5	St. Vincent	1872-76	6.3
Seychelles ...	1875-77	8.7	Barbados ...	1872-77	3.7
Nova Scotia ...	1871-75	7.7	Grenada ...	1871-75	5.6
Bermudas ...	1871-75	8.3	Dominica ...	1871-75	6.9
			Trinidad ...	1886-90	3.8

430. The following table gives for each of the five years ended with 1888 a statement of the marriage rates in British and such Foreign countries as the information is available for. The figures have been taken from the reports of the Registrar-General of England :—

Marriage rates in European countries.

MARRIAGE RATES IN EUROPEAN COUNTRIES, 1884 TO 1888.

Countries.	Number of Marriages* per 1,000 of Mean Populations.					
	1884.	1885.	1886.	1887.	1888.	Mean of 5 Years.
Hungary ...	10.1	9.9	9.6	8.9	...	9.6†
Prussia ...	8.0	8.1	8.1	8.0	8.0	8.0
Italy ...	8.2	7.9	7.8	7.7	7.8	7.9
German Empire ...	7.8	7.9	7.9	7.8	7.8	7.8
Austria ...	7.8	7.6	7.7	7.8	7.9	7.8
France ...	7.6	7.4	7.4	7.3	7.2	7.4
Denmark ...	7.8	7.6	7.1	7.0	7.1	7.3
England and Wales‡	7.5	7.2	7.0	7.1	7.1	7.2
Belgium ...	6.7	6.8	6.7	7.1	7.3	6.9
Holland ...	7.2	6.1	6.9	7.0	6.9	6.8
Switzerland ...	6.8	6.9	6.8	6.8	7.0	6.8
Spain ...	6.7	...	...	...	...	6.5§
Scotland‡ ...	6.7	6.4	6.2	6.3	6.2	6.4
Norway ...	6.8	6.6	6.5	6.2	6.1	6.4
Sweden ...	6.5	6.6	6.4	6.2	...	6.4†
Ireland|| ...	4.5	4.3	4.2	4.4	4.2	4.3

431. It will be observed that in four of the thirteen countries of which particulars are given for 1888, viz., Austria (slightly), Holland (slightly), Belgium, and Switzerland, the marriage rate was above the

European marriage rates in 1888 and former years.

* The numbers doubled give the persons married per 1,000 of the population.
 † Mean of four years.
 ‡ In 1889 and 1890, the marriage rates in England were 7.36 and 7.58 respectively, and in Scotland 6.46 and 6.66.
 § Mean of two years, 1883 and 1884.
 || 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.

average; in seven of those countries, viz., Italy (slightly), Denmark, France, England (slightly), Scotland, Norway, and Ireland (slightly), it was below the average; and in two, viz., Prussia and Germany, it was exactly equal to the average; also that in Austria, Belgium, and Switzerland, the rate was higher, in France and Norway lower than, and in Prussia, Germany, Scotland, and Ireland, as low as, in any of the other years named.

432. In the same five years, the mean marriage rate in Queensland was above that in any of the countries named, except Hungary (four years); and in New South Wales and Victoria it was about the same as in Italy, Germany, or Austria, but higher than in any of the other countries except Hungary and Prussia; whilst the mean rate was higher in Western Australia than in eleven, in Tasmania than in nine, in South Australia than in eight, but in New Zealand than in only one, of these countries. The following are the rates referred to:—

MEAN MARRIAGE RATES IN AUSTRALASIAN COLONIES,
1884 TO 1888.

						Number of Marriages per 1,000 of Mean Population.
Queensland	...	...	...	...	...	8·67
New South Wales	...	...	...	...	...	7·89
Victoria	...	...	...	...	...	7·87
Western Australia	...	...	...	...	...	7·47
Tasmania	...	...	...	...	...	7·27
South Australia	...	...	...	...	...	7·06
New Zealand	...	...	...	...	...	6·31

433. The following, according to the reports of the Registrar-General of England, is the marriage rate of the United Kingdom during the eighteen years ended with 1888. If, however, the registrations in Ireland are defective, as is alleged,* some disturbance to the calculations must result therefrom. It will be observed that the rate was lower in 1888 than in any other years named except 1886 and 1887:—

MARRIAGE RATE IN THE UNITED KINGDOM, 1871 TO 1888.

	Marriages per 1,000 of the Population.				Marriages per 1,000 of the Population.		
1871	8·21	1881	...	...	7·01
1872	7·98	1882	...	...	7·17
1873	8·03	1883	...	...	7·15
1874	7·79	1884	...	...	7·04
1875	7·67	1885	...	...	6·72
1876	7·70	1886	...	...	6·51
1877	7·32	1887	...	...	6·64
1878	7·09	1888	...	...	6·65
1879	6·69				
1880	6·83	Mean	...	...	7·23

* See footnote (II) on previous page.

Australasia
and
European
marriage
rates
compared.

Marriage
rate in
United
Kingdom.

434. 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 1890, it was two and a half times as high in the metropolis and 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 1890 and in a previous quinquennial period:—

Marriage rates in town and country.

MARRIAGES IN URBAN AND COUNTRY DISTRICTS, 1890.

Districts.	Estimated Mean Population.	Marriages, 1890.		Proportion per 1,000 of the Population, 1881-1885.
		Total Number.	Number per 1,000 of the Population.	
Melbourne and suburbs (Greater Melbourne)	473,500	5,172	10.92	10.49
Extra-Metropolitan towns ...	192,140	2,107	10.97	10.99
Country districts ...	452,860	1,908	4.21	3.12
Total ...	1,118,500	9,187	8.21	7.30

435. 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. The following table shows the number and percentage of marriages in each quarter of that year, and the mean percentage in each quarter of two previous decades:—

Marriages in each quarter.

MARRIAGES IN EACH QUARTER.

Seasons.	Quarter ended on the last day of—	Year 1890.		Percentage in Ten Years—	
		Number of Marriages.	Percentage.	1871 to 1880.	1881 to 1890.
Summer ...	March...	2,135	23.24	24.43	23.44
Autumn ...	June ...	2,550	27.76	26.19	26.66
Winter ...	September ...	2,112	22.99	23.81	23.35
Spring ...	December ...	2,390	26.01	25.57	26.55
	Year ...	9,187	100.00	100.00	100.00

436. In 1890, 748 widowers and 674 widows re-entered the marriage state. During the last seventeen years more widowers have re-married than widows. Formerly it was different. In the eight

Re-marriages in Victoria.

years ended with 1873 the widowers re-entering the married state numbered 4,344, and the widows 4,618, 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. Such a preponderance would be likely to happen only in a country in which females are much less numerous than males; and the fact of the reverse having been the case of late years would afford indirect proof, if such were needed, that the proportion of marriageable females to marriageable males in the population has increased, a circumstance which was made evident by the results of the census of 1881.* In England and Wales, during the ten years ended with 1885, 40 per cent more widowers re-married than widows, the number of the former being 258,061, that of the latter 184,665. The following is a statement of the number of widowers and widows who re-married in Victoria during each of the twenty-five years ended with 1890:—

RE-MARRIAGES, 1866 TO 1890.

Year.	Number of Re-marriages of—		Year.	Number of Re-marriages of—	
	Widowers.	Widows.		Widowers.	Widows.
1866 ...	487	498	1879 ...	637	553
1867 ...	504	591	1880 ...	603	520
1868 ...	558	623	1881 ...	679	551
1869 ..	553	563	1882 ...	628	547
1870 ...	547	595	1883 ...	699	562
1871 ...	587	605	1884 ...	725	615
1872 ...	522	552	1885 ...	735	646
1873 ...	586	591	1886 ...	696	607
1874 ...	602	593	1887 ...	692	552
1875 ...	614	583	1888 ...	823	668
1876 ...	678	623	1889 ...	789	686
1877 ...	666	600	1890 ...	748	674
1878 ...	634	585			
			Total...	15,992	14,783

Former
condition
of those
marrying.

437. In 1890, about seven-eighths of the unions which took place were between bachelors and spinsters, the proportion having gradually increased since 1871-1880, 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 1889 and the two preceding years were about a thirty-third, but in 1890 only a thirty-ninth of the whole. The following is the number and percentage in each of these groups during 1890, and the percentage during the decennial periods 1871-1880, and 1881-1890:—

* According to this census, there were in Victoria nearly 120 marriageable females to every 100 marriageable males.

FORMER CONDITION OF PERSONS MARRIED.

Previous Condition.	Year 1890.		Percentage in Ten Years—	
	Number of Marriages.	Percentage.	1871 to 1880.	1881 to 1890.
Bachelors and spinsters ...	8,004	87.12	80.59	85.84
Bachelors and widows ...	435	4.74	7.10	4.72
Widowers and spinsters ...	509	5.54	7.75	6.17
Widowers and widows ...	239	2.60	4.56	3.27
Total ...	9,187	100.00	100.00	100.00

438. The following statement gives the proportions of marriages of persons of different conjugal conditions in various countries; the figures have been taken entirely from official documents published in the respective countries named:—

Former condition of those marrying in various countries.

FORMER CONDITION OF PERSONS MARRYING IN DIFFERENT COUNTRIES.

Countries.	Per 1,000 Marriages Celebrated, Number between—			
	Bachelors and Spinsters.	Bachelors and Widows.	Widowers and Spinsters.	Widowers and Widows.
Victoria (1881-90) ...	858	47	62	33
New South Wales (1888-9)	862	55	53	30
Queensland (1887-9) ...	869	53	53	25
South Australia (1886-9) ...	865	37	64	34
New Zealand (1886-9) ...	867	43	62	28
Austria ...	758	62	129	51
Belgium ...	834	50	81	35
Denmark ...	832	50	96	22
England and Wales ...	819	44	84	53
Finland ...	788	54	113	45
France ...	844	41	78	37
Greece ...	861	39	67	33
Holland ...	805	44	103	48
Hungary ...	752	50	97	101
Ireland ...	857	31	86	26
Italy ...	832	37	94	37
Massachusetts ...	790	48	103	59
Norway ...	854	34	91	21
Prussia ...	807	53	105	35
Roumania ...	848	28	61	63
Russia in Europe ...	772	42	98	88
Scotland ...	851	29	89	31
Spain ...	811	40	100	49
Sweden ...	854	34	91	21
Switzerland ...	816	49	104	31
Vermont ...	747	44	128	81

Re-marriages
in various
countries.

439. By the figures in the following, which have been derived from those in the foregoing 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 those 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
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

Divorced
persons,
1890.

440. Divorced persons marrying are classed 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. Seven divorced men and nineteen divorced women were married in 1890; three of the former married spinsters, and four widows; sixteen of the latter married bachelors, and three widowers; In the previous year, eleven divorced men and ten divorced women were re-married.

441. The persons returned at the census of 1881 as living in a state of divorce, numbered 19, viz., 9 males and 10 females. Of the former, 4 were farmers or gardeners, 1 was a merchant, 1 a shopkeeper, 1 a cabinetmaker, 1 a bootmaker, and 1 a maltster; 5 were members of the Church of England, 1 was a Presbyterian, 1 a Roman Catholic, and 2 were Free Thinkers. Of the females, 1 was an innkeeper, 1 a farmer, 1 a tailoress, 1 a needlewoman, 1 of independent means, 2 were washerwomen, and 3 were merely performing domestic duties; 3 were members of the Church of England, 1 was a Presbyterian, 1 a Methodist, 1 a Baptist, 1 a Lutheran, and 3 were Roman Catholics.*

Divorced persons, 1881.

442. 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 first husband or wife was alive at the time thereof. Four deserted wives, and one deserted husband availed themselves of this provision in 1890. Two of the former married bachelors, and two widows; they had not heard of their former husbands—two for 7 years, one for 9 years, and one for 14 years. The deserted husband married a spinster; he had not heard of his former wife for 14 years. In the previous year three deserted wives and two deserted husbands re-married.

Deserted husbands and wives.

443. 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 2 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.

444. The marriages of 3 Aboriginal males with Aboriginal females are included in the returns of 1890. One of the males was a native of Queensland, but the others were natives of Victoria. In the previous year, 4 marriages of Aborigines took place.

Marriages of Aborigines.

* For further particulars respecting these divorced persons, see General Report, by the Government Statist, on the Census of Victoria, 1881, paragraph 314.

† An account of the provisions of this Statute is given under the head "Law, Crime, etc.," *post*.

Marriages of
Chinese.

445. Fourteen Chinese males were married in Victoria in the year 1890, as against 18 in 1889, and 8 in 1888. Of the women who married Chinese in the year under review, one was of Chinese parentage, although born in Victoria. During the twenty-four years prior to 1890, 397 Chinamen were married in Victoria, or an average of about 16 per annum. The following table shows the nationalities of the women who formed matrimonial unions with Chinese during that period, also during the year under review:—

NATIONALITY OF WOMEN MARRYING CHINESE, 1866 TO 1890.

Birthplace of Wives.	Number of Marriages of Chinese Males.		
	Twenty-four years : 1866 to 1889.	Year 1890.	Total : 1866 to 1890.
Victoria	194	8*	202
Other Australasian colonies ...	59	2	61
England and Wales... ..	66	3	69
Scotland	16	1	17
Ireland	27	...	27
Other British possessions ...	1	...	1
France	1	...	1
Germany	2	...	2
Spain	1	...	1
The United States	2	...	2
China	4	...	4
At sea	9	...	9
Not known	1	...	1
Total	383	14	397

Marriages
by different
sects.

446. The marriage ceremony in Victoria may be performed either by the registered clergy of any religious sect, or by lay registrars. In 1890, 94 per cent. of the marriages were celebrated according to the former, and 6 per cent. according to the latter, system. Lay marriages in 1890 numbered 537, and were more numerous than in either 1888 or 1889, in each of which years they numbered 510, or than in 1887, when they numbered 494, or than in the previous two years, in which respectively they numbered 453 and 426. They were, however, not so numerous as in 1884, when they numbered 645; in 1883, when they numbered 565; or in 1882, when they numbered 588. The following table gives a statement of the number and percentage of marriages celebrated by each religious sect and by lay registrars during 1890,

* One of the wives, although born in Victoria, was stated to be of the Chinese race.

also the percentage in the decennial periods ended with 1880 and 1890 respectively :—

MARRIAGES BY DIFFERENT DENOMINATIONS.

Marriages performed according to the usages of the—	Marriages in 1890.		Percentage of Marriages in Ten Years—	
	Number.	Percentage.	1881 to 1890.	1871 to 1880.
Church of England	2,831	30·81	30·52	24·63
Presbyterians	1,592	17·33	17·24	20·46
Wesleyans	1,492	16·24	15·63	16·38
Bible Christians	171	1·86	2·00	1·69
Independents	246	2·68	4·42	5·42
Baptists	400	4·35	5·00	3·70
Lutherans	83	·90	·93	1·02
Unitarians	6	·07	·05	·02
Calvinistic Methodists	7	·08	·06	·16
Roman Catholics	1,498	16·31	14·91	17·21
Jews	27	·29	·43	·42
Other sects	297	3·23	1·78	1·07
Lay registrars	537	5·85	7·03	7·82
Total	9,187	100·00	100·00	100·00

447. 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 the circumstance occurs too seldom to cause any serious disturbance in the marriage statistics. Two such cases, however, were noticed in 1890, viz., that of a couple who had been previously married—under what rites is not stated—being re-united under the forms of the Jewish denomination, and that a couple, who had been previously united in the Free Church of England, being re-married according to the rites of the Presbyterian Church. Duplicate marriages.

448. Of the 3 Aboriginal marriages which took place in 1890, 2 were solemnized according to the rites of the Moravians, and 1 according to those of the Presbyterians. Sects of
Aboriginals
married.

449. Of the 14 marriages of Chinese in 1890, 7 were celebrated according to the rites of the Church of England, 1 according to those of the Free Church of England, 4 according to those of the Wesleyan Methodists, and 2 were performed by local registrars. Sects of
Chinese
married.

Signing
with marks.

450. 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 1890, the proportion of those who signed with marks to the total numbers married being also shown:—

SIGNING MARRIAGE REGISTER WITH MARKS, 1890.

Persons Married.	Numbers Married.	Signing with marks.	
		Total Number.	Number in every 100 Married.
Bridegrooms	9,187	138	1·50
Brides	9,187	141	1·53
Mean	9,187	139·5	1·52

Increased
numbers
signing in
writing.

451. 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 1890, the proportion of men signing with marks was lower than in any previous year, whilst that of women was lower than in any previous year except 1889, as will be seen by the following figures, which show the proportions for the last eighteen years:—

NUMBERS SIGNING WITH MARKS PER 100 MARRIED,
1873 TO 1890.

Year.	Men.	Women.	Mean.	Year.	Men.	Women.	Mean.
1873 ...	6·55	9·97	8·26	1882 ...	2·88	3·27	3·07
1874 ...	6·52	9·91	8·22	1883 ...	3·09	3·47	3·28
1875 ...	5·48	9·43	7·46	1884 ...	2·55	2·77	2·66
1876 ...	5·31	7·50	6·41	1885 ...	2·56	2·62	2·59
1877 ...	5·04	6·02	5·53	1886 ...	2·00	1·98	1·99
1878 ...	4·12	5·30	4·71	1887 ...	1·73	2·12	1·92
1879 ...	3·81	5·60	4·71	1888 ...	1·72	1·81	1·76
1880 ...	4·18	4·09	4·13	1889 ...	1·51	1·38	1·45
1881 ...	2·90	4·16	3·53	1890 ...	1·50	1·53	1·52

Signing with
marks, 1853
to 1872

452. A very much more decided improvement is shown by comparing these results with those of the twenty years prior to 1873, which embrace the whole period from 1853, when the registration

system was inaugurated in Victoria, to the end of 1872. In this period, 86,062 marriages were registered, with the result that 7,902 of the bridegrooms and 17,824 of the brides signed the register with marks. These numbers give the following proportions as the average for the twenty years :—

NUMBERS SIGNING WITH MARKS PER 100 MARRIED,
1853 TO 1872.

Men.	Women.	Mean.
9.18	20.71	14.95

453. It will be noticed that in every one of the years, except 1880, 1886 and 1889, the proportion of men able to write has been greater than that of women. More females than males sign with marks.

454. The marriages in which marks instead of writing were made use of in 1890 numbered 259, but in only 20 of these, or about 1 in 13, did both parties use marks. In the 239 other instances either the husband or the wife signed in writing. Thus, whereas in the case of 1 marriage in 35, either the bride or the bridegroom was unable to write, it happened in the case of only 1 marriage in 459 that neither party was able to sign the marriage register in writing. Cases of both signing with marks.

455. Of the 14 Chinese who married in 1890, 4 signed with an ordinary cross, and 10 in writing. Of the women they married, all but 3 signed in writing. Signatures of Chinese.

456. In the case of the Aborigines who married in 1890, 1 of the females signed in writing, but the 2 other females and all the males signed with marks. Signatures of Aborigines.

457. 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 1890, and the average of the decennial periods ended with 1880 and 1890 respectively. Considerable improvement will be noticed in respect to all the principal sects :— Signing with marks in each sect.

SIGNING WITH MARKS IN EACH SECT.

Marriages performed according to the usages of the—	Number signing with Marks in every 100 Married.								
	Year 1890.			Ten Years : 1881 to 1890.			Ten Years : 1871 to 1880.		
	Men.	Women.	Mean.	Men.	Women.	Mean.	Men.	Women.	Mean.
Church of England ...	1·13	1·31	1·22	1·62	1·76	1·69	4·54	6·11	5·33
Presbyterians ...	1·19	·82	1·01	1·32	1·42	1·37	3·67	5·97	4·82
Methodists ...	1·38	1·20	1·29	1·82	1·80	1·81	4·15	5·33	4·74
Bible Christians } ...									
Independents ...	·41	·81	·61	1·72	1·39	1·56	3·37	5·49	4·43
Baptists ...	·75	·75	·75	1·91	2·15	2·03	3·48	5·22	4·35
Lutherans ...	1·20	1·20	1·20	·56	·56	·56	1·77	4·13	2·95
Calvinistic Methodists ...	...	...	...	2·86	...	1·43	1·22	6·10	3·66
Roman Catholics ...	2·40	2·27	2·34	3·85	3·91	3·88	10·14	15·43	12·79
Jews* ...	7·41	7·41	7·41	1·84	3·12	2·48	·95	·47	·71
Other sects ...	3·30	1·98	2·64	2·27	2·07	2·17	7·01	3·79	5·40
Lay registrars ...	2·05	4·28	3·17	4·56	6·68	5·62	6·60	12·93	9·77
Total ...	1·50	1·54	1·52	2·17	2·38	2·28	5·31	7·93	6·62

458. It will be observed that the proportion of those signing with marks is generally higher amongst marriages performed according to the rites of the Roman Catholic Church than amongst those celebrated by any other religious denomination, but that the numbers in 1890 show a very considerable improvement as compared with the ten years ended with 1890, which show a still more marked improvement as compared with the ten years ended with 1880. The proportion so signing amongst civil marriages, although formerly lower, has latterly been much higher than amongst marriages by Roman Catholics.

459. In 45 marriages by Unitarians which took place in the twenty years ended with 1890 not one instance occurred of either of the parties signing with a mark; this sect, therefore, finds no place in the above table. In 122 marriages by Calvinistic Methodists during the same period, all but two of the males signed in writing, but five 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 1889 in 54 marriages of Jews as many as 8 persons, and in 1890, in 27 marriages of Jews, as many as 4 persons, signed with marks. On examining the returns of the last two years, it was found that most of the Jews not signing in writing were Eastern Jews, chiefly from Russia or Russian Poland.

The large proportion in 1890 of Jews signing with marks is explained in paragraph 459 *infra*.

Roman Catholic and civil marriages.

Marriages by Unitarians, Calvinists, and Jews.

460. A statement of the numbers who sign the marriage register with marks is published in all the Australasian colonies except Western Australia and Tasmania, and from the figures given the following percentages for the five years 1885 to 1889 have been deduced. The colonies are 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.

SIGNING WITH MARKS IN AUSTRALASIAN COLONIES, 1885 TO 1889.

Colony.	Year.	Number Signing with Marks to every 100 Married.		
		Men.	Women.	Mean.
1. Victoria ...	1885	2.56	2.62	2.59
	1886	2.00	1.98	1.99
	1887	1.73	2.12	1.92
	1888	1.72	1.81	1.76
	1889	1.51	1.38	1.45
	Mean of 5 years	...	1.90	1.98	1.94
2. New Zealand ...	1885	2.83	3.82	3.32
	1886	1.92	2.89	2.40
	1887	1.94	3.11	2.52
	1888	1.66	2.52	2.09
	1889	2.01	2.59	2.30
	Mean of 5 years	...	2.07	2.99	2.53
3. South Australia ...	1885	4.00	4.30	4.15
	1886	3.04	3.49	3.26
	1887	2.18	1.80	1.99
	1888	2.40	2.45	2.42
	1889	2.38	2.18	2.28
	Mean of 5 years	...	2.80	2.84	2.82
4. New South Wales ...	1885	4.31	5.19	4.75
	1886	3.76	4.20	3.98
	1887	3.04	3.95	3.49
	1888	3.91	3.57	3.74
	1889	3.47	3.23	3.35
	Mean of 5 years	...	3.70	4.03	3.86
5. Queensland ...	1885	3.76	7.35	5.56
	1886	4.52	6.71	5.62
	1887	3.53	5.39	4.46
	1888	3.01	4.98	4.00
	1889	2.88	3.68	3.28
	Mean of 5 years	...	3.54	5.62	4.58

461. 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 Victoria the least illiterate colony.

other colony. Next to Victoria in this respect is New Zealand, in which the proportion of males signing in writing was in two of the years—viz., 1886 and 1888—even larger than in this colony. In South Australia, moreover, in 1887, the proportion of females set down as having signed with marks was smaller than in any other 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.

Signing with marks in various countries.

462. No returns are at hand showing the manner in which the marriage registers are signed in British colonies other than those named. 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.

Country.	Year.	Number Signing with Marks to every 100 Married.		
		Men.	Women.	Mean.
Prussia	1884	3·31	5·11	4·21
Scotland	1888	3·95	7·38	5·66
England and Wales ...	1888	8·30	9·70	9·00
Holland... ..	1877	7·53	14·83	11·18
France	1882	14·39	22·62	18·50
Ireland	1887	22·20	24·80	23·50
Italy	1886	21·58	31·73	26·65

Countries compared as to illiteracy.

463. By comparing these figures with those in the previous table for the corresponding years, it will appear that adult education, so far as it is indicated by signature to the marriage register, is more forward in Victoria, New Zealand, South Australia, and New South Wales than in any of the countries named; also that in Queensland it is more forward than in any except Prussia, in which the proportion signing with marks is much smaller than in any of the other countries named. Scotland comes next to Prussia, but it is more than one-third as illiterate again. Holland, which comes next to Scotland and England, would doubtless rank higher were it not that the latest return available dates as far as 1877, when adult education was probably not so advanced as it is now. The very large proportion signing with marks in Italy and Ireland attracts particular attention.

464. The age of both bridegroom and bride was specified in the case of all but 54 of the 9,187 marriages which took place in 1890. In 42 of the defective entries the age of neither party was given; in 7 cases the age of the husband was stated, but not that of his wife; and in 5 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.

AGES OF BRIDEGROOMS AND BRIDES IN COMBINATION, 1890.

Ages of Husbands.	Ages of Wives.																Total Husbands.				
	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.	75 to 80.	80 and upwards	Unspecified.
17 to 18 years	...	...	...	...	...	...	2	1	...	...	...	...	...	...	...	...	...	...	...	...	3
18 to 19 "	1	...	8	2	...	2	3	...	...	...	...	...	...	...	...	...	...	...	...	...	16
19 to 20 "	...	...	5	12	10	5	6	1	...	...	...	...	...	...	...	...	...	...	...	...	39
20 to 21 "	...	2	9	22	22	19	39	6	1	1	...	...	...	...	...	...	...	...	...	...	121
21 to 25 "	1	30	87	184	273	257	1376	335	34	14	3	2	...	...	...	...	...	...	...	...	2596
25 to 30 "	3	21	56	110	217	201	1682	1138	193	37	6	1	...	...	...	...	...	...	...	3	3668
30 to 35 "	3	6	17	30	36	45	477	532	259	53	15	2	2	...	...	...	...	...	...	3	1480
35 to 40 "	...	2	4	3	8	12	113	172	121	41	19	6	4	...	...	...	...	...	...	...	505
40 to 45 "	...	1	1	1	4	4	25	52	58	39	28	7	...	1	...	...	...	...	...	...	221
45 to 50 "	...	...	...	...	1	3	18	32	36	38	16	14	7	2	1	1	...	...	...	1	170
50 to 55 "	...	...	...	...	...	1	8	13	18	20	12	29	15	3	...	...	...	1*	...	...	120
55 to 60 "	...	...	...	...	...	1	2	12	9	13	19	17	11	7	2	3	...	...	...	...	96
60 to 65 "	...	...	...	...	...	...	3	...	10	5	9	10	8	8	3	3	1	...	...	...	60
65 to 70 "	...	...	...	...	...	...	1	2	2	2	4	8	4	1	3	4	...	1	...	...	32
70 to 75 "	...	...	...	1	...	...	...	...	...	1	...	2	1	1	2	2	1	...	...	...	11
75 to 80 "	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	1	...	...	...	...	2
Unspecified	...	...	...	1	1	2	...	1	...	...	...	...	...	...	...	...	...	...	42	...	47
Total Wives	8	62	187	366	572	552	3756	2297	741	264	131	98	52	23	11	14	2	1	1	49	9187

NOTE.—This table may be read thus:—Three men between 25 and 30 married girls between 15 and 16; fourteen women between 35 and 40 married men between 21 and 25, etc.

465. An examination of the 9,133 cases in which the ages of both parties are specified will show that in 2,917 instances, or 32 per cent. of the whole, both parties to the marriage were about the same age; in 826 instances, or 9 per cent. of the whole, the wife was older than the husband; and in 5,390 instances, or 59 per cent. of the whole, the husband was older than the wife.

Relative ages of husband and wife.

466. Some striking inequalities of age amongst the parties married appear in several of the columns, as, for instance, a man between 70 and 75 married a girl of only 18; and one between 75 and 80 married a woman between 21 and 25; two men between 50 and 60 married girls under 21; and four men between 45 and 50 married

Inequalities of age.

* Aged 80.

girls between 19 and 21. On the other hand, three women between 21 and 30 married youths of 17; a woman between 30 and 35, and one between 35 and 40, married youths of 20; two women between 45 and 50 married men between 21 and 25; a woman between 65 and 70 married a man between 45 and 50; a woman of 80 married a man between 50 and 55, etc.

467. It will be noticed that three youths aged 17 took upon themselves the cares and responsibilities of matrimony, their wives, however, being not less than four years older than their husbands. On the other hand, it will be remarked that two men and two women who had passed the age of 75—one of the latter being 80 years of age—entered the marriage state, the partners of all except the wife of one of the former being also advanced in life.

468. The next table has been designed for the purpose of showing the ages at which persons of either sex generally marry, the information being given for the year 1890, and for the decennial period 1881 to 1890:—

PROPORTION OF MALES AND FEMALES MARRYING AT DIFFERENT AGES, 1881-90 AND 1890.

Ages.	Bridegrooms.			Brides.		
	Numbers, 1890.	Proportions per 1,000.		Numbers, 1890.	Proportions per 1,000.	
		Year 1890.	Ten Years, 1881-90.		Year 1890.	Ten Years, 1881-90.
Under 15 years ...	...	...	...	...	...	·15
15 to 16 „ ...	...	...	...	8	·88	1·17
16 to 17 „ ...	...	...	·03	62	6·78	6·53
17 to 18 „ ...	3	·33	·29	187	20·46	20·32
18 to 19 „ ...	16	1·75	1·46	366	40·05	42·94
19 to 20 „ ...	39	4·27	5·62	572	62·60	65·03
20 to 21 „ ...	121	13·24	15·19	552	60·41	73·84
21 to 25 „ ...	2,596	284·03	321·02	3,756	411·03	432·34
25 to 30 „ ...	3,668	401·31	365·48	2,297	251·37	223·83
30 to 35 „ ...	1,480	161·93	134·57	741	81·09	62·07
35 to 40 „ ...	505	55·25	58·29	264	28·89	29·53
40 to 45 „ ...	221	24·18	32·54	131	14·34	17·10
45 to 50 „ ...	170	18·60	24·77	98	10·72	12·23
50 to 55 „ ...	120	13·13	18·40	52	5·69	6·74
55 to 60 „ ...	96	10·50	11·49	23	2·52	3·40
60 to 65 „ ...	60	6·56	6·11	11	1·20	1·90
65 to 70 „ ...	32	3·50	3·05	14	1·53	·63
70 and upwards ...	13	1·42	1·69	4	·44	·25
Total ...	9,140*	1,000·00	1,000·00	9,138*	1,000·00	1,000·00

* The bridegrooms and brides of unspecified ages being omitted, these numbers are less than those in the last table, the bridegrooms by 47 and the brides by 49. The reason of the bridegrooms being more than the brides is that the age was stated in the case of two more of the former than of the latter.

Extreme
ages of
marriage.

Age at
which mar-
riage is
contracted.

469. The large proportion of both sexes marrying at between 21 and 30 years of age is very marked; thus in 1890 more than two-thirds of the males, and nearly two-thirds of the females, who married were between those ages. These proportions are about the same as those shown by an average extending over the last ten years. Frequency of marriage at 21 to 30.

470. In the case of the marriages of Chinese which took place in 1890, the men, with two exceptions, were older than the females with whom they formed unions. None of the former were under 27 years of age, but of the latter, two had not reached the age of 21. The following table shows the ages of the Chinese bridegrooms and of their brides in combination :— Ages of Chinese bridegrooms and their brides.

AGES OF CHINESE BRIDEGROOMS AND THEIR BRIDES IN COMBINATION, 1890.

Ages of Bridegrooms.	Ages of Brides.											Total Bridegrooms.
	16.	18.	21.	25.	27.	29.	32.	35.	41.	42.	50.	
27	1	...	...	...	...	...	...	...	1
28	1	...	...	...	...	...	...	...	...	...	1
32	1	...	1	...	...	...	...	...	...	...	...	2
35	1	...	...	...	1
38	1	...	...	...	...	...	...	1
49	1	...	...	1	...	...	...	...	1	3
53	1	...	...	...	...	1
55	1	...	...	...	...	...	...	...	1
58	1	...	1
59	1	...	...	...	1
62	1	...	...	1
Total Brides	1	1	2	2	1	1	1	2	1	1	1	14

471. Of the three male Aborigines who married in 1890, two were widowers, and their partners were all widows. The ages of bridegroom and bride were set down as follow :—26 and 40, 34 and 37, 65 and 46. Ages of Aborigines marrying.

472. 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 Marriages of minors

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. Three of the males, however, who married in 1890 had not completed their eighteenth year. Of the brides, eight had not completed their sixteenth, and 62 more had not completed their seventeenth year. As many as 179 of the males, or one in every 51, and no fewer than 1,747 of the females, or over a fifth, had not attained the full age of 21 years.

Marriages of
minors in
Victoria
and Eng-
land.

473. From the experience of Victoria during the year 1890, and the decades 1871-80 and 1881-90, 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 proportion of females marrying under age, which was formerly higher in Victoria than in England, has fallen considerably, and in 1890, as well as in last decennial period, 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. Ten Years: 1871 to 1880.
	Year 1890.	Ten Years: 1881 to 1890.	Ten Years: 1871 to 1880.	
Bridegrooms	1·95	2·26	2·52	7·95
Brides	19·02	21·00	28·32	21·96
Mean	10·48	11·63	15·42	14·96

Age of
marriage in
various
countries.

474. The following table contains a statement of the proportion of males and females marrying at different ages in various countries. The figures, except those relating to Victoria and three other Australasian colonies, have been taken from the 46th Report of the Registrar-General of England‡:—

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

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

‡ Table D., page x.

AGES OF MALES AND FEMALES MARRYING IN VARIOUS COUNTRIES.

Countries.	Per 10,000 of All Ages Marrying, Numbers—						
	Under 20.	20 to 25.	25 to 30.	30 to 40.	40 to 50.	50 to 60.	Over 60.
BRIDEGROOMS.							
Victoria (1881-90) ...	74	3,362	3,655	1,928	573	299	109
Queensland (1889) ...	109	3,250	3,929	2,065	451	170	26
South Australia (1890)	98	3,141	3,682	2,389	403	184	103
New Zealand (1887-9)	141	2,825	3,444	2,562	713	235	80
—							
England and Wales ...	329	4,805	2,538	1,436	510	256	126
Scotland ...	311	3,919	2,965	1,877	604	237	87
Ireland ...	253	3,003	3,056	2,643	685	242	118
Denmark ...	2,092		3,820	2,968	752	279	89
Norway ...	173	2,681	3,530	2,459	699		458
Sweden ...	6	2,325	3,569	2,883	778		439
Russia (in Europe) ...	3,784	3,063	1,230	1,183	549		191
Austria ...	2,084		4,172	2,311	848	415	170
Hungary ...	3,173		4,571	1,255	604	296	101
Switzerland ...	127	2,525	3,133	2,710	927	404	174
Prussia ...	58	6,716		2,265	624	256	81
Bavaria ...	19	1,875	3,674	3,002		1,244	186
Saxony ...	38	3,432	3,823	1,767	561	278	101
Holland ...	256	2,405	3,370	2,659	846	345	119
Belgium ...	94	2,161	3,467	2,952	885	322	119
France ...	236	2,469	3,757	2,512	622	282	122
Italy ...	107	2,491	3,699	2,611	704	266	122
BRIDES.							
Victoria (1881-90) ...	1,361	5,062	2,238	916	293	102	28
Queensland (1889) ...	1,928	5,126	1,915	807	183	41	...
South Australia (1890)	1,369	5,096	2,219	917	286	72	41
New Zealand (1887-9)	2,181	4,528	2,046	897	275	56	17
—							
England and Wales ...	1,441	4,966	1,911	1,091	407	145	39
Scotland ...	1,338	4,570	2,325	1,314	370	72	11
Ireland ...	1,349	4,899	2,275	1,104	264	77	32
Denmark ...	616	3,608	3,076	2,054	515	112	19
Norway ...	824	3,919	2,889	1,749	476		143
Sweden ...	555	3,413	3,089	2,225	573		145
Russia (in Europe)*	5,801	2,120	699	616	229		35
Austria ...	1,807		2,851	2,881	1,696	590	175
Hungary ...	3,604		3,422	1,604	810	408	152
Switzerland ...	879	3,876	2,498	1,886	656	173	32
Prussia ...	1,030	6,974		1,487	403	92	14
Bavaria ...	644	3,532	2,949	2,061		761	53
Saxony ...	1,073	4,500	2,588	1,305	406	110	18
Holland ...	1,084	3,236	2,897	1,976	599	174	34
Belgium ...	640	3,573	2,770	2,124	647	193	53
France ...	2,116	3,911	2,048	1,374	377		174
Italy ...	1,692	4,384	2,195	1,254	347	101	27

* The figures, which are those of the Registrar-General of England, add in this line only to 9,500 instead of to 10,000.

Marriages of minors in different countries. 475. According to the figures in this table, fewer males marry under 20 in Victoria than in any of the other countries named, except Sweden, Prussia, Bavaria, and Saxony; but, on the other hand, more females marry under that age in Victoria and South Australia, where the proportions are about equal, than in any of those countries except Queensland, New Zealand, England, France, Italy, and Russia. Attention is called to the very large proportion shown as marrying under age in the last-named country, exceeding a third of the total marriages in the case of the males, and exceeding half in the case of the females.

Births, 1890. 476. The births registered in Victoria during 1890 numbered 37,578, as against 36,359 in 1889. The increase in the year under review, as compared with the previous one, was thus 1,219.

Births in 1890 and former years. 477. During the 20 years ended with 1883, the number of births in Victoria had remained almost stationary; but in 1884 a marked increase took place, which has continued during the six subsequent years, the number of births in 1890 being the highest ever recorded.*

Birth rate. 478. In proportion to population, the births decreased steadily for a number of years. The lowest point was reached in 1882, since which year there has been a gradual improvement, the birth rate in 1890 having been higher than it had been in any year since 1876. The following are the birth rates for the last thirty-one years:—

ANNUAL BIRTH RATE, 1860 TO 1890.

			Births per 1,000 of Mean population.†				Births per 1,000 of Mean population.†
1860	...	...	42·81	1877	...	...	32·17
1861	...	...	43·46	1878	...	...	32·36
1862	...	...	44·50	1879	...	...	32·18
1863	...	...	42·46	1880	...	...	30·75
1864	...	...	43·79	1881	...	...	31·24
1865	...	...	42·40	1882	...	...	30·06
1866	...	...	39·76	1883	...	...	30·26
1867	...	...	39·75	1884	...	...	30·93
1868	...	...	41·08	1885	...	...	31·33
1869	...	...	37·89	1886	...	...	31·30
1870	...	...	38·07	1887	...	...	32·50
1871	...	...	37·15	1888	...	...	32·70
1872	...	...	36·33	1889	...	...	33·35
1873	...	...	36·71	1890	...	...	33·60
1874	...	...	34·46				—
1875	...	...	33·94				—
1876	...	...	33·61				—
						Mean of 31 years	35·04

* For number of births in each year, see Statistical Summary of Victoria (first folding sheet), published in the second volume of this work.

† Birth rates since 1881 corrected since last publication, in accordance with revised estimates of population based on the census of 1891.

479. 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 and 1881 :—

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

480. It will be noticed that the married women at reproductive ages were fewer by 3,730 in 1881 than in 1871, that the proportion of births to such women, viz., 302 $\frac{2}{3}$ per 1,000 was exactly the same in both years, but that the proportion of births to the total population was considerably less in 1881 than in 1871. Thus, while the birth rate based upon a comparison of the births with the married women remained perfectly steady, that rate based upon a comparison of the births with the population showed a falling-off of nearly 7 per 1,000. The reduction in the birth-rate, calculated in the ordinary way, which had been going on for years, is therefore conclusively shown—at any rate so far as the period 1871 to 1881 is concerned—to be due to a deficiency in the community of married women at the fruitful period of life.

Reason for decline of birth rate.

481. Returns of the births in all the Australasian colonies are available to the end of 1890, and from these and the mean populations of the respective colonies during each year the birth rates have been calculated in the office of the Government Statist, Melbourne. The following table gives the birth rates of the different colonies for each year from 1865 to 1890, or as many years between those periods as the figures are available for :—

Birth rates in Australasian colonies.

* In both cases these are the legitimate births which occurred during the twelve months of which the census was the middle.

BIRTH RATES IN AUSTRALASIAN COLONIES, 1865 TO 1890.*

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
1866 ...	39·76	40·45	44·86	42·38	...	29·15	42·89
1867 ...	39·75	41·94	45·66	41·87	...	30·34	42·18
1868 ...	41·08	40·72	43·03	41·51	...	30·03	42·14
1869 ...	37·89	40·74	42·83	39·03	...	28·27	41·90
1870 ...	38·07	40·09	43·51	38·48	...	30·18	42·32
1871 ...	37·15	39·63	43·25	38·34	...	30·16	40·64
1872 ...	36·33	38·46	40·70	37·60	32·42	29·44	39·50
1873 ...	36·71	39·38	40·82	36·42	31·43	29·43	39·00
1874 ...	34·46	39·30	41·11	38·22	33·71	29·72	40·27
1875 ...	33·94	38·53	38·90	35·70	28·72	29·88	40·23
1876 ...	33·61	38·56	37·48	37·71	33·98	30·11	41·73
1877 ...	32·17	37·92	36·75	37·36	33·07	30·21	41·28
1878 ...	32·36	38·50	35·77	38·23	31·11	32·27	42·14
1879 ...	32·18	38·99	36·74	38·96	34·38	32·05	40·32
1880 ...	30·75	38·80	36·92	38·94	32·35	32·91	40·78
1881 ...	31·24	38·13	37·19	38·66	33·67	33·40	37·95
1882 ...	30·06	37·37	35·85	37·40	35·84	33·50	37·32
1883 ...	30·26	37·49	36·92	37·37	33·87	34·25	36·28
1884 ...	30·93	38·54	36·23	38·38	33·84	35·66	36·15
1885 ...	31·33	37·64	37·80	38·47	35·22	35·08	34·78
1886 ...	31·30	37·03	37·84	35·70	39·43	34·15	33·15
1887 ...	32·50	36·42	38·09	34·56	37·34	33·87	32·09
1888 ...	32·70	36·20	37·77	33·06	35·88	33·10	31·22
1889 ...	33·35	33·73	36·27	32·37	37·14	31·97	30·07
1890 ...	33·60	33·99	37·15	32·20	34·69	31·24	29·22
Means ...	34·02	38·53	39·35	37·80	34·11	31·65	38·34

482. In 1890 the birth rate was remarkably low in most of the colonies, and was below the average in all except Western Australia. In South Australia and New Zealand the rate was apparently the lowest recorded during the whole period of 26 years; whilst in New South Wales, although slightly higher than in 1889, it was also lower than in any other year shown in the table. In Victoria, the rate, although still below the average, was higher than in any year since 1876, as has been already stated. In Tasmania it was lower than in any year since 1877; and even in Western Australia it was considerably below the average of the five preceding years. It should be pointed out, however, that the birth rates for the later years are understated in consequence of the populations being over-estimated; these will be corrected in later editions of this work when they have been re-calculated in due course.*

* See footnote (*) on page 269 *ante*, which also applies to this table. Whilst these pages were passing through the press, it was ascertained that the true rates for 1890 were as follow:—New South Wales, 35·35; Queensland, 40·95; South Australia, 32·75; Western Australia, 32·55; Tasmania, 33·49; New Zealand, 29·41. For the number of births in the various colonies during the eighteen years ended with 1890, see General Summary of Australasian Statistics (third folding sheet) in the second volume. See also Appendix A. to the same volume.

483. 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 twenty-six years. It will be observed that Victoria stands fourth on the list for 1890 but fifth in the twenty-six year series :—

Order of colonies in respect to birth rates.

ORDER OF AUSTRALASIAN COLONIES IN REFERENCE TO BIRTH RATES.

Order in 1890.	Order in a Series of Years.
1. Queensland.	1. Queensland.
2. Western Australia.	2. New South Wales.
3. New South Wales.	3. New Zealand.
4. Victoria.	4. South Australia.
5. South Australia.	5. Victoria.
6. Tasmania.	6. Western Australia.
7. New Zealand.	7. Tasmania.

484. On the continent of Australia, taken as a whole, and on that continent, combined with Tasmania and New Zealand, the birth rate in 1890 was slightly higher than in 1889, but was, with that exception, the lowest recorded during the last eighteen years. It is possible, however, that the low apparent rates in the last two years may be partly due to the population being over-estimated, as proved by the recent census. The following are the figures for the period referred to:—

Birth rate in Australia and Australasia.

BIRTH RATE IN AUSTRALIA AND AUSTRALASIA, 1873 TO 1890.*

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	1883	34·54	34·84
1874	36·46	36·70	1884	35·25	34·33
1875	35·29	35·82	1885	35·33	35·22
1876	35·20	36·04	1886	34·85	34·52
1877	34·15	35·16	1887	34·95	34·42
1878	34·31	35·51	1888	34·68	34·03
1879	34·55	35·42	1889	33·64	32·99
1880	35·33	36·20	1890†... ..	33·93	33·05
1881	35·22	35·63			
1882	34·28	34·78	Means	34·96	35·10

485. 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. In some cases the figures are only for one or two years :—

Birth rates in British possessions.

* The rates for all the years since 1881 are liable to future correction, when the estimates of population have been revised in accordance with the results of the census of 1891.

† Just before going to press it was ascertained that the true rates for Australia and Australasia for 1890 were 35·08 and 34·07 respectively.

BIRTH RATES IN BRITISH POSSESSIONS.

Colonies.	Years.	Number of Births per 1,000 of the population.
Malta	1886	40·0
Gibraltar	1888-9	26·4
Ceylon	1886-8	30·7
Straits Settlements	1888-9	20·0
Hong Kong	1882-6	8·5
Mauritius	1886	36·3
Seychelles	1886	39·8
Sierra Leone	1887-9	17·9
Nova Scotia	1871-5	32·0
Bermudas	1884-9	35·4
British Guiana	1886	35·2
West Indies—		
Bahamas	1878-9	41·0
Jamaica	1886-7	36·0
St. Lucia	1869-89	41·3
St. Vincent	1888-9	40·3
Barbados	1886	41·5
Grenada	1871-9	45·3
Tobago	1886	36·0
Antigua	1875-6	40·4
Montserrat	1886	40·4
Dominica	1871-6	31·0
Trinidad	1881-90	33·8

Birth rate
in Euro-
pean
countries.

486. A statement of the birth rates in British and certain Foreign countries for each of the five years ended with 1888, 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, 1884 TO 1888.

Countries.	Number of Births per 1,000 of Mean Population.					Mean of 5 years.
	1884.	1885.	1886.	1887.	1888.	
Hungary	46·0	...	45·5	...	...	45·8*
Austria... ..	38·4	37·4	38·0	38·2	37·9	38·0
Italy	38·7	38·1	36·4	38·3	36·6	37·6
Prussia	37·4	37·6	37·7	37·8	37·7	37·6
German Empire	37·2	37·0	37·1	36·9	36·7	37·0
Spain	37·1	...	...	...	...	36·5†
Holland	34·9	34·4	34·6	33·7	33·7	34·3
England and Wales	33·4	32·5	32·4	31·4	30·6	32·1
Scotland	33·4	32·3	32·4	31·2	30·5	32·0
Norway... ..	31·0	31·3	30·9	30·8	30·8	31·0
Sweden	30·0	29·6	29·8	29·7	...	29·8‡
Belgium	30·5	29·9	29·6	29·4	29·1	29·7
Switzerland	28·1	27·5	27·5	27·9	27·7	27·7
France	24·8	24·3	23·9	23·5	23·1	23·9
Ireland	24·0	23·5	23·3	23·2	22·9	23·4

* Mean of two years.

† Mean of two years, 1883 and 1884.

‡ Mean of four years.

487. 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. 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 sub-division of land among the peasant proprietors. The better class of the labouring population aspire to become proprietors of small 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."†

Low birth rates in Ireland and France.

488. In the same five years the mean birth rates in Queensland and New South Wales were above those in any of the European countries referred to in the table, except Hungary, Austria, Italy, and Prussia—the rates in the two latter being about the same as in Queensland; the mean birth rates in Western Australia, South Australia, and Tasmania were above those in any except the four countries just named, together with Germany and Spain; the mean birth rate in New Zealand was below that in those six countries, with the addition of Holland; the mean birth rate in Victoria was below that in any of the countries named in the table except Norway, Sweden, Belgium, Switzerland, France, and Ireland. The following are the birth rates referred to:—

Australasian and European birth rates compared.

MEAN BIRTH RATES IN AUSTRALASIAN COLONIES, 1884 TO 1888.

						Number of Births per 1,000 of Mean Population.
Queensland	...	...	...	...	...	37·55
New South Wales	...	...	...	...	...	37·17
Western Australia	...	...	...	...	...	36·34
South Australia	...	...	...	...	...	36·03
Tasmania	...	...	...	...	...	34·37
New Zealand	...	...	...	...	...	33·48
Victoria	...	...	...	...	...	31·79

* 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.

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

Birth rate in
United
Kingdom

489. According to the reports of the Registrar-General of England, the birth-rate of the United Kingdom in 1888 was lower than in any year since 1870, and, for the first time, was less than 30 per 1,000 persons living, as will be seen by the following figures:—

BIRTH RATE IN THE UNITED KINGDOM, 1871 TO 1888.

		Births per 1,000 of the Population.				Births per 1,000 of the Population.	
1871	35·0	1881	...	...	32·5
1872	34·4	1882	...	...	32·2
1873	34·1	1883	...	...	31·8
1874	34·5	1884	...	...	32·1
1875	34·0	1885	...	...	31·3
1876	34·9	1886	...	...	31·3
1877	34·5	1887	...	...	30·3
1878	34·1	1888	...	...	29·6
1879	33·5				
1880	32·7	Mean	...	...	32·9

Birth rates
in town and
country,
1890.

490. 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 1890; also the average birth rates in the same divisions during the five years ended with 1885:—

BIRTHS IN URBAN AND COUNTRY DISTRICTS, 1890.

Districts.	Estimated Mean Population, 1890.	Births.		
		Total Number, 1890.	Number per 1,000 of the Population.	
			1890.	Annual Mean, 1881 to 1885.
Melbourne and suburbs (Greater Melbourne)	473,500	17,859	37·72	33·50
Extra-Metropolitan towns	192,140	6,616	34·43	32·54
Country Districts ...	452,860	13,103	28·93	27·82
Total ...	1,118,500	37,578	33·60	30·74

Birth rates
in town and
country,
1873 to 1890.

491. The next table shows the number of births per 1,000 of the population of the same three divisions of the colony during each of the last eighteen years:—

BIRTH RATES IN URBAN DISTRICTS, 1873 TO 1890.

Year.	Number of Births per 1,000 of the Population.*			
	Greater Melbourne.	Extra-Metropolitan Towns.	Country Districts.	Total of Victoria.
1873	34·36	40·18	36·32	36·71
1874	32·98	39·81	32·46	34·46
1875	33·63	38·63	31·54	33·94
1876	33·20	37·80	31·61	33·61
1877	33·09	34·51	30·30	32·17
1878	33·67	35·42	29·89	32·36
1879	33·32	35·65	29·63	32·18
1880	31·19	34·21	28·72	30·75
1881	32·42	34·76	28·70	31·24
1882	32·85	31·35	27·43	30·06
1883	33·15	32·07	27·22	30·26
1884	33·81	32·80	27·78	30·93
1885	34·94	31·87	28·00	31·33
1886	34·82	31·76	27·87	31·30
1887	37·24	33·30	27·72	32·50
1888	37·30	32·23	28·09	32·70
1889	38·04	33·34	27·83	33·35
1890	37·72	34·43	28·93	33·60

492. It will be noticed that in the first two years of the period to which the table refers the birth rate of the country districts was about equal to that of the metropolis, whilst the birth rate of the extra-metropolitan towns was very much higher than either. Since 1874, however, the metropolitan rate has been much above that of the country districts, but until 1882 was still below that of the extra-metropolitan towns. In 1882 and the subsequent years, however, owing to the birth rate of the extra-metropolitan towns and of the country districts having remained tolerably uniform, whilst that of the metropolis has been gradually increasing, the rate in the last-named division was much above that in other urban districts. It will also be noticed that, in 1890, the birth rate in the metropolis was higher than in any previous year except 1889, in the extra-metropolitan towns it was higher than in any year since 1881, and in the country districts it was higher than in any year since 1879. Results compared.

493. The mean population, the number of births, and the birth rate during 1890; also the mean annual birth rate during the ten years 1881 to 1890, in the different municipalities, etc., forming the component parts of the district of Greater Melbourne, are shown in the following table:— Birth rates in metropolitan sub-districts.

* The rates for the whole colony for 1882 and subsequent years have been corrected in accordance with revised estimates of population since last publication; those for the extra-metropolitan towns and country districts will similarly be corrected in the next issue of this work; those for Greater Melbourne will remain unaltered.

BIRTHS IN GREATER MELBOURNE.

Sub-districts.	Estimated Mean Population, 1890.	Births.		
		Total Number, 1890.	Number per 1,000 of the Population.	
			1890.	Annual Mean 1881 to 1890.
Melbourne City	71,694	1,766	24·63	25·39
North Melbourne Town	20,035	979	48·87	40·90
Fitzroy City	31,654	1,044	32·98	34·88
Collingwood City	34,102	1,339	39·26	39·57
Richmond City	37,452	1,647	43·96	38·65
Brunswick Town	20,605	977	47·42	44·83
Northcote Town*	7,123	263	36·93	39·21
Prahran City	38,109	1,362	35·74	33·51
South Melbourne City	40,211	1,429	35·54	34·83
Port Melbourne Borough	12,691	538	42·39	42·11
St. Kilda City*	19,179	507	26·43	25·97
Brighton Town	9,447	309	32·71	31·01
Essendon Town*	13,379	500	37·37	33·09
Flemington & Kensington Borough	9,333	421	45·11	39·68
Hawthorn City*	18,456	686	37·17	33·23
Kew Borough	6,987	197	28·19	26·98
Footscray Town†	18,021	908	50·39	46·01
Williamstown Town	15,344	659	42·95	37·85
Remainder of district	43,639	1,583	36·27	33·66
Shipping in Hobson's Bay and River	1,929	...	...	...
Total		17,114	36·14	34·09
Hospitals, Asylums, etc.‡	4,110	745	1·57§	1·49§
Grand total	473,500	17,859	37·71	35·58

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-dis-
tricts, 1881
to 1890.

494. It will be observed that during the ten years ended with 1890 the births in four municipalities, viz., North Melbourne, Brunswick, Port Melbourne, and Footscray, averaged above 40 per 1,000 of the population; that in five municipalities, viz., Collingwood, Richmond, Northcote, Flemington, and Williamstown, they were between 35 and 40 per 1,000; in seven municipalities, viz., Fitzroy, Prahran, South Melbourne, Brighton, Essendon, Hawthorn, and "Remainder of District," they were between 30 and 35 per 1,000; and that in three municipalities, viz., Melbourne City, St. Kilda, and Kew, they were

* Essendon (Borough) was proclaimed a Town on the 7th January, 1890; and Northcote (Borough) a Town, St. Kilda (Borough) a City, and Hawthorn (Town) a City, on 6th September, 1890.

† Proclaimed a City on 23rd April, 1891.

‡ 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.

below 30 per 1,000. The lowest rate was in Melbourne City, viz., only $25\frac{1}{3}$ per 1,000.

495. During 1890, the birth rates in all the sub-districts except Melbourne, Fitzroy and Collingwood cities, and Northcote town, were higher than they were in the ten years ended with 1890, but this was more particularly noticeable in North Melbourne, Richmond, Brunswick, Essendon, Flemington, Footscray, and Williamstown. The sub-district with the highest birth rate in 1890 was Footscray, with 50 per 1,000, which was followed by North Melbourne, Brunswick, Flemington, Richmond, Port Melbourne, and Williamstown; in all of which the rates were above 40 per 1,000; those with the lowest rates were Melbourne City, St. Kilda, and Kew, in which the rates were below 30 per 1,000.

496. In 1890, the birth rate in Melbourne was lower than that in Brisbane or Perth, but above that in Sydney, Adelaide, Hobart, or Wellington, 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:—

BIRTHS IN AUSTRALASIAN CAPITAL CITIES, 1890.

Capital Cities.*	Estimated Mean Population. †	Births, 1890.	
		Total Number.	Number per 1,000 of the Population.
Brisbane	89,210	4,099	45·95
Perth	8,180	338	41·32
Melbourne	473,500	17,859	37·71
Sydney	374,420	13,529	36·13
Adelaide	131,020	4,352	33·22
Wellington	32,360	1,051	32·48
Hobart	32,980	1,060	32·14

497. The average birth rate in the Australasian capital cities in 1890 was 37·0, that being higher than the rate in London, according to the average of the ten years 1876-85, viz., 34·7, which was a fraction higher than that of England and Wales (34·4) during the same period. The rate in London was thus higher than that in Adelaide,

* With suburbs.

† Calculated back from the census figures.

Hobart, or Wellington, but below that in any of the other Australasian cities named in the last table.

Birth rates
in Scotch
towns.

498. In the five years ended with 1885 the mean birth rate of the principal towns of Scotland was 36·07; of the large towns, 35·52; and of the small towns, 33·50. All these rates are much below the mean birth rate of the Australasian capital cities or than the birth rate of Melbourne.

Birth rates
in British
towns.

499. By comparing the following statement of the birth rates in British towns during 1887 with the figures in the last column of the last table, it will be found that the birth rate is higher in Brisbane and Perth than in any of those towns; in Melbourne, than in any except Cardiff, Newcastle, and Preston; in Sydney, than in any except those towns and Glasgow and Portsmouth; in Adelaide, than in any except those named and Manchester, Blackburn, Sunderland, Norwich, and Nottingham; in Wellington, than in any except those previously named and Wolverhampton, Sheffield, Leicester, Bolton, and Birkenhead; and in Hobart it was slightly lower than the average of 28 British towns:—

BIRTH RATES IN BRITISH TOWNS, 1887.

	Births per 1,000 of the Population.		Births per 1,000 of the Population.
Cardiff ...	41·1	28 British Towns ...	32·2
Newcastle ...	39·1	Salford ...	31·9
Preston ...	38·5	Birmingham ...	31·8
Glasgow ...	37·0	London ...	31·7
Portsmouth ...	36·8	Plymouth ...	31·5
Manchester... ..	35·9	Oldham ...	31·3
Blackburn ...	35·8	Liverpool ...	31·2
Sunderland... ..	34·6	Derby ...	30·0
Norwich ...	33·9	Bristol ...	29·7
Nottingham ...	33·3	Edinburgh... ..	29·3
Wolverhampton ...	33·2	Halifax ...	28·4
Sheffield ...	32·9	Dublin ...	28·0
Leicester ...	32·8	Bradford ...	27·7
Bolton ...	32·5	Huddersfield ...	27·7
Birkenhead... ..	32·5	Brighton ...	25·8

Birth rates
in Foreign
towns.

500. Comparing the birth rates in the following Foreign towns (including two in British India) with those in the capital cities of Australasia, it will be found that the birth rate in Brisbane is above that in any of the towns named; the birth rate in Perth is above that in all but 1, in Melbourne above all but 8, in Sydney above all but 12, in Adelaide above all but 14, and in Wellington and Hobart above all but 15, of the towns:—

BIRTH RATES IN FOREIGN TOWNS, 1880.

	Births per 1,000 of Population.		Births per 1,000 of Population.
Alexandria ...	42.9	Dresden ...	34.5
Madras (1887) ...	41.2	Christiania ...	33.7
Buda-Pesth ...	40.6	Berlin (1889) ...	32.8
Hamburg (State) ...	39.5	Brussels ...	31.2
The Hague ...	39.3	New York ...	30.4*
Rotterdam ...	38.3	Turin ...	29.8
Vienna ...	38.3	Boston (1883) ...	28.3
Munich ...	38.2	Paris (1887)...	27.2
Rome ...	37.3	Venice ...	23.9
Copenhagen ...	36.8	Geneva ...	22.9
Breslau ...	36.7	Bombay ...	20.0
Amsterdam ...	36.6	Baltimore (1889) ...	18.7

501. The following are the birth rates in six Victorian towns during 1890; the rate in the metropolis being, as will be observed, below that in Bendigo (Sandhurst), but above that in Castlemaine, Stawell, Geelong, or Ballarat. The proportions on which the results are based have been calculated back from the population as ascertained by the census of 1891:—

BIRTH RATES IN SIX VICTORIAN TOWNS, 1890.

	Births per 1,000 of Population.		Births per 1,000 of Population.
Bendigo (Sandhurst) ...	37.75	Stawell ...	31.03
Melbourne ...	37.71	Geelong ...	30.86
Castlemaine ...	34.29	Ballarat ...	30.62

502. The births of males in Victoria during 1890 numbered 19,175, those of females 18,403. These numbers furnish a proportion of 104.19 boys to 100 girls. In 1889, the proportion was as high as 106.05, and in 1888, 104.33; whilst in the ten years 1881-90, 160,057 births of males and 152,508 births of females were registered, giving a proportion of 104.95 boys to 100 girls.

503. 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 eighteen years ended with 1890, although not in every one of those years so far as Western Australia and Tasmania are concerned. The following are the numbers of boys per 100 girls born in the respective colonies during each year of the period referred to:—

* The number of births registered in New York would give a proportion of 22.8 per 1,000 of the population, but it is officially stated that the registered births are 25 per cent. below the actual number which take place, so that the correct proportion is as here stated.

PROPORTION OF MALE TO FEMALE BIRTHS IN AUSTRALASIAN
COLONIES, 1873 TO 1890

Year.	Number of Boys to 100 Girls Born.						
	Victoria.	New South Wales.	Queensland.	South Australia.	Western Australia.	Tasmania.	New Zealand.
1873 ...	102·65	104·38	106·13	102·77	109·04	98·44	103·48
1874 ...	103·94	104·31	105·74	103·44	103·25	107·02	106·83
1875 ...	104·95	102·08	104·01	103·85	98·95	109·51	107·80
1876 ...	105·76	102·47	105·26	101·08	106·76	111·48	106·01
1877 ...	104·19	106·34	106·78	102·91	101·32	105·04	104·59
1878 ...	107·19	106·83	103·89	107·14	101·15	105·52	101·57
1879 ...	104·69	105·71	103·36	102·53	117·59	99·11	105·93
1880 ...	104·44	104·99	103·63	110·98	92·37	101·56	104·71
1881 ...	104·99	105·59	106·64	106·48	108·07	107·41	104·90
1882 ...	103·63	103·23	107·55	106·36	110·64	104·81	104·46
1883 ...	105·04	104·89	106·17	103·29	104·64	110·42	105·17
1884 ...	105·98	105·37	102·25	104·40	106·42	103·37	104·28
1885 ...	106·44	104·88	102·50	101·57	108·00	104·36	103·59
1886 ...	104·53	106·35	102·51	104·48	115·90	108·99	104·72
1887 ...	104·39	103·09	105·24	109·70	103·26	106·63	103·35
1888 ...	104·33	103·74	105·05	109·82	107·38	98·71	104·10
1889 ...	106·05	107·66	107·15	105·05	107·28	105·13	106·38
1890 ...	104·19	104·27	102·19	101·56	95·13	105·07	103·43

Order of
colonies in
respect to
sexes of
those born.

504. In the Australasian colonies, taken as a whole, the proportion during the five years ended with 1890 was 105·1 male to 100 female infants. In the different colonies, the proportions ranged from 106·1 males per 100 females in South Australia to 104·4 males per 100 females in New Zealand and Queensland. 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, 1886 TO 1890.

South Australia	... 106·12	Queensland	... 104·43
Western Australia	... 105·79	New Zealand	... 104·40
New South Wales	... 105·02		
Tasmania	... 104·91	Mean ...	... 105·05
Victoria	... 104·70		

Births of
males and
females in
certain
countries.

505. 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 ten years 1881 to 1890, and those for the other countries named extend over periods of various lengths:—

PROPORTION OF MALE TO FEMALE BIRTHS IN VARIOUS COUNTRIES.

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

506. It will be observed that the proportion of boys born to girls is in Western Australia below that in 6 countries out of Australasia; whilst the proportion in South Australia, Tasmania, and Victoria, is above that in only 8, and in New South Wales, Queensland, and New Zealand, above that in only 2 of such countries. Australasian and other countries compared.

507. 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, except Russian Poland (of which the statistics are of doubtful authenticity), but it has for years past had a tendency to diminish. The proportion given in the table (104·3) is for the fifty years ended with 1887, but in the ten years ended with that year, it was only 103·8. The Registrar of England states he is unable to offer any explanation of that "curious fact."* Low proportion of boys born in England.

508. In 1890, 353 twin births and 3 triple births were registered, as against 381 twin births and 1 triple birth in 1889. 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 1 in every 12,796 was delivered of three children at a birth. Twins and triplets.

509. It appears that only three of the Australasian colonies besides Victoria distinguish the double and treble births in their Twins and triplets in Australasian colonies.

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

returns. The following are the numbers of such births in each of the four colonies during each of the seven years ended with 1889 :—

TWINS AND TRIPLETS IN AUSTRALASIAN COLONIES,
1883 TO 1889.

Year.	Victoria.		New South Wales.		Queensland.		New Zealand.	
	Twins.	Triplets.	Twins.	Triplets.	Twins.	Triplets.	Twins.	Triplets.
1883	183	...	287	2	103	...	...	...
1884	239	4	288	4	94	...	188	2
1885	237	1	306	2	115	...	161	1
1886	236	...	330	1	114	1	165	...
1887	285	3	310	1	105	...	185	3
1888	374	3	363	2*	130	1	192	1
1889	381	1	329	1	146	1	152	...

Twins and triplets in various countries.

510. The following figures purport to express the proportions of twins and triplets to the total births in different countries over a series of years ; but as they have not in all cases been derived from official sources, they must be taken only for what they may be worth. The countries are arranged in order, according to the proportion of double births said to occur in each :—

TWINS AND TRIPLETS IN VARIOUS COUNTRIES.

Countries.	Per 1,000 Births.		Countries.	Per 1,000 Births.	
	Cases of Twins.	Cases of Triplets.		Cases of Twins.	Cases of Triplets.
Ireland ...	17·6	...	Norway ...	11·8	·15
Iceland ...	14·2	·33	Scotland ...	11·7	...
Denmark ...	13·7	·24	England ...	11·2	...
Sweden ...	13·6	·18	France ...	10·1	·12
Austria ...	13·4	·18	Belgium ...	9·1	·10
Germany ...	12·9	·13	Queensland ..	9·1	·012
Holland ...	12·8	...	New Zealand ...	8·96	·077
Russia ...	12·1	...	New South Wales	8·75	·058
Switzerland ...	12·0	...	Spain ...	8·4	...
Italy ...	11·8	·14	Victoria ...	7·85	·053

NOTE.—Some of the figures in this table have been taken from Mulhall's *Dictionary of Statistics*, page 50.

Results in different countries compared.

511. In proportion to the total number of births, fewer births of twins appear to occur in Victoria than in any of the other countries

* Including one case of quadruplets.

named; moreover, all the Australasian colonies stand low on the list. Ireland, it will be observed, stands at the head of the list, whilst England and Scotland have—except the Australasian colonies—only three countries below them. There are no records of treble births in Ireland, Holland, Russia, Switzerland, Scotland, England, or Spain, although doubtless some occur in those countries, where it is possible they are included with the twin births.

512. The illegitimate children born in 1890 numbered 1,913, or 1 to every 19 births registered, as against a proportion of 1 to every 20 in 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.*

Illegitimate
births.

513. It was shown in a previous table† that the legitimate births registered in each of the two census years—1871 and 1881—were in the proportion of 302 $\frac{2}{3}$ to every 1,000 married women living at the reproductive period of life. It follows, therefore, from the number of legitimate births registered in 1890, that, approximately, 117,800 married women at the fruitful or child-bearing age were living in the colony during that year. Assuming that the illegitimate births bear the same proportion to unmarried women, it also follows, from the number of such births in 1890, that, exclusive of public prostitutes (who, as they rarely have children, are omitted from the computation), at least 6,320 single women at the fruitful or child-bearing ages were living in concubinage. If from the total number of women in the colony between the ages of 15 and 45—estimated to be about 254,000—be deducted the approximate number of married women above referred to, viz., 117,800, the difference will give 136,200 as the number of unmarried women and widows at those ages. It therefore follows that 1 out of every 22 of these was living immorally.

Women
living in
concubi-
nage.

514. The following table gives a statement of the number of illegitimate births and their proportion to the total number registered; also the estimated number of women living in concubinage, and their

Illegitimacy
and concu-
binage,
1873 to
1890.

* For many reasons, statistics of illegitimacy generally understate the truth.—See remarks upon the subject in the *Victorian Year-Book*, 1877-8, paragraph 259.

† See table following paragraph 479 *ante*.

proportion to the total number of single women at reproductive ages living in Victoria, according to the returns of the last eighteen years :—

ILLEGITIMACY AND CONCUBINAGE, 1873 TO 1890.

Year.	Illegitimate Births.		Women Living in Concubinage (exclusive of Public Prostitutes).	
	Total Number.	Percentage of Total Births.	Estimated Total Number.	Number per 100 Single Women between 15 and 45 Years of Age Living in Victoria.
1873	893	3·18	2,951	4·54
1874	984	3·67	3,251	4·41
1875	779	2·92	2,573	3·36
1876	975	3·64	3,221	4·02
1877	1,010	3·88	3,337	3·85
1878	1,103	4·15	3,644	4·20
1879	1,304	4·86	4,308	4·78
1880	1,254	4·80	4,143	4·39
1881	1,382	5·09	4,551	4·49
1882	1,271	4·75	4,200	3·91
1883	1,232	4·69	4,268	3·72
1884	1,238	4·29	4,090	3·46
1885	1,308	4·36	4,320	3·54
1886	1,465	4·75	4,840	3·87
1887	1,580	4·78	5,214	4·12
1888	1,658	4·81	5,475	4·12
1889	1,809	4·98	5,977	4·28
1890	1,913	5·09	6,320	4·65
Means	1,289	4·37	4,260	4·10

Illegitimacy
in Austral-
asian
colonies.

515. All the Australasian colonies now publish statistics of illegitimacy. According to these, which possibly may not in every case represent the whole truth,* illegitimacy, over a series of years, was most rife in New South Wales, next in Victoria, next in Western Australia, next in Tasmania, next in Queensland, and least of all in South Australia and New Zealand, and in 1889 the same order prevailed, except that the rate in Tasmania was lower than in Queensland. In most of the colonies, so far as figures are available, illegitimacy appears to have a tendency to increase. The following table shows the percentage of illegitimate to the total births in the various colonies, during a series of years :—

* See footnote to paragraph 512 *ante*.

ILLEGITIMACY IN AUSTRALASIAN COLONIES, 1872 TO 1889.

Year.	Illegitimate Births to every 100 Children Born.					
	Victoria.	New South Wales.	Queensland.	South Australia.	Tasmania.	New Zealand.
1872	2.99	4.03	2.92	...	...	...
1873	3.18	4.15	2.71	...	...	1.42
1874	3.67	4.22	2.76	...	...	1.30
1875	2.92	4.20	3.43	...	...	1.36
1876	3.64	4.08	3.21	...	...	2.23
1877	3.88	4.14	3.64	...	...	2.08
1878	4.15	4.03	3.68	...	...	2.41
1879	4.86	4.51	4.31	...	...	2.30
1880	4.80	4.35	4.31	...	...	2.43
1881	5.09	4.26	4.20	2.25	...	2.85
1882	4.75	4.24	4.40	2.25	4.40	2.87
1883	4.69	4.24	3.66	1.75	3.96	2.78
1884	4.29	4.40	4.05	2.10	4.46	2.96
1885	4.36	4.60	4.08	2.42	4.55	3.20
1886	4.75	4.65	3.97	2.38	4.13	3.12
1887	4.78	4.59	4.49	2.49	3.40	3.22
1888	4.81	5.08	4.13	2.67	3.62	3.05
1889	4.98	5.33	4.68	2.47	4.00	3.32
Means	4.25	4.39	3.81	2.31	4.06	2.52

NOTE.—In Western Australia in 1887, the proportion was 4.36, and in 1888, 3.95; but the proportion for 1889 does not appear to have been published.

516. A calculation, based upon the illegitimate births which occurred in the year 1881, shows that of the four colonies which then published statistics of these occurrences, concubinage was most rife in Queensland, next in New South Wales, and next in Victoria and New Zealand, there being only a slight difference between the two last-named colonies. In the following table the colony in which the largest proportion of concubinage existed is placed first, and that in which the smallest proportion existed last:—

Concubinage in Australasian colonies.

CONCUBINAGE IN AUSTRALASIAN COLONIES, 1881.

Colony.	Single Women between 15 and 45 Years of age.	Illegitimate Births, 1881.	Single Women living in Concubinage (exclusive of Public Prostitutes).	
			Total Number.	Number per 100 Single Women, between 15 and 45.
1. Queensland	15,441	345	1,059	6.86
2. New South Wales	71,085	1,263	3,665	5.16
3. Victoria	101,451	1,382	4,551	4.49
4. New Zealand	38,659	534	1,686	4.36

Proportion
of concubi-
nage in
each
colony.

517. The figures in the last column show the proportions which the single women leading a sexually immoral life, without being public prostitutes, bore to the whole number of single women at the fruitful period of life in each of the four colonies. These proportions will, perhaps, be better understood if expressed in another manner as follow :—

In Queensland	1 single woman in 13	was living	immorally.
In New South Wales	„ „	19	„ „
In Victoria	„ „	22	„ „
In New Zealand	„ „	23	„ „

Illegitimacy
in United
Kingdom.

518. Illegitimacy in England and Wales appears to be commoner than, and in Scotland twice as rife as, it is in any of the Australasian colonies named. In Ireland, on the other hand, it seems to be less prevalent than in any of those colonies except South Australia or New Zealand. This will be observed by comparing the following table with the last but one :—

ILLEGITIMACY IN ENGLAND, SCOTLAND, AND IRELAND, 1881 TO 1888.

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

Illegitimacy
in various
countries.

519. 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.	Country.	Illegitimate Births to every 100 Children Born.
Austria	12·9	England	4·9
Denmark	11·2	Switzerland	4·6
Sweden	10·2	New South Wales	4·4
Scotland	8·5	Victoria	4·3
Norway	8·5	Tasmania	4·1
Germany	8·4	Queensland	3·8
France	8·1	Holland	3·5
Belgium	7·0	Russia	3·1
Italy	6·8	Ireland	2·5
Portugal	5·6	New Zealand... ..	2·5
Spain	5·5	Greece	1·6

520. According to the figures, more illegitimacy prevails in Austria and less in Greece than in any other countries. In Victoria, illegitimacy appears to be less prevalent than in fourteen and more so than in six of the countries. Position of Victoria in respect to illegitimacy.

521. 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 1890, in the metropolitan district about 1 birth in 14, in the extra-metropolitan towns 1 birth in 23, but in country districts only 1 birth in 41 was registered as illegitimate. In the previous year the proportions were one in 14, 1 in 23, and 1 in 39 respectively. Illegitimacy in town and country.

522. By the following figures, which, with the exception of those for Melbourne, have been taken from the annual report for 1886 of the Statistical Department of the Argentine Republic,* it would appear that illegitimacy is less rife in the capital of this colony than in any of the foreign cities named :— Illegitimacy in large cities.

ILLEGITIMACY OF LARGE CITIES.

	Illegitimate Births to every 1,000 Children Born.		Illegitimate Births to every 1,000 Children Born.
Vienna ...	449	Liège ...	174
Prague ...	439	Christiana ...	162
Munich ...	439	Stuttgart ...	160
Stockholm ...	396	Berlin ...	154
Moscow ...	300	Ghent ...	144
Buda-Pesth ...	299	Hamburg ...	138
Copenhagen ...	279	Frankfort ...	132
Paris ...	268	Turin ...	132
St. Petersburg ...	236	Antwerp ...	129
Trieste ...	211	Cologne ...	124
Leipsic ...	211	Palermo ...	101
Dresden ...	208	The Hague ...	90
Milan ...	204	Naples ...	89
Rome ...	194	Rotterdam ...	76
Venice ...	189	Buenos Aires ...	74
Breslau ...	186		
Bucharest ...	175	Melbourne ...	69

* *Procedimientos del Departamento Nacional de Estadística*, 1886, page 87. Buenos Aires, 1887.

Fecundity of
women in
Austral-
asian
colonies.

523. To ascertain the relative fruitfulness of women in different countries, it is necessary to compare the number of married women at the reproductive ages with the legitimate births. This can be done in the case of Victoria, New South Wales, Queensland, South Australia, and New Zealand; but not in that of the other two Australasian colonies, as in the returns of the latter no distinction was made at the time the census of 1881 was taken between the infants born in and those born out of wedlock. By means of such a comparison in regard to the five colonies named, it would appear that the highest degree of fecundity exists in New South Wales, and the lowest in Victoria, this being probably owing to the fact that the married women are, on the average, younger in the former and older in the latter than in the other two colonies. The following table shows the number of married women under 45 years of age, the number of legitimate births in the census year, and the proportion of such births to such women in each of the five colonies:—

PROPORTION OF BIRTHS TO MARRIED WOMEN IN AUSTRALASIAN COLONIES.*

Colony.	Married Women under 45 Years of age.	Legitimate Births, 1881.	
		Total Number.	Number per 100 Married Women under 45.
1. New South Wales	80,473	27,730	34·46
2. South Australia	31,799	10,467	32·92
3. Queensland	24,183	7,875	32·56
4. New Zealand	57,464	18,198	31·67
5. Victoria	84,831	25,763†	30·37 †

Children to
a marriage
in Victoria.

524. Another 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 the seventeen years ended with 1890:—

* The Government Statistician of Tasmania gives the proportion of births—including illegitimate births—to married women under 45 years in that colony in 1881 as 347 per 1,000, as compared with 326 per 1,000 in New Zealand, and 309 per 1,000 in Victoria, during the same year.

† In consequence of the births here quoted being those for the calendar year, these figures differ slightly from those in table following paragraph 479 *ante*.

CHILDREN TO A MARRIAGE, 1874 TO 1890.

Year.	Legitimate Births.	Marriages in Year prior to that named in first Column.	Average Number of Children to a Marriage.
1874	25,816	4,974	5.19
1875	25,941	4,925	5.27
1876	25,794	4,985	5.1
1877	25,000	4,949	5.05
1878	25,478	5,103	4.99
1879	25,535	5,092	5.01
1880	24,894	4,986	4.99
1881	25,763	5,286	4.87
1882	25,476	5,896	4.32
1883	26,249	6,309	4.16
1884	27,612	6,771	4.08
1885	28,667	7,218	3.97
1886	29,359	7,395	3.97
1887	31,463	7,737	4.07
1888	32,845	7,768	4.23
1889	34,550	8,946	3.86
1890	35,665	9,194	3.88
Sums and Mean ...	476,107	107,534	4.43

525. The figures show a steady diminution in the proportion of children born, amounting—notwithstanding a slight revival in 1887 and 1888—in the seventeen years to a child and a third per marriage, or four children to every three marriages. It is evident that if the births increased with the marriages as they should do, the proportions would remain steady; but this is shown not to be the case. There are, however, many matters affecting the birth rates of infants respecting which it is not possible to obtain precise information. The falling-off shown by the figures in the last column of the table is a result which, although perhaps it cannot be proved, may be conjectured to be owing to the increasing desire on the part of married women to evade the cares of maternity, and the steps taken by them—often, no doubt, with the concurrence of their husbands—to prevent its occurrence.

Decrease in children to a marriage in Victoria.

526. 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 extending over a series of years:—

Children to a marriage in Australasian colonies.

CHILDREN TO A MARRIAGE IN AUSTRALASIAN COLONIES,
1880 TO 1889.

Year.	Average Number of Children to a Marriage.					
	Victoria.	New South Wales.	Queensland.	South Australia.	Tasmania.	New Zealand.
1880 ...	4.99	5.00	4.89	4.61	...	5.54
1881 ...	4.87	5.48	5.09	4.57	...	5.72
1882 ...	4.32	4.53	4.78	4.59	4.51	5.63
1883 ...	4.16	4.31	4.68	4.34	4.22	5.18
1884 ...	4.08	4.38	4.28	4.57	3.91	5.33
1885 ...	3.97	4.68	4.39	4.60	4.62	5.18
1886 ...	3.97	4.54	4.25	4.46	4.21	4.90
1887 ...	4.07	4.55	4.63	5.34	4.64	5.31
1888 ...	4.23	4.82	4.69	5.17	4.90	5.14
1889 ...	3.86	4.50	4.22	4.83	4.80	4.93
Means	4.25	4.68	4.59	4.71	4.48	5.29

NOTE.—In Western Australia, the proportion in 1887 was 5.03, and in 1888, 4.61; mean of the two years 4.82.

Decrease in children to a marriage in each colony.

527. It seems that in all the colonies except Tasmania and South Australia there is a tendency for the average number of children to a marriage to decrease in numbers, the proportions in the later years not having been so high as in the earlier years shown in the table. In 1889, however, the proportion was only slightly below the average in New South Wales.

Children to a marriage in various countries.

528. The following statement of the average number of children born to a marriage in certain countries has been derived from various 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.		Children to each Marriage.
Ireland ...	5.46	Scotland ...	4.43
New Zealand ...	5.29	Holland ...	4.34
Western Australia ...	4.82	Victoria ..	4.25
South Australia ...	4.71	Belgium ...	4.21
New South Wales ...	4.68	England ...	4.16
Queensland ...	4.59	Sweden ...	4.01
Italy ...	4.56	Denmark ...	3.55
Tasmania ...	4.48	France ...	2.98

Position of Victoria in reference to births to a marriage.

529. Ireland is at the head of the list, but it may be questioned whether the high proportion prevailing there does not in some degree result from the fact that the registration of marriages* is more

* See footnote (ll) to table following paragraph 430 ante.

defective than that of births. Ireland is closely followed by five Australasian colonies, after which comes Italy and then Tasmania. Ireland, Italy, Scotland, and Holland are the only countries out of Australasia which stand above Victoria.

530. The foregoing calculations relate to the average number of children born to each married couple, but the eminent statistician, M. Jacques Bertillon, in a paper read before the Statistical Society of Paris on the 10th May, 1888, has given* the following as the average number of children actually surviving in each family in the Department of the Seine at the time the French census of 1886 was taken:—

In every 1,000 families there were—

	328	with no child surviving
270	”	1 ” ”
198	”	2 children ”
106	”	3 ” ”
54	”	4 ” ”
25	”	5 ” ”
12	”	6 ” ”
7	”	7 or more ”

531. With reference to the startling fact that nearly a third of the families referred to were completely sterile, it will be remembered that this group contains a certain number of couples too recently married to have children; still the proportion appears enormous. It is to be regretted that similar figures relating to other countries are not available for purposes of comparison.

532. According to the registrations, births in Victoria are 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 1890, and the percentages for two previous decennial periods:—

BIRTHS IN EACH QUARTER.

Seasons.	Quarter ended on the last day of—	Year 1890.		Percentage in Ten Years—	
		Number of Births.	Percentage.	1881 to 1890.	1871 to 1880.
Summer	March ...	8,806	23·43	23·63	23·74
Autumn	June ...	9,892	26·33	25·49	25·10
Winter	September ...	10,087	26·84	26·73	27·15
Spring	December ...	8,793	23·40	24·15	24·01
	Year ...	37,578	100·00	100·00	100·00

* See *Journal de la Société de Statistique de Paris*, 1888, page 174, et seq.

Births in
each
quarter in
various
countries.

533. In the following table the average proportion of births occurring in each quarter in Victoria during a series of years is compared with that proportion in the opposite, and consequently (so far as seasons are concerned) corresponding quarter in certain countries of the northern hemisphere. The figures for such countries have been taken from Mr. Mulhall's work* :—

PERCENTAGE OF BIRTHS IN EACH QUARTER IN VARIOUS COUNTRIES.

Countries.	Quarter ending on the last day of—			
	March in Victoria, September in the other Countries (Summer).	June in Victoria, December in the other Countries (Autumn).	September in Victoria, March in the other Countries (Winter).	December in Victoria, June in the other Countries (Spring).
Victoria (1881-90)	Per Cent. 23·6	Per Cent. 25·5	Per cent. 26·7	Per Cent. 24·2
England ...	24·0	23·8	26·2	26·0
France ...	24·0	24·1	27·0	24·9
Germany ...	25·0	24·9	25·9	24·2
Sweden ...	23·7	25·7	26·8	23·8
Italy ...	23·7	24·7	27·5	24·1
Russia ...	24·7	23·7	25·6	26·0

Quarters in
which most
and fewest
births
occur.

534. It appears that in most countries the largest number of births take place in what may be called the winter quarter (ending September in Victoria, March in the other countries named), the exception being Russia, in which most births occur in the spring quarter. Fewest births occur in what may be called the summer quarter (ending March in Victoria, September in the other countries named), except in Germany, where the proportion in the spring quarter is the smallest, and in England and Russia, where it is the smallest in the autumn quarter.

Deaths, 1890.

535. The deaths registered in 1890 numbered 18,012, as against 19,392 in 1889. The decrease in the year under notice was thus 1,380, or 7 per cent.

Deaths, 1890
and former
years.

536. In 1889 for the first time, the deaths exceeded 19,000, and although the deaths in 1890 did not reach that number they were more numerous than those in any other previous year. In 1887 and 1888 they did not much exceed 16,000; in 1886 they numbered less than 15,000, but in only one prior year, viz., 1875, did they reach that

* *Dictionary of Statistics*, page 49.

number.* The high mortality in the last-named year, in which 15,287 deaths were recorded, was due to the prevalence of measles and scarlatina in an epidemic form.

537. The births in 1890 exceeded the deaths by 19,566 or 109 per cent., the corresponding proportion being 88 per cent. in the previous year. The proportion in 1890 was exceeded in all but ten of the previous twenty-four years. 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 whole period of twenty-five years ended with 1890 the average was 117 per cent. The following were the births and deaths in each of those twenty-five years, and the excess of the former over the latter :—

EXCESS OF BIRTHS OVER DEATHS, 1866 TO 1890.

Year.	Births.	Deaths.	Excess of Births over Deaths.	
			Numerical.	Centesimal.
				Per Cent.
1866 ...	25,010	12,286	12,724	104
1867 ...	25,608	11,733	13,875	118
1868 ...	27,243	10,067	17,176	171
1869 ...	26,040	10,630	15,410	145
1870 ...	27,151	10,420	16,731	161
1871 ...	27,382	9,918	17,464	176
1872 ...	27,361	10,831	16,530	153
1873 ...	28,100	11,501	16,599	144
1874 ...	26,800	12,222	14,578	119
1875 ...	26,720	15,287	11,433	75
1876 ...	26,769	13,561	13,208	97
1877 ...	26,010	12,776	13,234	104
1878 ...	26,581	12,702	13,879	109
1879 ...	26,839	12,120	14,719	121
1880 ...	26,148	11,652	14,496	124
1881 ...	27,145	12,302	14,843	121
1882 ...	26,747	13,634	13,113	96
1883 ...	27,541	13,006	14,535	112
1884 ...	28,850	13,505	15,345	114
1885 ...	29,975	14,364	15,611	109
1886 ...	30,824	14,952	15,872	106
1887 ...	33,043	16,005	17,038	106
1888 ...	34,503	16,287	18,216	112
1889 ...	36,359	19,392	16,967	88
1890 ...	37,578	18,012	19,566	109
Total in 25 years	712,327	329,165	383,162	117

538. It will be noticed that the births more than doubled the deaths in all the years except 1875, 1876, 1882, and 1889.

Years in which births doubled deaths.

* For the number of deaths during each year since the first settlement of Port Phillip, see Statistical Summary of Victoria (first folding sheet) in the second volume.

Excess of
births over
deaths in
Austral-
asian
colonies.

539. Of the Australasian colonies, New Zealand is the one in which the births have always exceeded the deaths by the highest proportion. This is due to the low death rate prevailing in that colony, resulting no doubt from the salubrity of the climate of New Zealand, but still more so from the circumstance of the population being spread over the country or dispersed throughout a number of small towns, instead of being to a great extent crowded into a few large cities, as is too much the case in the other colonies. 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. The following table shows the percentage of excess of births over deaths in each of the Australasian colonies during the respective years 1881 to 1890, 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, 1890.

Colony.	Excess per cent. of Births over Deaths.										Mean of 10 years.
	1881.	1882.	1883.	1884.	1885.	1886.	1887.	1888.	1889.	1890.	
New Zealand ...	241	233	217	246	224	215	212	231	220	205	224
South Australia ...	167	147	152	147	202	164	175	180	195	164	169
New South Wales ...	151	132	155	139	129	149	177	168	151	174	153
Queensland ...	148	99	96	56	87	126	162	158	135	173	124
Tasmania ...	126	112	101	130	128	134	119	135	127	127	124
Western Australia ..	144	153	89	55	100	82	122	126	161	189	122
Victoria ...	121	96	112	114	109	106	106	112	88	109	107

Excess of
births over
deaths in
Austral-
asian
capital.

540. In 1890 the percentage of excess of births over deaths in Melbourne was below that in any of the Australasian capital cities except Perth and Hobart, as will be seen by the following figures:—

EXCESS OF BIRTHS OVER DEATHS IN AUSTRALASIAN CAPITAL CITIES, 1890.

	Per cent.		Per cent.
1. { Brisbane ...	154	4. Melbourne ...	92
{ Wellington ...	154	5. Perth ...	85
2. Sydney ...	142	6. Hobart ...	52
3. Adelaide ...	114		

Excess of
births over
deaths in
European
countries.

541. The following table shows the percentage of excess of births over deaths in certain European countries during each of the five years ended with 1888. 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,
1884 TO 1888.

Countries.	Excess per cent. of Births over Deaths.					
	1884.	1885.	1886.	1887.	1888.	Mean of 5 years.
Norway	89	91	92	92	82	89
Denmark	82	82	79	75	61	76
Sweden	71	66	79	84	...	75*
Scotland	72	69	74	67	73	71
England and Wales	71	71	69	67	72	70
The Netherlands	57	64	58	71	66	63
Prussia	46	48	45	58	64	52
German Empire	43	44	42	53	54	47
Belgium	46	49	40	52	45	46
Hungary	47	41	41	31	...	40*
Italy	45	43	29	38	36	38
Switzerland	40	31	34	38	39	36
Ireland	36	28	30	27	28	30
Austria	31	25	29	32	30	29
France	9	10	6	7	5	7

542. 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 favourable to longevity, and part to the fact that the countries named 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) it is the rare exception for the births not to be three times as numerous as the deaths.†

Excess of births over deaths in Australia and elsewhere.

543. During the ten years 1881-1890, the population of Victoria increased at the average rate of 1.66 per cent. by excess of births over deaths, at which rate, irrespective of immigration, the population would double itself in 42 years. The rates varied from a minimum of 1.49 in 1882 to a maximum of 1.77 in 1890, as will be seen by the following figures:—

Natural increase of population.

INCREASE OF POPULATION BY EXCESS OF BIRTHS OVER DEATHS,
1881 TO 1890.

	Per Cent.		Per Cent.
1881	1.73	1887	1.70
1882	1.49	1888	1.76
1883	1.62	1889	1.58
1884	1.67	1890	1.77
1885	1.65		
1886	1.64	Mean	1.66

* Mean of 4 years.

See paragraph 539 ante.

Deaths of
males and
females.

544. In Victoria, deaths of males in 1890 numbered 10,369, and deaths of females, 7,643. These numbers furnish a proportion of nearly 75 females to every 100 males, as against a proportion of 74 females to every 100 males in the ten years 1881-90, and of 75 to every 100 in the ten years 1871-80. Females in the total population were in the proportion of 90 to every 100 males during 1890 and the last decennial period, and $87\frac{1}{2}$ during the preceding decennium; 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.

545. 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 each of the last thirty years:—

ANNUAL DEATH RATE, 1861 TO 1890.

Year.	Estimated Mean Population.*		Number of Deaths.		Deaths per 1,000 of the Mean Population.*			
	Males.	Females.	Males.	Females.	Males.	Females.	Total.†	
1861 ...	324,988	214,836	6,124	4,398	18·84	20·47	19·49	
1862 ...	322,916	225,164	5,900	4,180	18·27	18·56	18·39	
1863 ...	325,680	237,280	5,646	3,856	17·34	16·25	16·88	
1864 ...	335,272	251,178	5,202	3,685	15·51	14·67	15·15	
1865 ...	347,083	264,135	6,158	4,303	17·74	16·29	17·11	
1866 ...	353,941	275,097	7,016	5,270	19·82	19·16	19·53	
1867 ...	359,642	284,634	6,613	5,120	18·39	17·99	18·21	
1868 ...	367,752	295,340	5,865	4,202	15·95	14·23	15·18	
1869 ...	379,396	307,806	6,221	4,409	16·40	14·32	15·47	
1870 ...	392,159	321,036	6,114	4,306	15·59	13·41	14·61	
1871 ...	403,319	333,686	5,845	4,073	14·49	12·21	13·46	
1872 ...	409,081	344,117	6,308	4,523	15·42	13·14	14·38	
1873 ...	412,597	352,914	6,565	4,936	15·91	13·99	15·02	
1874 ...	416,725	360,931	6,994	5,228	16·78	14·48	15·72	
1875 ...	419,779	367,558	8,563	6,724	20·40	18·29	19·42	
1876 ...	422,931	373,627	7,716	5,845	18·24	15·64	17·02	
1877 ...	427,727	380,878	7,345	5,431	17·17	14·26	15·80	
1878 ...	433,153	388,313	7,179	5,523	16·57	14·22	15·46	
1879 ...	438,563	395,467	7,033	5,087	16·04	12·86	14·53	
1880 ...	446,445	403,898	6,610	5,042	14·81	12·48	13·70	
1881 ...	456,107	412,835	7,024	5,278	15·40	12·78	14·16	
1882 ...	467,130	422,590	7,900	5,734	16·91	13·57	15·32	
1883 ...	478,010	432,120	7,410	5,596	15·50	12·95	14·29	
1884 ...	490,460	442,170	7,675	5,830	15·65	13·21	14·48	
1885 ...	504,000	452,880	8,300	6,064	16·47	13·39	15·01	
1886 ...	519,970	464,890	8,575	6,377	16·49	13·72	15·18	
1887 ...	537,920	478,830	9,213	6,792	17·13	14·19	15·74	
1888 ...	558,700	496,280	9,385	6,902	16·80	13·90	15·44	
1889 ...	576,520	513,830	11,064	8,328	19·19	16·21	17·78	
1890 ...	589,310	529,190	10,369	7,643	17·60	14·44	16·10	
Average of thirty years					..	16·77	14·50	15·72

NOTE.—In 1861, 1866, and 1875, and to a certain extent in the preceding and in the succeeding years, the death rate was swelled by epidemics of measles and scarlatina.

* The population having been re-estimated for all the years since 1881, to accord with the results of the census of 1891, and the death rates for the same years have been re-calculated.

† The total mean population and the total deaths in each year may be obtained by taking the sum of the figures in the male and female columns.

546. It will be noticed that in all the years, except 1861 and 1862, death bore more hardly upon males than upon females. The figures in the lowest line of the table show that, over a period of thirty years, the deaths of males per 1,000 of the same sex living exceeded by $2\frac{1}{4}$ the deaths of females per 1,000 of that sex living.

Male and female death rate compared.

547. In countries in which the climate is healthy, hygiene properly attended to, and the population in a normal condition as regards age, the ordinary mortality incident to human nature would probably cause the death rate to be in the proportion of about 17 per 1,000 persons living. It should, however, be borne in mind that death rates based merely upon the total population, in common with birth and marriage rates, calculated upon a like basis, are not always fair tests of the state of a community. 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 persons at the middle ages is excessive, the death rate will be low. It will be remarked that the mortality exceeded 17 per 1,000 eight times in the thirty years named in the table, but over the whole period it has averaged below 16 per 1,000. In the last fourteen years it has only twice been so high as 16 per 1,000, whilst in five of those years it was below 15 per 1,000, in one being even below 14 per 1000.

Normal death rate.

548. In 1871 the death rate of both males and females was the lowest recorded during the whole period of thirty years, after which and the death rate in 1880, the next lowest rate was in 1881; it thus happened that those two successive census years, viz., 1871 and 1881, were years of exceptionally low mortality. Such a circumstance occurring at two successive census periods is apt to mislead those who attempt, without due allowance, to base conclusions upon the relation which exists between the number of deaths and the population of the colony, as derived from the results of the census years alone.

Low mortality in census years 1871 and 1881.

549. In 1890, the death rate of both males and females was considerably lower than in 1889, but much higher than in any other year since 1876. Taking the total of the two sexes, the death rate in 1890 was nearly $1\frac{3}{4}$ per 1,000 lower than in 1889, but not quite $\frac{1}{2}$ per 1,000 above the average of the whole period; it was exceeded in 9 of the previous 29 years.

Death rate 1890 and previous years.

550. The proportion which the deaths that occurred in each Australasian colony bore to the total population of that colony during each of the twenty-six years from 1865 to 1890 will be found in the following table:—

Death rates in Australasian colonies.

DEATH RATES IN AUSTRALASIAN COLONIES,
1865 TO 1890.*

Year.	Number of Deaths per 1,000 of Mean Populations.						
	Victoria.	New South Wales.	Queensland	South Australia.	Western Australia.	Tasmania.	New Zealand.
1865 ...	16·97	16·49	21·42	14·30	...	13·40	15·13
1866 ...	19·37	17·57	25·67	17·20	...	13·79	12·86
1867 ...	18·06	19·76	17·80	17·48	...	14·48	12·78
1868 ...	15·00	15·92	17·36	14·41	...	14·70	11·94
1869 ...	15·47	14·17	16·20	12·37	...	13·20	11·73
1870 ...	14·61	13·38	14·59	13·94	...	13·88	11·13
1871 ...	13·46	12·61	14·83	12·87	...	13·38	10·13
1872 ...	14·38	14·18	14·97	15·33	14·02	13·79	11·68
1873 ...	15·02	13·98	16·06	13·48	16·24	14·52	12·67
1874 ...	15·72	15·33	17·98	17·05	18·74	16·21	13·05
1875 ...	19·42	18·42	23·80	19·45	17·88	20·00	15·92
1876 ...	17·02	18·53	18·82	16·28	14·18	16·54	12·66
1877 ...	15·80	15·69	17·29	13·99	15·70	19·17	11·47
1878 ...	15·46	16·36	20·41	15·44	14·07	15·66	11·01
1879 ...	14·53	14·76	14·97	14·09	14·46	15·18	12·46
1880 ...	13·70	15·47	13·59	14·85	13·24	16·12	11·46
1881 ...	14·16	15·17	15·02	14·49	13·80	14·77	11·13
1882 ...	15·32	16·12	17·99	15·15	14·16	15·79	11·19
1883 ...	14·29	14·68	18·82	14·83	17·93	17·06	11·45
1884 ...	14·48	16·14	22·97	15·52	21·87	15·50	10·39
1885 ...	15·21	16·42	20·19	12·73	17·61	15·40	10·74
1886 ...	15·01	14·89	16·77	13·52	21·67	14·58	10·54
1887 ...	15·74	13·15	14·56	12·59	16·83	15·45	10·29
1888 ...	15·44	13·54	14·66	11·83	15·91	14·11	9·43
1889 ...	17·78	13·40	15·44	10·89	14·19	14·10	9·40
1890 ...	16·10	12·42	13·59	12·19	12·00	13·75	9·58
Means ...	15·83	15·33	17·53	14·48	16·09	15·17	11·63

Fluctuations
in the death
rate coinci-
dent in
different
colonies.

551. Considerable fluctuations in the death rates of the different colonies have occurred from year to year. Thus a high rate of mortality prevailed, more especially in the continental colonies, in 1866 and 1867 (in Queensland extending also to 1868), which was caused by the presence of an epidemic of measles and scarlatina; Tasmania and New Zealand appear on this occasion to have almost entirely escaped, as their death rates were but little affected. Moreover, in 1875-6 a high death rate—caused by the same complaints—also occurred in all the colonies of the group. In like manner, low death

* The rates for Victoria for 1882 and subsequent years have been amended in accordance with revised estimates of population based on the results of the census of 1891. The rates for the other colonies will in like manner be liable to future correction. Whilst these pages were passing through the press, it was ascertained that the true rates for 1890 were as follow:—New South Wales, 12·90; Queensland, 14·98; South Australia, 12·40; Western Australia, 11·26; Tasmania, 14·74; New Zealand, 9·64. For the number of deaths in the various colonies during the last eighteen of the years named, see General Summary of Australasian Statistics (third folding sheet) in the second volume.

rates prevailed in all the colonies about 1870 and 1871, extending in the case of some of them to 1872; also about 1880 and 1881. In Queensland and Western Australia a period of high mortality occurred also in 1884, but this did not extend to the other colonies, in most of which for several years past the mortality has been comparatively low. Again, in 1889 and 1890, an exceptionally low rate of mortality prevailed in all the colonies except Victoria; in South Australia and New Zealand in 1889, and in New South Wales in 1890, the rate having been absolutely the lowest during the whole period of 26 years, and that in Queensland, in 1890, the lowest with one exception. To what extent the low rates in 1889 and 1890 are due to the population being over estimated cannot be ascertained until the estimates have been revised in accordance with the results of the recent census.*

552. In the twenty-six years over which the observations extend, the normal death rate of 17 per 1,000 persons living was reached in Queensland thirteen times, in Victoria five times, in New South Wales and South Australia four times, in Tasmania three times, and in New Zealand not at all. In the last nineteen of those years it was reached six times in Western Australia. Queensland is the only one of the colonies in which, over a series of years, the death rate has exceeded 17 per 1,000.

553. 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; the death rate of Western Australia comes next to that of Queensland; the average death rates differ but slightly from one another in Victoria, New South Wales, and Tasmania; but the average death rate in South Australia is lower than that of these three. In 1890, the death rate of Victoria appears to have been considerably higher than that of any of the other colonies, but it must be remembered that Victoria is the only colony of which the population has been corrected according to the results of the recent census, and in most of the other colonies the previous population estimates were too high, and the death rates calculated therefrom consequently too low. The following is the order of the colonies in reference to their respective death rates; the colony with the highest rate being placed first, and that with the lowest last:—

* Whilst these pages were passing through the press, the results for 1890 have been ascertained, and are embodied in the footnote to the preceding page. The rates for Queensland and Tasmania were especially low.

ORDER OF AUSTRALASIAN COLONIES IN REFERENCE TO DEATH RATES.

- Order in 1890.
1. Victoria.
 2. Tasmania.
 3. Queensland.
 4. New South Wales.
 5. South Australia.
 6. Western Australia.
 7. New Zealand.

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

Death rate in Australia and Australasia.

554. 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 eighteen years ended with 1890 :—

DEATH RATE IN AUSTRALIA AND AUSTRALASIA,
1873 TO 1890.*

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	1883 ...	15·06	14·51
1874 ...	15·73	15·36	1884 ...	16·35	15·29
1875 ...	19·08	18·63	1885 ...	15·89	14·97
1876 ...	17·12	16·37	1886 ...	15·15	14·33
1877 ...	15·23	14·77	1887 ...	14·27	13·64
1878 ...	15·72	14·94	1888 ...	14·20	13·39
1879 ...	14·06	13·84	1889 ...	14·96	14·01
1880 ...	14·47	14·01	1890 ...	13·83	13·13
1881 ...	14·62	14·01			
1882 ...	15·85	15·02	Means ...	15·33	14·69

Normal death rate in Australia and Australasia.

555. 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 in 1890 the rate for the continent, as well as that for the whole of Australasia, was apparently the lowest in the last eighteen years.

Death rates in certain British possessions.

556. The following table shows the death rates in as many British colonies outside Australasia as the particulars are available for. In

* Rates for 1881 and subsequent years liable to revision when the population estimates have been corrected in accordance with the results of the recent census. Whilst these pages were passing through the press, the true rates for 1890 for Australia and Australasia were found to be 14·29 and 13·53 respectively.

many cases the average extends only over a short period, and 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 BRITISH POSSESSIONS.

Colonies.	Years.	Number of Deaths per 1,000 of the Population.
Gibraltar	1888-9	21·8
Malta	1886	27·0
British India	1880-88	24·9
Ceylon	1886-8	24·8
Straits Settlements	1888-9	30·4
Hong Kong	1879-86	26·6
Mauritius	1886-8	31·4
Seychelles	1886	20·1
St. Helena	1871-5	13·2
Gambia	1882	51·5
Sierra Leone	1887-9	18·3
Nova Scotia	1871-5	12·1
Bermudas	1875-89	24·0
British Guiana	1871-83	33·7
West Indies—		
Bahamas... ..	1888-9	22·8
Jamaica	1883-7	22·9
St. Lucia... ..	1869-84	25·3
St. Vincent	1886-9	21·2*
Barbados... ..	1886	25·7
Grenada	1888-9	23·9*
Tobago	1886	21·0
Antigua	1883-4	39·5
Montserrat	1883-6	20·4
Dominica	1882-3	17·3
Trinidad	1881-90	27·8*

557. In all the European countries of which the information is at hand, 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 Norway and Sweden, the mean annual death rate is above 17 per 1,000, and, with the same exceptions, in not one of those countries did the annual death rate during any of the years named ever fall as low as 17 per 1,000; whilst in Hungary and Spain, on the other hand, the average death rates amount to nearly twice that proportion. In the following table, the countries are arranged in the order of their mean death rates, as shown in the last column :—

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

DEATH RATES IN EUROPEAN COUNTRIES, 1884 TO 1888.

Countries.	Number of Deaths per 1,000 of Mean Population.					
	1884.	1885.	1886.	1887.	1888.	Mean of Five Years.
Hungary	31·4	...	32·2	33·5	...	32·4†
Spain	31·1	...	...	...	...	32·1‡
Austria	29·2	29·9	29·4	28·9	29·2	29·3
Italy	26·7	26·6	28·3	27·7	26·8	27·2
German Empire ...	26·0	25·7	26·2	24·2	23·8	25·2
Prussia	25·5	25·7	26·0	23·9	23·0	24·8
France	22·2	22·0	22·5	22·0	21·8	22·1
The Netherlands ...	22·2	21·0	21·8	19·7	20·4	21·0
Switzerland	20·2	21·3	20·7	20·2	19·9	20·5
Belgium	20·9	20·1	21·1	19·3	20·1	20·3
England and Wales*	19·6	19·0	19·3	18·8	17·8	18·9
Scotland*	19·4	19·1	18·6	18·7	17·6	18·7
Denmark	18·4	17·9	18·2	18·3	19·7	18·5
Ireland*	17·6	18·4	17·9	18·3	18·0	18·0
Sweden	17·5	17·8	16·6	16·1	...	17·0§
Norway	16·4	16·5	16·1	16·0	16·9	16·4

Death rate
in United
Kingdom.

558. According to the reports of the Registrars-General of England and Scotland, the death rate of the latter country approximates very closely to that of the former, but in Ireland it is somewhat lower than in the other two countries.|| From the figures for the United Kingdom during each of the eighteen years ended with 1888, it will be noticed that the death rate in 1888 was, for the first time, below 18 per 1,000 living :—

DEATH RATE IN THE UNITED KINGDOM, 1871 TO 1888.

Deaths per 1,000 of the Population.			Deaths per 1,000 of the Population.		
1871	22·6	1881	18·7		
1872	20·9	1882	19·2		
1873	20·8	1883	19·5		
1874	21·6	1884	19·3		
1875	22·2	1885	18·9		
1876	20·5	1886	19·0		
1877	20·0	1887	18·7		
1878	21·2	1888	17·8		
1879	20·5				
1880	20·4	Mean	20·1		

* In 1889 and 1890 the rates in England were respectively 17·9 and 19·2; in Scotland 18·9 and 19·2; and in 1889 in Ireland 17·5.

† Mean of three years.

‡ Mean of two years, 1883 and 1884.

§ Mean of four years.

|| Formerly the registrations in Ireland were admitted to be defective; but the Registrar-General of that country states that in recent years much improvement has taken place—especially since the passing of certain Acts of Parliament in the years 1878-80; and he has reason to believe that, at the present time, but few deaths escape registration.

559. In every country the death rate is higher in towns than it is in the 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. In 1890, the death rate was much lower in Melbourne and suburbs than in the country towns, whilst in the former it was nearly twice as high, and in the latter more than twice as high as in the country districts. The following are the figures for that year:—

Death rates in town and country, 1890.

DEATHS IN URBAN AND COUNTRY DISTRICTS, 1890.

Districts.	Estimated Mean Population.	Deaths, 1890.	
		Total Number.	Number per 1,000 of the Population.
Melbourne and suburbs (Greater Melbourne)	473,500	9,297	19·63
Extra-metropolitan Towns	192,140	4,146	21·58
Country districts ...	452,860	4,569	10·09
Total ...	1,118,500	18,012	16·10

560. The number of deaths per 1,000 of the estimated population of the metropolitan towns (Greater Melbourne), the extra-metropolitan towns, and the country districts of Victoria, is given in the following table for each of the last eighteen years:—

Death rates in town and country, 1873 to 1890.

DEATH RATES IN URBAN AND COUNTRY DISTRICTS, 1873 TO 1890.*

Years.	Number of Deaths per 1,000 of the Estimated Population.			
	Greater Melbourne.†	Extra-Metropolitan Towns.	Country Districts.	Total of Victoria.
1873 ...	19·86	18·50	9·65	15·02
1874 ...	21·27	20·47	9·09	15·72
1875 ...	25·82	26·03	11·24	19·42
1876 ...	21·84	23·00	10·45	17·02

* The rates for "Total of Victoria" have been revised since last publication to accord with amended estimates of population. The rates for extra-metropolitan towns, and especially country districts, will in like manner be subject to revision in the next issue of this work. Those for Greater Melbourne will remain unaltered.

† The death rate in Greater Melbourne would be considerably reduced if the deaths which occurred in the metropolitan hospitals, asylums, etc., should be eliminated from the total. In 1890, it would be reduced to 16·19 per 1,000 persons living.

DEATH RATES IN URBAN AND COUNTRY DISTRICTS, 1873 TO 1890*
—continued.

Years.	Number of Deaths per 1,000 of the Estimated Population.			
	Greater Melbourne.†	Extra-Metropolitan Towns.	Country Districts.	Total of Victoria.
1877	21·18	20·07	9·86	15·80
1878	20·12	20·21	9·83	15·46
1879	19·23	18·65	9·17	14·53
1880	18·70	17·65	8·13	13·70
1881	19·32	19·44	7·91	14·16
1882	21·02	20·24	8·94	15·32
1883	19·46	18·81	8·33	14·29
1884	20·54	18·74	7·86	14·48
1885	20·15	18·88	9·00	15·01
1886	20·42	19·27	8·75	15·18
1887	21·25	20·64	8·65	15·74
1888	20·52	19·56	8·64	15·44
1889	23·39	21·91	10·11	17·78
1890	19·63	21·58	10·09	16·10

NOTE.—In 1875, and to a certain extent in the preceding and succeeding years, the death rate was swelled by epidemics of measles and scarlatina.

Normal death rate in town and country.

561. It will be noticed that in thirteen of the years, including eight of the last nine years, the death rate in Melbourne and suburbs was above that in the other town districts; but in 1890 and the other four years the death rate in the extra-metropolitan towns was the higher. The greater mortality in proportion to population prevailing in the urban than in the country districts is very striking in all the years. In the former the mortality was invariably much above the normal 17 per 1,000 persons living, whilst in country districts it was always very considerably below that rate. It will also be noticed that the death rate in 1890 in the two extra-metropolitan districts was higher than in any previous years shown in the table, except 1875, 1876, and 1889; but the rate in Greater Melbourne was comparatively low, being in striking contrast with the exceptionally high rate of 1889.

Death rates in town and country districts of England.

562. In England and Wales, during the ten years 1876-85, the death rate in urban districts was 21·5 per 1,000, and in country districts, 18·0 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.

563. The following table shows the mean population, the number of deaths, and the proportion of the latter to the former, in 1890, also the number of deaths to every 1,000 persons living during the period

* See footnote (*) on page 325.

† See footnote (†) on page 325.

‡ See 48th Report of the Registrar-General of England, page lxxv.

of ten years ended with 1890, in each of the different municipalities and other sub-districts forming the component parts of the districts 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, 1890.	Deaths.		
		Total Number.	Number per 1,000 of the Population.†	
			1890.	Annual Mean, 1881 to 1890.
Melbourne City	71,694	1,173	16·36	16·64
North Melbourne Town... ..	20,035	389	19·41	18·76
Fitzroy City	31,654	510	16·12	17·55
Collingwood City	34,102	598	17·54	19·84
Richmond City	37,452	700	18·69	19·03
Brunswick Town	20,605	354	17·18	18·39
Northcote Town	7,123	111	15·58	15·86‡
Prahran City	38,109	585	15·36	16·53
South Melbourne City	40,211	670	16·66	17·45
Port Melbourne Borough	12,691	215	16·93	19·53
St. Kilda City... ..	19,179	300	15·64	14·15
Brighton Town	9,447	114	12·07	14·76
Essendon Town	13,379	175	13·08	12·28§
Flemington and Kensington Borough	9,333	143	15·32	15·02§
Hawthorn City	18,456	260	14·09	14·06
Kew Borough... ..	6,987	92	13·17	12·01
Footscray Town	18,021	339	18·81	18·39
Williamstown Town	15,344	235	15·32	16·55
Remainder of district	43,639	694	15·91	15·33
Shipping in Hobson's Bay and river	1,929	13	6·74	7·22
Total		7,670	16·19	16·96
<i>Hospitals, Asylums, etc.</i>|| ... ..	4,110	1,627	3·44**	3·69**
Grand Total	473,500	9,297	19·63	20·65

* For changes in constitution of municipalities, see footnotes to table following paragraph 493 *ante*.

† In order to compare the death rate with density of population, see table following paragraph 331 *ante*.

‡ Average of 7 years.

§ Average of 8 years.

|| Includes the Melbourne, Alfred, 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.

Death rates
in 1890 and
series of
years.

564. It will be observed that in 1890 the death rates were above the average of the decennial period in North Melbourne, St. Kilda, Essendon, Kew, "Remainder of district," Flemington, Hawthorn, and Footscray; but the excess was not great in any case, and was only slight in the last three of the places named. In the other sub-districts there was a smaller rate of mortality, more especially in Fitzroy, Collingwood, Port Melbourne, and Brighton.

Places in
which death
rate was
highest and
lowest.

565. The only sub-districts which, according to the average of ten years, had a higher death rate than 19 per 1,000* are the low-lying localities of Collingwood, Port Melbourne and Richmond; the next highest death rate prevailed in the densely populated suburb of North Melbourne, and next in Brunswick and Footscray. In 1890 the highest death rate was in North Melbourne, which was the only district with a rate exceeding 19 per 1,000; then followed in the order named, Footscray, Richmond, Collingwood, and Brunswick, with rates varying from $18\frac{3}{4}$ to 17 per 1,000. During the period of ten years, after the shipping, the lowest death rates were in Kew and Essendon; the next in Hawthorn, St. Kilda, and Brighton; and the next in Flemington, and the "Remainder of district." In 1890 the lowest death rate was in Brighton, the next in Essendon and Kew, and the next in Hawthorn—in all of which these districts the death rate was below 15 per 1,000.

Sub-districts
with death
rates over
17 per 1,000.

566. The death rate of Greater Melbourne, taken as a whole, in the calculation of which the deaths in charitable institutions are included, was about $19\frac{2}{3}$ per 1,000 persons living in 1890, or 1 per 1,000 lower than the average during the period of ten years. During the last-named period the annual death rate was below 17 per 1,000 in all the sub-districts except North Melbourne, Fitzroy, Collingwood, Richmond, Brunswick, South Melbourne, Port Melbourne, Footscray; and during 1890 it was below 17 per 1,000 in all the sub-districts except North Melbourne, Collingwood, Richmond, Brunswick, and Footscray. It will be borne in mind that the deaths in hospitals, asylums, etc., 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 only number 7,670, or a proportion of 16.19 per 1,000 living, a similar proportion for the ten years ended with 1890 being 16.96.

* It should be remembered that the deaths in hospitals, asylums, etc., 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.

567. In 1890, according to the following figures, the death rate of Melbourne was lower than that of Perth or Hobart, but much higher than that of any of the other Australasian capital cities. In 1881, or ten years previously, the death rate in Adelaide was much higher than in Melbourne or any other capital; whilst that of Sydney was only slightly lower than in Melbourne; but the returns indicate a marked decline in the mortality of those cities since 1881. There is reason to believe, however, that in some of the colonies the metropolitan radius, so far as the deaths are concerned, is smaller than that for which the population is calculated. In such cases the death rate would obviously appear to be lower than it really is. It should, moreover, be mentioned that the death rate of Melbourne is swelled by the large number of country residents who are admitted to and die in the metropolitan hospitals. In the Wellington returns, and possibly in those of some other of the capital cities, it is the custom to eliminate such entries, and it is probable that in Melbourne such deaths bear a higher proportion to the total number of deaths recorded than they do in any other of the capital cities named:—

Deaths in
Austral-
asian
capitals,
1890.

DEATHS IN AUSTRALASIAN CAPITAL CITIES, 1881 AND 1890.

Capital Cities.*	Estimated Mean Population, 1890.†	Deaths, 1890.	Number of Deaths per 1,000 of the Population.	
			1890.	1881.
Perth	8,180	182	22·25	....
Hobart	32,980	699	21·19	23·18
Melbourne	473,500	9,297	19·63	19·32
Brisbane	89,210	1,615	18·10	18·82
Adelaide‡	131,020	2,030	15·50	23·55
Sydney‡	374,420	5,591	14·93	19·12
Wellington	32,360	414	12·79	14·00

568. According to the following figures, showing the death rates in the principal towns in the United Kingdom, and the figures just given (for 1890) showing the death rates in Australasian capital cities, the death rate is apparently lower in Wellington, Sydney, or Adelaide than in any British town; in Brisbane, than in any except Brighton and Derby; in Melbourne, than in any except those towns and

Death rates
in towns of
United
Kingdom.

* With suburbs.

† Calculated in the office of the Government Statist, Melbourne, from the preliminary returns of the Census of 1891.

‡ There are some doubts as to whether the populations of Sydney and Adelaide in 1890 are not given for larger areas than those on which the deaths were registered. If this should be the case, the death rates for those cities, as shown in the table, would, as a matter of course, be lower than the true rates. It is difficult otherwise to understand how the death rates of Adelaide and Sydney could have fallen from 23½ and 19 per 1,000 respectively in 1881 to 15½ and 15 in 1891.

Nottingham, Hull, Leicester, and Portsmouth; whilst the death rate in Hobart is below that in 15, and the rate in Perth below that in 10, of the towns named on the list:—

DEATH RATES IN BRITISH TOWNS, 1887.

	Deaths per 1,000 of the Population.		Deaths per 1,000 of the Population.
Dublin ...	30·6	Halifax ...	21·0
Manchester ...	28·7	Birkenhead ...	21·0
Preston ...	27·9	Twenty-eight large towns	20·8
Blackburn ...	25·5	Bristol ...	20·4
Newcastle ...	25·3	Norwich ...	20·4
Oldham ...	23·8	Bradford ...	19·9
Liverpool ...	23·7	Edinburgh ...	19·8
Glasgow ...	23·2	Sunderland ...	19·7
Huddersfield ...	23·0	Birmingham ...	19·7
Plymouth ...	22·7	London ...	19·6
Salford ...	22·2	Portsmouth ...	19·5
Cardiff ...	21·9	Leicester ...	19·5
Wolverhampton ...	21·7	Hull ...	19·2
Sheffield ...	21·6	Nottingham ...	18·7
Bolton ...	21·3	Derby ...	17·1
Leeds ...	21·1	Brighton ...	16·9

569. 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 unfavourably with London, which is one of the towns in which the death rate is lowest. Manchester is one in which the death rate had always been, and continued to be, highest; but Liverpool, which some years previously stood at the very head of the list, had, in 1887, six towns above it, and stood immediately above Glasgow. In Birmingham the mortality was comparatively low, and approximated closely to that of London.

570. The death rates in all the Australasian capitals will be found to be considerably lower than the average death rates of most of the 50 Colonial and Foreign towns named in the subjoined list:—

DEATH RATES IN 50 COLONIAL AND FOREIGN TOWNS, 1878-80.*

	Annual Deaths per 1,000 of the Population.		Annual Deaths per 1,000 of the Population.
Vera Cruz ...	70·5	Alexandria ...	34·2
Valparaiso ...	64·6	Naples ...	33·1
St. Petersburg ...	51·4	Munich ...	32·8
Havanna ...	45·7	Breslau ...	32·5
Madras (1887) ...	40·3	Rouen ...	31·3
Rio Janeiro ...	39·4	Calcutta ...	31·1†
Madrid ...	37·4	Mexico ...	30·9
Montreal ...	37·2	Milan ...	30·6
Buda-Pesth ...	35·2		

* Partly taken from Mulhall's *Dictionary of Statistics* (1891), page 174.

† In 1889, the proportion was 34·36 per 1,000 living.

DEATH RATES IN 50 COLONIAL AND FOREIGN TOWNS, 1878-80
—continued.

Annual Deaths per 1,000 of the Population.		Annual Deaths per 1,000 of the Population	
Buenos Aires ...	30·1	Brussels ...	23·9
Vienna ...	29·0	Boston ...	23·5
Palermo ...	28·5	Paris (1887) ...	23·4
Marseilles ...	28·0	Rotterdam ...	23·3
Chicago ...	27·2	Berlin (1889) ...	23·1
Rome ...	26·8	Quebec ...	22·9
Bordeaux ...	26·7	Venice ...	22·7
Bombay (1887) ...	26·3	New Orleans ...	22·7
New York ...	26·2	Copenhagen ...	22·1
Leipsic ...	26·1	Amsterdam (1887) ...	22·1
Zurich ...	25·6	Geneva ...	21·2
Turin ...	25·6	Baltimore ...	21·1
Dresden ...	25·4	Philadelphia ...	20·3
Stockholm ...	24·7	St. Louis ...	19·3
Lyons ...	24·7	Christiania ...	18·8
Hamburg ...	24·5	San Francisco ...	18·1
Bucharest ...	24·5		

571. Of the 4 principal towns in Victoria next in importance to Melbourne, 3 had a higher death rate than that city ; but in only one of them—Castlemaine—was the death rate as high as in the majority of Colonial and Foreign towns just referred to. This will be seen by the following figures :—

Death rates
in Victorian
towns.

DEATH RATES IN 5 VICTORIAN TOWNS, 1890.

Deaths per 1,000 of the Population.		Deaths per 1,000 of the Population.	
1. Castlemaine ...	27·52	4. Melbourne... ..	19·63
2. Geelong ...	20·34	5. Ballarat	18·64
3. Bendigo (Sandhurst) ...	20·07		

572. The mortality of Victoria is 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. According to the average of the decennium ended with 1890, the months in which most deaths occur appear to be January, March, and December, and then April, February, May, in the order named ; whereas in the preceding decennium fewer deaths occurred in December than in any of the other months named. In the year under review more deaths occurred in January, March, and April, than in any other months. The number of deaths in each month of 1890, and their percentage to the total number in the year, also the percentage of the deaths in each month of the decennial periods ended with 1880 and 1890 to the total number of deaths during the same periods, will be found in the following table :—

Deaths in
each month.

DEATHS IN EACH MONTH.

Months.	Year 1890.		Percentage in—	
	Number of Deaths.	Percentage.	Ten Years : 1881 to 1890.	Ten Years : 1871 to 1880.
January	1,930	10·72	10·05	10·29
February	1,618	8·98	8·69	9·09
March	1,811	10·06	9·46	10·17
April	1,802	10·01	8·77	9·73
May	1,751	9·72	8·52	8·55
June	1,326	7·36	7·51	7·44
July	1,426	7·92	7·78	7·89
August	1,380	7·66	7·93	7·37
September	1,285	7·13	7·17	6·81
October	1,146	6·36	7·04	7·09
November	1,112	6·17	7·62	7·12
December	1,425	7·91	9·46	8·45
Total	18,012	100·00	100·00	100·00

Deaths at different seasons.

573. 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; but in 1890, there were more deaths in the winter than in the spring quarter. In the United Kingdom, on the contrary, 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 last decennial periods; in England and Wales, according to the experience of thirty-one 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.		Deaths per 100 at all Seasons.					
			Victoria.			England and Wales.	Scotland.	Ireland.
	Melbourne, Victoria.	Greenwich, England.	Year 1890.	Average of Ten Years, 1881 to 1890.	Average of Ten years, 1871 to 1880.	Average of Thirty-one Years.	Average of Ten Years.	Average of Five Years.
Summer	65·2	60·5	29·75	28·20	29·55	23·24	22·34	20·21
Autumn	53·8	44·3	27·08	24·80	25·72	24·65	24·71	23·45
Winter	50·2	40·0	22·72	22·90	22·07	27·49	27·95	30·19
Spring	60·3	52·8	20·45	24·10	22·66	24·62	25·00	26·15
Year	57·6	49·4	100·00	100·00	100·00	100·00	100·00	100·00

* 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.

574. The Chinese who died in 1890 numbered 223—of whom one was a female; and the Aborigines who died numbered 29—of whom 3 (including 1 adult) were stated to be half-castes. The former furnish a proportion of 27 and the latter of 35 to every 1,000 of their probable numbers. In the same year the proportion of deaths of all races to every 1,000 of the population was 16·10.

Deaths of Chinese and Aborigines.

575. In 1890 only 4 of the Chinese who died were under the age of 5 years, and only 24 others were under 45 years of age; the great majority, or more than half, were between 45 and 65; whilst the oldest were said to be aged 81, 82, and 85 respectively. Of the Aborigines who died, eleven were under 5, whilst one male was stated to have attained the age of 90, and another male was supposed to have been upwards of 100.

Ages at death of Chinese and Aborigines.

576. The following table shows the number of deaths at various periods of age registered in Victoria during the year 1890, and during the last decennial period; also the proportion of the deaths at each age to the total at all ages:—

Deaths at each age, 1881-90.

DEATHS AT EACH AGE, 1890, AND 1881-90.

Ages.	Number of Deaths at each Age.			Percentage of Deaths at each Age.		
	Males.	Females.	Total.	Males.	Females.	Total.
YEAR 1890.						
Under 5 years ...	3,379	3,019	6,398	32·59	39·50	35·52
5 years to 10 years ...	354	314	668	3·41	4·11	3·71
10 " 15 " ...	189	187	376	1·82	2·45	2·09
15 " 20 " ...	231	257	488	2·23	3·36	2·71
20 " 25 " ...	406	356	762	3·92	4·66	4·23
25 " 35 " ...	927	703	1,630	8·94	9·20	9·05
35 " 45 " ...	662	530	1,192	6·38	6·93	6·62
45 " 55 " ...	855	519	1,374	8·25	6·79	7·63
55 " 65 " ...	1,451	663	2,114	13·99	8·67	11·73
65 " 75 " ...	1,166	605	1,771	11·25	7·92	9·83
75 years and upwards ...	749	490	1,239	7·22	6·41	6·88
Total ...	10,369	7,643	18,012	100·00	100·00	100·00
TEN YEARS, 1881-90.						
Under 5 years ...	29,885	25,679	55,564	34·38	39·79	36·69
5 years to 10 years ...	2,445	2,312	4,757	2·81	3·58	3·14
10 " 15 " ...	1,499	1,432	2,931	1·73	2·22	1·94
15 " 20 " ...	2,153	2,273	4,426	2·48	3·52	2·92
20 " 25 " ...	3,309	3,075	6,384	3·81	4·76	4·22
25 " 35 " ...	6,217	5,693	11,910	7·15	8·82	7·86
35 " 45 " ...	5,914	4,960	10,874	6·81	7·68	7·18
45 " 55 " ...	9,608	5,472	15,080	11·05	8·48	9·96
55 " 65 " ...	11,711	5,307	17,018	13·47	8·22	11·23
65 " 75 " ...	8,616	4,596	13,212	9·91	7·12	8·72
75 years and upwards ...	5,558	3,745	9,303	6·40	5·81	6·14
Total ...	86,915	64,544	151,459	100·00	100·00	100·00

Proportion
of deaths at
different
ages.

577. It will be noticed that in the period of ten years, over one-third of the males and nearly two-fifths of the females who died had not reached their fifth year; that 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 about a sixth of the males and more than an eighth of the females were over 65 years of age; it will moreover be found that, on the average, the females who died were about 15 years younger than the males—about half the former being under and half over 17 years of age, whilst about half the latter were under and half over 32 years of age. The proportions in 1890 are, it will be observed, much higher at the age-periods 5 to 10, 25 to 35, and those over 55.

Infantile
mortality,
1890.

578. The mortality of infants in 1890, in proportion to the number born, was considerably above the average, and was by far the highest recorded since 1866. The total number under 1 year of age who died in 1890 was 4,412, and as the births numbered 37,578, it follows that 1 infant died to every 8·5 births, or 11·74 infants to every 100 births. In the twenty-four years 1866 to 1889, the proportion of infants dying before completing their first year was 12·54 to every 100 births.*

Mortality of
male and
female
infants.

579. 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 the twenty years ended with 1890, of the number of births of boys and girls, the number of deaths of each before completing their first year, and the proportion of the deaths of infants of either sex to the number of births of infants of the same sex:—

MORTALITY OF MALE AND FEMALE INFANTS, 1871 TO 1890.

Year.	Births.		Deaths at under 1 Year of Age.			
			Total Number.		Number per 100 Births.	
	Boys.	Girls.	Boys.	Girls.	Boys.	Girls.
1871	14,000	13,382	1,710	1,404	12·21	10·49
1872	13,831	13,530	1,801	1,533	13·02	11·33
1873	14,234	13,866	1,679	1,502	11·80	10·83
1874	13,659	13,141	1,839	1,502	13·46	11·43
1875	13,683	13,037	2,071	1,740	15·14	13·35
1876	13,759	13,010	1,637	1,343	11·90	10·32
1877	13,272	12,738	1,838	1,461	13·85	11·47
1878	13,752	12,829	1,763	1,499	12·82	11·68
1879	13,727	13,112	1,817	1,402	13·24	10·69
1880	13,358	12,790	1,669	1,436	12·49	11·23
Sums and Means	137,275	131,435	17,824	14,822	12·98	11·28

* See table following paragraph 586 *post*.

MORTALITY OF MALE AND FEMALE INFANTS, 1871 TO 1890
—continued.

Year.	Births.		Deaths at under 1 Year of Age.			
			Total Number.		Number per 100 Births.	
	Boys.	Girls.	Boys.	Girls.	Boys.	Girls.
1881	13,903	13,242	1,696	1,423	12·20	10·75
1882	13,612	13,135	2,049	1,673	15·05	12·74
1883	14,109	13,432	1,702	1,448	12·06	10·78
1884	14,844	14,006	1,853	1,428	12·49	10·20
1885	15,455	14,520	2,046	1,725	13·24	11·88
1886	15,753	15,071	2,127	1,797	13·50	11·92
1887	16,876	16,167	2,354	1,942	13·95	12·01
1888	17,617	16,886	2,390	2,011	13·57	11·91
1889	18,713	17,646	2,989	2,560	15·97	14·51
1890	19,175	18,403	2,372	2,040	12·37	11·09
Sums and Means	160,057	152,508	21,578	18,047	13·48	11·83

580. According to a previous paragraph,* the births of male infants in a series of years were in the proportion of about $104\frac{1}{2}$ 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.

Mortality of male greater than of female infants.

581. In proportion to every 1,000 born, the number of male infants dying varied from 118 in 1873 to 151 in 1875 and 1882, and 160 in 1889, and that of female infants dying from 103 in 1876 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; and in the ten years ended with 1890, 135 and 118 respectively. The high mortality of infants in 1875 was caused by an epidemic of measles. The next year was one in which the general mortality was much increased by an epidemic of scarlatina, but infants under 1 year appear not to have been at all affected thereby, as their mortality in 1876 was remarkably low. The high infantile mortality in 1882 was exceptional, as in that year no such epidemics were prevalent. It was not sustained in 1883 or 1884, the infantile mortality in those years having been lower than in most of the preceding ones, but concurrently with an increasing birth rate,

Proportion of infants dying to births.

* See paragraph 502 ante.

there has been a gradual rise in the infantile death rate. The high mortality of 1889 was partly due to an epidemic of whooping-cough, and partly to a largely increased mortality under diarrhoea, gastro-enteritis, and debility.

582. In classifying the deaths of infants, those are distinguished which occur at under 1 month of age, at from 1 to 3 months, at from 3 to 6 months, and at from 6 to 12 months. The numbers of these during 1890 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 1890 the mortality of both male and female infants at each age-period was below the average:—

AGE AT DEATH OF MALE AND FEMALE INFANTS.

Ages.	Deaths at under 1 Year of Age.				
	Year 1890.			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 ...	745	31·41	3·88	30·99	4·20
1 to 3 months ...	412	17·37	2·15	17·92	2·37
3 to 6 ,, ...	513	21·63	2·68	22·26	3·01
6 to 12 ,, ...	702	29·59	3·66	28·83	3·90
Total ...	2,372	100·00	12·37	100·00	13·48
GIRLS.					
Under 1 month ...	586	28·72	3·18	27·41	3·24
1 to 3 months ...	385	18·87	2·09	18·68	2·21
3 to 6 ,, ...	453	22·21	2·46	23·01	2·73
6 to 12 ,, ...	616	30·20	3·35	30·90	3·66
Total ...	2,040	100·00	11·08	100·00	11·84

More deaths of male than female infants at all ages.

583. In 1890 and 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.

584. 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

* For corresponding average for 1871-81, see last edition of this work, Vol. I, table following paragraph 635.

were a year old did so in the first month after birth; about two-elevenths of both males and females in the next two months; between a fourth and 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. The proportions for 1890 are slightly less for the periods between one and six months in the case of males, and for the periods between 3 and 12 months in the case of females; and correspondingly higher for the other age-periods than the proportions just alluded to.

585. As a practical result of these calculations, it may be mentioned 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 1 month and 3 months of age; 301 more boys and 273 more girls between 3 and 6 months; 390 more boys and 366 more girls between 6 and 12 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 will be still living.

586. In Victoria, New South Wales, Queensland, and Tasmania, the infantile death rate in 1889 was above, but in the other colonies it was below, the average, as will be seen by the following table, which gives the number of births, the number of deaths of infants under one year, and the proportion of the latter to the former, in each of the colonies of the group, for each of the twenty-four years ended with 1889, except in regard to Western Australia, for which the information is given at the foot of the table for the last four of those years. All the calculations were made in the office of the Government Statist, Melbourne:—

INFANTILE MORTALITY IN AUSTRALASIAN COLONIES.

Year.	Births.	Deaths at under 1 Year of Age.		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.		Total Number.	Number to 100 Births.
	VICTORIA.			NEW SOUTH WALES.			QUEENSLAND.		
1866	25,010	3,838	15·35	16,950	1,939	11·44	4,127	690	16·72
1867	25,608	3,534	13·80	18,317	2,269	12·39	4,476	578	12·91
1868	27,243	3,054	11·21	18,485	1,791	9·69	4,460	552	12·38
1869	26,040	3,284	12·61	19,243	1,858	9·66	4,654	528	11·35
1870	27,151	3,203	11·80	19,648	1,867	9·50	4,905	526	10·72
1871	27,382	3,114	11·37	20,143	1,812	9·00	5,205	516	9·91
1872	27,361	3,334	12·19	20,250	2,116	10·45	5,265	578	10·98
1873	28,100	3,181	11·32	21,444	1,985	9·26	5,720	701	12·26

INFANTILE MORTALITY IN AUSTRALASIAN COLONIES—*continued.*

Year.	Births.	Deaths at under 1 Year of Age.		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.		Total Number.	Number to 100 Births.
VICTORIA.				NEW SOUTH WALES.			QUEENSLAND.		
1874	26,800	3,341	12·47	22,178	2,428	10·95	6,383	776	12·16
1875	26,720	3,811	14·26	22,528	2,695	11·96	6,706	1,025	15·28
1876	26,769	2,980	11·13	23,298	2,629	11·28	6,903	994	14·40
1877	26,010	3,299	12·68	23,851	2,785	11·68	7,169	1,058	14·76
1878	26,581	3,262	12·27	25,328	3,126	12·34	7,397	1,234	16·68
1879	26,839	3,219	11·99	26,933	2,886	10·72	7,870	917	11·65
1880	26,148	3,105	11·86	28,162	3,200	11·36	8,196	865	10·55
1881	27,145	3,119	11·49	28,903	3,341	11·56	8,220	918	11·17
1882	26,747	3,722	13·91	29,702	3,897	13·12	8,518	1,188	13·95
1883	27,541	3,150	11·44	31,281	3,590	11·48	9,890	1,319	13·34
1884	28,850	3,281	11·37	33,946	4,285	12·62	10,679	1,574	14·74
1885	29,975	3,771	12·57	35,043	4,596	13·12	11,672	1,733	14·85
1886	30,824	3,924	12·73	36,284	4,635	12·85	12,582	1,584	12·59
1887	33,043	4,296	13·00	37,236	3,945	10·59	13,513	1,526	11·29
1888	34,503	4,401	12·75	38,525	4,271	11·09	14,247	1,719	12·70
1889	36,359	5,549	15·26	37,295	4,663	12·50	14,401	1,962	13·62
Sums and means	674,749	84,772	12·54	634,973	72,609	11·43	193,158	25,061	12·97
SOUTH AUSTRALIA.				TASMANIA.			NEW ZEALAND.		
1866	6,782	1,178	17·37	2,805	264	9·41	8,466	849	10·03
1867	7,041	1,254	17·81	2,971	267	8·98	8,918	873	9·79
1868	7,247	1,084	14·96	2,990	351	11·73	9,391	899	9·57
1869	6,976	911	13·06	2,859	291	10·18	9,718	957	9·85
1870	7,021	1,031	14·68	3,054	298	9·76	10,277	956	9·30
1871	7,082	961	13·57	3,053	260	8·52	10,592	882	8·33
1872	7,105	1,145	16·12	3,010	306	10·17	10,795	1,074	9·95
1873	7,107	990	13·93	3,048	266	8·73	11,222	1,213	10·81
1874	7,696	1,319	17·13	3,097	321	10·36	12,844	1,394	10·85
1875	7,408	1,343	18·13	3,105	407	13·11	14,438	1,816	12·58
1876	8,224	1,228	14·93	3,149	286	9·08	16,168	1,673	10·35
1877	8,640	1,212	14·03	3,211	365	11·37	16,856	1,527	9·06
1878	9,282	1,466	15·79	3,502	375	10·71	17,770	1,486	8·36
1879	9,902	1,217	12·29	3,564	384	10·77	18,070	1,941	10·74
1880	10,262	1,393	13·57	3,739	420	11·23	19,341	1,805	9·33
1881	10,708	1,364	12·74	3,913	405	10·34	18,732	1,731	9·24
1882	10,844	1,647	15·19	4,043	419	10·36	19,009	1,678	8·83
1883	11,173	1,627	14·56	4,259	528	12·40	19,202	1,995	10·39
1884	11,847	1,590	13·42	4,578	457	9·98	19,846	1,573	7·93
1885	12,046	1,366	11·34	4,637	522	11·26	19,693	1,756	8·92
1886	11,177	1,409	12·62	4,627	485	10·48	19,299	1,899	9·84
1887	10,831	1,204	11·12	4,736	478	10·09	19,135	1,795	9·38
1888	10,510	1,008	9·59	4,777	460	9·63	18,902	1,336	7·07
1889	10,318	972	9·42	4,757	506	10·64	18,457	1,456	7·89
Sums and means	217,229	29,919	13·77	87,489	9,121	10·43	367,141	34,564	9·41

NOTE.—In Western Australia the proportions for the last 4 years were as follows:—1886, 15·48; 1887, 15·68; 1888, 12·38; 1889, 8·79; or an average of 13·08 for the four years.

587. For many years the returns of South Australia showed a very high infantile death rate, much higher than that in any of the other Australian colonies. It has since, however, been stated that the apparently high rate referred to had no existence in reality, but was due to the ages of young children and infants having been incorrectly classified through a misunderstanding on the part of the registering officers. Latterly this has been rectified, with the result that for several years past the infantile death rate of South Australia has compared favourably with that of the other colonies.*

Apparently high infantile death rate in South Australia explained.

588. 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 1889, as in the previous year, was highest in Victoria, although that colony was fourth on the list over a series of years. The reduced rate in South Australia is indicated by the low place it occupies in the list for 1889, as compared with that it occupied in the list extending over a series of years :—

Order of colonies in respect to infantile mortality.

ORDER OF COLONIES IN REFERENCE TO INFANTILE MORTALITY.

Order in 1889.	Order over a Series of Years.
1. Victoria.	1. South Australia.
2. Queensland.	2. Western Australia.†
3. New South Wales.	3. Queensland.
4. Tasmania.	4. Victoria.
5. South Australia.	5. New South Wales.
6. Western Australia.	6. Tasmania.
7. New Zealand.	7. New Zealand.

589. Of all the countries respecting which the information is procurable, infantile mortality is highest in Germany, Austria and Italy. In France it is just below the average of the whole of the countries, and in England it is next below that in France. South Australia stands just below England and Belgium; Western Australia, Queensland and Victoria below these and Denmark and Sweden; New South Wales below these and Scotland; and Tasmania below all these and Norway; New Zealand, with Ireland, stands below all the other countries :—

Infantile mortality in various countries.

INFANTILE MORTALITY IN VARIOUS COUNTRIES.

	Deaths under 1 Year of Age to 100 Births.	Deaths under 1 Year of age to 100 Births.	
Wurtemberg	... 31·25	Alsace-Lorraine	... 21·27
Bavaria	... 30·84	Italy	... 20·97
Saxony	... 28·22	Prussia	... 20·78
Baden	... 26·17	Holland	... 19·32
Austria	... 25·63	Switzerland	... 18·79

* See last edition of this work, Vol. I., paragraph 640.
 † According to an average of 4 years only.

INFANTILE MORTALITY IN VARIOUS COUNTRIES—*continued.*

	Deaths under 1 Year of Age to 100 Births.		Deaths under 1 Year of Age to 100 Births.	
France	16·60		Scotland	12·20
England	14·92		New South Wales	11·43
Belgium	14·82		Norway	10·49
South Australia	13·77		Tasmania	10·43
Denmark	13·75		Ireland	9·50
Sweden	13·19		New Zealand	9·41
Western Australia	13·08			
Queensland	12·97		Mean of the countries named... ..	17·29
Victoria	12·54			

NOTE.—The information respecting all the countries except the Australasian colonies and Ireland is based upon the average of the 19 years ended with 1883. That respecting the Australasian colonies, except Western Australia, which is for 4 years, is based on the average of the 24 years ended with 1889, and that respecting Ireland is for the year 1887. All the figures have been derived from official documents.

Infantile mortality in Melbourne and country.

590. The infantile mortality of large towns is naturally always above that in country districts. Thus the deaths at under 1 year of age in Melbourne and suburbs (Greater Melbourne) during the eighteen years ended with 1890 averaged 17 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. The following table shows the death rate of infants in the metropolis and in the other districts of the colony during each of the eighteen years named:—

INFANTILE MORTALITY IN AND OUTSIDE OF GREATER MELBOURNE, 1873 TO 1890.

Year.	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 ...	8,007	1,277	15·95	20,093	1,904	9·48
1874 ...	7,946	1,480	18·63	18,854	1,861	9·87
1875 ...	8,227	1,546	18·79	18,493	2,265	12·25
1876 ...	8,202	1,339	16·33	18,567	1,641	8·84
1877 ...	8,295	1,407	16·96	17,715	1,892	10·68
1878 ...	8,636	1,297	15·02	17,903	1,965	10·98
1879 ...	8,829	1,467	16·61	18,010	1,752	9·73
1880 ...	8,645	1,439	16·65	17,503	1,666	9·52
1881 ...	9,237	1,514	16·39	17,908	1,605	8·96
1882 ...	9,576	1,857	19·39	17,171	1,865	10·86
1883 ...	10,093	1,603	15·89	17,448	1,547	8·87
1884 ...	10,911	1,832	16·79	17,939	1,449	8·08
1885 ...	12,066	2,041	16·92	17,909	1,730	9·60
1886 ...	12,941	2,309	17·84	17,883	1,615	9·03
1887 ...	14,583	2,553	17·51	18,460	1,743	9·44
1888 ...	15,645	2,688	17·18	18,858	1,713	9·08
1889 ...	16,934	3,290	19·43	19,425	2,259	11·63
1890 ...	17,859	2,571	14·40	19,719	1,841	9·34
Sums and means }	196,632	33,510	17·04	329,858	32,313	9·80

591. 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 favourably 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 Australian 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		

592. In, or in connexion with the Women's Hospital, Melbourne, 748 children were born alive during the year ended with 30th June, 1890, and of these 34, or about 4½ per cent., died whilst under the care of the institution. In the previous year, 4 per cent.; in 1887-8, 3 per cent.; in 1886-7, 4 per cent.; in 1885-6, 4⅔ per cent.; in 1884-5 and 1883-4, 9 per cent.; in the year 1882-3, 7 per cent.; in 1881-2 (18 months), 11½ per cent.; and in the year 1880, 5½ 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. It is satisfactory to find that the proportions in the last and four previous years were the lowest recorded in the institution; at the same time it may be pointed out that, in consequence of the bad class of cases which come to maternity hospitals for treatment, the infants who die in such institutions, in proportion to the numbers born, are, all over the world, in excess of a similar proportion outside.

Deaths of infants in Women's Hospital.

593. In the year 1890, deaths of male children under 5 years of age numbered 3,379, and deaths of female children under that age

Deaths of children under 5.

numbered 3,019—the former being in the proportion of nearly 33 per cent. and the latter of about 40 per cent. to the total number of deaths at all ages. These proportions are considerably below the average; in the case of males the proportion was, with one exception, the lowest in the last 20 years, and in the case of females, the lowest with four exceptions. Thus the mortality of young children of both sexes in 1890 was in striking contrast to that in the preceding year, when it was higher than it had been for several years previously. Comparing the average of 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. The following table shows the number of such deaths at each year of age, and their proportion to the deaths at all ages, in each of the last twenty years:—

DEATHS OF CHILDREN UNDER 5 YEARS OF AGE,
1871 TO 1890.

Years.	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	...	1,710	463	135	79	77	2,464	42·15
1872	...	1,801	486	155	120	102	2,664	42·23
1873	...	1,679	456	186	146	97	2,564	39·06
1874	...	1,839	504	184	159	128	2,814	40·43
1875	...	2,071	917	383	234	217	3,822	44·78
1876	...	1,637	511	312	261	210	2,931	38·04
1877	...	1,838	512	216	123	108	2,797	38·08
1878	...	1,763	465	176	140	87	2,631	36·65
1879	...	1,817	353	159	117	94	2,540	36·12
1880	...	1,669	414	156	103	74	2,416	36·55
Means	...	1,783	508	206	148	119	2,764	39·41
1881	...	1,696	357	141	102	72	2,368	33·71
1882	...	2,049	400	134	87	92	2,762	34·96
1883	...	1,702	358	123	114	95	2,392	32·28
1884	...	1,853	457	162	114	82	2,668	34·76
1885	...	2,046	402	162	106	78	2,794	33·66
1886	...	2,127	467	130	75	69	2,868	33·44
1887	...	2,354	539	149	91	72	3,205	34·79
1888	...	2,390	475	164	139	100	3,268	34·82
1889	...	2,989	668	237	157	129	4,180	37·78
1890	...	2,372	520	207	153	127	3,379	32·59
Means	...	2,158	464	161	114	92	2,989	34·28

DEATHS OF CHILDREN UNDER 5 YEARS OF AGE, 1871 TO 1890
—continued.

Years.	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.
FEMALES.							
1871 ...	1,404	413	136	94	68	2,115	51.93
1872 ...	1,533	473	155	106	94	2,361	52.20
1873 ...	1,502	427	160	132	119	2,340	47.41
1874 ...	1,502	472	171	135	99	2,379	45.58
1875 ...	1,740	864	408	256	169	3,437	51.22
1876 ...	1,343	469	275	217	177	2,481	42.46
1877 ...	1,461	484	171	148	102	2,366	43.57
1878 ...	1,499	481	204	108	95	2,387	43.22
1879 ...	1,402	353	156	100	89	2,100	41.28
1880 ...	1,436	386	143	89	51	2,105	41.75
Means ...	1,482	482	198	139	106	2,407	46.06
1881 ...	1,423	331	124	95	65	2,038	38.61
1882 ...	1,673	358	121	94	86	2,332	40.67
1883 ...	1,448	310	125	86	68	2,037	36.40
1884 ...	1,428	423	182	128	87	2,248	38.56
1885 ...	1,725	370	125	92	75	2,387	39.36
1886 ...	1,797	460	155	76	62	2,550	40.00
1887 ...	1,942	435	146	102	76	2,701	39.77
1888 ...	2,011	400	156	94	85	2,746	39.79
1889 ...	2,560	620	197	127	117	3,621	43.48
1890 ...	2,040	525	182	153	119	3,019	39.50
Means ...	1,805	423	151	105	84	2,568	39.61

594. During the ten years ended with 1880, deaths of male children under 5 numbered 27,643, and deaths of female children under 5 numbered 24,071, and thus the former exceeded the latter by 3,572, or by 15 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. In the ten years ended with 1890, the mortality of boys under 5 amounted to 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. The epidemic periods, 1875 and 1889, are easily recognised by the increased mortality which occurred thereat.

More boys die than girls.

Deaths of
octogenarians.

595. The persons who died at the age of 80 or upwards numbered 647 in 1890, as against 613 in 1889, and 582 in 1888. Those in 1890 consisted of 359 males and 288 females. Fifty-five of the males and 46 of the females had passed the age of 90, and 4 of the males and 4 of the females had passed the age of 100. The following are the exact registered ages of such persons in the last twenty years:—

DEATHS OF OCTOGENARIANS, 1871 TO 1890.

Years of age.	Year 1890.		Eight Years, 1882-89.		Eleven Years, 1871-81.	
	Males.	Females.	Males.	Females.	Males.	Females.
80	68	52	393	263	253	144
81	29	27	219	161	135	98
82	36	26	298	167	119	97
83	38	27	212	132	101	75
84	48	28	254	178	115	79
85	23	16	192	148	91	70
86	19	23	140	117	63	61
87	19	20	119	100	65	46
88	14	20	94	87	48	38
89	10	3	62	62	35	26
90	24	14	54	53	26	37
91	7	4	33	30	10	16
92	6	9	25	27	18	18
93	4	2	23	28	9	8
94	1	3	19	16	14	8
95	...	3	17	16	16	9
96	3	3	9	4	11	4
97	2	1	7	7	3	4
98	2	1	8	7	5	2
99	2	2	6	8	8	...
100	2	...	10	6	2	5
101	...	...	3	4	1	2
102	1	1	5	2	3	...
103	...	...	3	2	1	2
104	...	1	2	2	2	1
105	...	1	1	1	2	...
106	...	...	3	1	...	1
107	...	1	...	1	...	...
108	1	...	...	...	...	...
109	...	...	1	...	...	...
110	...	...	...	...	...	1
111	...	...	1	...	...	...
114	...	...	...	...	...	1
Unspecified	...	...	...	...	135*	98*
Total ...	359	288	2,213	1,630	1,291	951

* These figures are those relating to the years 1871 and 1872, in which the exact ages octogenarians were not noted.

596. In the 9 years ended with 1890, 2,582 males and 1,918 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 79,891 and 59,266 respectively, therefore 1 male and 1 female in every 31 lived to be upwards of 80 years of age. In the same period, 285 of the males, or 1 in 280, and 261 of the females, or 1 in 225, lived to be 90 years of age or upwards; and 33 of the males, or 1 in 2,415, and 23 of the females, or 1 in 2,577, lived to be upwards of 100 years of age. Owing to the rapidly increasing proportion of old people in the population, these proportions are much higher than those prevailing in the preceding period of 9 years ended with 1881, when only 1 male in every 56 males and 1 female in every 58 females who died was upwards of 80 years of age; only one male in 496, and 1 female in 413, was upwards of 90 years; and only 1 male in 5,912, and only 1 female in 3,776, was upwards of 100 years.

Deaths of octogenarians, 1882 to 1890.

597. The average age at death in 1890 was 31·03 years, or a fraction over 31 years. For males the average was 33·57 years, or about 33 years and 7 months, and for females was 27·57 years, or about 27 years and 7 months; the females being thus on the average 6 years younger than the males. Until 1882, the average age at which both males and females died in Victoria had a tendency to advance from year to year, but since then the average has remained tolerably steady—the year 1889, however, being an exception, owing to the high mortality of children in that year having lowered the average—as will be seen by the following figures:—

Average age at death.

AVERAGE AGE AT DEATH IN VICTORIA.

			Males.		Females.
			—		—
			Years.		Years.
23 years—1852 to 1875	...	...	21·70	...	15·01
Year 1875	...	...	24·28	...	18·23
„ 1876	...	...	26·81	...	21·84
„ 1877	...	...	28·60	...	23·06
„ 1878	...	...	29·54	...	23·24
„ 1879	...	...	30·65	...	24·71
„ 1880	...	...	30·72	...	25·35
„ 1881	...	...	32·63	...	25·98
„ 1882	...	...	32·04	...	26·58
„ 1883	...	...	33·13	...	27·55
„ 1884	...	...	32·24	...	27·50

AVERAGE AGE AT DEATH IN VICTORIA—*continued.*

				Males.		Females.
				Years.		Years.
Year	1885	...	...	33·48	...	27·52
	„	1886	...	33·32	...	27·40
	„	1887	...	32·80	...	27·35
	„	1888	...	32·68	...	27·59
	„	1889	...	30·65	...	25·66
	„	1890	...	33·57	...	27·57

Expectation of life in Victoria and England. 598. It should 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 based upon actuarial calculations of a complex character. In England and Wales, according to the most recent life table, the average duration of life—technically called “expectation of life,” or “mean lifetime”—is 41·35 years for males, and 44·62 years for females. In Victoria, according to a life table constructed some time since by Mr. A. F. BurrIDGE, F.I.A., of London, based on the mortality experienced in the 10 years 1871-80, the average duration of life is 46·37 for males, but a table for females was not given. It would thus appear that a male Victorian may expect, on the average, to enjoy 5 years more of life than an Englishman.

New classification adopted in Victoria. 599. 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. The system of classification, now adopted, has superseded that of the late Dr. Farr, which, until the new 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.*

* Paragraph 635 *et seq.*

600. A Nosological Index was compiled by the present writer more than a quarter of a century since, under the sanction of the then Registrar-General, Mr. W. H. Archer, F.I.A., to be used in connexion with Dr. Farr's classification, in order to facilitate the bringing of all the circumstances resulting in death under classified heads, also for the guidance of deputy registrars in receiving, and of medical men in supplying, information respecting the causes of death, and of officers of charitable and other public institutions in preparing statistical tables of the deaths and sickness occurring therein. The adoption of a new system of classification has made it necessary that the Nosological Index should be completely altered to suit the change. This has been done according to the best knowledge possessed by the Department of the Government Statist, Melbourne, the place to be assigned to each disease or cause of death having been carefully considered by experienced officers and compared with the revised nomenclature proposed by the Royal College of Physicians. At the same time the opportunity has been taken greatly to increase the number of entries in the Index.*

Nosological Index.

601. From the date of its publication until the adoption of the new classification in 1886 the former Index had been in general use in the registration departments of all the Australasian colonies, some of which received such a supply of copies as they required from the Victorian Government, and others reprinted the work. Most of the colonies have now adopted the new system. To all the colonies adopting this system the revised Index will be found as indispensable as the former one proved itself to be during a period of twenty-five years in connexion with the system which has been abandoned.

Victorian Index in use throughout Australasia

602. The following table shows the causes of death in classified arrangement; the total number and the number of Chinese and Aborigines who died from each cause during 1890, also the total number who died from each cause during the ten-year periods ended with that year and with 1880 :—

Causes of death classified.

* A copy of the new Nosological Index was published in the *Victorian Year-Book*, 1886-7, page 853 *et seq.*

CAUSES OF DEATH IN CLASSIFIED ARRANGEMENT.
(10 Years: 1871 to 1880, and 1881 to 1890; and Year 1890.)

Class.	Sub-Class.	Causes of Death.*	Number of Deaths.				
			Ten Years:		Year 1890.		
			1871-1880.	1881-1890.	Total †	Chinese	Aborigines.
		All causes	122,570	151,459	18,012	223	29
		CLASSES.					
I.	...	SPECIFIC FEBRILE OR ZYMOTIC DISEASES: — Zymotici (ζύμη, leaven). Diseases of the whole body, dependent on morbid poisons.	28,430	23,270	2,685	10	7
II.	...	PARASITIC DISEASES: — Parasitici (παράσιτος, parasite). Diseases dependent on animal or vegetable parasites.	734	764	67	...	...
III.	...	DIETIC DISEASES: — Dietici (δίαιτα, way of life; diet). Diseases produced by errors of diet.	1,979	2,163	209	2	...
IV.	...	CONSTITUTIONAL DISEASES: — Cachectici (καχεξία, 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."	17,205	24,011	2,917	51	6
V.	...	DEVELOPMENTAL DISEASES: — Metamorphici (μεταμόρφωσις, change of form). Special diseases, the incidental result of the formative and nutritive processes.	6,042	10,617	1,426	20	3
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.	51,209	69,213	8,257	115	10
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.	8,607	9,678	1,165	14	1
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, etc.	8,364	11,743	1,286	11	2

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

† The Chinese and Aborigines are included in this column.

CAUSES OF DEATH IN CLASSIFIED ARRANGEMENT—*continued.*
(10 Years: 1871 to 1880, and 1881 to 1890; and Year 1890.)

Class.	Sub-Class.	Causes of Death.	Number of Deaths.				
			Ten Years :		Year 1890.		
			1871-1880.	1881-1890.	Total.*	Chinese.	Aborigines.
SUB-CLASSES.							
I.	1	Miasmatic diseases ...	15,459	10,949	1,682	5	3
	2	Diarrhoeal diseases ...	11,036	10,375	799	4	3
	3	Malarial diseases ...	213	72	4	...	...
	4	Zoogenous diseases ...	1	8	2	...	...
	5	Venereal diseases ...	377	425	60	...	...
	6	Septic diseases ...	1,344	1,441	138	1	1
II.	...	Parasitic diseases ...	734	764	67	...	...
III.	...	Dietic diseases ...	1,979	2,163	209	2	...
IV.	...	Constitutional diseases ...	17,205	24,011	2,917	51	6
V.	...	Developmental diseases ...	6,042	10,617	1,426	20	3
VI.	1	Diseases of the nervous system ...	13,532	15,999	1,779	19	1
	2	Diseases of the organs of special sense	?	80	21	...	...
	3	Diseases of the circulatory system...	6,804	10,651	1,407	26	1
	4	Diseases of the respiratory system...	15,534	21,285	2,428	54	6
	5	Diseases of the digestive system ...	11,240	14,949	1,801	10	2
	6	Diseases of the lymphatic system and ductless glands	44	105	25	...	...
	7	Diseases of the urinary system ...	1,875	3,767	495	6	...
	8	Diseases of the organs of generation	295	339	56	...	...
	9	Diseases of parturition ...	1,267	1,213	137	...	...
	10	Diseases of the organs of locomotion	290	375	59	...	...
	11	Diseases of the integumentary system	328	450	49	...	...
VII.	1	Accident or negligence ...	7,447	8,274	1,003	10	1
	2	Homicide ...	190	290	39	...	...
	3	Suicide ...	951	1,101	123	4	...
	4	Execution ...	19	13	...	...	...
VIII.	...	Ill-defined causes, or unspecified ...	8,364	11,743	1,286	11	2
DISEASES, ETC.							
I.	1	Small-pox ...	2	7	...	...	...
		Chicken-pox ...	13	14	2	...	...
		Measles ...	2,080	534	1	...	...
		Epidemic rose rash ...	...	8	1	...	...
		Scarlet fever ...	4,101	430	68	...	...
		Influenza ...	276	398	164	...	3
		Whooping-cough ...	1,974	1,392	98	...	...
		Mumps ...	...	7	1	...	...
		Diphtheria † ...	3,040	2,566	734	1	...
		Cerebro-spinal fever ...	...	7	2	...	...
		Simple continued fever	3,973	5,585	611	4	...
		Typhoid (or enteric) fever					
		Others ...	...	1	...	...	...
	2	Cholera (simple) ...	523	834	82	...	...
		Diarrhoea ...	7,667	8,304	612	2	2
		Dysentery ...	2,846	1,237	105	2	1
	3	Remittent fever ...	169	42	2	...	...
		Beri Beri ...	...	3	...	...	...

* The Chinese and Aborigines are included in this column.

† See also Croup (VI., 4).

CAUSES OF DEATH IN CLASSIFIED ARRANGEMENT—*continued.*
(10 Years: 1871 to 1880, and 1881 to 1890; and Year 1890.)

Class.	Sub-Class.	Causes of Death.	Number of Deaths.					
			Ten Years.		Year 1890.			
			1871-1880.	1881-1890.	Total.	Chinese.	Aborigines.	
		DISEASES, ETC.— <i>continued.</i>						
I.	3	Ague	44	27	2	...	...
	4	Glanders	1	...	...	...	...
		Cow-pox and other effects of vaccination	?	8*	2	...	...
	5	Syphilis	286	332	45	...	...
		Gonorrhœa, stricture of the urethra	91	93	15	...	...
	6	Phagadæna	?	5*	1	...	...
		Erysipelas	619	426	27	1	...	
		Pyæmia, septicæmia †	264	370	48	...	...
		Puerperal fever ‡	461	640	62	...	1	
II.	...	Thrush	327	220	14	...	...
		Others from vegetable parasites ...	?	1*	...	...	...
		Hydatids	379	537	53	...	...
		Others from animal parasites ...	28	6	...	...	...
III.	...	Starvation, want of breast-milk ...	1,322	1,192	101	2	...	
		Scurvy §	?	6*	...	...	...
		Intemperance	646	950	103	...	...
		Other dietic diseases	11	15	5	...	...
IV.	...	Rheumatic fever, rheumatism of heart	817	799	87	...	1	
		Rheumatism						
		Gout	133	197	29	...	...
		Rickets	?	16	2	...	...
		Cancer, malignant disease || ...	2,957	4,864	626	12	1	
		Tabes mesenterica	723	1,192	114	...	...
		Tubercular meningitis (acute hydrocephalus)	1,394	1,714	212	...	...
		Phthisis	10,155	14,090	1,631	39	3	
		Other forms of tuberculosis, scrofula, etc.	780	594	110	..	1	
		Purpura, hæmorrhagic diathesis ¶ ...	100	114	11	...	...
		Anæmia, chlorosis, leucocythæmia**	?	136*	47	...	...
		Diabetes mellitus ††	146	268	43	...	...
		Other constitutional diseases ...	?	27*	5	...	...
V.	...	Premature birth	2,715	3,860	486	...	1	
		Atelectasis ††	?	191*	47	...	...
		Cyanosis	203	275	30	...	...
		Spina bifida	108	105	10	...	...
		Imperforate anus						
		Cleft palate, harelip	289	334	58	...	...
		Other congenital defects						
		Old age	2,727	5,852	795	20	2	

* For 5 years only.

† A few cases 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 scurvy prior to 1886.

|| Including lupus 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, and diabetes undefined.

‡‡ Included with debility (VIII.) prior to 1886.

CAUSES OF DEATH IN CLASSIFIED ARRANGEMENT—*continued.*
(10 Years : 1871 to 1880, and 1881 to 1890; and Year 1890.)

Class.	Sub-Class.	Causes of Death.	Number of Deaths.					
			Ten Years.		Year 1890.			
			1871-1880.	1881-1890.	Total.	Chinese.	Aborigines.	
		DISEASES, ETC.— <i>continued.</i>						
VI.	1	Inflammation of brain or its membranes	2,383	2,265	119	...	...
		Apoplexy	2,750	3,520	362	6	...	
		Softening of brain	†	*393	62	...	...
		Hemiplegia, brain paralysis	1,596	2,661	389	9	1	
		Paralysis, undefined						
		Insanity (general paralysis of insane)						
		Chorea	20	21	...	...	...
		Epilepsy	588	851	97	...	...
		Convulsions	3,390	3,471	465	1	...	
		Laryngismus stridulus	?	*15	4	...	...
		Idiopathic tetanus	2,805	2,802	281	3	...	
		Paraplegia, diseases of spinal cord						
		Other diseases of nervous system						
	2	Otitis, otorrhœa†	?	*61	19	...	...
		Epistaxis and diseases of nose†	?	*14	2	...	...
		Ophthalmia and diseases of eye†	?	*5	...	...	...
	3	Endocarditis, valvular disease	377	1,405	310	5	...	
		Pericarditis						
		Hypertrophy of heart‡						
		Angina pectoris‡	?	*90	9	...	...
		Syncopè‡	?	*51	10	...	...
		Aneurism	?	*619	219	1	...	
		Senile gangrene§	?	*69	17	...	...
		Embolism, thrombosis	5,642	7,747	769	19	1	
		Phlebitis						
		Varicose veins						
		Other diseases of the circulatory system						
	4	Laryngitis	359	518	49	...	...
		Croup || ... ..	1,897	2,004	297	...	...
		Other diseases of larynx and trachea	?	*26	3	...	...
		Asthma, emphysema	392	635	79	4	...	
		Bronchitis	4,588	6,574	715	15	4	
		Pneumonia	5,077	7,875	891	23	2	
		Congestion of the lungs	1,812	1,955	187	5	...	
		Pleurisy	811	1,127	131	3	...	
		Others	598	571	76	4	...	
	5	Stomatitis¶	3	64	17	...	...
		Dentition	1,469	1,273	134	...	1	
		Sore throat, quinsy	153	130	31	...	...

* For five years only.

† Included with other diseases of 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.

¶ 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: 1871 to 1880, and 1881 to 1890; and Year 1890.)

Class.	Sub-Class.	Causes of Death.	Number of Deaths.					
			Ten Years.		Year 1890.			
			1871-1880.	1881-1890.	Total.*	Chinese.	Aborigines.	
		DISEASES, ETC.— <i>continued.</i>						
VI.	5	Dyspepsia	1,971	3,861	322	1	1	
		Hæmatemesis						
		Melæna						
		Diseases of stomach						
		Enteritis						
		Ulceration of intestines						
		Ileus, obstruction of intestine						
		Stricture or strangulation of intestine						
		Intussusception of intestine						
		Hernia						
		Fistula						
		Peritonitis						
		Ascites						
		Gallstones	3,623	4,176	382	2	...	
		Cirrhosis of liver						
		Other diseases of liver						
		Other diseases of the digestive system	3	80	23	...	...
	6	Diseases of lymphatic system	?	*36	13	...	...
		Disease of spleen	44	39	3	...	...
		Bronchocele	?	15	4	...	...
		Addison's disease†	?	*15	5	...	...
	7	Nephritis	218	536	105	...	...
		Bright's disease	749	1,837	226	4	...	
		Uræmia†	?	*156	23	...	...
		Suppression of urine	29	76	12	...	...
		Calculus	48	104	8	...	...
		Hæmaturia†	?	*15	4	...	...
		Diseases of bladder and prostate	203	520	99	...	...
		Other diseases of the urinary system	628	523	18	2	...	
	8	Ovarian disease	44	125	27	...	...
		Diseases of the uterus and vagina... ..	170	132	15	...	...
		Disorders of menstruation	52	47	5	...	...
		Pelvic abscess‡	?	*13	4	...	...
		Perineal abscess‡	?	*8	2	...	...
		Diseases of the testes, penis, scrotum, etc.	29	14	3	...	...
	9	Abortion, miscarriage	1,267	1,213	137	...	...
		Puerperal mania						
		Puerperal convulsions						
		Placenta prævia, flooding						
		Phlegmasia dolens						
		Other accidents of childbirth						
	10	Caries, necrosis§ ... ..	...	*123	36	...	...
		Arthritis, ostitis, periostitis	87	132	10	...	...
		Other diseases of the organs of locomotion	203	120	13	...	...

* 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: 1871 to 1880, and 1881 to 1890; and Year 1890.)

Class.	Sub-Class.	Causes of Death.	Number of Deaths.					
			Ten Years :		Year 1890.			
			1871-1880.	1881-1890.	Total.	Chinese.	Aborigines.	
		DISEASES, ETC.— <i>continued.</i>						
VI.	11	Carbuncle	37	53	4	...	...
		Phlegmon, cellulitis	20	61	12	...	...
		Lupus†	?	*11	2	...	...
		Ulcer, bed sore	86	107	11	...	...
		Eczema						
		Pemphigus			16	...	...
		Other diseases of the integu- mentary system	185	218	4	...	...
VII.	1	Fractures, contusions	3,152	3,564	407	3	1	
		Wounds	262	274	21	...	...
		Burn, scald	885	941	110	...	...
		Sunstroke	218	233	69	...	...
		Lightning	25	26	2	...	...
		Poison	178	204	22	4	...	
		Bite of snake or insect	37	38	2	...	...
		Drowning	1,937	2,064	228	...	...
		Suffocation	625	648	103	1	...	
		Otherwise	128	282	39	2	...	
	2	Murder and manslaughter	190	290	39	...	...
	3	Gunshot wounds	69	203	25	...	...
		Cut, stab	185	181	22	1	...	
		Poison	188	183	17	...	...
		Drowning	217	206	20	...	...
		Hanging	256	278	32	3	...	
		Suicide by other means	36	50	7	...	...
VIII.	4	Judicial hanging	19	13	...	...	...
		Dropsy‡	613	457	43	...	...
		Debility, atrophy, inanition§	6,987	10,309	1,139	8	2	
		Mortification	131	92	4	...	...
		Tumour	269	325	23	...	...
		Abscess	38	95	10	...	...
		Hæmorrhage ... ..	...		6	...	...
		Sudden (cause unascertained) ... ..	...	465	14	3	...
		Causes not specified	326		47	...	...

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

* For five years only.
 † Included with cancer (IV.) prior to 1886.
 ‡ Including anæmia (IV.) prior to 1886.
 § Including atelectasis (V.) prior to 1886.

CAUSES OF DEATH IN ORDER OF FATALITY.

(10 Years : 1871-80, and 1881-90; and Year 1890.)

Order of Fatality.			Causes of Death.	Number of Deaths.		
Ten Years : 1871-80.	Ten Years : 1881-90.	Year 1890.		Ten Years : 1871-80.	Ten Years : 1881-90.	Year 1890.
1	1	1	Phthisis	10,155	14,090	1,631
4	2	2	Heart disease, etc., exclusive of aneurism and pericarditis, endocarditis and valvular disease	5,642	8,576	1,024
3	4	3	Accidents	7,447	8,274	1,003
5	5	4	Pneumonia	5,077	7,875	891
16	7	5	Old age	2,727	5,852	795
11	18	6	Diphtheria	3,040	2,566	734
6	6	7	Bronchitis	4,588	6,574	715
12	9	8	Cancer, malignant disease	2,957	4,864	626
2	3	9	Diarrhoea	7,667	8,304	612
8	8	10	Typhoid (or enteric) and simple continued fever	3,973	5,585	611
19	15	11	Enteritis	2,134	2,838	592
17	12	12	Premature birth	2,715	3,860	486
10	14	13	Convulsions	3,390	3,471	465
26	17	14	Hemiplegia, paralysis, insanity	1,596	2,661	389
9	10	15	Liver diseases not classed	3,623	4,176	382
15	13	16	Apoplexy	2,750	3,520	362
22	11	17	Dyspepsia, and other diseases of the stomach	1,971	3,861	322
48	25	18	Endocarditis, pericarditis, valvular disease	377	1,405	310
23	20	19	Croup (including diphtheritic croup)	1,897	2,004	297
14	16	20	Diseases of spinal cord and other diseases of nervous system	2,805	2,787	281
36	23	21	Bright's disease	749	1,837	226
28	24	22	Tubercular meningitis (acute hydrocephalus)	1,394	1,714	212
25	22	23	Childbirth and puerperal fever	1,728	1,853	199
24	21	24	Congestion of the lungs	1,812	1,955	187
52	52	25	Influenza	276	398	164
41	34	26	Malformation	600	905	145
27	27	27	Dentition	1,469	1,273	134
32	30	28	Pleurisy	811	1,127	131
30	31	29	Suicide	951	1,101	123
18	19	30	Inflammation of brain or its membranes	2,383	2,265	119
37	29	31	Tabes mesenterica	723	1,192	114
35	32		Peritonitis	771	1,014	114
34	42	32	Other forms of tuberculosis, scrofula, etc.	780	594	110
13	28	33	Dysentery	2,846	1,237	105
54	45		Nephritis	218	536	105
38	33	34	Intemperance	646	950	103
29	29	35	Starvation, want of breast milk	1,322	1,192	101
55	48	36	Diseases of bladder and prostate	203	520	99
21	26	37	Whooping-cough	1,974	1,392	98
43	36	38	Epilepsy	588	851	97
31	38	39	Rheumatic fever and rheumatism	817	799	87

CAUSES OF DEATH IN ORDER OF FATALITY—*continued.*

(10 Years : 1871-80, and 1881-90; and Year 1890.)

Order of Fatality.			Causes of Death.	Number of Deaths.		
Ten Years : 1871-80.	Ten Years : 1881-90.	Year 1890.		Ten Years : 1871-80.	Ten Years : 1881-90.	Year 1890.
44	37	40	Cholera (simple)	523	834	82
46	40	41	Asthma, emphysema	392	635	79
42	43	42	Diseases of the respiratory system not classed	598	571	76
45	41	43	Ileus, obstruction of intestine ...	424	621	74
33	39	44	Aneurism	785	670	73
7	50	45	Scarlet fever	4,101	430	68
...	53	46	Softening of the brain*	?	‡393	62
47	44	47	Hydatids	379	537	53
49	49	48	Laryngitis	359	518	49
53	54	49	Pyæmia, septicæmia	‡264	370	48
...	65	50	Anæmia, chlorosis, leucocythcemia ...	?	‡136	47
51	55	51	Syphilis	286	332	45
64	58	52	Diabetes mellitus	146	268	43
56	56	53	Hernia	191	304	40
57	57	} 54 {	Murder and manslaughter	190	290	39
62	59		Ulceration of intestines	160	231	39
...	69	55	Caries, necrosis	?	‡123	36
63	67	56	Sore throat, quinsy	153	130	31
65	62	57	Gout	133	197	29
73	68	} 58 {	Ovarian disease	44	125	27
40	51		Erysipelas	619	426	27
83	77	} 59 {	Diseases of the digestive system not classed	3	80	23
...	63		Uræmia	?	‡156	23
...	77	60	Diseases of the eye and ear (and nose?)	?	‡80	21
67	64	61	Intussusception of intestine ...	93	139	19
39	47	62	Diseases of the urinary system not classed	628	523	18
83	79	63	Stomatitis	3	64	17
...	...	64	Eczema †	?	?	16
60	66	} 65 {	Diseases of the uterus and vagina ...	170	132	15
68	75		Gonorrhœa, stricture of urethra ...	91	93	15
50	60	66	Thrush... ..	327	220	14
55	70	} 67 {	Diseases of the organs of locomotion not classed	203	120	13
...	85		Diseases of the lymphatic system ...	?	‡36	13
75	78	} 68 {	Suppression of urine	29	76	12
77	80		Phlegmon, cellulitis	20	61	12
66	71	} 69 {	Purpura, hæmorrhagic diathesis ...	100	114	11
70	73		Ulcer, bedsore	86	107	11
69	66	70	Arthritis, ostitis, periostitis ...	87	132	10
72	74	71	Calculus	48	104	8
73	76	72	Stricture or strangulation of intestine	44	83	7
71	82	} 73 {	Disorders of menstruation	52	47	5
...	86		Constitutional diseases not classed ...	...	‡27	5
81	91	} 73 {	Dietic diseases not classed	11	15	5
...	91		Addison's disease	?	‡15	5

* Included with diseases of spinal cord and other diseases of nervous system prior to 1886.
 † See diseases of integumentary system not classed. ‡ For 5 years only.

CAUSES OF DEATH IN ORDER OF FATALITY—*continued.*
(10 Years : 1871-80, and 1881-90; and Year 1890.)

Order of Fatality.			Causes of Death.	Number of Deaths.			
Ten Years : 1871-80.	Ten Years : 1881-90.	Year 1890.		Ten Years : 1871-80.	Ten Years : 1881-90.	Year 1890.	
58	61	74	Diseases of the integumentary system not classed	185	218	4	
59	72		Ascites	184	113	4	
74	81		Carbuncle	37	53	4	
...	91		Laryngismus stridulus	?	*15	4	
...	91		Hæmaturia	?	*15	4	
...	93		Pelvic abscess	?	*13	4	
...	91		Bronchocele	?	*15	4	
73	84	75	Disease of spleen	44	39	3	
...	87		Diseases of the larynx and trachea not classed	?	*26	3	
79	88		Fistula	17	22	3	
75	92		Diseases of testes, penis, scrotum, etc.	29	14	3	
61	83		Remittent fever	169	42	2	
73	86		Ague	44	27	2	
...	90		Rickets	?	*16	2	
80	92	76	Chicken-pox	13	14	2	
...	94		Lupus	?	*11	2	
...	95		Perineal abscess	?	*8	2	
...	95		Cow-pox and other effects of vaccination	?	*8	2	
...	96		Cerebro-spinal fever	?	*7	2	
20	46		77	Measles	2,080	534	1
...	98			Phagadæna	*5	1
...	96	Mumps		?	*7	1	
...	95	Epidemic rose-rash		?	*8	1	
76	96	Other parasitic diseases		28	7	...	
...	99	Beri Beri		?	*3	...	
...	97	Scurvy		?	*6	...	
77	89	Chorea	20	21	...		
84	96	Small-pox	2	7	...		
85	...	Glanders	1	...	...
78	93	Judicial hanging	19	13	...		
...	91	Idiopathic tetanus	?	*15	...		
...	100	Other miasmatic diseases ... ..	...	1	...	
Deaths from well-defined causes...				114,206	139,716	16,726	
Deaths from "atrophy and debility" and other ill-defined and unspecified causes				8,364	11,743	1,286	
Deaths from all causes				122,570	151,459	18,012	

Death rate from various causes in Victoria and England.

604. 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

* For five years only.

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 year 1890, the decennial periods ended with that year and with 1880, and the results for England and Wales to the five years ended with 1880 :—

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

Class.	Sub-Class.	Causes of Death.	Number of Annual Deaths per 100,000 of Mean Population.			
			Victoria.			England and Wales.
			Year 1890.	Average of 10 Years : 1881-1890.*	Average of 10 Years : 1871 to 1880.	Average of 5 Years : 1876 to 1880.
		All causes	1,610·37	1,512·50	1,538·01	2,081·74
		CLASSES.				
I.	...	Specific febrile or zymotic diseases	240·05	232·38	356·74	332·00
II.	...	Parasitic diseases	5·99	7·63	9·21	5·74
III.	...	Dietic diseases	18·69	21·60	24·83	6·72
IV.	...	Constitutional diseases ...	260·80	239·78	215·89	358·26
V.	...	Developmental diseases ...	127·49	106·02	75·82	163·14
VI.	...	Local diseases	738·22	691·18	642·57	1,004·80
VII.	...	Violent deaths	104·16	96·64	108·00	72·00
VIII.	...	Ill-defined and not specified causes	114·97	117·27	104·95	139·08
		SUB-CLASSES AND DISEASES.				
I.	1	Miasmatic diseases	150·38	109·34	193·98	219·26
		Measles	·09	5·33	26·10	38·54
		Scarlet fever	6·08	4·29	51·46	68·04
		Diphtheria†	65·62	25·62	38·15	12·18
		Whooping-cough	8·76	13·90	24·77	52·76
		Typhoid or enteric fever, etc.	54·63	55·77	49·85	34·66
	2	Diarrhœal diseases	71·43	103·61	138·48	85·40
		Diarrhœa	54·72	82·92	96·21	} 83·36
		Dysentery	9·39	12·35	35·71	
	3	Malarial diseases	·36	·72	2·67	·74
	4	Zoogenous diseases	·18	·08	·01	·36
	5	Venereal diseases	5·36	4·24	4·73	9·56
	6	Septic diseases	12·34	14·39	16·87	16·68
		Puerperal fever (see also Childbirth and Puerperal <i>infra</i>)	5·54	6·39	5·78	6·20

* Approximate.

† Deaths from diphtheritic croup are not included with those from diphtheria, but under the head of croup, which is classed as a disease of the respiratory system, Class VI., Sub-Class 4.

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

Class.	Sub-Class.	Causes of Death.	Number of Annual Deaths per 100,000 of Mean Population.			
			Victoria.			England and Wales.
			Year 1890.	Average of 10 Years : 1881-1890.	Average of 10 Years : 1871 to 1880.	Average of 5 Years : 1876 to 1880.
		SUB-CLASSES AND DISEASES.				
IV.	...	Constitutional diseases—				
		Rheumatism, rheumatic fever, and gout	10·37	9·95	11·92	...
		Cancer, malignant disease	55·97	48·57	37·10	49·60
		Phthisis	145·82	140·71	127·42	204·24
		Other tubercular and scrofulous diseases	38·98	34·95	36·35	77·87
V.	...	Developmental diseases—				
		Of children (premature birth or malformation)	56·41	47·58	41·60	55·80
		Of old age	71·08	58·44	34·22	107·34
VI.	...	Diseases of the systems—				
	1	Nervous (brain diseases, etc.)	159·05	159·77	169·80	277·80
	2	Organs of special sense (nose, ear, and eye diseases)	1·88	?	?	1·34
	3	Circulatory (heart diseases, etc.)	125·79	106·36	85·37	141·70
	4	Respiratory (lung diseases, etc.)*	217·08	212·56	194·92	395·50
	5	Digestive (stomach, bowel, liver diseases, etc.)	161·02	149·28	141·04	117·60
	6	Lymphatic, and ductless glands	2·24	1·05	·55	1·26
	7	Urinary (kidney, bladder diseases, etc.)	44·26	37·62	23·53	37·50
	8	Generative (diseases of ovary, uterus, and vagina, etc.)	5·00	3·39	3·70	5·88
	9	Childbirth (see also Childbirth and puerperal fever <i>infra</i>)	12·25	12·11	15·90	7·96
	10	Locomotive (arthritis, ostitis, etc.)	5·27	3·75	3·64	10·78
	11	Integumentary (carbuncle, phlegmon, ulcer, etc.)	4·38	4·49	4·12	7·48
VII.	1	Accident or negligence	89·67	82·63	93·45	63·12
	2	Homicide	3·49	2·89	2·38	1·40
	3	Suicide	11·00	10·99	11·93	7·38
	4	Execution ... ..	...	·13	·24	·10
I. VI.	6 } 9 }	Childbirth and puerperal fever	17·79	18·50	21·68	14·16

NOTE.—See notes to table following paragraph 602 *ante*.

* Deaths from diphtheritic croup are not included with those from diphtheria, but under the head of croup, which is classed as a disease of the respiratory system, Class VI., Sub-Class 4.

605. By means of the results shown in 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,* typhoid fever, diarrhœal diseases, dietic diseases (including want of breast-milk and alcoholism), parasitic diseases (including thrush, hydatids, etc.); diseases of the stomach, bowels and liver ; violent deaths of all kinds ; and the consequences of childbirth. From every other cause shown, also from all causes combined, the death rate is, on the average, higher in England and Wales than in Victoria.

Diseases more fatal in Victoria than in England.

606. It should be explained that under the altered nosological classification, which has now been in force for five 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 not distinguishable. 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.

New nosology prevents returns from being strictly comparable.

607. Per 100,000 of the population, 240 deaths in 1890 were set down to specific febrile or zymotic diseases. The proportion was slightly above the average of the decade 1881-90, but nearly one-third below the average of the decade 1871-80, during which period, in consequence of the prevalence of epidemics, the rate of mortality from this class of complaints was somewhat higher than in England. Of the 240 deaths referred to, 150 were set down to miasmatic diseases, 71 to diarrhœal diseases, 12 to septic diseases, 5 to venereal diseases, and only a fraction to malarial and zoogenous diseases. Of miasmatic diseases, the most prominent in Victoria is typhoid fever, which caused 55 deaths per 100,000 of the population in 1890, as compared with as many as 82 in 1889, and about 53 according to the average of the last twenty years, which is about 50 per cent. higher than in England. Diphtheria, which in 1890 caused nearly half the deaths from miasmatic diseases, or more deaths than typhoid fever, has during the last three years been gradually growing more fatal ; thus in 1890 the mortality therefrom was 66 per 100,000 as compared with 48 in 1889,

Specific febrile or zymotic diseases.

* There is some difficulty in making comparisons in the case of diphtheria, as diphtheritic croup, which is generally classed with croup, may sometimes be classed with diphtheria. See footnote to last table.

and 28 in 1888, the average of the last 10 years being only 26, and of the previous decade 38. The mortality from diarrhoeal diseases in 1890 (71 per 100,000) was considerably lower than in 1889, lower by a third than during the decade 1881-90, and scarcely half as high as in the decade 1871-80. The mortality from most of the other zymotic diseases, except scarlet fever and venereal diseases, was considerably below the average of the last ten years.

Zymotic diseases, etc., in Australasian colonies.

608. 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 disease 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

Results compared in different colonies.

609. 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 population as well as to the mortality from all causes than it was in any of the other Australasian colonies 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.

Small-pox in various countries.

610. 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 three 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, that being the period of the last outbreak. It may not, however, be uninteresting to give some statistics of deaths from small-pox in other countries, material for which 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:—

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		

611. Although cases of small-pox have rarely occurred in Victoria, ^{Vaccina-}parents are required by law to cause their children to be vaccinated. ^{tions.}In 1890 the number of cases of successful vaccination performed in Victoria was 25,502; and, as the number of births was 37,578, it appears that 68 per cent. of the children born were vaccinated. This proportion is lower than that in 1889, and considerably below the average of the last 15 years. Part of the remainder are accounted for by death—3,094, or over 8 per cent., of those born having died before they were 6 months old. The average proportion of vaccinations to infants born is 76 per cent., as is seen by reference to the following figures, which indicate the proportions during each of the 15 years ended with 1890:—

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

PROPORTION OF VACCINATIONS TO BIRTHS, 1876 TO 1890.

			Vaccinations Per 100 Births.				Vaccinations Per 100 Births.
1876	...	...	80	1885	...	...	69
1877	...	...	87	1886	...	...	70
1878	...	...	82	1887	...	...	78
1879	...	...	82	1888	...	...	67
1880	...	...	73	1889	...	...	70
1881	...	...	100*	1890	...	...	68
1882	...	...	75				76
1883	...	...	67	Mean of 15 years			76
1884	...	...	74				76

Vaccina-
tions in
various
countries.

612. 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	Italy	...	...	73
Scotland	...	...	88	Germany	...	...	71
Norway	...	...	87	South Australia (1878 to 1887)	...	...	69
England and Wales	...	...	86	New Zealand (1886 to 1887)...	...	...	68
Hungary	...	...	86	France	...	...	64
Holland	...	...	82	Russia in Europe	...	...	56
Sweden	...	...	80	Tasmania (1878 to 1887)	...	...	55
Austria	...	...	78	New South Wales(1878 to 1887)	...	...	25
Victoria (1878 to 1887)	...	...	77				

Vaccina-
tions in
Australasia
and else-
where.

613. 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 are 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 are vaccinated.

Cost of
vaccina-
tion.

614. The number of public vaccinators in Victoria is 200, and the amount paid in 1890 for vaccinations, including fees to Deputy-Registrars and travelling allowances to vaccinators, was £5,112.

Efficacy of
vaccina-
tion.

615. Doubts having been from time to time expressed as to the efficacy of vaccination in preventing or modifying the effects of small-pox, the following abridged extract from the Report of the Board of Health of the City of New York for the year 1890‡ may prove of interest:—

* 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*, etc., page 189.

‡ Page 41, *et seq.* : Martin B. Brown, 49 Park Place, New York, 1891.

“Small-pox is fatal to a very large proportion of those whom it attacks. It kills from thirty to forty per cent. of its victims. It has been described with great accuracy by very early writers; nevertheless, its history previous to the seventeenth century is obscure, and must be regarded defective on account of its having been confounded with measles and other forms of eruptive disease. During the seventeenth and eighteenth centuries not a decade passed without an occurrence of fearful epidemics of small-pox. In England from seven to nine per cent. of all the deaths were due to it. It was one of the most destructive diseases, attacking, as it did, persons in every station of life. In Berlin one-twelfth of all the deaths were caused by small-pox during the years 1783 to 1794. In France, during the same period, 30,000 perished annually from it. During the sixteenth century, in Mexico, 3,500,000 persons died of small-pox. In 1734 nearly two-thirds of the population of Greenland were swept away by an epidemic of the disease, and in Iceland 18,000 persons died out of a population of 50,000.

“Before the introduction of vaccination small-pox had become a permanent disease which never entirely ceased in any one year, and every three or five years became a great epidemic. In non-epidemic years, one-tenth of all mortality was from variola; in epidemic years, one-half. Very few men escaped small-pox till old age, almost every one sickened at least once in his life of this horrible, murderous disease. Countless mortals were maimed by loss of sight. Of new-born children one-third died of small-pox before their first-year; one-half before their fifth year of life. There was no family which had not heavy losses to deplore. In the country the mortality was greater than it was in the city. Physicians and Government possessed no means against this abominable evil. Isolation was impracticable, from the widespread nature of the disease. Men accepted the pest as an unavoidable fate. The loss which Europe suffered from this one disease amounted to many millions. It was the principal factor which deterred or kept back the population from progress, and to lead us back to these conditions are the efforts of many ignorant mortals directed.

“We now find no mortality among vaccinated children. Also among adults, whenever vaccination and re-vaccination are maintained, mortality from small-pox is at an end. The death rate from small-pox previous to 1876 was 59·57 per 100,000 persons living; since that year it has been only 8·38 per 100,000. In Paris, where vaccination is not energetically enforced, the death rate from small-pox ranges from 136 to 10·1 per 100,000. In the principal German cities, where vaccination laws are enforced with rigour, the death rate from small-pox is 1·44 per 100,000 inhabitants. In London, where compulsory vaccination is rigidly enforced, the death rate from small-pox is only ·6 per 100,000. In the Canton of Zurich, Switzerland, since the compulsory vaccination law was repealed, the mortality from small-pox has risen from 8 to 85 per 100,000 inhabitants.

“When small-pox prevails in a community where some are protected by vaccination and others are not, the influence of vaccination is strikingly exhibited. In observations shown for 21 years on 4,000,000 people in Bohemia, it was discovered that the death rate among vaccinated persons in whom the protective power had diminished by reason of age was $5\frac{1}{16}$ per cent., while among those who had never been vaccinated it was $29\frac{1}{2}$ per cent. Illustrations of this kind could be multiplied, as almost countless authentic statistics exist.

“In New York the first question asked by the inspector of contagious diseases of a person sick with a doubtful case of small-pox is: ‘When were you successfully vaccinated?’ and if the answer indicates it was done a period of five or six years before, the disease is believed not to be small-pox. During over nine years of service in the Health Department of New York there has been no instance of small-pox in a person who had been vaccinated successfully within five years, and the number of cases seen by the inspectors mount into hundreds. During that period only one inspector of contagious diseases has contracted small-pox, and he was the only inspector who disbelieved in vaccination, and refused to have it performed on himself.”

616. The seven zymotic diseases which chiefly affect children are measles, scarlet fever, diphtheria, croup, whooping-cough, dysentery, and diarrhoea. The following table shows the number of deaths from

Zymotic
diseases
affecting
children.

such diseases which occurred during the twenty-seven years ended with 1890, the annual means of the seven years 1864-70, and of the decades 1871-80 and 1881-90 being also given :—

DEATHS FROM ZYMOTIC DISEASES CHIEFLY AFFECTING CHILDREN,
1864 TO 1890.

Year.	Number of Deaths from—							
	Measles.	Scarlet Fever.	Diph- theria.	Croup.	Whooping Cough.	Dysen- tery.	Diarrhœa.	Total.
1864 ...	7	278	451	160	25	243	528	1,692
1865 ...	11	215	391	171	304	402	864	2,358
1866 ...	427	462	331	132	365	525	1,027	3,269
1867 ...	630	621	334	115	205	430	986	3,321
1868 ...	24	460	451	194	243	220	640	2,232
1869 ...	24	224	493	162	100	306	858	2,167
1870 ...	3	24	418	99	50	244	706	1,544
Annual mean } 1864-1870	160·9	326·3	409·9	147·6	184·5	338·5	801·3	2,369·0
1871 ...	4	27	255	90	318	316	626	1,636
1872 ...	7	135	320	121	227	424	747	1,981
1873 ...	1	188	420	142	299	357	629	2,036
1874 ...	256	120	375	159	151	325	846	2,232
1875 ...	1,541	985	239	135	58	509	1,002	4,469
1876 ...	5	2,240	201	173	13	202	675	3,509
1877 ...	6	183	359	315	245	254	963	2,325
1878 ...	5	136	336	331	291	197	877	2,173
1879 ...	3	61	337	275	193	140	698	1,707
1880 ...	252	26	198	156	179	122	604	1,537
Annual mean } 1871-1880	208·0	410·1	304·0	189·7	197·4	284·6	766·7	2,360·5
1881 ...	62	86	114	125	167	115	671	1,340
1882 ...	15	89	122	142	109	182	968	1,627
1883 ...	7	59	131	167	48	139	885	1,436
1884 ...	233	34	162	181	209	78	643	1,540
1885 ...	69	14	152	180	168	115	827	1,525
1886 ...	20	14	121	160	209	115	906	1,545
1887 ...	78	4	199	191	129	138	933	1,672
1888 ...	30	21	301	282	21	109	817	1,581
1889 ...	19	41	530	279	234	141	1,042	2,286
1890 ...	1	68	734	297	98	105	612	1,915
Annual mean } 1881-1890	53·4	43·0	256·6	200·4	139·2	123·7	830·4	1,646·7

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.

Children's
zymotic
diseases,
1890.

617. As compared with the previous year, a slight increase took place in 1890 in the mortality from scarlet fever, and a marked increase in that from diphtheria and croup, but a decrease from all

the other diseases named in the table, especially from measles and diarrhoea, the mortality from the latter disease being the lowest recorded during the last ten years, whilst only 1 death was set down to the former. Taken as a whole, these diseases in 1890 caused 371 fewer deaths than in 1889, but a much larger number than in any previous year since 1878.

618. Measles in a fatal form appears to be non-existent in Victoria Measles. at the present time. An epidemic of that complaint occurred in 1884, and caused in that and the following year 302 deaths, or 12 less than resulted from the preceding epidemic of the same complaint in 1880 and 1881. Neither of these outbreaks of measles was so serious in its effects as the two previous ones of 1874-5 and 1866-7, when the resulting deaths numbered 1,797 and 1,057 respectively. Per 10,000 of the population, the proportion of deaths from measles was .17 in 1889 and .86 in the ten years ended with 1887, the latter 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) ... ..	.86
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, and 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.

619. On the occasion of the earlier visitations of measles in Scarlet fever. 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

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

complaint; but no such calamity has attended the last two outbreaks of measles, during the whole period of which, especially the last outbreak, 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 last ten years, or an average of 43 per annum; as against 5,101, or an average of 510 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 1890, scarlet fever caused 68 deaths, or .61 per 10,000 of the population, as against .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 last ten years was lower than the average prevailing in any of the following countries, 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 ... .. .59
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.

620. 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 9.11 in 1890, 7.32 in 1889, 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 years, is lower than that for any of the foreign countries of which information is at

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

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

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, Volume I., paragraph 664.

621. Deaths from whooping-cough in 1890 were in the proportion of ·88, in 1889 of 2·12, in the last ten years of 1·34, 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, Volume I., paragraph 666.

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

Typhoid
fever.

622. Typhoid fever* caused 611 deaths in 1890, or only two-thirds of the number which took place in the previous year, when it was exceptionally prevalent. The rate of mortality from this complaint in 1890 was 5·46 per 10,000 persons living, which is about the average proportion ; although in 1889 it was as high as 8·39. During the last 25 years the death rate from typhoid fever has fluctuated considerably, but, nevertheless, there were four pretty 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 two principal ones appear to be 1871-3 and 1880-81, when the average rate was below 4 per 10,000 ; and 1885, when it was a little above that proportion. Typhoid fever causes, on the average, nearly 3¼ per cent. of the total deaths from all causes, and as many as 13 per cent. of those at between 10 and 25 years of age. The following table shows the number of deaths from typhoid fever, and their proportion to the population, during each of the past 25 years :—

DEATHS FROM TYPHOID FEVER, 1866 TO 1890.†

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	1880	297	3·49
1867	455	7·06	1881	351	4·04
1868	295	4·45	1882	472	5·30
1869	360	5·24	1883	661	7·27
1870	416	5·83	1884	456	4·89
1871	269	3·65	1885	424	4·44
1872	323	4·29	1886	530	5·39
1873	282	3·68	1887	631	6·22
1874	470	6·04	1888	541	5·14
1875	455	5·78	1889	910	8·37
1876	375	4·71	1890	611	5·46
1877	532	6·58			
1878	532	6·48	Mean ...	464	5·49
1879	438	5·25			

* A useful circular issued under the direction of the Central Board of Health, describing the symptoms of typhoid fever, and 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.

† 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.

‡ Rates since 1882 revised and corrected since last publication.

623. The following table shows the mortality from typhoid fever in all the Australasian colonies, except Western Australia, during the seventeen years ended with 1889, or during as many of those years as the information is available for:—

Typhoid fever in Australasian colonies.

DEATHS FROM TYPHOID FEVER* IN AUSTRALASIAN COLONIES, 1873 TO 1889.

Year.	Number of Deaths from Typhoid Fever.					
	Total.	Per 10,000 Persons Living.	Total.	Per 10,000 Persons Living.	Total.	Per 10,000 Persons Living.
	VICTORIA.		NEW SOUTH WALES.		QUEENSLAND.	
1873 ...	282	3·68	...	...	67	4·78
1874 ...	470	6·04	...	...	78	5·03
1875 ...	455	5·78	298	5·10	158	9·16
1876 ...	375	4·71	401	6·64	72	3·91
1877 ...	532	6·58	375	5·96	105	5·38
1878 ...	532	6·48	441	6·70	197	9·53
1879 ...	438	5·25	265	3·84	132	6·16
1880 ...	297	3·49	240	3·31	54	2·03
1881 ...	351	4·04	266	3·50	85	3·30
1882 ...	472	5·30	450	5·66	166	6·31
1883 ...	661	7·27	397	4·76	255	8·89
1884 ...	456	4·89	516	5·86	563	19·10
1885 ...	424	4·44	503	5·40	541	17·52
1886 ...	530	5·39	591	6·03	408	12·27
1887 ...	631	6·22	434	4·24	245	6·91
1888 ...	541	5·14	441	4·14	228	6·04
1889 ...	910	8·35	571	5·17	385	9·56
Total ...	8,357	5·54	6,189	5·09	3,739	7·99
	SOUTH AUSTRALIA.		TASMANIA.		NEW ZEALAND.	
1873 ...	68	3·48	24	2·32	127	4·41
1874 ...	97	4·82	44	4·22	161	5·05
1875 ...	94	4·53	50	4·81	340	9·47
1876 ...	92	4·22	26	2·49	195	5·03
1877 ...	84	3·63	41	3·86	133	3·26
1878 ...	106	4·37	50	4·61	131	3·11
1879 ...	101	3·97	38	3·42	208	4·64
1880 ...	63	2·39	29	2·55	177	3·73
1881 ...	85	2·95	33	2·81	137	2·78
1882 ...	116	5·03	36	2·98	128	2·51
1883 ...	135	4·51	64	5·15	182	3·44
1884 ...	151	4·89	50	3·89	118	2·15
1885 ...	145	4·63	30	2·27	128	2·26
1886 ...	106	3·39	47	3·47	134	2·30
1887 ...	153	4·88	112	8·01	168	2·82
1888 ...	120	3·77	84	5·82	139	2·30
1889 ...	137	4·26	113	7·59	121	1·97
Total ...	1,883	4·10	871	4·13	2,727	3·60

* 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.

Deaths from typhoid fever in the colonies, 1889, and previous years compared.

624. In New Zealand, the death-rate from typhoid fever in 1889 was below, but in all the other colonies it was above the average, especially in Queensland, Victoria, and Tasmania. In Queensland the mortality from typhoid fever in 1884 and the two following years was simply enormous, amounting to 19, $17\frac{1}{2}$, and $12\frac{1}{4}$ per 10,000 of the population in the three years respectively; whilst the rate in 1889, although considerably lower than those years, was higher than in any of the other years named. Moreover, the rate in Victoria in 1889 was higher than any previous year shown in the table, and that in Tasmania was higher than in any previous year except 1887.

Typhoid fever in England and Wales.

625. 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 Tasmania and New Zealand. During the ten years ended with 1880 the mean death rate therefrom was 4·30, but in the seven years ended with 1888 only 2·41 per 10,000 persons living, the latter being far lower than even the minimum rate (3·49) recorded in Victoria during the last twenty-seven years.

Typhoid and typhus in various countries.

626. 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		

* 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.

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

627. Deaths from venereal diseases numbered 377 in the ten years ended with 1880, 425 in the ten years with ended 1890, and 60 in 1890, being in the ratio per 10,000 of the population annually of .47 at the first period, of .42 at the second period, and of .54 at the last period. If deaths from syphilis be considered apart from those caused by other venereal diseases, the numbers at the same periods would be 286, 332, and 45, and the proportions .36, .33, and .40, which contrast favourably with those in six of the ten following countries :—

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

	Per 10,000 Persons Living.		Per 10,000 Persons Living.
Italy ... ..	... 1.65	Scotland ... ..	... .63
Sweden (towns) ...	... 1.16	Massachusetts ...	... .32
Scotland (8 towns)	... 1.01	Switzerland ... ..	... .24
Denmark (towns)	... .94	Ireland ... ..	... .16
England and Wales	... .84	Holland ... ..	... .11

628. 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.”

629. Parasitic diseases, chief amongst which are thrush and hydatids, caused 6 deaths in 1890 per 100,000 of the population, which was $1\frac{2}{3}$ below the average of the ten years ended with 1890, and $3\frac{1}{4}$ below the average of the ten years 1871 to 1880. These diseases are more prevalent in Victoria than in England.

630. 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 eighteen years ended with 1890 has caused 872 deaths, or an average of 48 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, and for the whole period 5.36. In the last six years, however, the mortality from hydatids was much below that of the previous six years. The following are the figures for the last eighteen years :—

* See Dr. Raseri's paper, page 193.

† *The Australian Race*, Vol. I., page 227.

DEATHS FROM HYDATIDS, 1873 TO 1890.

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	1883 ...	56	6·16
1874 ...	41	5·27	1884 ...	59	6·33
1875 ...	47	5·97	1885 ...	47	4·92
1876 ..	36	4·52	1886 ...	51	5·18
1877 ...	37	4·57	1887 ...	51	5·02
1878 ...	37	4·50	1888 ...	53	5·03
1879 ...	60	7·19	1889 ...	61	5·61
1880 ...	48	5·64	1890 ..	53	4·75
1881 ...	48	5·50			
1882 ...	58	6·52	Mean ...	48	5·36

Hydatids in Australasian colonies.

631. According to the returns of the eight years ended with 1889, 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, etc. In such cases inquiry should be made as to whether the "disease" referred to was hydatid disease or not, which may possibly not be done so rigidly in the other colonies as it is in Victoria, and for this reason the mortality from the complaint may appear to be relatively higher here than it really is:—

DEATHS FROM HYDATIDS IN AUSTRALASIAN COLONIES, 1882 TO 1889.

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	1·51	3	1·26
1883 ...	56	6·16	10	1·20	4	1·50
1884 ...	59	6·33	20	2·27	8	2·71
1885 ...	47	4·92	28	2·92	3	·97
1886 ...	51	5·18	23	2·35	Nil.	...
1887 ...	51	5·02	27	2·64	1	·28
1888 ...	53	5·03	22	2·07	Nil.	...
1889 ...	61	5·61	24	2·09	3	·72
Total ...	436	5·60	166	2·13	22	·93

* Rates revised and corrected since last publication.

DEATHS FROM HYDATIDS IN AUSTRALASIAN COLONIES,
1882 TO 1889—*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	3·31	7	1·37
1883 ...	6	2·01	4	3·22	1	19
1884 ...	13	4·21	6	4·67	3	55
1885 ...	5	1·60	2	1·51	3	·53
1886 ...	18	5·76	2	1·46	4	·68
1887 ...	9	2·87	3	2·15	3	·50
1888 ...	13	4·09	2	1·39	5	·83
1889 ...	11	3·36	5	3·25	2	·32
Total ...	87	3·50	28	2·62	28	·62

NOTE.—In Western Australia only 1 death in 1888, but none in the other years were set down to this disease.

632. Hydatid disease is much more fatal in all the Australasian colonies than it is in England and Wales, where there were only 54 deaths from it in 1888, or a proportion of ·19 per 100,000 persons living, as compared with a mean of ·20 in the five years 1881 to 1885.†

Hydatids in
England.

633. Dietic diseases, consisting principally of want of breast milk and alcoholism, caused nearly 19 deaths in 1890 per 100,000 persons living, which was 7 lower than in 1889, and 3 below the average of the last ten years. These diseases appear to be nearly four times as fatal in Victoria as in England.

Dietic
diseases.

634. In 1890, 103 deaths were set down to intemperance—of which 15 ended with delirium tremens—as against 116 in 1889, 130 in 1888, and an average of 95 during the last ten years, and of 65 in the ten years preceding that period. These figures furnish annual proportions per million persons living of 92 for 1890, 105 for 1889, 122 for 1888, 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 was increasing. As a matter of fact, however, returns of the mortality from intemperance are of doubtful

Intemper-
ance.

* Rates corrected since last publication.

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

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

635. 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. Under this class there were, in 1890, 261 deaths per 100,000 of the population, or 21 more than the average of the decade 1881-90, and 45 above the average of the decade 1871-80. Of the 261 deaths per 100,000 referred to, 146 resulted from phthisis, or pulmonary consumption; 56 were set down to cancer; 39 to tabes mesenterica, acute hydrocephalus and other tubercular or scrofulous diseases; and 20 to other constitutional diseases.

636. Phthisis, or pulmonary consumption, caused 1,631 deaths in 1890, or 60 more than in the previous year. Except during the prevalence of epidemics, phthisis is the occasion of more deaths in Victoria than any other disease;† next to phthisis, diarrhæa is usually the most fatal disease on the list (although in 1890 eight diseases stood before it), but this complaint causes barely three-fifths 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

* Page 186.

† See table following paragraph 603 *ante*.

Constitutional diseases.

Phthisis.

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 each of the last thirty years:—

DEATHS FROM PHTHISIS IN VICTORIA, 1861 TO 1890.

Year.	Deaths from Phthisis.		Year.	Deaths from Phthisis.	
	Total Number.	Number per 10,000 Persons Living.*		Total Number.	Number per 10,000 Persons Living.*
1861 ...	753	13·94	1877 ...	1,088	13·46
1862 ...	707	12·90	1878 ...	1,124	13·68
1863 ...	717	12·74	1879 ...	1,058	12·69
1864 ...	686	11·70	1880 ...	1,175	13·82
1865 ...	741	12·12	1881 ...	1,199	13·80
1866 ...	782	12·43	1882 ...	1,274	14·33
1867 ...	793	12·31	1883 ...	1,212	13·32
1868 ...	746	11·25	1884 ...	1,359	14·58
1869 ...	893	12·99	1885 ...	1,384	14·48
1870 ...	888	12·45	1886 ...	1,375	13·98
1871 ...	841	11·41	1887 ...	1,557	15·34
1872 ...	876	11·63	1888 ...	1,528	14·51
1873 ...	945	12·34	1889 ...	1,571	14·44
1874 ...	1,011	13·00	1890 ...	1,631	14·61
1875 ...	1,027	13·04	Total in 30 years	31,951	13·36
1876 ...	1,010	12·68			

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

637. By the figures in the table it appears that the death rate from phthisis fell with tolerable steadiness from 1861 to 1871, but since that period there has, on the whole, been a gradual increase. During the whole period of thirty years the deaths from this complaint were in the proportion of $13\frac{1}{3}$ to every 10,000 persons living; during the first ten of those years that proportion was about $12\frac{1}{2}$ (12·483); in the second ten it was nearly $12\frac{3}{4}$ (12·742), and in the last ten it was 14 (14·09). It must, however, be borne in mind that the proportions living at the ages at which phthisis is most fatal, viz., between 15 and 45, have also increased. It will be observed that the death rate from phthisis in 1890 (14·61 per 10,000) was higher than in any previous year of the period, except 1887.

* For figures of mean population used in making these calculations, (see table "Breadstuffs Available for Consumption" in Part "Production" in the second volume. The rates since 1881 have been revised and corrected since last publication.

Deaths of
males and
females
from
phthisis.

638. Phthisis in Victoria generally affects males more heavily than females. In 1890, 1,012 of the former, and 619 of the latter, died of that complaint; the males being in the proportion of 17·17, but the females of only 11·70, per 10,000 of their respective sexes living.

Ages at
death from
phthisis.

639. The following table gives the number of deaths from phthisis at each age in 1890; also the proportion which such deaths bore to the total deaths from all causes in 1890 and in the decennial period 1881-90:—

DEATHS FROM PHTHISIS, 1890 AND 1881-90.—AGES AT DEATH.

Ages.	Number who Died from Phthisis, 1890.			Percentage of Deaths from Phthisis to those from all Causes.	
	Males.	Females.	Total.	1890.	Ten Years : 1881-90.
Under 5 years ..	10	7	17	·27	·40
5 to 10 „ ...	7	5	12	1·80	2·40
10 „ 15 „ ...	10	14	24	6·38	7·91
15 „ 20 „ ...	36	58	94	19·26	21·96
20 „ 25 „ ...	122	114	236	30·97	31·91
25 „ 35 „ ...	281	196	477	29·26	31·42
35 „ 45 „ ...	169	111	280	23·53	22·16
45 „ 55 „ ...	148	65	213	15·52	15·33
55 „ 65 „ ...	170	35	205	9·72	9·06
65 „ 75 „ ...	45	13	58	3·28	3·32
75 years and upwards	14	1	15	1·20	·74
Total ...	1,012	619	1,631	9·06	9·30

Phthisis
most fatal
to adults.

640. 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 1890, at the age-periods 35 and upwards, were either about the same as, or somewhat above, the average; but at the age-periods under 35, it was below the average. In the year under review, about one-fourth of the deaths in the colony between the ages of 20 and 45, nearly one-fifth of those between 15 and 20, and nearly a sixth of those between 45 and 55, were caused by phthisis.

Phthisis in
Melbourne
and
country.

641. Of the 1,631 deaths from phthisis in 1890, 948 occurred in Melbourne and suburbs (Greater Melbourne) and 683 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 thirty years:—

DEATHS FROM PHTHISIS PER 10,000 PERSONS LIVING IN AND
OUTSIDE GREATER MELBOURNE, 1861 TO 1890.

Year.	Greater Melbourne.	Extra-Metropolitan Districts.	Year.	Greater Melbourne.	Extra-Metropolitan Districts.*
1861	23·44	10·63	1877	22·74	9·29
1862	24·64	8·71	1878	22·62	9·63
1863	23·71	8·79	1879	21·77	8·45
1864	20·08	8·70	1880	23·95	8·92
1865	22·11	8·57	1881	22·71	9·45
1866	20·42	9·53	1882	23·09	10·04
1867	21·56	8·87	1883	22·27	8·82
1868	20·83	7·63	1884	24·45	9·35
1869	23·87	8·83	1885	23·92	9·12
1870	22·49	8·56	1886	21·25	9·54
1871	22·08	7·20	1887	23·22	10·36
1872	18·69	8·62	1888	21·55	9·82
1873	20·51	8·77	1889	20·73	10·04
1874	22·04	8·94	1890	20·02	10·59
1875	21·46	9·25			
1876	22·46	8·28	Means	22·16	9·11

642. In England and Wales, in the twenty-five years ended with 1888, the death rate from phthisis, per 10,000 persons, ranged from 25·33 in 1866 to 15·41 in 1888, the mean of the first five years of the period having been as high as 25·10, whilst that of the last five years was as low as 16·83.† The latter proportion, though considerably lower than that of Greater Melbourne, is still much 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.

Death rate from phthisis in England.

643. Of the 223 Chinese who died in Victoria in 1890, 39, or 17 per cent., fell victims to phthisis. In the last ten years 16 per cent. of the deaths of Chinese were from phthisis.

Phthisis among Chinese.

644. Three out of the 29 deaths of Aborigines in 1890 were set down to phthisis. It is stated on good authority that phthisis is the

Phthisis among aborigines.

* Rates since 1881 revised and corrected since last publication.

† See Fifty-first Report of the Registrar-General of England, page xlvi.

chief cause of the death of the Australian Aborigines, who, when once affected, very seldom recover.

645. The rate of mortality from phthisis in Victoria would appear, by the calculations in the following table, to have been, over a series of years, slightly higher than in Queensland, and much higher than in any other of the Australasian colonies. It will be observed that the figures of the other colonies in the several years exhibit more variation than those of Victoria, and that Queensland is the only colony besides Victoria in which the rate in any of the years exceeded 13 per 10,000; also that the rate in Queensland in 1884 and 1885, viz., 19 per 10,000, was most exceptionally high* :—

DEATHS FROM PHTHISIS IN AUSTRALASIAN COLONIES,
1873 TO 1889.

Year.	Number of Deaths from Phthisis.					
	Total.	Per 10,000 Persons Living. †	Total.	Per 10,000 Persons Living.	Total.	Per 10,000 Persons Living.
	VICTORIA.		NEW SOUTH WALES.		QUEENSLAND.	
1873 ...	945	12·34	...	...	145	10·35
1874 ...	1,011	13·00	...	...	163	10·51
1875 ...	1,027	13·04	614	10·50	228	13·22
1876 ...	1,010	12·68	616	10·21	260	14·12
1877 ...	1,088	13·46	597	9·49	225	11·53
1878 ...	1,124	13·68	652	9·91	263	12·72
1879 ...	1,058	12·69	746	10·80	281	13·12
1880 ...	1,175	13·82	803	11·06	301	13·56
1881 ...	1,199	13·80	874	11·50	292	13·21
1882 ...	1,274	14·33	927	11·66	404	17·00
1883 ...	1,212	13·32	948	11·36	471	17·58
1884 ...	1,359	14·58	1,018	11·56	572	19·40
1885 ...	1,384	14·48	1,078	11·58	593	19·20
1886 ...	1,375	13·98	1,051	10·73	494	14·86
1887 ...	1,557	15·34	977	9·56	441	12·43
1888 ...	1,528	14·51	1,045	9·82	492	13·04
1889 ...	1,571	14·44	1,025	9·28	470	11·84
Total ...	20,897	14·36	12,971	10·60	6,095	13·98

* 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, and that the diminished mortality since 1884-5 is probably to some extent due to the gradual decrease of the Polynesian element, viz., from $4\frac{1}{2}$ per cent. in 1884 to only $2\frac{1}{2}$ per cent. in 1887-8 of the total population. Nearly half the deaths from phthisis in 1884 and 1885, and nearly two-fifths in 1886 and 1887, were of Polynesians, although they form a very small section of the total population. Excluding the Polynesians from the calculation, the death rate from phthisis in Queensland in 1884 was only 10·4, in 1885 only 10·5, in 1886 only 9·2, in 1887 only 10·2, and in 1888 only 8·75 per 10,000. It is stated that the general death rate of Polynesians in Queensland during 1884 was as high as 148, and during 1885 as high as 99, per 1,000.

† Rates since 1882 corrected since last publication.

DEATHS FROM PHTHISIS IN AUSTRALASIAN COLONIES,
1873 TO 1889—*continued.*

Year.	Number of Deaths from Phthisis.					
	Total.	Per 10,000 Persons Living.	Total.	Per 10,000 Persons Living.	Total.	Per 10,000 Persons Living.
	SOUTH AUSTRALIA.		TASMANIA.		NEW ZEALAND.	
1873 ...	153	7·84	115	11·10	206	7·16
1874 ...	179	8·89	101	9·69	270	8·47
1875 ...	209	10·07	114	10·97	339	9·45
1876 ...	226	10·36	102	9·75	307	7·92
1877 ...	203	8·78	127	11·95	326	7·98
1878 ...	267	11·00	115	10·60	326	7·73
1879 ...	271	10·66	90	8·09	399	8·90
1880 ...	277	10·51	113	9·95	447	9·42
1881 ...	274	9·49	115	9·80	468	9·28
1882 ...	341	11·77	127	10·52	438	8·60
1883 ...	313	10·47	139	11·18	500	9·45
1884 ...	323	10·46	145	11·29	498	9·07
1885 ...	307	9·80	145	10·97	514	9·08
1886 ...	339	10·85	145	10·57	500	8·48
1887 ...	353	11·27	154	11·01	534	8·95
1888 ...	365	11·48	116	8·04	476	7·86
1889 ...	289	8·99	121	8·13	499	8·13
Total...	4,689	10·16	2,084	10·21	7,047	8·58

646. 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, and 2,067 in 1890. These numbers furnish proportions per 10,000 of the population of 16·38 deaths annually at the first period, 17·59 at the second, and 18·48 at the last, which 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.
Austria (principal towns) ...	72·20
Austria ...	38·39
Belgium (towns) ...	35·11
Germany (principal towns) ...	34·40
Massachusetts ...	34·25

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

ANNUAL DEATH RATE FROM TUBERCULAR DISEASES IN VARIOUS COUNTRIES, 1881 TO 1884*—*continued.*

	Deaths from Tubercular Diseases per 10,000 persons living.
Switzerland (towns)	32·50
Sweden (towns)	31·61
Scotland (8 towns)	31·12
Prussia	30·88
Belgium	30·48
Denmark (towns)	30·42
Spain (towns)	29·24
Scotland	25·93
Italy	25·54
Ireland	22·43
Switzerland	21·79
England and Wales	21·09
Holland	19·73
Spain	12·32

Prevention
of tuber-
culosis.

647. The following is an abridgment of an important report on the prevention of tuberculosis which was prepared by the Pathologists of the Health Department of the city of New York, and published in the report of the Board of Health of that city for the year 1890†:—

“The disease known as tuberculosis, and when affecting the lungs, as pulmonary tuberculosis (consumption), is very common in the human being and in certain of the domestic animals, especially cattle. About one-fourth of all deaths occurring in the human being during adult life is caused by it, and nearly one-half of the entire population at some time in life acquires it. The disease is the same in nature, in animals and in man, and has the same cause. It has been proven beyond a doubt that a living germ, called the tubercle bacillus, is the cause, and the only cause, of tuberculosis. It may affect any organ of the body, but most frequently first involves the lungs. When the living germs find their way into the body they multiply there, if favourable conditions for their growth exist, and produce new growths or nodules (tubercles), which tend to soften. The discharges from these softened tubercles, containing the living germs, are thrown off from the body. In pulmonary tuberculosis these discharges constitute, in part, the expectoration. The germs thus thrown off do not grow outside the living human or animal body, except under artificial conditions, although they may retain their vitality and virulence for long periods of time, even when thoroughly dried. As tuberculosis can only result from the action of these germs, it follows from what has just been said that when the disease is acquired it must result from receiving into the body the living germs that have come from some other human being or animal affected with the disease.

“It has been abundantly established that the disease may be transmitted by meat or milk from tubercular animals. The milk glands in milch cows often become affected with the disease when their lungs are involved, and the milk from such animals may contain the living germs, and is capable of producing the disease. Among stall-fed dairy cows twenty per cent. or thirty per cent. are sometimes found to be affected with the disease. Tubercular animals are also frequently killed for food; their flesh sometimes contains the germs, and if not thoroughly cooked is capable of transmitting the disease. Boiling the milk or thoroughly cooking the meat destroys the germs. Although the meat and milk from tubercular animals constitute actual and important sources of danger, the disease is acquired, as a rule, through its communication from man to man.

* See footnote (*) on page 379.

† Page 38 *et seq.*

“Tuberculosis is commonly produced in the lungs (which are the organs most frequently affected) by breathing air in which the living germs are suspended as dust. The material which is coughed up, sometimes in large quantities, by persons suffering from consumption, contains these germs, often in enormous numbers. This material, when expectorated frequently, lodges in places where it afterwards dries, as on the streets, floors, carpets, clothing, handkerchiefs, etc. After drying, in one way or another, it is apt to become pulverised and float in the air as dust. It has been shown, experimentally, that dust collected from the most varied points in hospital wards, asylums, prisons, private houses, etc., where consumptive patients are present, or have been present, is capable of producing tuberculosis in animals when used for their inoculation. Such dust may retain for weeks its power of producing the disease. On the other hand, dust collected from rooms in institutions or houses that have not been occupied by tubercular patients does not produce the disease when used for the inoculation of animals. These observations show that where there are cases of pulmonary tuberculosis, under ordinary conditions the dust surrounding them often contains the tubercle bacilli, and persons inhaling the air in which this dust is suspended may be taking in the living germs. It should, however, be distinctly understood that the breath of tubercular patients, and the moist sputum received in proper cups, are not elements of danger, but only the dried and pulverised sputum. The breath and moist sputum are free from danger, because the germs are not dislodged from moist surfaces by currents of air. If all discharges were destroyed at the time of exit from the body, the greatest danger of communication from man to man would be removed.

“It is a well-known fact that some persons, and especially the members of certain families, are particularly liable to tuberculosis, and this liability can be transmitted from parents to children. So marked and so frequent is this liability, and so frequent is the development of the disease in particular families, that the affection has long been considered hereditary. We now know that tuberculosis can only be caused by the entrance of the germ into the body; and that this transmitted liability simply renders the individual a more easy prey to the living germs when once they have gained entrance. The frequent occurrence of several cases of pulmonary tuberculosis in a family is then to be explained, not on the supposition that the disease itself has been inherited, but that it has been produced after birth by transmission from some affected individual. Where the parents are affected with tuberculosis, the children from the earliest moments of life are exposed to the disease under the most favourable condition for its transmission, for, not only is the dust of the house likely to contain the bacilli, but the relationship also between parents and children, especially between the mother and the child, are of that close and intimate nature especially favourable for the transmission by direct contact.

“If, then, tuberculosis is not inherited, the question of prevention resolves itself principally into the avoidance of tubercular meat and milk, and the destruction of the discharges, especially the sputum, of tubercular individuals. As to the first means of communication, those measures of prevention alone answer the requirements which embrace the governmental inspection of dairy cows and of animals slaughtered for food, and the rigid exclusion and destruction of all those found to be tubercular. For the removal of the second means of communication, *i.e.*, the sputum of tubercular individuals, the problem is simple when the patients are confined to their rooms or houses; then wooden or pasteboard cups with covers should always be at hand for the reception of the sputum. These cups may be supported in simple racks, and at least once daily, or more frequently if necessary, should be removed from the racks and thrown with their contents into the fire.

“The disposition of the expectoration of persons who are not confined to their rooms or homes is a far more difficult problem. The expectoration certainly should not be discharged on the street, and the only practicable means for its collection seems to be in handkerchiefs, which when soiled should at the earliest moment be soaked in a solution of five per cent. of carbolic acid, and then boiled and washed. Handkerchiefs thus soiled are exceedingly dangerous factors in distributing tubercle bacilli; for when the sputum becomes dry it is easily separated in flakes from the cloth, and then soon becomes pulverised and suspended as dust. It becomes evident from what has been said that the means which will most certainly prevent the spread of this

disease from one individual to another, are those of scrupulous cleanliness regarding the sputum. These means lie largely within the power of the affected individual. It is furthermore to be remembered that consumption is not always, as was formerly supposed, a fatal disease, but that it is in very many cases a distinctly curable affection. An individual who is well on the road to recovery, may, if he does not with the greatest care destroy his sputum, diminish greatly his chances of recovery by self inoculation.

“While the greatest danger of the spread of the disease from the sick to the well is in private houses and in hospitals, yet, if this danger is thoroughly appreciated, it is, for the most part, quite under control, through the immediate destruction of the sputum, and the enforcement of habits of cleanliness. But in places of public assembly, such as churches and theatres, particularly the latter, the conditions are different, and the safety would seem to depend largely upon a dilution and partial removal of the floating and possibly dangerous dust by means of adequate ventilation. Rooms in private houses and hospital wards that are occupied by phthisical patients should from time to time be thoroughly cleaned and disinfected, and this should always be done after they are vacated before they are again occupied by other individuals. Steamship companies should be obliged to furnish separate apartments for consumptive persons, so that no person in the exigencies of travel need be forced to share his room with one who might be a source of active danger to him.”

Deaths from
cancer in
Victoria.

648. Next to phthisis, the most fatal of the constitutional diseases is cancer. This complaint caused 626 deaths in 1890, or 3 fewer than in the previous year. Cancer in a fatal form has been much increasing of late years, for during the ten years ended with 1880 it caused only 1 death in every 41 from all causes, but in the last ten years the proportion had risen to 1 in 29; moreover since 1861 the death rate from it has increased steadily from less than 2 to over 5 per 10,000 of the population; whilst in 1889 and 1890 the exceptionally high rates of 5·8 and 5·5 were reached—the highest previous to those years being only 5·12. The following table shows the number of deaths from cancer, and the number per 10,000 persons living, in each of the last thirty years:—

DEATHS FROM CANCER, 1861 TO 1890.

Year.	Deaths from Cancer.			
	Total Number.			Number of 10,000 Persons Living.
	Males.	Females.	Total.	
1861	52	50	102	1·89
1862	30	50	80	1·46
1863	58	45	103	1·83
1864	55	72	127	2·17
1865	81	70	151	2·47
1866	52	64	116	1·84
1867	63	57	120	1·87
1868	95	88	183	2·76
1869	85	99	184	2·68
1870	109	105	214	3·00

DEATHS FROM CANCER, 1861 TO 1890—*continued.*

Year.	Deaths from Cancer.			
	Total Number.			Number per 10,000 Persons Living.*
	Males.	Females.	Total.	
1871	100	93	193	2·62
1872	130	96	226	3·00
1873	122	128	250	3·27
1874	146	122	268	3·45
1875	168	140	308	3·91
1876	150	153	303	3·80
1877	169	160	329	4·07
1878	182	132	314	3·82
1879	205	178	383	4·59
1880	202	181	383	4·50
1881	172	179	351	4·04
1882	208	165	373	4·19
1883	234	216	450	4·95
1884	221	225	446	4·79
1885	234	211	445	4·66
1886	247	249	496	5·04
1887	275	252	527	5·19
1888	276	245	521	4·95
1889	324	305	629	5·78
1890	338	288	626	5·49
Total in 30 years ...	4,783	4,418	9,201	3·84

649. Cancer is a complaint which generally affects females more than males.† In the thirty years of which mention is made in the table, 92 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 1889, 94 females, and in 1890, 85 females died of cancer to every 100 males, although, in the population, females over the age of 30 were probably in the proportion of about 78 to every 100 males.

Proportions
of the sexes
who died of
cancer.

650. Judging from the experience of the eight years ended with 1889, cancer is much more fatal in Victoria than in any other Australasian colony except Tasmania, the rate in which is only slightly below the Victorian rate. Tasmania is a colony in which—as cancer is essentially a complaint of advanced life—the large proportion of old people would naturally lead to the expectation of a high death rate therefrom. The following are the figures for the eight years referred to:—

Cancer
in Austral-
asian colo-
nies.

* Rates since 1881 revised and corrected since last publication.

† 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, and of 74 at the census of 1881, to every 100 males.

DEATHS FROM CANCER IN AUSTRALASIAN COLONIES, 1882 TO 1889.

Colony.	Year.	Number of Deaths from Cancer.	
		Total.	Per 10,000 Persons Living.
Victoria ...	1882	373	4·19
	1883	450	4·94
	1884	446	4·78
	1885	445	4·65
	1886	496	5·04
	1887	527	5·18
	1888	521	4·94
	1889	629	5·77
	Mean of 8 years	486	4·94
New South Wales ...	1882	215	2·71
	1883	215	2·58
	1884	233	2·65
	1885	267	2·87
	1886	333	3·40
	1887	354	3·46
	1888	404	3·80
	1889	393	3·56
	Mean of 8 years	302	3·13
Queensland ...	1882	54	2·27
	1883	70	2·61
	1884	94	3·19
	1885	53	1·71
	1886	92	2·68
	1887	81	2·28
	1888	88	2·33
	1889	130	3·27
	Mean of 8 years	83	2·54
South Australia ...	1882	89	3·07
	1883	86	2·88
	1884	109	3·53
	1885	100	3·19
	1886	104	3·33
	1887	110	3·51
	1888	116	3·65
	1889	133	4·14
	Mean of 8 years	106	3·41
Western Australia ...	1882	9	2·96
	1883	10	3·20
	1884	10	3·09
	1885	17	4·99
	1886	15	3·74
	1887	17	4·08
	1888	18	4·25
	1889	20	4·65
	Mean of 8 years	15	3·87

DEATHS FROM CANCER IN AUSTRALASIAN COLONIES,
1882 TO 1889—*continued.*

Colony.	Year.	Number of Deaths from Cancer.	
		Total.	Per 10,000 Persons Living.
Tasmania... ..	1882	60	4·97
	1883	67	5·39
	1884	65	5·06
	1885	60	4·54
	1886	57	4·16
	1887	67	4·79
	1888	68	4·71
	1889	70	4·70
	Mean of 8 years	64	4·79
New Zealand	1882	147	2·88
	1883	158	2·99
	1884	191	3·48
	1885	177	3·13
	1886	214	3·63
	1887	238	3·99
	1888	263	4·34
	1889	260	4·24
	Mean of 8 years	206	3·59

651. In England and Wales there has for years past been a progressive increase in the death rate from cancer. This rate, in the three years ended with 1888, 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* :—

Deaths from cancer in England and Wales.

DEATHS FROM CANCER IN ENGLAND AND WALES.

	Deaths from Cancer per 10,000 persons living.			Deaths from Cancer per 10,000 persons living.
1861 to 1865	3·68	1886	...	5·83
1866 to 1870	4·04	1887	...	6·06
1871 to 1875	4·46	1888	...	6·10
1876 to 1880	4·95			
1881 to 1885	5·45	Mean	...	4·76

652. According to the following figures, cancer would appear to be less fatal in Victoria and Tasmania than in any of the countries

Deaths from cancer in various countries.

* See Forty-sixth Annual Report, page xviii.; also *Victorian Year-Book*, 1887-8, Vol. I., paragraph 699.

named except Prussia, Ireland, and Austria; less fatal in Western Australia than any except Ireland and Prussia; less fatal in South Australia and New Zealand than in any except Prussia; and less fatal in the other two colonies than in any one of the countries referred to:—

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

	Deaths from Cancer per 10,000 persons living.		Deaths from Cancer per 10,000 persons living.
Austria (15 principal towns) ...	11·20	England and Wales ...	5·35
Denmark (towns) ...	10·98	Massachusetts ...	5·30
Sweden (towns) ...	8·71	Scotland (8 towns) ...	5·27
Switzerland ...	8·46	Scotland ...	5·26
Italy ...	6·13	Austria ...	4·23
Holland ...	5·82	Ireland ...	3·69
		Prussia ...	3·13

653. Developmental diseases,† Class V., caused 127 deaths in 1890 to every 100,000 of the population. Of these 56 were due to diseases peculiarly affecting infants, such as premature birth and malformations, and 71 to old age. The rate of mortality from the whole class in 1890—viz., 127 per 100,000—appears to have been about 21 more than the average of the ten years 1881-90, and 52 more than the average of the ten years ended with 1880; the increase, especially as compared with the last named period, being chiefly confined to deaths from old age. The increased death rate from old age is accounted for by the circumstance that the proportion of old people (75 and upwards) in the population has increased since 1871-80 by about 90 per cent., whilst the average age of such persons has advanced also. The actual deaths of infants born prematurely numbered 486 in 1890—which number gives a proportion of 11 per cent. of the total deaths under one year, or $1\frac{1}{3}$ per cent. of the total births recorded, which proportions are above the average during the ten years ended with 1890, when they were $9\frac{3}{4}$ and $1\frac{1}{4}$ respectively. The death rate from this class of complaints is always much higher in England than in Victoria.

654. 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 1890, 8,257 deaths, or 46 per cent. of the

* See Dr. Raseri's paper, page 193.

† 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.

Develop-
mental
diseases.

Local
diseases.

deaths from all causes, were ascribed to them, that being the same proportion as in the ten years 1881 to 1890. The deaths from diseases placed in this class were in 1890 in the proportion to every 100,000 of the population of 738, or 47 above the average of the last decade. Over a fifth of these diseases were due to affections of the brain and nerves; over a sixth to those of the circulatory system, including heart disease; about two-sevenths to lung and throat diseases—viz., croup, bronchitis, pneumonia, pleurisy, etc.; over a fifth to diseases of the digestive organs; 6 per cent. to diseases of the urinary organs; a little over $1\frac{2}{3}$ per cent. to the accidents of childbirth; and the remainder to diseases of the locomotive, generative, and integumentary systems; of the lymphatic and ductless glands; and of the organs of special sense, in the order named. In the year under review the death rates from complaints classed under all the principal sub-classes of local diseases, except diseases of the nervous and integumentary systems and childbirth, in which there was only a slight variation, were much above the average of the ten years ended with 1890, the increase being most marked in the case of complaints of the circulatory, digestive, generative, and locomotive systems; and, excepting diseases of the nervous system and childbirth, they were also higher than in the earlier period 1871-80. In England, the death rate from local diseases is, on the average, fully 45 per cent. higher than the death rate from that class of complaints in Victoria.

655. The mortality from diseases of the respiratory system in 1890 was somewhat above the average. The proportion in 1890 was 217 to every 100,000 persons living, while it was 213 in the ten years 1881-90, but only 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, 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 2,428, being equal to not quite one-seventh of the total mortality; and of these pneumonia caused 891, bronchitis 715, congestion of the lungs 187, and croup 167. Of those who died from these complaints, 1,025 were under 5 years—more than half of these being under 1 year—and 796 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 4,059 deaths in 1890 (or 38

Diseases of
respiratory
system.

* See paragraph 635 *ante*.

more than in 1889) were from diseases particularly affecting the organs of respiration, which is equal to between one-fourth and one-fifth of the total mortality.

Bronchitis
and pneu-
monia in
various
countries.

656. 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, and 1,793 in 1890, 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, and of 16.03 for 1890. The complaints referred to are, according to the following figures, much less fatal here than in any of the countries named except Prussia, 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 IN
VARIOUS COUNTRIES, 1881 TO 1884.*

	Per 10,000 persons living.		Per 10,000 persons living.
Spain (principal towns) ...	53.15	Germany (principal towns)	27.87
Italy ...	45.31	Denmark (towns) ...	27.47
Scotland (8 towns) ...	38.06	Belgium (principal towns)	27.06
Austria (principal towns)...	37.95	Ireland ...	26.76
Holland ...	36.32	Switzerland (principal towns) ...	26.69
Scotland ...	34.13	Spain ...	24.12
Belgium ...	32.87	Sweden (principal towns)	24.10
England and Wales ...	32.25	Massachusetts ...	21.03
Switzerland ...	31.52	Prussia ...	16.63
Austria ...	28.09		

Deaths in
childbed.

657. 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 1890 the proportion of deaths of child-bearing women to the number of children born, although much higher than the exceptionally low

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

proportion which prevailed in 1889, was still considerably under the average of the last twenty-seven years, as is shown in the following table:—

DEATHS OF WOMEN IN CHILDBIRTH, 1864 TO 1890.

Year.	Number of Mothers who died of—			Deaths of Mothers to every 10,000 Children born alive.
	Childbirth.	Puerperal Fever (Metria).	Total.	
1864	100	21	121	47·12
1865	99	24	123	47·46
1866	112	26	138	55·18
1867	117	20	137	53·51
1868	110	23	133	48·82
1869	105	18	123	47·23
1870	115	9	124	45·67
1871	90	12	102	37·25
1872	123	16	139	50·80
1873	127	44	171	60·85
1874	142	109	251	93·66
1875	154	83	237	88·70
1876	117	48	165	61·64
1877	131	42	173	66·51
1878	149	49	198	74·49
1879	123	38	161	59·99
1880	111	20	131	50·09
1881	155	78	233	85·84
1882	117	59	176	65·80
1883	115	43	158	57·37
1884	131	72	203	70·36
1885	106	62	168	56·05
1886	122	70	192	62·29
1887	116	58	174	52·66
1888	113	74	187	54·20
1889	101	62	163	44·83
1890	137	62	199	52·96
Total in twenty-seven years	3,238	1,242	4,480	58·94

658. In 1884, the death rate of parturient women showed a sudden increase concurrently with the prevalence of an epidemic of measles, followed by a remarkable decrease in 1885 coincidently with the gradual disappearance of that epidemic. It is a singular fact that at or about the four periods during the last twenty-five years at which epidemics of measles and scarlatina have prevailed in Victoria,* viz., 1866-7, 1874-5, 1881-2 and 1884, the mortality of child-bearing women largely increased. Whether this is only a coincidence, or whether there is any connexion between the two circumstances, is a matter

Increase of
deaths in
childbed at
epidemic
periods.

* See table following paragraph 616 ante.

which merits the consideration of the medical faculty. It should be mentioned that the visitation in 1881-2 differed somewhat from the others, as the deaths of child-bearing women did not increase in numbers concurrently with the epidemic, but in the year following that in which it was most fatal.

Deaths in
childbed in
Victoria
and United
Kingdom.

659. The proportion of women dying in childbed during the whole period of twenty-seven years was 1 to 171 births, and in 1890 the proportion was 1 to every 189 births. In 1889, the proportion was 1 to every 223 births; in 1888, 1 to every 185 births; in 1887, 1 to every 190 births; in 1886, 1 to every 161 births; in 1885, 1 to every 178 births; and in 1884, it was as high as 1 to every 142 births. All these proportions are much higher than those in England and Wales, where, in the five years ended with 1887, 200 births occurred to each death of a mother.* In Scotland, 1 woman died in childbirth to every 207 births during 1873, and to every 149 births in 1874; and in Ireland, during the ten years, 1869-78, 1 woman died in childbirth to every 151 births.

Deaths from
childbirth
in Women's
Hospital.

660. In the Midwifery Department of the Melbourne Women's Hospital, 795 women were confined, and 748† infants were born alive, during the year ended 30th June, 1890. Nine deaths of mothers occurred during or shortly after parturition; or 1 death of a mother to every 89 deliveries, or to every 83 births. In 1888-9, 1 death of a mother took place therein to 76 deliveries, or 71 births; in 1887-8, 1 to every 168 deliveries, or 158 births; in 1886-7, 1 to 28 deliveries, or 26 births; in 1885-6, 1 to 34 deliveries, or 32 births; in 1884-5, 1 to 17 deliveries, or 16 births; in 1883-4, 1 to 31 deliveries, or 28 births; in 1882-3, 1 to 86 deliveries, or 77 births; in 1882 (first six months), 1 to 60 deliveries, or 56 births; in 1881, 1 to 29 deliveries, or 27 births; in 1880, 1 to 98 deliveries, or 89 births; in 1879, 1 to 71 deliveries, or 67 births; and in 1878, 1 to 92 deliveries, or 86 births. These proportions are, on the average, about $2\frac{1}{2}$ times as high as those for the whole colony; 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

* 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 ten 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 9 cases of twins.

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. It should be mentioned that the committee of management of this hospital attribute the low rate of mortality in 1887-8 to the fact that antiseptic precautions were more rigorously carried out than they had been in former years; but it will be noticed that such a low rate was not maintained in 1888-9 and 1889-90.

661. 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.* In 1889, however, the proportion was higher in both New South Wales and Queensland than it was in Victoria. The following table contains a statement of the deaths recorded as having occurred from childbirth and metria in all the Australasian colonies except Western Australia during the seventeen years ended with 1889, and the proportion of such deaths to every 10,000 children born alive in each colony:—

Deaths in
childbed in
Austral-
asian
colonies.

DEATHS FROM CHILDBIRTH AND PUERPERAL FEVER (OR METRIA)
IN AUSTRALASIAN COLONIES, 1873 TO 1889.

Year.	Number of Deaths from Childbirth and Puerperal Fever.					
	Total.	Per 10,000 Children Born Alive.	Total.	Per 10,000 Children Born Alive.	Total.	Per 10,000 Children Born Alive.
	VICTORIA.		NEW SOUTH WALES.		QUEENSLAND.	
1873 ...	171	60·85	...	...	23	40·21
1874 ...	251	93·66	...	...	33	51·70
1875 ...	237	88·70	149	66·14	37	55·17
1876 ...	165	61·64	186	79·84	43	62·29
1877 ...	173	66·51	113	47·38	53	73·93
1878 ...	198	74·49	103	40·67	46	62·19
1879 ...	161	59·99	90	33·42	38	48·28
1880 ...	131	50·09	127	45·10	42	51·24
1881 ...	233	85·84	117	40·35	70	85·15
1882 ...	176	65·80	118	39·73	49	57·53
1883 ...	158	57·37	114	36·44	42	42·47
1884 ...	203	70·36	137	40·36	67	62·74
1885 ...	168	56·05	127	36·24	69	59·12
1886 ...	192	62·29	191	52·64	71	56·43
1887 ...	174	52·66	173	46·46	62	45·88
1888 ...	187	54·20	151	39·20	75	52·64
1889 ...	163	44·83	172	46·12	66	45·83
Sums & } Means }	3,141	65·02	2,068	46·01	886	56·05

* 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, Volume I., paragraph 719.

DEATHS FROM CHILDBIRTH AND PUERPERAL FEVER (OR METRIA)
IN AUSTRALASIAN COLONIES, 1873 TO 1889—*continued.*

Year.	Number of Deaths from Childbirth and Puerperal Fever.					
	Total.	Per 10,000 Children Born Alive.	Total.	Per 10,000 Children Born Alive.	Total.	Per 10,000 Children Born Alive.
	SOUTH AUSTRALIA.		TASMANIA.		NEW ZEALAND.	
1873 ...	22	30·96	26	85·30	52	46·34
1874 ...	38	49·38	20	64·58	74	57·61
1875 ...	54	72·89	32	103·06	93	64·41
1876 ...	49	59·58	20	63·51	74	45·77
1877 ...	45	52·08	25	77·86	74	43·90
1878 ...	41	44·17	16	45·69	85	47·83
1879 ...	50	50·49	11	30·86	81	44·83
1880 ...	39	38·00	18	48·14	76	39·29
1881 ...	63	58·83	14	35·73	92	49·11
1882 ...	70	64·55	14	34·63	101	53·14
1883 ...	49	43·86	19	44·61	95	49·47
1884 ...	49	41·36	12	26·21	137	69·03
1885 ...	53	44·00	16	34·50	144	73·12
1886 ...	36	32·21	13	28·10	111	57·52
1887 ...	54	49·86	19	40·12	95	49·65
1888 ...	43	40·91	18	37·68	111	58·72
1889 ...	29	28·11	11	23·12	78	42·26
Sums & } Means }	784	47·13	304	48·45	1,573	52·47

NOTE.—In Western Australia 6 deaths of child-bearing women occurred in 1887, 3 in 1888, and 4 in 1889, or at the rates of 36·7, 19·8, and 25·09 per 10,000 births, respectively.

Low death
rate from
childbirth
in colonies,
1889.

662. The above figures show that, in proportion to the children born alive, the number of deaths of child-bearing women in 1889 was considerably below the average in all the colonies except New South Wales. In that colony the rate was very slightly above the average.

Deaths from
child-bear-
ing in
various
countries.

663. Comparing the deaths of child-bearing women in Victoria with every 10,000 of the population, the proportions annually are 2·17 for the decennial period 1871 to 1880, 1·85 for the decennial period 1881 to 1890, and 1·78 for 1890. These and the following figures show Victoria to stand rather high in regard to the mortality of women in child-bed as compared with many other countries, and especially so as it would appear that deaths from diseases of pregnancy, as well as from circumstances attendant upon child-bearing, are included in the following list, which they are not in the figures for Victoria:—

ANNUAL DEATH RATE FROM DISEASES OF PREGNANCY AND CHILD-BEARING IN VARIOUS COUNTRIES, 1881-84.*

	Deaths from Pregnancy and Child-bearing per 10,000 persons living.		Deaths from Pregnancy and Child-bearing per 10,000 persons living.
Spain (principal towns)...	3·77	Massachusetts ...	1·80
Spain ...	3·56	Denmark (towns) ...	1·76
Belgium ...	2·32	Belgium (principal towns)	1·72
Prussia ...	2·20	Ireland ...	1·65
Italy ...	2·13	England and Wales ...	1·60
Scotland (eight towns) ...	2·10	Holland ...	1·43
Switzerland ...	2·06	Sweden ...	1·29
Switzerland (principal towns) ...	2·02	Sweden (principal towns)	1·27
Scotland ...	1·87	Germany (principal towns)	1·23

664. 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, and in the subsequent ten years it fell to as low as 97, whilst in 1890 it rose to 104. The last-named rate is higher by nearly one half than the rate prevailing in England and Wales, where it averages only 72. The greater frequency of violent deaths in Victoria than in England appears in all classes of such deaths, those from accidents and executions, being, in proportion to population, about a third more numerous, suicides half as numerous again, and homicides twice as numerous.

665. The number of violent deaths recorded in Victoria during 1890 was 1,165, of which 1,003, or 86 per cent., were ascribed to accident; 39, or 3 per cent., to homicide, and 123, or 11 per cent., to suicide. Deaths from accidents were formerly more numerous than those from any single disease, and more recently than those from any specific disease except phthisis and diarrhœa.† Forty-one per cent. of the deaths from accidents in 1890 were due to fractures, 23 per cent. to drowning, and 11 per cent. to burns and scalds. Both homicides and suicides were above the average of the ten years ended

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

† See table following paragraph 603 ante.

with 1890. 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 1890 and the ten years ended with 1890, the sexes of those who died being distinguished :—

VIOLENT DEATHS.

Causes of Death.	Year 1890.			Ten Years : 1881 to 1890.		
	Males.	Females.	Total.	Males.	Females.	Total.
Accidents :—						
Fractures and contusions	360	47	407	3,175	389	3,564
Gunshot wounds ...	11	1	12	138	12	150
Cuts, stabs, etc. ...	6	3	9	94	30	124
Burns and scalds ...	57	53	110	400	541	941
Sunstroke ...	46	23	69	161	72	233
Lightning ...	2	...	2	23	3	26
Poison ...	16	6	22	142	62	204
Snake, insect—bite ...	2	...	2	32	6	38
Drowning ...	191	37	228	1,691	373	2,064
Suffocation ...	63	40	103	402	246	648
Others ...	33	6	39	222	60	282
Total ...	787	216	1,003	6,480	1,794	8,274
Homicide ...	24	15	39	163	127	290
Suicide :—						
Gunshot wounds ...	22	3	25	196	7	203
Cuts, stabs, etc. ...	22	...	22	159	22	181
Poison ...	13	4	17	122	61	183
Drowning ...	16	4	20	153	53	206
Hanging ...	29	3	32	258	20	278
Otherwise ...	6	1	7	41	9	50
Total ...	108	15	123	929	172	1,101
Execution ...	...	...	...	13	...	13
Grand Total ..	919	246	1,165	7,585	2,093	9,678

666. 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, of the males, 1 in every 11 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

Violent deaths in proportion to total deaths.

by the hand of another; 1 in every 344 committed suicide; but, happily, not one was executed.

667. Males are much more subject to violent deaths than females. Of those who so died in 1890, 919, or 79 per cent., belonged to the male, and 246, or 21 per cent., to the female sex. The proportions which prevailed during the ten years ended with 1890 were 78 and 22 per cent. respectively.

Violent deaths of males and females.

668. 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. Only 1 woman has been executed in the colony since its first settlement; but in the 39½ years since Victoria has been an independent colony as many as 132 males have been executed.

Violent deaths: proportion of males and females.

669. 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.

Burns and scalds.

670. One hundred and twenty-three persons took their own lives in 1890, and 143 in the previous year. During the ten years ended with 1890 the mean annual number of deaths by suicide was 110.

Suicidal deaths.

671. 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 172 cases which occurred during the last ten years by shooting. It may be mentioned that suicide by shooting is much more common now than formerly, the cases in the ten years ended with 1890 being nearly three times as numerous as in the preceding ten years.

Modes of suicide in Victoria.

672. The Registrar-General of England in his 46th Report gives the following table, showing the proportion, during the ten years

Modes of suicide in England.

ended with 1880, of suicides effected by different methods in England and Wales. With the exception of shooting, the relative frequency of each method follows substantially the same order as that obtaining in Victoria :—

MODES OF COMMITTING SUICIDE IN ENGLAND AND WALES.

Methods.	Number by each Method per 1,000 by all Methods.	
	Males.	Females.
Hanging or strangulation	400	268
Drowning	165	333
Cut or stab	212	149
Poison	79	172
Shooting	68	2
Jump from height	20	36
Railway train	24	7
Otherwise	32	33
Total	1,000	1,000

Suicides of
Chinese.

673. Suicide frequently occurs amongst the Chinese. Five men of this race committed that act in 1889, and four in 1890. Of the 9 referred to, all but two hanged themselves. The total number of Chinese males in the colony is believed to be about 9,000*; so that those who committed suicide during 1889 were in proportion of about 1 in 1,800, and during 1890 about 1 in 2,250. In the general population the proportion of persons committing self destruction averages only 1 in about 10,000.

Suicides in
Austral-
asian
colonies.

674. According to the results in the following table, it would appear that, in proportion to population, suicide is more common in Victoria than in any other Australasian colony except 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 suicides and their proportion to every 100,000 of the population during the seventeen years ended with 1889 recorded in all the Australasian colonies except Western Australia,

* At the time of going to press, the correct number of Chinese had not been ascertained from the census schedules.

for which the information is obtainable for only the last two of those years:—

DEATHS FROM SUICIDE IN AUSTRALASIAN COLONIES,
1873 TO 1889.

Year.	Number of Deaths from Suicide.					
	Total.	Per 100,000 Persons Living.	Total.	Per 100,000 Persons Living.	Total.	Per 100,000 Persons Living.
	VICTORIA.		NEW SOUTH WALES.		QUEENSLAND.	
1873 ...	97	12·7	41	7·5	22	15·7
1874 ...	97	12·5	64	11·2	10	6·4
1875 ...	91	11·6	55	9·4	23	13·3
1876 ...	100	12·6	61	10·1	24	13·0
1877 ...	92	11·4	66	10·5	27	13·8
1878 ...	87	10·6	48	7·3	29	14·0
1879 ...	108	13·0	62	9·0	40	18·7
1880 ...	118	13·9	68	9·4	22	9·9
1881 ...	102	11·7	83	10·9	21	9·5
1882 ...	83	9·3	55	7·0	40	16·8
1883 ...	103	11·3	54	6·5	37	13·8
1884 ...	86	9·2	81	9·2	45	15·3
1885 ...	89	9·3	95	10·2	36	11·7
1886 ...	101	10·3	95	9·7	44	13·2
1887 ...	132	13·0	121	11·8	63	17·8
1888 ...	139	13·2	132	12·4	62	16·4
1889 ...	143	13·5	112	9·8	56	13·5
Means ...	104	11·8	76	9·5	35	13·7
	SOUTH AUSTRALIA.		TASMANIA.		NEW ZEALAND.	
1873 ...	10	5·1	6	5·8	20	7·0
1874 ...	22	10·9	6	5·8	20	6·3
1875 ...	24	11·5	6	5·8	29	8·1
1876 ...	15	6·9	6	5·7	42	10·8
1877 ...	17	7·3	10	9·4	32	7·8
1878 ...	18	7·4	8	7·4	37	8·8
1879 ...	18	7·1	5	4·5	42	9·4
1880 ...	25	9·5	8	7·0	38	8·0
1881 ...	34	11·8	6	5·1	42	8·5
1882 ...	18	6·3	3	2·5	53	10·4
1883 ...	31	10·4	5	4·0	55	10·4
1884 ...	31	10·0	7	5·5	57	10·4
1885 ...	32	10·2	5	3·8	54	9·5
1886 ...	31	9·9	3	2·2	66	11·3
1887 ...	29	9·2	6	4·3	52	8·7
1888 ...	31	9·8	7	4·9	39	6·4
1889 ...	21	6·4	10	6·5	46	7·4
Means ...	24	8·8	6	5·3	43	8·8

NOTE.—In Western Australia, there were recorded 5 suicides in 1888, and 5 also in 1889; the proportions per 1,000 of the population being 11·9 and 11·7 respectively.

Proportion
of suicides
in different
colonies.

675. It will be observed that, according to the records, the suicides which take place annually in Victoria and Queensland are almost invariably above 1 per 10,000 persons living, whilst those which take place in the other colonies are generally below that proportion, which was reached seven times in New South Wales, five times in New Zealand, and six times in South Australia, but not once in Tasmania during the seventeen years named in the table. The rate in Tasmania appears to be much lower than in any of the other colonies.

Suicides in
various
countries.

676. By the following figures, which have been derived from various sources, it appears that suicide is more common in eight countries out of Australasia than in Queensland, in nine than in Victoria, Western Australia or New South Wales, and in ten than in New Zealand or South Australia, whilst there are only eight out of the twenty-two countries named in which suicide is less common than it is in Tasmania :—

DEATHS FROM SUICIDE IN DIFFERENT COUNTRIES.

	Deaths from Suicide in each year per 100,000 Persons Living.		Deaths from Suicide in each year per 100,000 Persons Living.
Saxony ...	31·1	New Zealand ...	8·8
Denmark ...	25·8	Sweden ...	8·1
Schleswig-Holstein ...	24·0	Norway ...	7·5
Austria ...	21·2	Belgium ...	6·9
Switzerland ...	20·2	England and Wales ...	6·9
France ...	15·7	Tasmania ...	5·3
German Empire ...	14·3	Hungary ...	5·2
Hanover ...	14·0	Scotland ...	4·0
Queensland ...	13·7	Italy ...	3·7
Prussia ...	13·3	Netherlands ...	3·6
Victoria ...	11·8	United States ...	3·5
Western Australia ...	11·8	Russia ...	2·9
New South Wales ...	9·5	Ireland ...	1·7
Bavaria ...	9·1	Spain ...	1·4
South Australia ...	8·8		

Suicide more
destructive
than war.

677. It has been pointed out that suicide is a more terrible destroyer of human life than war, for whilst during the first fifty years of the Queen's reign war occasioned 52,000 deaths of subjects of the United Kingdom, and 316,000 deaths of subjects of France, Germany, and Austria, suicide claimed 77,000 victims in the first-named country, and 610,000 victims in the other three countries named.*

* See Mulhall's *Fifty Years of National Progress*, page 11.

678. According to the following figures, violent deaths in Victoria, during the eight years ended with 1889, occurred in about the same proportion to the population as in New Zealand, but less common than in any other of the Australasian colonies, except South Australia and Tasmania :—

Violent deaths in Australasian colonies.

VIOLENT DEATHS IN AUSTRALASIAN COLONIES, 1882 TO 1889.

Colony.	Year.	Number of Violent Deaths.	
		Total.	Per 10,000 Persons Living.
Victoria ...	1882	841	9.46
	1883	908	9.99
	1884	799	8.57
	1885	846	8.85
	1886	942	9.58
	1887	1,023	10.08
	1888	1,119	10.63
	1889	1,186	10.90
	Mean of 8 years	958	9.76
New South Wales ...	1882	904	11.37
	1883	850	10.19
	1884	990	11.24
	1885	1,106	11.88
	1886	1,083	11.05
	1887	1,148	11.23
	1888	1,140	10.71
	1889	1,110	9.69
	Mean of 8 years	1,041	10.92
Queensland ...	1882	439	18.48
	1883	396	14.78
	1884	509	17.27
	1885	492	15.93
	1886	496	14.92
	1887	599	16.88
	1888	593	15.72
	1889	622	15.00
	Mean of 8 years	518	16.12
South Australia ...	1882	210	7.24
	1883	202	6.76
	1884	239	7.74
	1885	212	6.77
	1886	272	8.69
	1887	229	7.31
	1888	234	7.36
	1889	208	6.35
	Mean of 8 years	226	7.28

VIOLENT DEATHS IN AUSTRALASIAN COLONIES, 1882 TO 1889—
continued.

Colony.	Year.	Number of Violent Deaths.	
		Total.	Per 10,000 Persons Living.
Western Australia... ..	1882	53	17·44
	1883	59	18·89
	1884	51	15·78
	1885	45	13·21
	1886	67	18·02
	1887	57	13·67
	1888	90	21·27
	1889	44	9·78
	Mean of 8 years	58	16·01
Tasmania	1882	88	7·29
	1883	106	8·53
	1884	90	7·01
	1885	92	6·97
	1886	94	6·94
	1887	112	8·01
	1888	118	8·18
	1889	144	9·35
	Mean of 8 years	106	7·78
New Zealand	1882	505	9·92
	1883	494	9·33
	1884	548	9·98
	1885	517	9·13
	1886	571	9·81
	1887	555	9·31
	1888	513	8·47
	1889	508	8·01
	Mean of 8 years	526	9·25

Death rate
from
violence in
various
countries.

679. In the following table, the Australasian colonies and certain European countries are arranged in order 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	163·8	141·1	6·4	13·5
Western Australia ...	161·7	133·9	12·1	9·2
New South Wales ...	111·7	94·9	3·1	9·3
New Zealand	95·7	84·0	1·4	9·0
Victoria	94·6	82·6	2·9	11·0
Switzerland	92·4	68·9	3·9	20·2
United Kingdom† ...	77·5	69·7	1·6	6·2
England and Wales ...	75·7	66·7	1·7	6·9
Tasmania	74·5	68·5	1·5	5·3
South Australia ...	74·2	63·4	1·4	8·9
Norway	72·4	64·1	1·3	7·5
Scotland	72·0	68·2	·1	4·0
Finland	62·6	55·7	3·5	3·4
Sweden	61·9	50·7	2·0	8·1
Russia	61·6	46·1	2·1	13·3
Bavaria	51·9	37·7	3·9	9·1
Belgium	48·3	38·5	1·6	6·9
Austria	47·1	...	...	21·2
Ireland	39·1	35·3	1·7	1·7
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.

680. It will be seen that the list is headed by five 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 four colonies referred to, and immediately above Switzerland, which, with the United Kingdom and England and Wales, stands immediately above Tasmania and South Australia. 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.

Proportion of violent deaths in different countries.

681. The following table gives a statement of the number of cases of death and injury from accidents on the Government lines of railway during the thirty-one and a half years ended with 30th June, 1890, embracing the whole period of the existence of railways in Victoria:—

Railway accidents.

* Not including executions.

† Including the Shipping.

DEATHS FROM RAILWAY ACCIDENTS, 1859 TO 1889-90.

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.
1859 to 1868	37	...	...	...	3	19	22	1	14	...
1869	4	...	...	...	...	2	2	...	1	1
1870	2	...	...	...	...	1	1	...	1	...
1871	6	...	...	...	...	2	2	...	2	2
1872	3	...	...	...	...	...	...	...	3	...
1873	...	...	...	...	...	...	...	...	...	...
1874	10	...	...	...	4	...	4	1	4	1
1875	11	...	...	...	...	6	6	...	4	1
1876	23	...	...	...	3	10	13	2	6	2
1877	22	...	1	1	3	10	13	...	8	...
1878	16	...	...	...	...	7	7	2	6	1
1879	21	...	...	...	1	8	9	2	9	1
1880	18	...	...	...	...	7	7	3	6	2
1881	34	4	4	8	...	14	14	3	8	1
1882	38	1	1	2	...	22	22	3	9	2
1883	32	...	5	5	...	10	10	5	10	2
1884 (six months)	10	1	...	1	4	2	6	...	3	...
1884-5	36	...	1	1	...	12	12	7	14	2
1885-6	38	...	1	1	1	15	16	5	14	2
1886-7*	50	4	...	4	2	14	16	5	25	...
1887-8	45	...	2	2	...	22	22	8	13	...
1888-9	78	1	4	5	4	23	27	7	37	2
1889-90	74	1	8	9	9	21	30	7	22	6
Total killed	608	12	27	39	34	227	261	61	219	28

PERSONS INJURED BY RAILWAY ACCIDENTS, 1859 TO 1889-90.

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.
1859 to 1868	84	22	2	24	5	45	50	1	7	2
1869	...	...	...	...	...	...	...	...	...	...
1870	4	...	...	...	4	...	4	...	...	...
1871	3	...	...	...	...	1	1	...	1	1
1872	32	28	2	30	1	1	2	...	...	...
1873	1	...	...	...	...	1	1	...	...	...
1874	1	...	...	...	...	1	1	...	...	...
1875	8	...	...	...	6	1	7	...	1	...

* The high mortality in 1886-7 was chiefly due to the Windsor railway accident. So far as the numbers killed and injured are concerned, this is the worst railway accident which has occurred in Victoria.

PERSONS INJURED BY RAILWAY ACCIDENTS, 1859 TO 1889-90—
continued.

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.
1876	27	1	1	2	4	15	19	...	5	1
1877	49	36	..	36	3	5	8	1	2	2
1878	40	22	3	25	6	5	11	...	1	3
1879	45	7	2	9	11	20	31	3	1	1
1880	20	5	...	5	1	7	8	2	3	2
1881	64	46	4	50	1	10	11	...	2	1
1882	261	210	5	215	13	25	38	1	2	5
1883	101	67	8	75	7	12	19	2	1	4
1884 (six months)...	90	44	9	53	10	21	31	2	1	3
1884-5	116	13	23	36	10	46	56	5	9	10
1885-6	191	3	33	36	17	101	118	6	4	27
1886-7*	358	266	24	290	16	43	59	3	3	3
1887-8	169	18	34	52	15	84	99	2	10	6
1888-9	358	116	82	198	24	107	131	5	12	12
1889-90	401	20	115	135	49	186	235	5	13	13
Total injured...	2,423	924	734	1,271	203	737	940	38	78	96

682. It will be observed that, in the whole period of thirty-one and a half years, 608 persons were killed and 2,423 were injured on the State lines of railway, and that, exclusive of trespassers, persons crossing the lines, etc., 254 of the former and 1,084 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, 39 were passengers, and as many as 261 railway or contractors' servants; 27 of the former, and 227 of the latter, having suffered in consequence of their own carelessness. The passengers injured numbered 1,271, and the railway servants 940; as many as 737 of the latter, but only 347 of the former, suffered from their own action. At crossings, 61 persons were killed, and 38 injured. As many as 219 trespassers were killed; these no doubt included persons who committed suicide by placing themselves in the way of trains. The trespassers injured have numbered 78, half of whom received their injuries during the last four years.

Railway passengers and servants killed and injured.

* See footnote (*) on previous page.

Mining accidents.

683. In the seventeen years ended with 1890, embracing the whole period during which the Regulation and Inspection of Mines and Machinery Statutes* have been in operation, 885 persons lost their lives, and 1,979 persons were injured, from accidents connected with mining operations. The following were the numbers in each year and their proportion to the number of miners at work :—

DEATHS AND INJURIES FROM MINING ACCIDENTS, 1874 TO 1890.

Year.	Average Number of Miners at work.	Number of Persons—			Numbers per 1,000 Miners at work—		
		Killed.	Injured.	Total.	Killed.	Injured.	Total.
1874 ...	46,512	90	245	335	1.93	5.27	7.20
1875 ...	42,058	83	217	300	1.97	5.16	7.13
1876 ...	41,531	55	170	225	1.32	4.10	5.42
1877 ...	38,860	64	154	218	1.65	3.96	5.61
1878 ...	37,212	40	106	146	1.07	2.85	3.92
1879 ...	37,195	48	112	160	1.29	3.01	4.30
1880 ...	38,076	50	89	139	1.31	2.34	3.65
1881 ...	38,436	72	108	180	1.87	2.81	4.68
1882 ...	37,446	71	130	201	1.90	3.47	5.37
1883 ...	33,927	59	128	187	1.74	3.77	5.51
1884 ...	29,182	41	106	147	1.40	3.63	5.03
1885 ...	27,033	40	67	107	1.48	2.48	3.96
1886 ...	25,361	44	68	112	1.73	2.68	4.41
1887 ...	25,511	28	72	100	1.09	2.82	3.91
1888 ...	25,142	36	76	112	1.43	3.02	4.45
1889 ...	24,577†	34	69	103	1.38	2.80	4.18
1890 ...	24,038†	30	62	92	1.24	2.57	3.81
Means ...	33,652	52	116	168	1.54	3.45	4.99

Mining accidents, 1890.

684. In 1890, fatal mining accidents numbered 4 less than in the previous year, and, in proportion to the number of miners at work, were below the average. In comparison with earlier years, the persons killed and injured in and in connexion with mines have much diminished both in numbers and in proportion to the miners at work.

Mining accidents in Victoria and England.

685. According to the mean of the seventeen years to which reference is made, 1 miner in every 647 loses his life annually. In 1890 the proportion was as low as 1 in 801. These proportions contrast favourably with the proportion of fatal accidents in the

* 37 Vict. No. 480, 41 Vict. No. 583, 45 Vict. No. 719, and 47 Vict. No. 783.

† Including coal miners.

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.

686. It appears by the following table that, in the seventeen years named, 1,404, or 49 per cent., of the mining accidents in Victoria were caused by the fall of earth or materials; 547, or 19 per cent., by falling down shafts, etc., and cage accidents; 356, or 12 per cent., by explosions, principally of blasting charges; and the balance, or 20 per cent., by timber and truck accidents, machinery in motion, foul air, flooding, and undescribed casualties:—

CAUSES OF MINING ACCIDENTS, 1874 TO 1890.

Nature of Accident.	Number of Persons—		
	Killed.	Injured.	Total.
Fall of earth or rock underground...	356	650	1,006
" " on surface ...	111	80	191
" materials down shafts, passes, etc. ...	46	159	205
" " winzes, etc. ...	2	...	2
Falling down shafts ...	124	165	289
" " winzes, shoots, etc. ...	16	80	96
Cage accidents ...	49	113	162
Timber accidents ...	17	26	43
Truck accidents... ...	7	47	54
Machinery in motion ...	21	89	110
Explosion of charges of gunpowder ...	28	146	174
" " guncotton ...	1	10	11
" " nitro-glycerine compounds ...	31	71	102
" stored explosives ...	7	31	38
" boilers ...	2	6	8
" fire damp ...	1	22	23
Foul air ...	11	1	12
Flooding of mines ...	25	...	25
Undescribed ...	30	283	313
Total ...	885	1,979	2,864

687. Under the *Factories and Shops Act* 1885 (49 Vict. No. 862) 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

Causes of mining accidents.

Accidents in factories, 1890.

certifying medical practitioner for the district, of any accident causing loss of life to a person employed in a factory or workroom, 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 workroom within forty-eight hours of the occurrence of the accident. The following cases of injury were reported in the last two years:—

ACCIDENTS IN FACTORIES OR WORKROOMS, 1889 AND 1890.

Nature of Injury.	Males.		Females.	
	1889.	1890.	1889.	1890.
Death	4	5	...	1
Loss of arm or hand ...	5	2	...	...
" leg	1	1	...	...
" fingers or toes ...	39	22	1	3
Fractures... ..	6	9	...	...
Lacerations, contusions, etc....	54	47	2	4
Total	109	86	3	8

688. Of the males who were killed or injured in factories or workrooms, 37 or 34 per cent. in 1889, and 39 or 45 per cent. in 1890, were under 20 years of age. All the females injured in both years were under 20 years of age.

689. In 1890, the year under review, there were no fewer than 1,286 deaths in Victoria from ill-defined or unspecified causes, or over 7 per cent. of the deaths from all causes, as compared with 9 per cent. in 1889, $7\frac{3}{4}$ 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., 1,139 in 1890—were returned as from atrophy and debility; whilst 23 (in 1890) were set down to tumors, 43 to dropsy, 10 to abscess, 20 to other ill-defined causes, and 47 were altogether unspecified.

690. The mortality under the head of atrophy and debility is almost entirely confined to infants and young children—thus, of the 1,139 deaths set down thereto in 1890, 1,050 were under 5 years, 927

Factory accidents to persons under 20.

Ill-defined and unspecified causes of death.

Atrophy and debility in Victoria.

were under 1 year, and 256 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 twenty-four years ended with 1890:—

DEATHS FROM ATROPHY AND DEBILITY, 1867 TO 1890.

Year.				Males.	Females.	Total.
1867	...	...	..	399	347	746
1868	...	...	...	337	328	665
1869	...	...	...	386	337	723
1870	...	...	..	422	368	790
1871	...	...	...	368	311	679
1872	...	...	...	354	338	692
1873	...	...	...	378	336	714
1874	...	...	...	402	337	739
1875	...	...	...	413	349	762
1876	...	...	...	344	305	649
1877	...	...	...	344	304	648
1878	...	...	...	389	311	700
1879	...	...	...	407	304	711
1880	...	...	...	369	324	693
1881	...	...	...	392	345	737
1882	...	...	...	493	442	935
1883	...	...	...	412	387	799
1884	...	...	...	488	365	853
1885	...	...	...	541	414	955
1886	...	...	...	577	472	1,049
1887	...	...	...	659	503	1,162
1888	...	...	...	639	550	1,189
1889	...	...	...	811	680	1,491
1890	...	...	...	555	584	1,139
Annual mean 1867 to 1890...				453	389	842

691. Notwithstanding the proportions of the sexes of persons at ages to be affected by atrophy and debility were about equal, it will be observed that in every one of the years except 1890 more males died than females. During the whole period, females died of these complaints in the proportion of 86 to every 100 males. Sex of those who died of atrophy, etc.

692. The practice of returning atrophy and debility as causes of death appears to be no less frequent in most of the other Australasian colonies than in Victoria; but in Queensland, during four years ended with 1889, very few deaths have been so recorded. The following are the figures for the eight years ended with 1889:— Atrophy and debility in Australasian colonies.

DEATHS FROM ATROPHY AND DEBILITY IN AUSTRALASIAN COLONIES,
1882 TO 1889.

Colony.	Year.	Number of Deaths from Atrophy and Debility.	
		Total.	Per 10,000 Persons Living.
Victoria ...	1882	935	10·51
	1883	799	8·78
	1884	853	9·15
	1885	955	9·99
	1886	1,049	10·67
	1887	1,162	11·45
	1888	1,189	11·29
	1889	1,491	13·71
	Mean of 8 years	1,054	10·69
New South Wales ...	1882	776	9·76
	1883	832	9·97
	1884	975	11·07
	1885	1,059	11·38
	1886	971	9·91
	1887	756	7·39
	1888	886	8·32
	1889	811	7·08
	Mean of 8 years	883	9·36
Queensland ...	1882	299	12·58
	1883	344	12·84
	1884	438	14·86
	1885	402	13·02
	1886	297	8·93
	1887	114	3·21
	1888	76	2·01
	1889	70	1·69
	Mean of 8 years	255	8·64
South Australia ...	1882	337	11·62
	1883	353	11·81
	1884	380	12·31
	1885	307	9·81
	1886	315	10·06
	1887	264	8·42
	1888	215	6·76
	1889	201	6·13
	Mean of 8 years	296	9·62
Western Australia ...	1882	30	9·87
	1883	19	6·08
	1884	35	10·83
	1885	48	14·09
	1886	47	12·64
	1887	63	15·11
	1888	43	10·16
	1889	54	12·00
	Mean of 8 years	42	11·34

DEATHS FROM ATROPHY AND DEBILITY IN AUSTRALASIAN COLONIES, 1882 TO 1889—*continued.*

Colony.	Year.	Number of Deaths from Atrophy and Debility.	
		Total.	Per 10,000 Persons Living.
Tasmania ...	1882	112	9·28
	1883	124	9·98
	1884	126	9·81
	1885	124	9·38
	1886	115	8·49
	1887	148	10·58
	1888	152	10·53
	1889	193	12·52
	Mean of 8 years	137	10·07
New Zealand ...	1882	334	6·56
	1883	269	5·08
	1884	304	5·54
	1885	294	5·19
	1886	318	5·46
	1887	271	4·54
	1888	238	3·93
	1889	285	4·66
	Mean of 8 years	289	5·12

693. The number of deaths of persons over 80 years of age, and their exact ages at death, have been already quoted for the year 1890 and the two preceding periods of eight and eleven years respectively.* The following table shows the causes of death of these persons:—

Causes of death of octogenarians.

CAUSES OF DEATH OF OCTOGENARIANS, 1871 TO 1890.

Causes of Death.	Year 1890.		Eight Years, 1882-89.		Eleven Years ended with 1881.	
	Males.	Females.	Males.	Females.	Males.	Females.
Influenza, Coryza, Catarrh ...	2	2	6	2	5	11
Diphtheria ...	...	...	1	...	...	...
Typhoid Fever, etc. ...	...	...	6	3	3	2
Cholera ...	...	...	1	4	6	1
Dysentery and Diarrhœa ...	10	8	74	57	51	36
Venereal Diseases ...	...	...	2	...	4	...
Erysipelas ...	...	1	6	2	3	7
Hydatids ...	...	...	...	...	1	...
Privation ...	...	...	2	...	3	...
Scurvy ...	...	...	...	...	1	...
Intemperance ...	...	...	...	...	2	1
Rheumatism ...	2	...	6	11	7	4
Gout ...	2	...	4	2	2	...
Cancer ...	7	4	49	35	35	13
Tabes Mesenterica ...	...	...	1	...	...	...
Phthisis ...	4	...	11	4	3	3

* See table following paragraph 595 *ante.*

CAUSES OF DEATH OF OCTOGENARIANS, 1871 TO 1890—continued.

Causes of Death.	Year, 1890.		Eight Years, 1882-89.		Eleven Years ended with 1881.	
	Males.	Females.	Males.	Females.	Males.	Females.
Purpura, Hæmorrhagic Diathesis	...	...	1	...	...	...
Anæmia, Chlorosis, Leucocythæmia	1	...	1	1	...	...
Diabetes Mellitus	...	2	1	...	...	...
Old Age	174	173	1,122	921	631	538
Brain Diseases, etc.	44	18	194	144	136	103
Ear and Nose Diseases	...	...	...	3	...	...
Heart Diseases, etc.	44	27	178	119	66	46
Lung Diseases, etc.	31	30	307	211	183	116
Quinsy	...	...	...	...	...	1
Stomach Diseases, etc.	11	13	79	44	37	21
Kidney Diseases, etc.	11	3	83	13	47	1
Genetic Diseases	...	...	1	1	...	1
Bone Diseases	...	...	2	...	...	...
Carbuncle, Boil	...	...	...	1	3	2
Skin Diseases, etc.	...	...	1	...	4	2
Accidents	14	7	47	34	22	18
Suicide	2	...	4	2	4	...
Dropsy	...	...	8	10	20	18
Mortification	...	...	4	2	9	3
Tumour	...	...	3	1	...	3
Abscess, etc.	...	...	1	...	1	...
Unspecified Causes	...	...	7	3	2	...
Total	359	288	2,213	1,630	1,291	951

Complaints most fatal to octogenarians—1871-90.

694. It will be noticed that during the twenty years referred to in the case of about half the males and considerably more than half the females, no complaint was set down except old age. Little is to be learnt from such a vague definition, and it is much to be wished that medical men would endeavour to describe the causes of death with more precision. Of the remainder, about one-fourth of both sexes died of diseases of the organs of respiration, chiefly pneumonia and bronchitis, and over one-sixth died of affections of the brain and nerves.

Occupations at death.

695. The compilation of the returns of the census of 1891 is not sufficiently advanced to admit of information being given respecting the occupations of those who died, but such tables, based upon the results of the census of 1881, and taken in connexion with the mortality returns of the census year and the year immediately preceding and immediately following it, were published in the *Statistical Register of Victoria* for 1883, and abstracts of these have been given in former issues of the *Victorian Year-Book*.* The following is a summary of the proportions of adult males of each class of occupations who died annually in the three years referred to, the groups being arranged according to the order of fatality:—

* See *Statistical Register*, 1883, page 278; also *Victorian Year-Book*, 1883-4, paragraph 619; *ibid.*, 1884-5, paragraph 669; *ibid.*, 1885-6, paragraph 684, *et seq.*

OCCUPATIONS OF ADULT MALES AT DEATH IN ORDER OF FATALITY.

	Annual Deaths of Males over 20 per 1,000 Living.
1. Engaged in industrial pursuits	21·89
2. „ „ entertaining and serving... ..	20·42
3. „ „ commercial pursuits	17·62
4. „ „ professional pursuits	16·51
5. „ „ food and drinks	15·53
6. „ „ books and literature	12·48
7. „ „ on land and with animals	9·96

696. As bearing upon the mortality, it is important to consider whether the number of medical men is sufficient to minister to the health of the population. At the census of 1881, 454 legally qualified medical practitioners were returned, which gives 1 to every 1,900 persons, or to every 194 square miles. The first of these proportions compares favourably with that in most other countries, the only ones known to have a higher proportion being England and Wales, Italy, and 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 country respecting which the information is at hand, except Sweden and Norway. 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
Italy ...	1885	60	Belgium ...	4·7
England and Wales ...	1881	58	Italy ...	6·2
Victoria ...	1881	53	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	Russia in Europe ..	148·4
Portugal ...	1880	18	Victoria ...	193·6
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 kilomètres, which have been converted into square miles on the assumption that one of the former is equal to 386 of one of the latter.

Sickness and
death in
general
hospitals.

697. There are 39 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, 1890, was 16,699, and the number of deaths was 2,118. There was thus 1 death to every 8 discharges during the year 1890, as against 1 death to every 7·4 during 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, 1890, and the proportion of deaths to cases in each hospital during that year:—

SICKNESS AND MORTALITY IN GENERAL HOSPITALS.

Name of Hospital.	Year ended 30th June, 1890.			Percentage of Mortality to Discharges, Year ended 30th June, 1889.
	Number of Patients Discharged.*	Number of Deaths.	Percentage of Mortality to Discharged.	
Alexandra	68	4	5·88	12·00
Amherst	279	29	10·40	9·71
Ararat†	305	46	15·09	13·83
Bairnsdale	140	16	11·43	12·50
Ballarat	1,206	133	11·04	13·85
Beechworth	708	53	7·49	8·60
Belfast (Port Fairy)† ...	38	3	7·90	11·36
Bendigo	1,318	130	9·86	11·79
Castlemaine	451	51	11·31	13·76
Clunes	98	10	10·21	6·19
Colac	91	5	5·50	12·68
Creswick	203	27	13·30	8·18
Daylesford†	147	29	19·72	11·54
Dunolly	325	26	8·00	11·29
Echuca	231	17	7·36	7·04
Geelong†	889	97	10·91	12·11
Hamilton†	169	11	6·51	13·33
Heathcote	77	7	9·10	9·90
Horsham	210	26	12·38	13·04
Inglewood	381	28	7·35	8·85
Kilmore	182	13	7·14	7·14
Kyneton	464	33	7·11	6·86
Maldon†	62	9	14·52	15·22
Mansfield	140	9	6·43	4·27
Maryborough	323	31	9·60	12·16
Melbourne	3,963	762	19·23	18·61
Melbourne (Alfred)	1,492	216	14·47	14·93
Melbourne (Austin)†	55	41	74·54	88·10
Melbourne (Homœopathic) ...	615	55	8·94	11·53
Mooroopna	439	40	9·11	8·85
Nhill	110	12	10·91	13·98
Pleasant Creek (Stawell)† ...	283	37	13·07	13·26
Portland†	19	4	21·05	42·86
Sale	340	30	8·82	13·38

* Including deaths. † These institutions are also Benevolent Asylums. ‡ For incurables.

SICKNESS AND MORTALITY IN GENERAL HOSPITALS—*continued.*

Name of Hospital.	Year ended 30th June, 1890.			Percentage of Mortality to Discharges, Year ended 30th June, 1889.
	Number of Patients Discharged.*	Number of Deaths.	Percentage of Mortality to Discharged.	
St. Arnaud	278	28	10·07	9·13
Swan Hill	109	8	7·34	7·61
Wangaratta	257	27	10·51	7·73
Warrnambool†	145	14	9·65	13·56
Wood's Point... ..	89	1	1·12	·93
Total	16,699	2,118	12·69	13·48

698. In proportion to the cases discharged in 1889-90, the greatest mortality occurred in the Austin (Melbourne),‡ Portland, Daylesford, Melbourne, Ararat, Maldon, and the Alfred (Melbourne) Hospitals; and the lowest in the Wood's Point, Colac, Alexandra, Mansfield, and Hamilton Hospitals. It should be borne in mind, however, that the Portland, Ararat, and Maldon Hospitals are also Benevolent Asylums.

Highest and lowest death rates.

699. Taking the General Hospitals as a whole, the average time patients remained in those institutions in 1890 was 35 days, but the duration of their stay was found to vary according to the complaint, the period of residence having averaged as much as 75 days in the case of patients afflicted with paralysis, and as little as 12 days in the case of those suffering from ague. In the following table the principal diseases are arranged in order, according to the average number of days the patients suffering from such disease were resident in hospital during the year 1890:—

Period of residence in hospitals.

DURATION OF RESIDENCE IN HOSPITAL OF PATIENTS SUFFERING FROM VARIOUS COMPLAINTS, 1890.

Disease.	Average Number of Days.	Disease.	Average Number of Days.
Paralysis	75	Cancer	43
Asthma	55	Gout	39
Scurvy	52	Diseases of Generative System	
Pleurisy	50	(females)	38
Diabetes	47	Rheumatism	38
Atrophy, Debility and Inanition	47	Typhoid Fever	35
Phthisis	45	Bronchitis	35

* Including deaths. † This institution is also a Benevolent Asylum. ‡ For incurables.

DURATION OF RESIDENCE IN HOSPITAL OF PATIENTS SUFFERING
FROM VARIOUS COMPLAINTS, 1890—*continued.*

Disease.	Average Number of Days.	Disease.	Average Number of Days.
Heart Disease	35	Laryngitis	25
Venereal Disease	34	Diseases of Digestive Organs	24
Apoplexy	34	Scarlet Fever	24
Accidents	33	Measles	23
Whooping Cough	32	Puerperal Fever	22
Rheumatic Fever	32	Epilepsy	21
Nephritis	30	Erysipelas	18
Bright's Disease	27	Intemperance	17
Pneumonia	27	Diphtheria	14
Croup	26	Influenza	14
Diarrhoeal Diseases	25	Ague	12

Proportions
of deaths in
hospitals in
various
countries.

700. 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.

					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
Württemberg ... ..	...	...	...	1882	3·49

Deaths in
Victorian
and other
hospitals.

701. 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, etc., 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.

702. The patients discharged* from the Infirmary Department of the Women's Hospital numbered 251 during the year 1888-9, and 271 in 1889-90. The deaths in the same institution numbered 18 in the former, and 16 in the latter year. Therefore, 1 patient in 14 who left the institution died in 1888-9, and 1 in 17 in 1889-90.

Sickness and deaths in Women's Infirmary Department.

703. In the Midwifery Department of the Women's Hospital, Melbourne, 762† women were confined in 1888-9, and 795 in 1889-90. Ten died in the former period, and 9 in the latter. Thus, 1 woman in 76 died in 1888-9, and 1 woman in 88 in 1889-90. From the founding of the institution to the end of June, 1890, 15,278 women were accouched therein,† of whom 266 died, which is equivalent to 1 death to every 57 confinements.‡

Deaths of mothers in Women's Midwifery Department.

704. The infants born alive in the Women's Hospital numbered 711 in the year 1888-9, and 748 during the year 1889-90, and of these 30 in the former and 34 in the latter year died before being taken from the institution; thus, 1 infant in 24 died in the former, and 1 in every 22 in the latter year.‡

Deaths of infants in Women's Hospital.

705. In the Melbourne Hospital for Sick Children the discharges numbered 941, and 77 deaths occurred, in the year 1888-9; and there were 839 discharges, and 72 deaths occurred, during the year 1889-90. These numbers furnish a proportion of 1 death to every 12 patients in each year.

Sickness and deaths in Children's Hospital.

706. Cases of sickness in benevolent asylums (exclusive of Melbourne Immigrants' Home) numbered 2,785 in 1888-9, and 1,706 in the year 1889-90; deaths numbered 257 and 272. The deaths were thus to the cases treated in the proportion of 1 to every 11 in 1888-9, and of 1 to 6 in 1889-90.

Sickness and deaths in benevolent asylums.

707. In the Melbourne Immigrants' Home the cases of sickness in the year 1888-9 amounted to 676, and the deaths to 102, or 1 death to every 7 cases of sickness. In the year 1889-90 the cases of sickness in this institution numbered 664, and the deaths 109, or 1 death to every 6 cases of sickness.

Sickness and deaths in Immigrants' Home.

708. In 1888-9 the cases of sickness in orphan asylums numbered 184, and the deaths 7. In the year ended 30th June, 1889-90, these

Sickness and deaths in orphan asylums.

* The discharges referred to in this and the following paragraphs in all cases include deaths.

† Including 87 women accouched outside the hospital by midwives connected with the institution.

‡ See paragraph 592 *ante*.

numbers were 193 and 5 respectively. Thus 1 death occurred to every 26 cases of sickness in 1888-9, and 1 death in every 38 cases in 1889-90.

Sickness and deaths in lunatic asylums.

709. In hospitals for the insane during 1889, the cases discharged numbered 773, and during 1890 they numbered 754. The deaths amounted to 237 at the former period, and 264 at the latter, or an average of 1 death to every 3 cases of sickness in both years.

Sickness and deaths in gaols.

710. In gaols and penal establishments 2,030 cases of sickness occurred in 1889, and 2,655 in 1890. The deaths in the same years were 89 and 86 respectively, exclusive of deaths by execution. Thus 1 death occurred to every 23 cases of sickness in the former, and 1 in every 31 cases in the latter year.

Deaths in public institutions.

711. Altogether the number of deaths in penal or charitable institutions during 1889-90* was 3,053, being in the proportion of 1 to every 5.9 deaths which took place in Victoria during the year. 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 year 1889-90:—

DEATHS IN PUBLIC INSTITUTIONS, 1889-90.

	Number of Deaths.
General hospitals	2,118
Women's Hospital—	
Infirmery Department	16
Midwifery Department	44†
Hospital for Sick Children	72
Benevolent asylums... ..	272
Melbourne Immigrants' Home	109
Orphan Asylums	5
Eye and Ear Hospital	3
Victorian Asylum and School for the Blind	1
Hospitals for the insane	264
Female refuges	3‡
Victorian Infant Asylum	22
Industrial and reformatory schools	38§
Gaols (inclusive of Police gaols)	80
Penal establishments	6
Total	3,053

NOTE.—No deaths occurred in 1889-90 in the Deaf and Dumb Institution.

* 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, 1890.

† Including the deaths of 34 infants born in the institution.

‡ Infants only, who were admitted with their mothers. No mothers died in the institutions.

§ Including deaths of boarded-out and licensed children.

712. The administration of matters relating to Public Health in Victoria is now regulated by the *Health Act* 1890, consolidating previous Acts. Under this Act there has been since the 1st February, 1890, a Department of Public Health, with a Minister of Health and a Board of Public Health, consisting of the Chairman and Medical Inspector, who are appointed by the Government, and seven representative members, who are members of and elected by Municipal Councils, and who hold office for three years. The powers of the Board are very large. It may compel local councils to carry out most of the provisions of the *Health Act* which were previously optional, may make general regulations for the inspection of dairies, may provide hospital accommodation where councils are in default, may order the isolation of persons suffering from dangerous, infectious, or contagious diseases, may require councils to provide destructors, incinerators, etc., and to pass by-laws providing for the effective treatment of house refuse, nightsoil, etc., and for the prevention of the pollution of rivers, and may act as a court of appeal in regard to abattoirs and offensive trade establishments. The Board, which meets weekly either as a board or in committee, also administers the *Cemetery Act*, as well as the laws and regulations relating to vaccination and quarantine. The local sanitary authorities are the various Municipal Councils, of which there are now 194. These councils are responsible for the sanitary condition of their several districts, and are authorized to defray all expenses in connexion with sanitary works out of the municipal funds, and in certain cases to levy special sanitary rates.

Department
of Public
Health.

713. The following are the results of meteorological observations taken at different stations throughout the colony during 1890. 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:—

Meteorologi-
cal observa-
tions, 1890.

METEOROLOGICAL OBSERVATIONS AT VARIOUS STATIONS, 1890.

Stations.	Height above Sea-level.	Temperature in the Shade.		
		Max.	Min.	Mean.
	Feet.	°	°	°
Portland	37·0	102·0	27·0	57·4
Gabo Island*	50·0	84·0	40·0	...
Melbourne	91·3	103·4	29·0	58·7
Cape Otway	270·0	104·0	30·0	56·4
Wilson's Promontory	300·0	91·0	42·0	57·4
Echuca	314·0	105·0	30·0	61·6
Sandhurst	701·0	103·5	30·0	59·4
Ballarat*	1,438·0	...	32·0	...

Stations.	Mean Atmospheric Pressure.	Days on which Rain fell.	Amount of Rainfall.	Mean Relative Humidity.	Amount of Cloud.
	Inches.	No.	Inches.	0—1.	0—10.
Portland	29·950	171	34·47	0·79	4·7
Gabo Island* ... ..	...	155	42·76	...	..
Melbourne	29·924	140	24·24	0·72	6·2
Cape Otway	29·689	194	31·52	0·81	5·7
Wilson's Promontory	29·616	137	47·63	0·78	6·3
Echuca	29·635	101	21·70	...	...
Sandhurst	29·244	120	24·85	0·69	4·7
Ballarat* ... ..	...	...	...	...	...

Meteorology
in Mel-
bourne, 1864
to 1890.

714. The following are the results for Melbourne in each of the twenty-seven years ended with 1890:—

METEOROLOGICAL OBSERVATIONS AT MELBOURNE—RETURN
FOR TWENTY-SEVEN 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

* The return for Ballarat is incomplete owing to change of Observer and transfer of instrument to Mt. Pleasant Observatory. The return for Gabo Island is also incomplete in consequence of temporary absence of the Observer.

METEOROLOGICAL OBSERVATIONS AT MELBOURNE—RETURN FOR TWENTY-SEVEN YEARS—*continued.*

(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.					
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	32·30	·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
Means	104·8	30·1	57·4	29·94	131	25·51	·71	5·9

715. It will be noticed that in 1890, according to observations taken at the Melbourne Observatory, although the maximum and the minimum temperature were $1\frac{1}{2}$ and 1 degree respectively below the average, yet the mean temperature was over $1\frac{1}{4}$ degree above the average; also that, whilst the mean atmospheric pressure was slightly below, the rainfall was $1\frac{1}{4}$ inch below the average. The mean relative humidity, however, was above, and the mean amount of cloud much above the average, whilst the number of wet days was 9 more than usual.

Observations in 1890 compared with means.

716. During the period of twenty-seven years a higher temperature than the maximum of 1890 was experienced in all the years but twelve, but a lower one than the minimum in only five of the previous years; moreover, the mean temperature was higher than in any previous year; the days on which rain fell were more numerous than in twenty-two of the years, but the amount of rainfall was lower than in all the years but eleven.

Observations in 1890 and former years compared.

717. The mean temperature of Melbourne over a series of years ($57\cdot4^\circ$) corresponds with that of Bathurst, a town in the interior of New South Wales, situated 2,150 feet above the sea-level, and is about equal to that of Washington ($56\cdot9^\circ$), Bordeaux ($57\cdot0^\circ$), Madrid ($57\cdot2^\circ$), and Marseilles ($58\cdot3^\circ$). It is higher by over 2 degrees than

Mean temperature in Melbourne and elsewhere.

that of Hobart (55.1°), lower by $5\frac{1}{3}$ degrees than that of Sydney (62.5°), and lower by $7\frac{1}{3}$ degrees than that of Adelaide (64.6°).*

Mean rain-
fall in Mel-
bourne and
elsewhere.

718. The mean rainfall in Melbourne (25.5 in.) corresponds approximately with that of Ventnor in England, and Perth in Western Australia, Goulburn in New South Wales, and Toulouse in France. It is somewhat above that in London, Paris, or Berlin, is 2 inches above that in Hobart, is $4\frac{1}{2}$ 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.
Brisbane	139	49.37	Melbourne	131	25.51
Sydney	147	49.17	Perth ... ..	...	25.00
Newcastle	113	46.98	Bathurst	73	23.62
Auckland (1888-9) ...	168	38.29	Hobart	141	23.46
Orange	104	37.71	Wagga Wagga	77	22.73
Dunedin (1888-9) ...	144	35.90	Sandhurst	111	22.22
Wellington (1888-9) ...	170	35.68	Adelaide	120	21.09
Portland	185	33.63	Echuca	76	20.73
Belfast	163	28.85	Deniliquin	64	17.06
Albury	80	28.36	Bourke	43	16.15
Goulburn	84	26.13			

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) ...	25 $\frac{1}{2}$
Washington	41	Toulouse	24 $\frac{3}{4}$
Cork	40	Berlin	24
Naples	39	London	24
Plymouth	39	Paris	23
Milan	38	Marseilles	19
Liverpool	37	Madrid	9
Manchester	33		

NOTE.—The averages 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, and Ventnor, 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: Potter, Sydney, 1890.

* The observations, except those for Melbourne, Adelaide, and Hobart, have been taken from a work entitled *Physical Geography and Climate of New South Wales*, by H. C. Russell, C.M.G., Government Astronomer of that colony.

719. The Board of Visitors to the Melbourne Observatory, in their report dated 12th September, 1890,* state that, notwithstanding the doubts expressed in their last report as to whether the repolishing of the mirrors of the great Melbourne telescope could be satisfactorily carried out, this important and difficult work has been accomplished under the direction of the Government Astronomer (Mr. R. L. J. Ellery, C.M.G.). The instrument is now restored to its original efficient condition, and, in fact, the mirror in use is now of a more perfect figure than it was when it was first received at the Observatory. Although the telescope is fit for the work required of it, it is still thought—having regard to the great progress lately made in the construction of large lenses—that it would be well to keep in view the expediency of obtaining a refractor of large aperture, to be erected on the equatorial mounting of the great Melbourne telescope, the cost of the change being estimated at about £2,000. The instruments and buildings, as recommended by the Board, are now being lighted by electricity. The Australian meteorological stations reporting to the Observatories by telegraph are found to be too numerous, the tax upon the departments becoming too burdensome, and an Inter-colonial Conference on the subject is contemplated, when Mr. Ellery will propose a revision of the list.†

Mirrors of
great
telescope.

720. An extended account of the meteorology and climate of Victoria will be found in the *Victorian Year-Book*, 1874, paragraphs 54 to 95.

Meteorology
elsewhere
treated on.

* Parliamentary Paper, No. 217, Session 1890.

† An interesting description of the Melbourne Observatory and of the great Melbourne telescope, by Mr. E. J. White, the then acting Government Astronomer, will be found in the *Victorian Year-Book*, 1874, page 231 *et seq.*