

## VITAL STATISTICS.

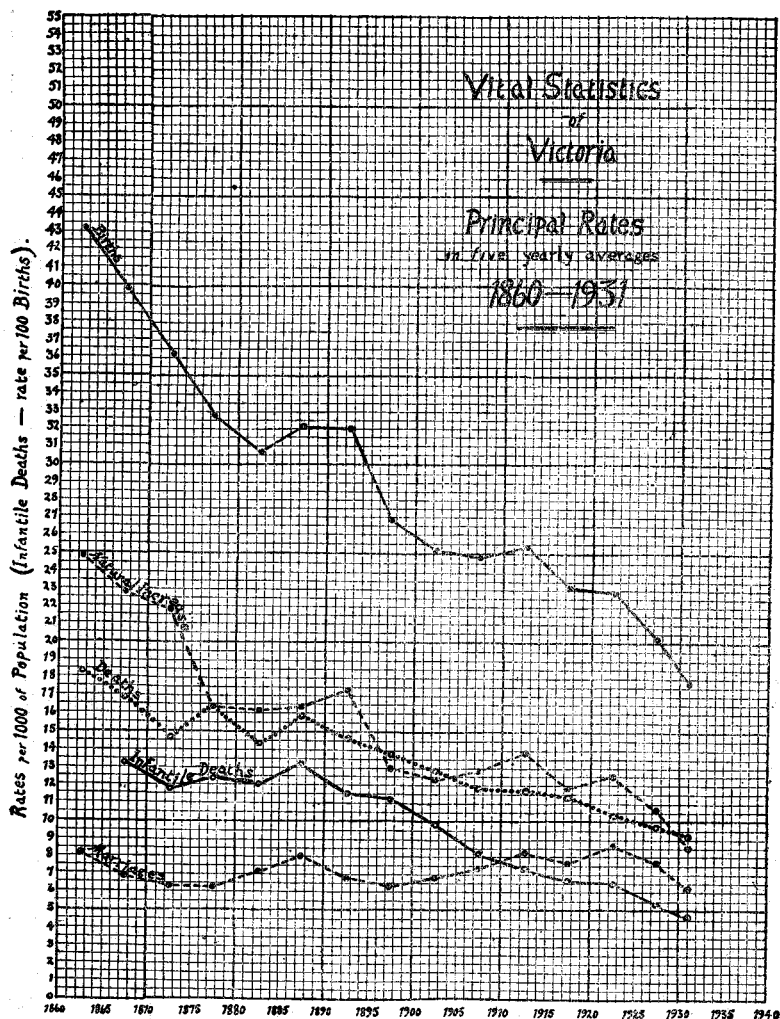
Registration  
of Births,  
Deaths, and  
Marriages.

The present official system of compulsory registration of births, deaths, and marriages in Victoria has been in force since 1853, and the registers—framed on the best models—are replete with all necessary information bearing on the family history of the people. The statutory duties under the Registration Acts are performed by the Government Statist, who has control over the local registrars of births and deaths, and the registrars of marriages, and (so far as regards their registration duties) over the clergymen who celebrate marriages. Copies of entries certified by him or by the Assistant Government Statist are *prima facie* evidence in the Courts of Australia of the facts to which they relate. At the head office in Melbourne there is kept for reference a complete collection of all registrations effected since 1st July, 1853, as well as originals or certified copies of all existing church records relating to earlier periods, as far back as 1837. Since the present system was instituted approximately 4,682,000 original entries have been made in the indexes, of which 1,256,600 relate to marriages, 2,327,900 to births, and 1,097,500 to deaths.

Applicants for searches or certificates of births, deaths, or marriages should, in applying to the Government Statist, furnish particulars of the date and place of the event; also the names of the parties in the case of a marriage, and the name, age (if a death), and parentage in the case of a birth or death. Searches are charged for at the following rates:—2s. 6d. for the first five years and an additional 2s. 6d. for every five years or part of five years thereafter. There is no extra charge for an extract of an entry, but, for a certificate, a further sum of 5s. is payable, except where application is made within three months of the registration of the event, when the extra charge is only 2s. 6d. For a search in the early church records, prior to 1st July, 1853, the fee is only 1s., a further sum of 1s. being payable if a certificate is required.

As evidence of the extent by which the information in the records is availed of, the number of transactions which took place in 1931 was 35,247, yielding £4,522 revenue. Included in the above number were 3,920 free ordinary searches and 349 free certificates.

The *Year-Book* for 1916-17 contains on pages 301 to 303 a statement of the law relating to marriages and the registration of births and deaths in Victoria. The various Acts were consolidated in 1928.



The principal numbers and rates—male and female—  
**Summary of Vital Statistics, 1931.** relating to Vital Statistics in Victoria for the year 1931, are given in the following table:—

**SUMMARY OF VITAL STATISTICS, VICTORIA, 1931.**

Division.	Sex.	Mean Population.	Number of—			Rate per 1,000 of Population.		Deaths under One Year per 1,000 Births.
			Births.	Deaths.	Deaths under One Year.	Births.	Deaths.	
Greater Melbourne	Males	487,540	7,598	5,028	395	15·58	10·31	51·99
	Females	544,080	7,203	4,736	316	13·24	8·70	43·87
	Total	1,031,620	14,801	9,764	711	14·35	9·46	48·04
Rest of the State	Males	400,929	8,034	4,162	385	20·04	10·38	47·92
	Females	364,636	7,497	3,107	253	20·56	8·52	33·75
	Total	765,565	15,531	7,269	638	20·28	9·49	41·08
Victoria	Males	888,469	15,632	9,190	780	17·59	10·34	49·90
	Females	908,716	14,700	7,843	569	16·18	8·63	38·71
	Total	1,797,185	30,332	17,033	1,349	16·88	9·48	44·47

NOTE.—Particulars of marriages are available only for the whole State.

The marriage, birth, and infantile death rates for 1931 were the lowest recorded in Victoria.

**MARRIAGES.**

**Marriages—Numbers and Rates.** Marriages in Victoria in 1931 numbered 10,182. This was 1,459 less than the number for the previous year, and 4,716 less than the greatest number recorded—that for 1920.

The ordinary marriage rate—per 1,000 of the total population—like birth and death rates similarly estimated, is somewhat unreliable in comparatively newly settled countries like Australia, especially in earlier periods, but it affords a ready and approximate comparison between years not widely separated.

The following table shows the number of marriages, the quarters in which they were registered, and the proportion per 1,000 of the population, since 1854:—

MARRIAGES IN EACH QUARTER, VICTORIA, 1855 TO 1931.

Period.	Average Annual Number of Marriages.	Quarter of Registration.				Rate per 1,000 of Mean Population.
		March.	June.	September.	December.	
1855-59..	4,362	*	*	*	*	10·24
1860-64..	4,418	1,068	1,166	1,079	1,105	8·16
1865-69..	4,533	1,123	1,144	1,113	1,153	6·94
1870-74..	4,823	1,168	1,299	1,131	1,225	6·40
1875-79..	5,023	1,239	1,307	1,207	1,270	6·21
1880-84..	6,296	1,528	1,611	1,483	1,674	7·07
1885-89..	8,208	1,899	2,196	1,915	2,198	8·04
1890-94..	7,945	1,995	2,100	1,838	2,012	6·88
1895-99..	7,627	1,816	2,074	1,778	1,959	6·44
1900-04..	8,201	2,000	2,252	1,930	2,019	6·78
1905-09..	9,209	2,185	2,548	2,182	2,294	7·36
1910-14..	11,244	2,664	3,000	2,644	2,936	8·29
1915-19..	10,908	2,437	2,754	2,815	2,902	7·62
1920-24..	13,598	3,252	3,578	3,152	3,616	8·64
1925 ..	13,370	3,064	3,594	3,201	3,511	8·00
1926 ..	13,405	3,012	3,757	3,085	3,551	7·90
1927 ..	13,608	3,152	3,835	3,000	3,621	7·88
1928 ..	13,186	3,162	3,524	3,148	3,352	7·53
1929 ..	12,935	3,292	3,303	2,801	3,539	7·31
1930 ..	11,641	2,837	3,323	2,630	2,851	6·52
1931 ..	10,182	2,346	2,638	2,425	2,773	5·67

\* Not available.

The highest number of marriages in the history of the State—14,898, and also the highest rate per 1,000 of the population since 1857—9·85, were recorded in 1920. This was mainly due to the marriages of a large number of returned soldiers after their return to civilian life. The rate for 1931 was the lowest recorded.

**Marriage rates in Australasia.** Marriage rates in each of the other Australasian States in 1931 were as follows:—New South Wales, 6·13; Queensland, 6·21; South Australia, 5·26; Western Australia, 6·51; Tasmania, 6·82; and New Zealand, 6·79. The rate for Australia was 5·98 in 1931, as compared with 6·71 in 1930, 7·45 in 1929, 7·73 in 1928, 7·95 in 1927, and an average annual rate of 8·38 in the period 1920 to 1924, 7·75 in 1915 to 1919, and 8·72 in 1910 to 1914.

**Marriages. (Census and standardized rates.)**

Census rates and explanations of factors affecting the crude marriage rate will be found in previous editions of this work.

The ages of bridegrooms and brides who were married in 1931 are shown in combination for various groups in the table which follows :—

### AGES OF BRIDEGROOMS AND BRIDES IN COMBINATION IN VICTORIA, 1931.

Ages of Bridegrooms.	Ages of Brides.																			Total Bridegrooms.
	13.	14.	15.	16.	17.	18.	19.	20.	21 to 25.	25 to 30.	30 to 35.	35 to 40.	40 to 45.	45 to 50.	50 to 55.	55 to 60.	60 to 65.	65 to 70.	70 and over.	
16	..	..	..	..	1	..	..	2	1	..	..	..	..	..	..	..	..	..	..	4
17	..	..	..	3	5	5	..	..	2	..	..	..	..	..	..	..	..	..	..	17
18	..	1	3	5	15	24	12	8	7	..	2	..	..	..	..	..	..	..	..	77
19	..	..	2	2	15	29	48	42	15	33	1	..	..	..	..	..	..	..	..	185
20	..	..	2	2	13	32	44	61	45	71	5	..	..	..	..	..	..	..	..	273
21 to 25	1	8	47	115	236	307	295	1,571	280	32	5	1	1	1	..	..	..	..	..	2,899
25 to 30	1	2	15	56	80	131	193	1,577	1,186	176	32	8	1	1	..	..	..	..	..	3,458
30 to 35	..	..	..	3	13	21	25	43	413	576	281	84	9	1	..	..	..	..	..	1,469
35 to 40	..	..	..	1	5	3	10	13	105	211	189	118	33	7	1	4	..	..	..	700
40 to 45	..	..	..	..	..	2	1	2	37	77	93	87	69	20	6	..	..	..	..	394
45 to 50	..	..	..	..	1	..	2	..	13	27	37	68	52	35	13	2	3	..	..	253
50 to 55	..	..	..	..	..	..	..	..	5	7	17	27	27	25	20	12	1	..	..	141
55 to 60	..	..	..	..	..	..	..	..	3	1	11	12	26	20	11	14	2	1	..	101
60 to 65	..	..	..	..	..	..	..	1	2	..	7	14	13	15	7	10	9	4	1	83
65 to 70	..	..	..	..	..	..	..	..	..	..	3	3	7	16	8	10	21	10	2	80
70 to 75	..	..	..	..	..	..	..	..	..	..	1	1	2	1	7	6	7	9	4	38
75 and over	..	..	..	..	..	..	..	..	..	..	..	2	..	..	1	1	3	2	1	10
Total Brides	3	17	102	272	463	594	616	3,840	2,373	847	453	247	142	74	59	46	26	8	10,182	

Of every 1,000 men married during the year, 734 were older and 164 younger than their brides, and 102 were of the same age as their partners.

The following table shows the proportions of both sexes marrying in various age groups for 1931 :—

### PROPORTIONS OF BRIDEGROOMS AND BRIDES IN AGE GROUPS, 1931.

Age Group.	Proportion per 1,000 of total—		Age Group.	Proportion per 1,000 of total—	
	Bridegrooms.	Brides.		Bridegrooms.	Brides.
Under 16 ..	..	1·96	35 to 40 ..	68·75	44·49
16 to 17 ..	·39	10·02	40 to 45 ..	38·70	24·26
17 to 18 ..	1·67	26·71	45 to 50 ..	24·85	13·95
18 to 19 ..	7·56	45·47	50 to 55 ..	13·85	7·27
19 to 20 ..	18·17	58·34	55 to 60 ..	9·92	5·79
20 to 21 ..	26·81	60·50	60 and over ..	20·72	7·86
21 to 25 ..	284·72	377·14	Total ..	1,000·00	1,000·00
25 to 30 ..	339·62	233·06			
30 to 35 ..	144·27	83·18			

**Age at marriage.** The mean ages at marriage, according to conjugal condition, are shown in the following table, for each of the last five years :—

### MEAN AGE AT MARRIAGE, 1927 TO 1931.

Year.	Bridegrooms.			Brides.		
	Bachelors.	All Bridegrooms.	Bridegrooms of Brides under 45.	Spinsters.	All Brides.	Brides under 45.
	Years.	Years.	Years.	Years.	Years.	Years.
1927 ..	28·19	29·51	28·71	25·37	26·34	25·50
1928 ..	28·12	29·55	28·66	25·34	26·34	25·42
1929 ..	28·07	29·59	28·71	25·31	26·23	25·35
1930 ..	28·16	29·72	28·81	25·19	26·22	25·29
1931 ..	27·89	29·52	28·65	25·02	26·02	25·03

In 1931 the mean marrying age of divorced men was 41·88 years and of widowers 49·39, while for divorced women the age was 36·49 and for widows 44·70.

**Birthplaces of persons marrying.** Marriage records show that, of the persons married in Victoria during 1931, 86·3 per cent. were born in Australia, 10·9 per cent. in the United Kingdom, and 1·3 per cent. in other British Possessions, and that only small proportions, about 2·1 per cent. of the bridegrooms and 1·0 per cent. of the brides, were natives of foreign countries. The numbers born in Australia and other countries are shown in the subjoined table for the years 1913 and 1931 :—

### BIRTHPLACES OF PERSONS MARRIED, 1913 AND 1931.

Where Born.	Bridegrooms.		Brides.	
	1913.	1931.	1913.	1930.
Australia ... ..	9,628	8,496	10,274	9,087
New Zealand ... ..	155	88	82	67
England and Wales ...	972	985	644	645
Scotland ... ..	213	253	141	179
Ireland ... ..	126	91	83	63
Other British Possessions ...	40	59	24	41
Germany ... ..	46	23	19	12
Russia ... ..	17	10	3	7
Italy ... ..	15	56	12	14
United States ... ..	30	22	14	9
Other Foreign Countries and unspecified ... ..	82	99	28	58
Total .. ..	11,324	10,182	11,324	10,182

**Conjugal condition of persons marrying.**

The following statement shows the percentages of persons in each conjugal condition who have married in different periods since 1870 :—

**CONJUGAL CONDITION OF PERSONS MARRYING, 1871 TO 1931.**

Conjugal Condition.	Percentage of Total Marriages.				
	1871-80.	1891-1900.	1911-20.	1921-30.	1931.
Bachelors and Spinsters..	80·59	87·22	90·31	90·70	91·33
Bachelors and Widows ..	7·10	4·23	3·15	2·95	2·06
Widowers and Spinsters..	7·75	6·07	4·81	4·57	4·68
Widowers and Widows ..	4·56	2·48	1·73	1·78	1·93

NOTE.—In this table divorced men and women are included with bachelors and spinsters respectively.

Of every 1,000 persons of each sex married in Victoria during 1931, 66 were widowers and 40 were widows, as against 63 and 43 respectively in 1930, 64 and 38 in 1929, 59 and 44 in 1928, and 58 and 44 in 1927.

**Divorced persons re-marrying.** The number of divorced persons re-married during 1931 was 374, which was 89 less than the number for the preceding year. Of the 123,104 persons married during the last five years, divorced persons numbered 2,317, or 1 in every 53 persons, as compared with 1 in every 98 in the period, 1916-20. The following are the numbers of divorced persons who have re-married during the years 1927 to 1931 :—

**DIVORCED PERSONS RE-MARRYING, 1927 TO 1931.**

Year.				Males.	Females.	Total.
1927	..	..	..	227	238	465
1928	..	..	..	248	255	503
1929	..	..	..	236	276	512
1930	..	..	..	236	227	463
1931	..	..	..	184	190	374

**Marriages of minors.**

The proportions of bridegrooms and brides under 21 years of age are given in the subjoined table for the years 1927 to 1931 :—

Year.				Percentage under 21 years of age.	
				Bridegrooms.	Brides.
1927	..	..	..	4·15	17·47
1928	..	..	..	4·02	18·11
1929	..	..	..	4·31	18·34
1930	..	..	..	4·70	19·57
1931	..	..	..	5·45	20·30.

Marriages in  
religious  
denomina-  
tions.

The numbers and proportions of marriages solemnized according to the rites of the principal religious denominations and of those performed by registrars of marriages, for the years 1913 and 1931, are shown in the following table:—

### MARRIAGES IN VARIOUS DENOMINATIONS.

Denomination.	1913.		1931.	
	Number.	Percentage of Total Marriages.	Number.	Percentage of Total Marriages.
Church of England .. ..	3,179	28·07	2,836	27·85
Roman Catholic Church .. ..	1,922	16·97	1,805	17·73
Presbyterian Church .. ..	2,105	18·59	1,674	16·44
Methodist Church .. ..	1,633	14·42	1,315	12·92
Baptist Church .. ..	449	3·97	496	4·87
Church of Christ .. ..	257	2·27	226	2·22
Congregational Church .. ..	1,014	8·95	217	2·13
Lutheran Church .. ..	71	·63	90	·88
Salvation Army .. ..	47	42	54	·53
Hebrew .. ..	43	·38	66	·65
Other Sects .. ..	314	2·77	260	2·55
Registrars of Marriages .. ..	290	2·56	1,143	11·23
Total .. ..	11,324	100·00	10,182	100·00

Excepting the ratios for the Roman Catholic, Presbyterian, and Methodist churches, there were great disparities between the proportion of marriages celebrated according to the rites of each of the principal denominations and the proportionate number of adherents possessed by it in the community.

Civil  
marriages.

The following statement shows the numbers and proportions of marriages performed by civil registrars, for each of the last ten years:—

### CIVIL MARRIAGES, 1922 TO 1931.

Year.	Number.	Percentage of Total Marriages.	Year.	Number.	Percentage of Total Marriages.
1922 ..	436	3·35	1927 ..	845	6·21
1923 ..	508	3·87	1928 ..	1,013	7·68
1924 ..	658	4·95	1929 ..	1,040	8·04
1925 ..	528	5·95	1930 ..	1,224	10·51
1926 ..	617	4·61	1931 ..	1,143	11·23



**Registered  
clergymen.** The ministers qualified by registration to celebrate marriages in Victoria numbered 1,759 on 31st December, 1931. The numbers of ministers in each denomination (excepting Jews and Quakers) and civil registrars of marriages were as follows:—

REGISTERED MINISTERS OF EACH DENOMINATION, 1931.

Denomination.	Number of Registered Ministers.	Denomination.	Number of Registered Ministers.
Church of England ..	442	Ballarat Town Mission ..	1
Roman Catholic ..	393	New Church ..	2
Presbyterian ..	300	Greek Orthodox Church ..	1
Methodist ..	310	Unitarian ..	1
Baptist ..	92	International Bible Students' Association ..	1
Church of Christ ..	72	Latter Day Saints (Mor- mons) ..	1
Congregational ..	55	Open Brethren ..	3
Lutheran ..	30		
Salvation Army ..	37		
Latter Day Saints (Re- organized) ..	3	Total Clergymen ..	1,759
Seventh Day Adventist ..	10	Civil Registrars of Mar- riages ..	21
Catholic Apostolic ..	2		
Free Christian ..	1		
Australian Church ..	2	Grand Total ..	1,780

Marriages of Jews and Quakers are exempted from the law relating to marriages in Victoria, and are deemed legal and valid if celebrated according to their respective usages.

BIRTHS.

**Births—  
Numbers and  
Rates.** The number of births registered in Victoria during the year 1931 was 30,332. This was 2,795 less than the number registered for the preceding year, and the rate per 1,000 of the population was the lowest experienced in Victoria. Stillbirths, which are excluded from both births and deaths, numbered 846, and corresponded to a ratio of 2.79 per 100 infants born alive in 1931. There were 1,063 male to every 1,000 female births in 1931, as compared with 1,056 in 1930, 1,073 in 1929, 1,066 in 1928, and 1,062 in 1927.

In young communities, birth rates calculated per 1,000 of the population are to some extent unreliable and misleading. In the earlier periods, when, owing to immigration, the population consists for

the most part of men and women at the reproductive period of life, such rates are naturally high. As time proceeds, however, notwithstanding that immigration of reproductive adults may be maintained, the proportion of such adults to the total population must diminish, and with it, consequently, the birth rate.

The following table shows the number of births—male and female—the quarters in which they were registered, and the proportion per 1,000 of the population, since 1854 :—

### BIRTHS IN EACH QUARTER, VICTORIA, 1855 TO 1931.

Period.	Average Annual Number of Births.	Sex.		Quarter of Registration.				Rate per 1,000 of Mean Population.
		Males.	Females.	March.	June.	September.	December.	
1855-59	17,154	8,742	8,412	*	*	*	*	39·49
1860-64	24,060	12,379	11,681	5,614	5,991	6,534	5,921	43·29
1865-69	25,963	13,219	12,744	6,027	6,543	7,105	6,288	39·77
1870-74	27,359	13,944	13,415	6,478	6,769	7,467	6,645	36·35
1875-79	26,584	13,639	12,945	6,333	6,686	7,211	6,354	32·85
1880-84	27,286	13,965	13,321	6,374	7,025	7,300	6,587	30·64
1885-89	32,941	16,883	16,058	7,824	8,289	8,814	8,014	32·27
1890-94	36,945	18,901	18,044	8,669	9,604	9,735	8,937	31·99
1895-99	31,675	16,213	15,462	7,746	8,078	8,323	7,528	26·76
1900-04	30,316	15,544	14,772	7,384	7,682	7,880	7,370	25·08
1905-09	30,994	15,879	15,115	7,489	7,832	8,076	7,597	24·76
1910-14	34,500	17,717	16,783	8,329	8,619	8,850	8,702	25·42
1915-19	33,101	17,014	16,087	8,228	8,336	8,514	8,023	23·13
1920-24	36,022	18,549	17,473	8,729	8,970	9,367	8,956	22·89
1925 ..	35,922	18,593	17,329	8,938	8,790	9,195	8,999	21·49
1926 ..	35,362	18,203	17,159	8,832	8,861	8,950	8,719	20·84
1927 ..	35,074	18,068	17,006	8,508	8,742	9,265	8,559	20·30
1928 ..	34,498	17,805	16,693	8,870	8,684	8,716	8,228	19·70
1929 ..	33,604	17,394	16,210	8,512	8,564	8,153	8,375	18·99
1930 ..	33,127	17,015	16,112	8,360	8,308	8,329	8,130	18·65
1931 ..	30,332	15,632	14,700	7,835	7,888	7,294	7,315	16·88

\* Not available.

Birth rates per 1,000 of the mean population in each of the other Australasian States in 1931 were as follows :— New South Wales, 19·02; Queensland, 18·62; South Australia, 15·56; Western Australia, 20·32; Tasmania, 21·65; and New Zealand, 18·42. The rate for Australia in 1931 was 18·23 as compared with 19·93 in 1930, 20·31 in 1929, 24·40 in 1920 to 1924, 25·89 in 1915 to 1919, and 27·73 in 1910 to 1914. The birth rate in England and Wales was 15·8 in the year 1931.

**Births.**  
(Census and  
standardized  
rates.)

Census rates and explanations of factors affecting the crude birth rate will be found in previous issues of this work.

**Birthplaces**  
**of parents**  
**of nuptial**  
**children.**

The birth records of children born in wedlock show that, in Victoria in 1931, 80 out of every 100 children were born to Australian parents, and 94 out of every 100 to one or both parents born in Australia. Of the total fathers, the percentages born in the States or countries mentioned hereafter were as follows:—77·4 in Victoria; 85·9 in Australia; 0·7 in New Zealand; 8·1 in England and Wales; 2·1 in Scotland; 0·9 in Ireland; 0·5 in other British Possessions; and 1·8 in foreign countries. The corresponding percentages for mothers were:—Victoria, 79·7; Australia, 88·9; New Zealand, 0·6; England and Wales, 6·8; Scotland, 1·7; Ireland, 0·5; other British Possessions, 0·4; and foreign countries, 1·1.

**Ages of**  
**parents of**  
**nuptial**  
**children.**

The average ages of fathers and mothers of nuptial children whose births were recorded in 1931 were 33·06 and 29·43 years respectively, which were 4·41 and 4·40 years above the average ages of bridegrooms marrying brides under 45 years of age, and of such brides for the same year. The proportions of both parents in various age groups are shown in the following table for the year mentioned:—

PERCENTAGE OF PARENTS IN AGE GROUPS, 1931.

Father.			Mother.		
Age Group.		Proportion per 100 Births.	Age Group.		Proportion per 100 Births.
Under 20	...	61	Under 20	...	4·56
20 to 25	...	11·60	20 to 25	...	22·95
25 to 30	...	26·64	25 to 30	...	28·62
30 to 35	...	25·61	30 to 35	...	23·12
35 to 40	...	18·17	35 to 40	...	14·89
40 to 45	...	10·55	40 to 45	...	5·41
45 to 50	...	4·42	45 and over	...	45
50 and over	...	2·40			
Total	...	100·00	Total	...	100·00

It will be seen that, on the experience of 1931, 51·57 per cent. of the mothers were between ages 20 and 30, and 38·01 per cent. between ages 30 and 40. The proportions of fathers at these ages were 38·24 and 43·78 per cent. respectively. Of every 1,000 nuptial births about 46 were due to mothers under 20 years, and about 4 to mothers aged 45 years and upwards.

The following table, shows the number of births (allotted to the place of usual residence of the mother), and the births per 1,000 of the mean

population in Greater Melbourne, the principal country towns, and the remainder of the State for the five-year period 1923 to 1927 and the years 1929 to 1931 :—

# BIRTHS IN GREATER MELBOURNE, PRINCIPAL COUNTRY TOWNS, AND REMAINDER OF STATE.

Municipality.	Number of Births.				Births per 1,000 of Mean Population.			
	Annual Average, 1923-1927.	1929.	1930.	1931.	Annual Average, 1923-1927.	1929.	1930.	1931.
<b>Greater Melbourne—</b>								
Melbourne ..	1,812	1,366	1,475	1,220	17·80	13·38	14·50	12·04
Box Hill ..	*	283	285	234	*	20·99	20·65	16·57
Braybrook (Part) ..	*	210	202	186	*	29·66	28·02	26·01
Brighton ..	482	413	405	371	18·75	14·32	13·81	12·55
Brunswick ..	1,161	1,057	986	888	23·42	18·59	17·39	15·91
Camberwell ..	797	919	989	819	23·10	19·45	19·97	16·52
Caulfield ..	1,065	1,019	1,000	877	18·49	14·17	13·52	11·76
Chelsea ..	..	118	129	126	..	16·39	17·74	17·26
Coburg ..	703	792	770	696	23·98	20·14	19·46	17·44
Collingwood ..	690	549	518	505	20·35	16·69	16·01	15·91
Essendon ..	846	812	781	737	21·31	18·70	17·68	16·62
Fitzroy ..	683	562	515	465	19·92	17·05	15·94	14·78
Footscray ..	980	942	928	777	23·09	18·49	17·89	15·12
Hawthorn ..	525	463	462	387	16·63	13·87	13·85	11·69
Heidelberg (Part) ..	*	454	452	366	*	21·55	21·40	17·40
Kew ..	379	370	356	319	17·96	15·02	14·25	12·72
Malvern ..	636	549	513	466	15·07	11·95	11·05	9·99
Moorabbin ..	..	417	456	360	..	26·13	26·45	20·39
Mordialloc ..	..	170	153	157	..	16·62	14·85	15·39
Northcote ..	898	759	740	698	24·51	18·25	17·87	16·88
Oakleigh ..	*	294	270	244	*	26·49	24·11	21·67
Port Melbourne ..	278	233	229	220	21·14	17·32	17·22	17·05
Prahran ..	877	712	717	637	17·02	13·52	13·63	12·25
Preston ..	558	770	767	647	31·33	26·94	26·27	21·60
Richmond ..	886	705	682	672	20·34	16·47	16·16	16·23
Sandringham ..	275	300	290	248	15·93	12·68	12·34	10·67
South Melbourne ..	865	683	658	592	18·34	14·30	13·74	12·36
St. Kilda ..	659	566	546	473	16·05	13·13	12·71	11·13
Williamstown ..	485	440	431	414	21·77	17·64	17·18	16·57
Remainder of Metropolis ..	1,364	..	..	..	25·88	..	..	..
<b>Country Towns—</b>								
Ballarat ..	728	706	654	681	17·75	16·73	15·55	16·31
Bendigo ..	609	586	558	523	18·10	17·39	16·56	15·51
Geelong ..	862	931	906	772	21·87	21·36	20·88	18·05
Chelsea ..	126	..	..	..	19·28	..	..	..
Castlemaine ..	132	111	105	116	18·50	15·48	14·64	17·39
Hamilton ..	144	140	146	146	27·69	26·32	27·56	27·55
Maryborough ..	114	115	106	128	23·57	23·19	21·37	25·35
Mildura ..	198	188	187	168	34·09	30·82	31·17	28·00
Mordialloc ..	150	..	..	..	19·70	..	..	..
Shepparton ..	†	158	168	136	†	27·72	30·55	22·67
Stawell ..	111	84	96	86	23·88	17·68	20·43	17·20
Warrnambool ..	183	184	163	162	22·75	22·44	20·12	19·78
Wonthaggi ..	159	128	161	150	25·06	18·29	23·00	20·46
<b>Summary—</b>								
Greater Melbourne ..	17,904	16,927	16,705	14,801	19·93	16·48	16·15	14·35
Country Towns ..	3,516	3,331	3,250	3,068	20·64	19·75	19·36	18·29
Remainder of State ..	14,255	13,346	13,172	12,463	23·73	23·27	22·62	20·85
Victoria ..	35,675	33,604	33,127	30,332	21·37	18·99	18·56	16·88

\* Included in Remainder of Metropolis.

† Not calculated.

NOTE.—Up to the end of 1928, Greater Melbourne was defined as that area within a radius of ten miles of the Elizabeth-street Post Office. At the beginning of 1929, the area was re-defined to conform to the expansion of the Metropolis in a south-easterly direction, and to include, as far as possible, complete Local Government areas. In the Heidelberg shire, the Greensborough Riding, and, in the Braybrook Shire, the Western Riding, are excluded.

**Twin and triplet births.** The numbers of cases of twin and triplet births in Victoria in the last five years were as follows :—

## CASES OF TWINS AND TRIPLETS.

Year.	Cases of Twins.	Cases of Triplets.
1927 ... ..	397	3
1928 ... ..	361	1
1929 ... ..	348	3
1930 ... ..	350	Nil
1931 ... ..	343	3

On the average of the five years 1 mother in every 92 gave birth to twins, and 1 in every 16,482 was delivered of triplets. The proportions for the decennium ended 1917 were 1 in every 94 and 1 in every 9,538 respectively.

**Adoption of Children.** The *Adoption of Children Act* 1928 makes provision for the legal adoption of children. An adopted child has the right of succession whether under an intestacy or disposition to the real and personal property of an adopter, but not of its natural parent or parents; it has no rights of succession to the property of adopting parents' relatives, but has rights in estate of natural parents' relatives. Marriage is prohibited between an adopter and an adopted child.

The first registration under the above Act was effected on 14th October, 1929, and, between that date and the end of the year 1930, the adoptions of 143 male and 261 female children were registered. During 1931, adoptions registered comprised 68 male and 151 female children.

**Children legitimized.** In December, 1912, an Act was passed which provides that children born out of wedlock may be legitimized at any time after the marriage of the parents, on the application of the father, provided there was no lawful impediment to the marriage of the

parents at the time of the birth. An amending Act passed in 1916 allowed legitimation to be effected on the application of the mother if the father were absent on war service or had died not more than two years previously. Up to the end of 1931 advantage was taken of these Acts, and of an Act (now repealed) passed in 1903, to legitimate 3,186 children, of whom 279 were registered in the years 1903 to 1909, 1,347 in 1910 to 1919, 1,374 in 1920 to 1929, 101 in 1930, and 85 in 1931.

Legitimation Acts are in force in all the States and New Zealand, but there are marked differences in the numbers of legitimations resulting therefrom. In proportion to every 100 children born out of wedlock in 1931, the numbers of legitimations in the various States and New Zealand during that year were as follows:—Victoria, 6·0; New South Wales, 18·5; Queensland, 13·0; South Australia, 8·6; Western Australia, 21·2; Tasmania, 9·4; and New Zealand, 29·2.

Ex-nuptial  
Births in  
Victoria.

The following table shows the number of ex-nuptial births and their percentage to total births, in Victoria, since 1909:—

### EX-NUPTIAL BIRTHS IN VICTORIA, 1910 TO 1931.

Period.	Average Annual Number of Births.	Average Annual Number of Ex-nuptial Births.			Percentage of Total Births.
		Male.	Female.	Total.	
1910-14 .. ..	34,500	1,013	979	1,992	5·77
1915-19 .. ..	33,101	941	912	1,853	5·60
1920-24 .. ..	36,022	869	821	1,690	4·69
1925 .. ..	35,922	809	734	1,543	4·30
1926 .. ..	35,362	818	785	1,603	4·53
1927 .. ..	35,074	811	745	1,556	4·44
1928 .. ..	34,498	845	780	1,625	4·71
1929 .. ..	33,604	744	717	1,461	4·35
1930 .. ..	33,127	751	729	1,480	4·47
1931 .. ..	30,332	748	668	1,416	4·67

The percentages in the various States and New Zealand in 1931 were as follows:—Victoria, 4·67 per cent.; New South Wales, 5·34 per cent.; Queensland, 5·68 per cent.; South Australia, 3·33 per cent.; Western Australia, 4·30 per cent.; Tasmania, 4·89 per cent.; Australia, 4·93 per cent.; and New Zealand, 4·94 per cent.

**Ex-nuptiality in town and country.** A larger proportion of ex-nuptiality prevails among residents of Greater Melbourne and of the principal country towns than in the rural districts of Victoria. During the year 1931, the proportion of ex-nuptial births to total births was 5·38 per cent. in Greater Melbourne, 5·05 per cent. in the principal country towns, and 3·72 per cent. in the rural districts.

## DEATHS.

**Deaths.** The following table shows the number of deaths—male and female—the quarters in which they were registered, and the proportion per 1,000 of the population since 1854 :—

## DEATHS IN EACH QUARTER, VICTORIA, 1855 TO 1931.

Period.	Average Annual Number of Deaths.	Sex.		Quarter of Registration.				Rate per 1,000 of Mean Population.
		Males.	Females.	March.	June.	September.	December.	
1855-59..	7,653	4,768	2,885	*	*	*	*	17·78
1860-64..	10,210	6,001	4,209	3,257	2,658	2,093	2,202	18·44
1865-69..	11,035	6,374	4,661	3,385	2,938	2,243	2,469	16·93
1870-74..	10,978	6,365	4,613	3,232	2,744	2,461	2,541	14·56
1875-79..	13,289	7,567	5,722	4,016	3,567	2,831	2,875	16·45
1880-84..	12,820	7,324	5,496	3,512	3,167	3,013	3,128	14·40
1885-89..	16,200	9,307	6,893	4,591	3,912	3,689	4,008	15·87
1885-89..	16,200	9,307	6,893	4,591	3,912	3,689	4,008	15·87
1890-94..	16,886	9,716	7,170	4,643	4,108	3,977	4,158	14·62
1895-99..	16,350	9,227	7,123	4,324	3,957	3,808	4,261	13·81
1900-04..	15,457	8,686	6,771	3,921	3,750	3,992	3,794	12·84
1905-09..	14,932	8,296	6,636	3,805	3,539	3,917	3,671	11·93
1910-14..	15,705	8,616	7,089	3,873	3,875	4,137	3,820	11·57
1915-19..	16,283	8,860	7,423	3,781	4,172	4,467	3,863	11·38
1920-24..	16,375	8,781	7,594	3,846	4,166	4,503	3,860	10·40
1925 ..	15,836	8,582	7,254	3,744	4,039	4,334	3,719	9·47
1926 ..	16,335	8,765	7,570	3,622	4,439	4,239	4,035	9·63
1927 ..	16,773	8,982	7,791	3,809	4,271	4,714	3,979	9·71
1928 ..	17,708	9,384	8,324	4,087	4,176	4,735	4,710	10·11
1929 ..	16,717	9,131	7,586	3,587	4,138	4,987	4,005	9·45
1930 ..	15,959	8,467	7,492	3,682	4,112	4,334	3,831	8·94
1931 ..	17,033	9,190	7,843	3,501	4,020	4,644	4,868	9·48

\* Not available.

The number of deaths in 1931 was 17,033, which was 335 above the average of the preceeding five years.

Death rates  
in Australasia.

The death rates per 1,000 of population in each of the other Australian States during 1931 were as follows:— New South Wales, 8·48; Queensland, 7·86; South Australia, 8·38; Western Australia, 8·75; and Tasmania, 9·35. The rate for Australia was 8·70 in 1931, as compared with an average annual rate of 8·59 in 1930, 9·41 in 1925 to 1929, 9·79 in 1920 to 1924, 10·90 in 1915 to 1919, and 10·70 in 1910 to 1914. In the year 1931, the death rate in New Zealand was 8·34, and in England and Wales, 12·3.

Index of  
mortality.

The differences in the age and sex constitutions of the populations of the six States have been taken into account in computing their respective indexes of mortality. The results for each are based upon a standard population, distributed according to sex, into eleven age groups. Mortality indexes for each State for the years 1927 to 1931 as compiled by the Commonwealth Statistician, are as follows:—

### INDEX OF MORTALITY FOR AUSTRALIA, 1927 TO 1931.

Year.	Index of Mortality for—						
	Victoria.	New South Wales.	Queensland.	South Australia.	Western Australia.	Tasmania.	Australia.
1927	10·02	10·64	10·20	9·30	10·71	10·43	10·43
1928	10·45	10·40	9·91	9·21	11·14	10·76	10·24
1929	9·78	11·14	10·21	8·97	11·69	10·98	10·39
1930	9·31	9·54	9·03	8·69	11·16	9·66	9·38
1931	9·88	9·59	9·04	8·69	10·99	10·14	9·56

Though the death rate is usually higher in Victoria than in any other Australian State, the figures in the above table show that, by taking an average over the last five years, only two States—Queensland and South Australia—had a lower index of mortality than Victoria.

Death rates  
at various  
ages.

Information relating to death rates for groups of ages at the decennial periods, 1891-1900, 1902-11, and 1912-21, will be found in previous issues of this publication.

Death rates  
in town and  
country.

The following table, computed on the basis of allotment of all deaths to the place of usual residence, shows the number of deaths, and the deaths per 1,000 of the mean population in Greater Melbourne, the principal country



towns, and the remainder of the State for the five-year period 1923 to 1927 and the years 1929 to 1931.

# DEATHS IN GREATER MELBOURNE, PRINCIPAL COUNTRY TOWNS, AND REMAINDER OF STATE.

Municipality.	Number of Deaths.				Deaths per 1,000 of Mean Population.			
	Annual Average, 1923-1927.	1929.	1930.	1931.	Annual Average, 1923-1927.	1929.	1930.	1931.
<b>Greater Melbourne—</b>								
Melbourne ..	1,264	1,101	1,028	1,111	12.42	10.78	10.11	10.97
Box Hill ..	*	128	132	99	*	9.50	9.57	7.01
Braybrook (Part) ..	*	37	61	59	*	5.23	8.46	8.25
Brighton ..	242	270	279	275	9.43	9.36	9.52	9.30
Brunswick ..	520	487	503	535	10.50	8.56	8.87	9.59
Camberwell ..	316	370	442	452	9.15	7.83	8.93	9.11
Caulfield ..	463	559	535	507	8.04	7.77	7.24	7.60
Chelsea ..	..	58	54	64	..	8.06	7.43	8.77
Coburg ..	232	310	270	319	7.90	7.88	6.83	7.99
Collingwood ..	422	358	336	377	12.45	10.88	10.39	11.87
Essendon ..	404	421	409	439	10.19	9.69	9.26	9.90
Fitzroy ..	457	448	394	447	13.33	13.59	12.19	14.21
Footscray ..	397	382	366	417	9.36	7.50	7.05	8.11
Hawthorn ..	331	335	327	381	10.51	10.04	9.81	11.51
Heidelberg (Part) ..	*	187	187	199	*	8.88	8.85	9.46
Kew ..	191	204	217	220	9.06	8.28	8.68	8.78
Malvern ..	368	391	376	412	8.71	8.51	8.10	8.83
Moorabbin ..	..	119	121	129	..	7.46	7.02	7.30
Mordialloc ..	..	84	96	91	..	8.21	9.32	8.92
Northcote ..	349	367	332	398	9.53	8.83	8.02	9.62
Oakleigh ..	*	98	96	85	*	8.83	8.84	7.55
Port Melbourne ..	151	134	132	131	11.49	9.06	9.92	10.16
Prahran ..	608	656	600	600	11.80	12.44	11.40	11.54
Preston ..	168	237	231	231	9.44	8.20	7.91	7.71
Richmond ..	490	457	442	465	11.24	10.68	10.47	11.23
Sandringham ..	121	185	157	163	6.99	7.82	6.68	7.01
South Melbourne ..	539	505	470	471	11.43	10.57	9.82	9.83
St. Kilda ..	441	467	436	401	10.73	10.84	10.15	9.44
Williamstown ..	237	210	187	226	10.63	8.42	7.45	9.05
Remainder of Metropolis ..	520	..	..	..	9.86	..	..	..
<b>Country Towns—</b>								
Ballarat ..	482	497	430	525	11.76	11.78	10.23	12.57
Bendigo ..	444	426	386	397	13.20	12.64	11.46	11.77
Geelong ..	401	417	455	480	10.16	9.57	10.48	11.23
Chelsea ..	56	..	..	..	8.61	..	..	..
Castlemaine ..	73	75	75	77	10.19	10.46	10.46	11.54
Hamilton ..	63	66	64	59	12.21	12.41	12.08	11.13
Maryborough ..	59	59	62	53	12.25	11.90	12.50	10.50
Mildura ..	65	58	57	54	11.10	9.51	9.50	9.00
Mordialloc ..	70	..	..	..	9.20	..	..	..
Shepparton ..	†	47	53	45	†	8.25	9.64	7.50
Stawell ..	53	46	40	61	11.38	9.68	8.51	12.20
Warrnambool ..	80	84	92	95	10.00	10.24	11.36	11.59
Wonthaggi ..	49	46	39	51	7.74	6.57	5.57	6.96
<b>Summary—</b>								
Greater Melbourne ..	9,231	9,565	9,219	9,764	10.28	9.31	8.91	9.46
Country Towns ..	1,895	1,821	1,753	1,897	11.13	10.80	10.44	11.31
Remainder of State ..	5,407	5,331	4,987	5,372	9.01	9.29	8.56	8.99
Victoria ..	16,533	16,717	15,959	17,033	9.91	9.45	8.94	9.48

\* Included in Remainder of Metropolis.

† Not calculated.

NOTE.—Up to the end of 1928, Greater Melbourne was defined as that area within a radius of ten miles of the Elizabeth-street Post Office. At the beginning of 1929, the area was re-defined to conform to the expansion of the Metropolis in a south-easterly direction, and to include, as far as possible, complete Local Government areas. In the Heidelberg Shire, the Greensborough Riding, and in the Braybrook Shire, the Western Riding, are excluded.

Decrease in  
Metropolitan  
death rate.

In Greater Melbourne, in the decade 1922-31, there were 9·95 deaths per 1,000 of the population, as compared with 15·76 in the decennium 1892-1901. The reduction in the rate represents a saving of approximately 54,500 lives in the last ten years. That the sanitary conditions of the metropolis have greatly improved is evidenced by a comparison of the death rates from tubercular and certain other diseases for the period 1922-31 with those for the decennium 1892-1901. The following are the rates :—

Cause of Death.	Deaths per 1,000,000 of Population.		
	1892-1901.	1922-31.	Decrease in 1922-31.
Pulmonary Tuberculosis ...	1,654	607	1,047
Other Tubercular Diseases ...	446	112	334
Typhoid Fever ...	293	12	281
Scarlet Fever ...	33	12	21
Measles ...	215	20	195
Diphtheria ...	196	58	138
Total ...	2,837	821	2,016

The figures show that the mortality from the six diseases mentioned declined by 71 per cent. in 1922-31—the decline representing a rate of 2,016 per million of the population.

The mortality from all causes showed a net decline of 5,810 per million of the population during the period mentioned.

Residents of  
different  
areas dying  
in hospitals  
and other  
public  
institutions.

An examination of the particulars of residence of persons who have died in the public institutions of Victoria during recent years reveals definite and interesting information regarding the assistance rendered by these institutions to people in different divisions of the State. For

Greater Melbourne, the principal country towns, and the remainder of the State, the percentages of the total deaths, and the rate per 1,000 of the population, of residents thereof which occurred in public institutions during the year 1931 were as follows:—

PROPORTION OF DEATHS OF RESIDENTS OF CERTAIN  
AREAS OCCURRING IN PUBLIC INSTITUTIONS, 1931.

Area.	Percentage of Deaths of Residents occurring in—			Deaths of Residents occurring in Public Institutions per 1,000 of Population.
	Public Hospitals.	Other Public Institutions.	Total Public Institutions.	
Greater Melbourne—				
Melbourne .. ..	36·54	10·35	46·89	5·14
Box Hill .. ..	13·13	6·06	19·19	1·35
Braybrook (Part) ..	37·29	1·69	38·98	3·22
Brighton .. ..	13·82	6·54	20·36	1·89
Brunswick .. ..	32·34	6·73	39·07	3·75
Camberwell .. ..	15·93	4·20	20·13	1·84
Caulfield .. ..	20·28	6·17	26·45	2·01
Chelsea .. ..	46·88	3·12	50·00	4·38
Coburg .. ..	29·47	6·27	35·74	2·86
Collingwood .. ..	38·73	7·69	46·42	5·51
Essendon .. ..	25·97	6·60	32·57	3·23
Fitzroy .. ..	38·48	9·62	48·10	6·83
Footscray .. ..	32·62	8·87	41·49	3·37
Hawthorn .. ..	13·12	7·09	20·21	2·33
Heidelberg (Part) ..	17·59	4·52	22·11	2·09
Kew .. ..	17·27	5·46	22·73	1·99
Malvern .. ..	13·11	4·61	17·72	1·56
Moorabbin .. ..	24·81	13·95	38·76	2·83
Mordialloc .. ..	28·57	4·40	32·97	2·94
Northcote .. ..	31·15	5·78	36·93	3·55
Oakleigh .. ..	23·53	4·71	28·24	2·13
Port Melbourne .. ..	34·35	7·63	41·98	4·26
Prahran .. ..	23·67	6·33	30·00	3·46
Preston .. ..	29·00	8·23	37·23	2·87
Richmond .. ..	36·13	7·31	43·44	4·88
Sandringham .. ..	20·24	6·75	26·99	1·89
South Melbourne .. ..	35·46	8·28	43·74	4·30
St. Kilda .. ..	21·94	5·24	27·18	2·56
Williamstown .. ..	26·99	4·43	31·42	2·84

PROPORTION OF DEATHS OF RESIDENTS OF CERTAIN AREAS  
OCCURRING IN PUBLIC INSTITUTIONS, 1931—*continued*.

Area.	Percentage of Deaths of Residents occurring in—			Deaths of Residents occurring in Public Institutions per 1,000 of Population.
	Public Hospitals.	Other Public Institutions.	Total Public Institutions.	
Country Towns—				
Ballarat .. ..	22·67	8·76	31·43	3·95
Bendigo .. ..	25·19	7·30	32·49	3·83
Geelong .. ..	22·92	7·29	30·21	3·39
Castlemaine ..	36·37	6·49	42·86	4·95
Hamilton .. ..	38·98	6·78	45·76	5·09
Maryborough ..	39·62	1·89	41·51	4·36
Mildura .. ..	37·04	3·70	40·74	3·67
Shepparton ..	48·89	4·44	53·33	4·00
Stawell .. ..	18·03	4·92	22·95	2·80
Warrnambool ..	36·85	5·26	42·11	4·88
Wonthaggi .. ..	60·79	1·96	62·75	4·37
Summary—				
Greater Melbourne ..	27·46	7·04	34·50	3·27
Country Towns ..	27·41	7·01	34·42	3·89
Remainder of State ..	24·20	5·44	29·64	2·66
Victoria .. ..	26·43	6·53	32·96	3·12

Of the total deaths in the State 26·43 per cent. occurred in public hospitals in 1931, as against 27·24 per cent. in 1930, 26·92 per cent. in 1929, 27·9 per cent. in 1928, 27·1 per cent. in 1927, and 20·9 per cent. in 1910-15. For the metropolitan area 34·5 per cent. of the total deaths took place in public institutions as compared with 30·9 for the rest of the State. Taking the proportions for fatal cases as an index of all cases dealt with, it would appear that, relatively to population, the assistance rendered by public institutions to the residents of Greater Melbourne exceeds by about 12 per cent. that given to people residing elsewhere.

In 1931 the number of deaths in public institutions was 5,614, of which 3,369 were of residents of Greater Melbourne.

Deaths in  
Metropolitan  
public  
institutions.

The number of deaths in each metropolitan public institution in 1931 is given in the subjoined table:—

# DEATHS IN METROPOLITAN PUBLIC INSTITUTIONS, 1931.

Institution.	No. of Deaths.	Institution.	No. of Deaths.
<b>Hospitals—</b>		<b>Asylums—</b>	
Melbourne .. ..	855	<b>Mental—</b>	
Alfred .. ..	558	Kew .. ..	126
Children's .. ..	444	Mont Park .. ..	119
St. Vincent's .. ..	242	Receiving House, Royal Park .. ..	48
Austin .. ..	219	Macleod Military .. ..	1
Women's .. ..	222		
Homœopathic .. ..	100	Total Mental .. ..	294
Infectious Diseases .. ..	119		
Caulfield Repatriation .. ..	78	<b>Benevolent—</b>	
Queen Victoria .. ..	77	Melbourne (Cheltenham) .. ..	161
Williamstown .. ..	48	Victorian Homes for Aged and	
Caulfield Convalescent .. ..	15	Infirm .. ..	81
After Care Home .. ..	..	Convent of Little Sisters of the	
Eye and Ear .. ..	15	Poor .. ..	64
Police .. ..	6	Old Colonists' Homes .. ..	4
Total Hospitals .. ..	2,998	Total Benevolent .. ..	310
		<b>Foundling Homes, Refuges—</b>	
		Broadmeadows .. ..	11
		East Melbourne .. ..	1
		The Haven, Fitzroy .. ..	7
		Carlton .. ..	..
		Children's Welfare Depot .. ..	..
		Berwick .. ..	2
		Total Refuges, etc. .. ..	21
		Total Hospitals and other	
		Institutions .. ..	3,729

Of the 3,729 deaths in the above institutions, 2,205 were males and 1,524 were females.

The mortality of children under one year in proportion to births reveals a constant decline since 1890—the deaths per 1,000 children born having fallen from 133 in 1885–89 to 50 in 1927–31—a reduction of 62 per cent. In other words, where 100 infants died in the earlier years, only 38 died in the last five years.

Various health Acts and educative measures have contributed to the reduction, including the notification of infectious diseases, the regulation of the manufacture, sale, and distribution of foodstuffs and

Infantile  
mortality.

patent medicines, and the ensuring of a pure milk and water supply. The passing of the Midwives Act in 1915 and the inauguration of the Infant Welfare movement in 1917, coincide with, and, in a large degree, account for the reduction of the rate in the later years. Particulars of the latter movement will be found in Part "Social Condition" of this volume.

The infantile death rates for Greater Melbourne, the remainder of the State, and the whole State, for different periods since 1879, are shown in the following table :—

### INFANTILE MORTALITY IN VICTORIA, 1880 TO 1931.

Period.	Greater Melbourne.		Remainder of State.		Victoria.	
	Average Annual Number of Deaths under One Year.	Rate per 1,000 Births.	Average Annual Number of Deaths under One Year.	Rate per 1,000 Births.	Average Annual Number of Deaths under One Year.	Rate per 1,000 Births.
1880-84..	1,649	170·1	1,626	92·3	3,275	120·0
1885-89..	2,576	178·5	1,812	97·9	4,388	133·3
1890-94..	2,311	140·4	1,926	94·9	4,237	114·7
1895-99..	1,650	131·5	1,913	100·0	3,563	112·5
1900-04..	1,417	116·5	1,565	86·2	2,982	98·2
1905-09..	1,209	96·5	1,307	71·5	2,516	81·2
1910-14..	1,345	84·2	1,201	64·9	2,546	73·8
1915-19..	1,302	76·2	886	55·4	2,188	66·1
1920-24..	1,328	71·6	1,024	58·6	2,352	65·3
1925 ..	1,079	60·2	967	53·7	2,046	57·0
1926 ..	1,104	61·6	863	49·5	1,967	55·6
1927 ..	1,118	62·5	848	49·4	1,966	56·1
1928 ..	1,015	56·8	904	54·4	1,919	55·6
1929 ..	855	50·5	732	43·9	1,587	47·2
1930 ..	847	50·7	694	42·3	1,541	46·5
1931 ..	711	48·0	638	41·1	1,349	44·5

In computing birth and death rates the system was introduced in 1923 of allotting all births and deaths to the place of usual residence of the parties. In the cases of births and infantile deaths the mother's residence is considered to be that of the child. This accounts for the slight increase in the rate for the remainder of the State in the period 1920-24, and a corresponding decrease in the rate for the Metropolis.

In 1931 the infantile death rate for Victoria was the lowest experienced in the history of the State.

The number of deaths of infants under 1 year of age, and the deaths per 1,000 births in Greater Melbourne, the principal country towns, and the remainder of the State for the five-year period 1923 to 1927, and the years 1929 to 1931 were as follows :—

Infantile  
deaths in  
different areas.

# INFANTILE DEATHS IN GREATER MELBOURNE, PRINCIPAL COUNTRY TOWNS, AND REMAINDER OF STATE.

Municipality.	Number of Deaths under One Year.				Deaths under One Year per 1,000 Births.			
	Annual Average, 1923-1927.	1929.	1930.	1931.	Annual Average, 1923-1927.	1929.	1930.	1931.
Greater Melbourne—								
Melbourne ..	163	83	115	67	89.97	60.76	77.97	54.91
Box Hill ..	*	6	14	5	*	21.20	49.12	21.37
Braybrook (Part) ..	*	2	10	8	*	9.52	49.50	43.01
Brighton ..	20	20	15	9	41.49	48.43	37.04	24.26
Brunswick ..	77	65	56	41	65.99	61.49	56.80	46.17
Camberwell ..	34	37	33	19	42.15	40.26	33.37	23.20
Caulfield ..	52	36	40	38	48.65	35.33	40.00	43.33
Chelsea ..	..	3	5	9	..	25.42	38.76	71.43
Coburg ..	44	41	39	29	62.29	51.77	50.65	41.67
Collingwood ..	62	30	36	43	89.80	54.64	69.50	85.15
Essendon ..	52	37	31	33	61.26	45.57	39.69	44.78
Fitzroy ..	57	43	39	44	83.50	76.51	75.73	64.62
Footscray ..	68	32	44	39	69.21	33.97	47.41	50.19
Hawthorn ..	25	20	18	11	47.66	43.20	38.96	28.42
Heidelberg (Part) ..	*	23	30	16	*	50.66	66.37	43.72
Kew ..	17	14	19	13	45.38	37.84	53.37	40.75
Malvern ..	28	25	16	16	44.63	45.54	31.19	34.33
Moorabbin ..	..	21	13	13	..	50.36	28.51	36.11
Mordialloc ..	..	10	6	12	..	58.82	39.22	76.43
Northcote ..	54	50	32	32	60.16	65.88	43.24	45.85
Oakleigh ..	*	11	12	5	*	37.41	44.44	20.49
Port Melbourne ..	25	12	14	20	89.08	51.50	61.14	90.91
Prahran ..	58	43	39	42	66.12	60.39	54.39	65.93
Preston ..	30	34	33	19	54.80	44.16	43.02	29.37
Richmond ..	65	55	37	46	73.81	78.01	54.25	68.45
Sandringham ..	15	11	9	7	53.86	36.67	31.03	28.23
South Melbourne ..	77	46	49	42	89.52	67.35	74.47	70.95
St. Kilda ..	34	29	25	13	50.97	51.24	45.79	27.48
Williamstown ..	33	16	18	20	67.99	36.36	41.76	48.31
Remainder of Metropolis ..	75	..	..	..	54.99	..	..	..
Country Towns—								
Ballarat ..	49	24	41	42	67.88	33.99	62.69	61.67
Bendigo ..	48	33	28	30	77.81	56.31	50.18	57.36
Geelong ..	61	50	56	46	70.75	53.71	61.81	59.59
Chelsea ..	10	..	..	..	79.49	..	..	..
Castlemaine ..	8	3	9	2	59.18	27.03	85.71	17.24
Hamilton ..	10	1	9	3	66.76	7.14	61.64	20.55
Maryborough ..	6	12	5	1	48.03	104.35	47.17	7.81
Mildura ..	13	9	8	12	66.53	47.87	42.78	71.43
Mordialloc ..	13	..	..	..	86.44	..	..	..
Shepparton ..	†	4	10	10	†	25.32	59.52	73.53
Stawell ..	7	4	3	1	61.15	47.62	31.25	11.63
Warrnambool ..	9	8	4	11	49.34	43.48	24.54	67.90
Wonthaggi ..	10	Nil	7	11	63.99	00.00	43.48	73.33
Summary—								
Greater Melbourne	1,165	855	847	711	65.05	50.51	50.70	48.04
Country Towns ..	244	148	180	169	69.40	44.43	55.38	55.08
Remainder of State	702	584	514	469	49.25	43.76	39.02	37.63
Victoria	2,111	1,587	1,541	1,349	59.16	47.23	46.52	44.47

\* Included in Remainder of Metropolis.

† Not calculated.

NOTE.—Up to the end of 1928, Greater Melbourne was defined as that area within a radius of ten miles of the Elizabeth-street Post Office. At the beginning of 1929, the area was re-defined to conform to the expansion of the Metropolis in a south-easterly direction, and to include, as far as possible, complete Local Government areas. In the Heidelberg Shire, the Greensborough Riding, and in the Braybrook Shire, the Western Riding, are excluded.

The prejudicial effect of city surroundings on infant life is evidenced by the mortality being heavier in urban than in country districts. During the years 1927-31 the deaths of children under 1 year of age to every 1,000 births were 54 in Melbourne, 54 in Ballarat, 63 in Bendigo, and 60 in Geelong, as against 44 in the remainder of the State.

An investigation into the experience in regard to infantile mortality over a period of years discloses that the decrease in the infantile death rate, since the earlier periods, has been shared proportionately by each sex, and also by each age period, except that of "under one week." Comparing the quinquennia 1910-14 (the earliest years for which the information is available) with 1927-31, the mortality rate of infants "under one week" increased by 4 per cent., that of infants "over one week and under one month" decreased by 36 per cent., and for "over one month and under one year" the decrease was 50 per cent. Victoria lost, between the ages of one month and one year, sixty-four out of every 1,000 children in 1900-04, thirty-two in 1915-19, and twenty-one in 1927-31.

On the average of the years 1927-31, the total rate for males was higher than that for females by 28·2 per cent.

The tables which follow show the percentage of deaths of infants at various ages under one year for certain periods since 1899, and male and female death rates at each age period for the year 1931 :—

### INFANTILE MORTALITY AT DIFFERENT AGES, 1900 TO 1931.

Period.	Deaths Under One Year per 1,000 Births.							
	Under 1 Week.	1 Week to 1 Month.	1 to 3 Months.	3 to 6 Months.	6 to 12 Months.	Total under 1 Year.	Males.	Females.
1900-04 ..	34·4		16·9	21·0	25·9	98·2	105·7	90·4
1905-09 ..	33·0		13·8	15·1	19·3	81·2	89·3	72·6
1910-14 ..	21·5	11·1	12·1	12·4	16·7	73·8	81·8	65·3
1915-19 ..	23·3	10·1	10·5	9·4	12·8	66·1	73·0	58·7
1920-24 ..	23·7	9·3	9·8	10·0	12·5	65·3	71·8	58·5
1925 ..	23·1	7·8	7·9	7·1	11·1	57·0	62·9	50·5
1926 ..	22·6	7·1	7·1	7·5	11·3	55·6	61·3	49·6
1927 ..	22·6	8·7	7·5	7·1	10·2	56·1	62·8	48·9
1928 ..	22·5	6·9	6·6	7·2	12·4	55·6	61·1	49·8
1929 ..	22·4	8·0	5·2	4·6	7·0	47·2	55·1	38·7
1930 ..	21·7	6·2	5·5	5·3	7·8	46·5	50·8	42·0
1931 ..	22·9	5·7	4·8	4·6	6·5	44·5	49·9	38·7



# **INFANTILE MORTALITY AT DIFFERENT AGES, MALES AND FEMALES, 1931.**

Age.	Males.			Females.		
	Number.	Rate per 1,000 Births.	Percentage at each Age.	Number.	Rate per 1,000 Births.	Percentage at each Age.
Under 1 week ..	405	25.9	51.9	290	19.7	51.0
1 week to 1 month	98	6.3	12.6	76	5.2	13.4
1 to 3 months ..	71	4.5	9.1	73	5.0	12.8
3 to 6 months ..	84	5.4	10.8	56	3.8	9.8
6 to 12 months ..	122	7.8	15.6	74	5.0	13.0
Total ..	780	49.9	100.0	569	38.7	100.0

**Probable mortality of Infants.** The experience of the years 1927-31 shows that, of every 20,000 newly-born boys and girls in equal numbers, 562 boys and 438 girls died within twelve months, and 9,438 of the former and 9,562 of the latter, or 19,000 of mixed sexes, were living at the end of the year. The corresponding numbers surviving the first year in earlier periods were 17,765 in the ten years 1891-1900 and 17,468 in 1881-90. It is thus seen that, of every 20,000 births comprising equal numbers of each sex, there were 1,235 more survivors in 1927-31 than in 1891-1900, and 1,532 more than in 1881-90.

**Infantile death rates from certain causes.** An investigation of infantile mortalities would be incomplete if the diseases which have proved fatal in different periods of years were not ascertained, and their incidence in each period compared. Information of this nature reveals the causes of high death rates, and, when a fairly early period is selected for comparison with recent years, it shows in what direction improvements have taken place. The chief preventable and non-preventable causes of death, grouped under certain headings, are shown in the subjoined table for the periods 1891-93, 1901-10, 1911-20, and for the years 1929 to 1931:—

## INFANTILE DEATH RATES FROM CERTAIN CAUSES.

Cause of Death.	Deaths under One Year per 1,000 Births in—					
	1891-93.	1901-10.	1911-20.	1929.	1930.	1931.
Epidemic, Endemic, and Infectious Diseases ..	12·41	7·31	4·87	2·86	3·08	3·59
Bronchitis, Broncho-pneumonia, Pneumonia ..	11·37	8·13	6·86	6·87	5·28	6·33
Diarrhœal Diseases ..	29·66	24·62	16·13	3·84	4·98	2·31
Malformations, &c. (157) ..	3·45	4·86	4·38	4·82	4·38	4·55
Wasting Diseases (158) ..	22·24	12·74	13·09	4·58	5·13	3·20
Prematurity ..	13·13	14·99	15·17	13·99	14·25	14·14
Violence ..	3·16	2·47	1·07	·63	·51	·63
Injury at birth ..	21·51	12·77	7·98	3·15	2·90	2·90
Early Infancy (161) ..				3·48	3·05	4·32
All other causes ..				3·01	2·96	2·50
Total, all Causes ..	116·93	87·89	69·55	47·23	46·52	44·47

## INFANTILE DEATH RATES, AT DIFFERENT AGES, FROM CERTAIN CAUSES, 1931.

Cause of Death.	Deaths under One Year per 1,000 Births.									
	Age Period.						Total.	Males.	Females.	Average Annual Rate, 1927-31.
	Under 1 Week.	1 Week and under 1 Month.	1 Month and under 3 Months.	3 Months and under 6 Months.	6 Months and under 12 Months.					
Epidemic, Endemic, and Infectious Diseases ..	·03	·26	·69	·99	1·62	3·59	4·09	3·06	3·14	
Bronchitis, Broncho-pneumonia, Pneumonia ..	·30	1·02	1·48	1·22	2·31	6·33	7·49	5·10	6·54	
Diarrhoeal Diseases ..	..	·13	·33	·76	1·09	2·31	2·56	2·04	5·90	
Malformations, &c. (157)	2·11	·82	·73	·46	·43	4·55	5·37	3·68	4·67	
Wasting Diseases (158) ..	1·78	·73	·30	·33	·06	3·20	3·26	3·13	5·05	
Prematurity ..	12·13	1·42	·49	·10	..	14·14	15·10	13·13	14·34	
Injury at Birth ..	2·54	·33	·03	..	..	2·90	3·14	2·65	3·20	
Early Infancy (161) ..	3·43	·76	·13	..	..	4·32	4·86	3·74	3·20	
Violence ..	·23	·03	·07	·03	·27	·63	·96	·27	·72	
All other causes ..	·36	·23	·49	·73	·69	2·50	3·07	1·91	3·42	
Total, all Causes ..	22·91	5·73	4·74	4·62	6·47	44·47	49·90	38·71	50·18	
Average Annual Rate, 1927-31 ..	22·43	7·17	5·95	5·78	8·85	50·18	56·17	43·81	..	

Of every 1,000 infants born during 1927-31, 5·9 died from diarrhoeal and 5·1 from wasting diseases, as compared with 29·2 from these causes in 1911-20, 37·5 in 1901-10, and 51·9 in 1891-93—a decrease of 79 per cent. since the last mentioned period. In 1927-31, acute bronchitis, broncho-pneumonia and pneumonia were responsible for 6·5 deaths per 1,000 births, as compared with 11·4 in 1891-93—a decline of 43 per cent. between the two periods. Of every 1,000 children who died in the last five years, 379 deaths were due to prematurity and congenital malformations, which may be regarded as of a non-preventable nature, while 118 died from diarrhoeal and 130 from the above-mentioned respiratory diseases.

An examination of the male and female mortalities from infantile diseases discloses the fact that the male rate was consistently higher than the female rate, except in the case of whooping cough.

The following table shows the number of deaths from the principal causes, and the death rate of infants under one month for Greater Melbourne and the whole State, for the years 1927 to 1931:—

DEATHS OF INFANTS UNDER ONE MONTH, 1927 TO 1931.

Cause of Death.	Greater Melbourne.					Victoria.				
	1927.	1928.	1929.	1930.	1931.	1927.	1928.	1929.	1930.	1931.
Epidemic, Endemic, and Inf. ctious Diseases ..	6	10	5	2	5	12	10	6	7	9
Bronchitis, Broncho-pneu- monia, Pneumonia ..	45	23	55	27	23	57	41	71	37	40
Diarrhoeal Diseases ..	5	8	4	..	2	14	10	13	3	4
Malformations, &c. (157) ..	57	62	57	46	44	104	103	113	99	89
Wasting Diseases (158) ..	67	44	52	52	24	149	115	112	120	76
Prematurity ..	234	247	242	234	208	481	482	452	439	411
Injury at Birth ..	62	68	54	47	39	120	119	103	94	87
Early Infancy (161) ..	48	53	56	66	67	93	83	114	100	127
Violence ..	12	7	4	5	3	16	12	6	6	8
All other causes ..	28	21	12	8	7	53	41	32	21	18
Total, all Causes ..	614	543	541	487	422	1,099	1,016	1,022	926	869
Deaths per 1,000 Births	34·3	30·4	32·0	29·1	28·5	31·3	29·5	30·4	28·0	23·6

On the average of the last ten years, 113 in every 1,000 ex-nuptial infants died within a year, as against 52 in every 1,000 nuptial children. It is thus seen that the proportion of ex-nuptial children dying before the age of 1 year is 2·2 times that of nuptial children. In the year 1931 the mortality rate of nuptial infants was 42·8 per 1,000 births. The children born out of wedlock during the same year numbered 1,416, and the deaths of ex-nuptial infants were 112, the death rate being thus 79·1 per 1,000 births. With the view of ascertaining the chief reasons for the marked disproportion in the mortality rates of the two classes the following table has been constructed, showing the

Nuptial and  
ex-nuptial  
infantile  
death rates.

deaths from certain causes per 1,000 nuptial and ex-nuptial births, for the periods 1904-08, 1914-18, 1924-28 and the year 1931 :—

### DEATH RATES OF NUPTIAL AND EX-NUPTIAL INFANTS FROM CERTAIN CAUSES.

Cause of Death.	Deaths under One Year per 1,000 Births.							
	Nuptial.				Ex-nuptial.			
	1904-08.	1914-18.	1924-28.	1931.	1904-08.	1914-18.	1924-28.	1931.
Diarrhoeal Diseases ..	19·8	14·2	8·9	2·1	72·6	48·6	23·1	7·8
Prematurity, Congenital Malformations, Marasmus, &c.* ..	30·3	27·2	25·0	21·3	52·1	64·9	46·9	33·2
Bronchitis, Broncho-pneumonia, Pneumonia ..	6·9	6·1	5·9	6·1	18·6	12·5	13·0	10·6
Other causes ..	18·3	15·3	14·7	13·3	58·7	36·6	29·3	27·5
Total, all Causes ..	75·3	62·8	54·5	42·8	202·0	162·6	112·3	79·1

\* Not including "Injury at Birth" and "Other Diseases peculiar to Early Infancy."

The rates for 1931 show that of every 1,000 children born out of wedlock 7·8 died from diarrhoeal diseases within a year, as compared with 2·1 deaths per 1,000 nuptial infants from the same cause. Owing to a larger proportion of the former children being deprived of breast food a higher mortality from these diseases might be expected among them than among nuptial infants, but the striking differences in the death rates from this cause and from the chief respiratory diseases indicate considerable neglect in the rearing of ex-nuptial infants. The rates from bronchitis, broncho-pneumonia, and pneumonia were 10·6 and 6·1 per 1,000 births respectively.

**Infantile mortality in Australasia.** Infantile death rates per 1,000 births in each of the Australian States and New Zealand, in 1931, were as follows :—Victoria, 44·47; New South Wales, 43·48; Queensland, 36·56; South Australia, 36·35; Western Australia, 41·53; Tasmania, 45·99; and New Zealand, 32·15. These figures compare very favourably with the rate for England and Wales, which was 65·8. The rate for Australia was 42·12 as compared with 61·0 in 1920-24, 64·3 in 1915-19, and 71·7 in 1910-14.

The infantile deaths per 1,000 births in the Australasian capitals in 1931 were as follows :—Melbourne, 48·04; Sydney, 44·29; Brisbane, 41·58; Adelaide, 40·43; Perth, 46·17; Hobart, 59·36; and Wellington, 30·25.

**Deaths of children under 5.** In 1931 the deaths of male children under 5 years of age numbered 1,018, and the deaths of female children under that age, 761—the former being in the proportion of 11·08 per cent., and the latter of 9·70 per cent., to the total number of deaths of the respective sexes at all ages. Previous issues of the *Year-Book* contain detailed information relating to the deaths of children under 5 years of age for periods since 1870.

The ages of males and females, who died in each of the last three years, are shown in the following table:—

## AGES AT DEATH IN VICTORIA, 1929 TO 1931.

Ages.	1929.			1930.			1931.		
	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.
Under 1 ..	959	628	1,587	865	676	1,541	780	569	1,349
1 to 2	130	116	246	134	139	273	107	100	207
2 „ 3	62	53	115	63	45	108	61	34	95
3 „ 4	51	46	97	43	35	78	44	29	73
4 „ 5	34	27	61	32	32	64	26	29	55
5 „ 10	132	88	220	144	100	244	159	98	257
10 „ 15	94	62	156	90	67	157	120	68	188
15 „ 20	161	118	279	146	109	255	155	120	275
20 „ 25	228	169	397	180	174	354	167	170	337
25 „ 30	234	205	439	227	223	450	221	187	408
30 „ 35	229	218	447	194	212	406	221	251	472
35 „ 40	287	266	553	256	254	510	249	265	514
40 „ 45	318	287	605	312	241	553	337	290	627
45 „ 50	384	338	722	358	310	668	365	320	685
50 „ 55	495	393	888	453	341	794	482	367	849
55 „ 60	674	474	1,148	628	421	1,049	653	451	1,104
60 „ 65	904	629	1,533	767	617	1,384	858	642	1,500
65 „ 70	1,122	859	1,981	1,038	822	1,860	1,163	872	2,035
70 „ 75	1,043	829	1,872	969	912	1,881	1,179	1,013	2,192
75 „ 80	710	669	1,379	694	718	1,412	868	770	1,638
80 „ 85	440	535	975	470	520	990	551	620	1,171
85 „ 90	294	351	645	276	342	618	294	383	677
90 „ 95	104	171	275	88	142	230	108	145	253
95 ..	14	14	28	9	13	22	6	12	18
96 ..	12	9	21	7	11	18	4	13	17
97 ..	8	9	17	5	6	11	4	10	14
98 ..	4	11	15	4	7	11	1	3	4
99 ..	2	6	8	7	..	7	2	7	9
100 ..	2	2	4	..	..	..	1	1	2
101 ..	..	1	1	3	2	5	..	1	1
102 ..	..	2	2	2	1	3	2	1	3
103 ..	..	1	1	1	..	1	1	1	2
104 ..	..	..	..	1	..	1	1	1	2
108 ..	..	..	..	*1	..	1	..	..	..
Total ..	9,131	7,586	16,717	8,467	7,492	15,959	9,190	7,843	17,033

\* Age not verified.

Of the 49,709 persons who died in Victoria during the last three years 6,083 were aged 80 years and upwards, and 29—fifteen males and fourteen females—had attained or passed the age of 100 years. To every 100 female deaths there were 117 male deaths in 1931, as against 113 in 1930, 120 in 1929, 113 in 1928, and 115 in 1927.

Death rates  
from certain  
diseases.

The death rates from the chief diseases are shown in the appended table for the period 1908-12 and for the last three years :—

### DEATHS PER MILLION FROM CERTAIN CAUSES.

International Classification Number.	Cause of Death.	Deaths per Million of the Population.			
		1908- 1912.	1929.	1930.	1931.
1	Typhoid Fever .. .. .	98	11	10	14
7	Measles .. .. .	33	25	19	8
8	Scarlet Fever .. .. .	16	7	6	15
9	Whooping Cough .. .. .	77	44	40	40
10	Diphtheria and Croup .. .. .	122	57	48	72
11	Influenza .. .. .	109	77	34	179
16	Acute Poliomyelitis (Infantile Paralysis) .. .. .	..	10	7	9
18	Cerebro-Spinal Meningitis .. .. .	..	14	6	6
23	Tuberculosis of the Respiratory System .. .. .	855	496	498	481
24-32	Other Tubercular Diseases .. .. .	182	92	97	68
34	Syphilis .. .. .	51	23	18	24
41	Hydatids .. .. .	22	17	12	12
45-53	Cancer .. .. .	833	1,068	1,042	1,087
59	Diabetes .. .. .	107	132	126	145
71, 72	Anæmia, Chlorosis, Leucæmia .. .. .	81	74	77	78
79a	Simple Meningitis .. .. .	133	32	36	29
80, 81	Locomotor Ataxia and other diseases of Spinal Cord .. .. .	71	36	48	37
82 a and b	*Cerebral Hæmorrhage and Apoplexy .. .. .	..	350	311	330
85	Epilepsy .. .. .	35	27	20	20
90-95	Diseases of the Heart .. .. .	1,441	1,480	1,459†	1,759
97	*Arterio Sclerosis .. .. .	..	336	364	420
106	Acute and Chronic Bronchitis .. .. .	348	144	132	145
107-109	Broncho-pneumonia and Pneumonia .. .. .	834	759	560	679
110	Pleurisy .. .. .	45	40	32	34
111	Congestion, œdema, embolism, &c., of Lung .. .. .	63	55	47†	63
112, 113	Asthma and Pulmonary Emphysema .. .. .	60	21	17	28
117, 118	Diseases of the Stomach (Cancer excepted) .. .. .	99	74	60	83
119, 120	Enteritis, Gastro-enteritis, and Diarrhoeal Diseases .. .. .	833	153	196	129
121	Appendicitis .. .. .	81	71	85	85
122	Hernia, Intestinal Obstruction .. .. .	113	99	86	84

DEATHS PER MILLION FROM CERTAIN CAUSES—*continued.*

International Classification Numbers.	Cause of Death.	Deaths per Million of the Population.			
		1908- 1912.	1929.	1930.	1931.
124, 125, 127	Cirrhosis and other diseases of the Liver, Gall-bladder and Biliary Passages .. .. .	158	88	93	83
126	Biliary Calculi .. .. .	27	32	31	25
129	Simple Peritonitis (non-puerperal)	35	20	11	9
130-132	Acute and Chronic Nephritis, Uræ- mia, Bright's Disease .. .. .	576	556	486	555
134	Calculi of the Urinary System .. .. .	7	9	6	7
135 and 137	Diseases of the Bladder and Prostate	94	78	76	83
162	Old Age .. .. .	1,030†	590	560	569
163-171	Suicide .. .. .	102	103	116	101
172-175	Homicide .. .. .	19	20	11	23
176-194 and 196	Accidental Violence .. .. .	} 531	479	480	{ 397
195	Violence—Open Verdict .. .. .				
	All Causes .. .. .	11,771	9,449	8,942	9,478

\* Deaths returned as "arterio sclerosis" with record of "cerebral vascular lesion," are included with "arterio sclerosis." Comparable figures are not available for the earlier period.

† Not comparable with later years.

The above and other causes of death are dealt with in subsequent paragraphs. Owing to various changes in classification, certain of the figures shown in the above table for 1931 are not comparable with those given for previous years. The principal rates affected are those relating to cerebral hæmorrhage and heart diseases.

**Vaccinations.** On 30th December, 1931, an amendment of the *Health Act 1928* repealing the provisions as to compulsory vaccinations came into operation. Particulars of past years are given in previous issues of this book.

**Typhoid fever.** Up to the beginning of the present century, typhoid fever was regarded as one of the chief menaces to the health of the community, but owing to its being of a preventable nature, the introduction and subsequent extensions of the sewerage system and the increased supervision of water supplies, dairying, &c., have resulted in its incidence being reduced to very small proportions. In 1931, deaths numbered 26, being equivalent to a rate of 14 per million of population, as compared with rates of 10 in 1930, 11 in 1929, 31 in 1920-24, 108 in 1905-09, and 301 in 1895-99. Cases of typhoid fever reported in 1931 numbered 203, or 113 per million of population, as against 259 in 1920-24, and 2,884 in 1895-99. The deaths per 100 cases were 13·6 in 1927-31 and 10·4 in 1895-99.

**Small-pox -- Deaths from.** Persons suffering from small-pox have arrived at Victorian ports on many occasions, but, as they were at once quarantined, the disease never spread among the people of the State. During the years 1853 to 1931 only 31 deaths occurred from this cause, and of that number only 8 took place in the last forty-seven years of the period.

**Measles.** Although the mortality from measles has varied very considerably from period to period, there has been no very severe epidemic outbreak since 1898, when 671 deaths resulted from the disease. In 1931 there were 15 deaths attributed to this cause, representing a rate of 8 per million of the population, as compared with rates of 19 in 1930, 25 in 1929, 7 in 1928, and 30 in 1927.

On the average of the five years 1927 to 1931, 43 per cent. of those who died from the disease were under 2 years of age and 73 per cent. were under 5 years.

**Scarlet fever.** In 1931 the deaths from scarlet fever numbered 27, which corresponded to a rate of 15 per million of the population, as compared with rates of 6 in 1930, 7 in 1929, 7 in 1928, 17 in 1927, and 34 in 1890-92. During 1931 there were 3,386 cases reported, as against 2,071 in 1930, 1,490 in 1929, 2,345 in 1928, and 2,290 in 1927. For the five years mentioned the deaths were less than one per cent. of the cases. Seventy-two per cent. of these deaths were of children under 10 years of age. According to the experience of the last ten years the chance of dying from the disease is 33 per cent. greater for females than for males.

**Whooping cough.** Whooping cough was responsible for 72 deaths in 1931, which equalled a rate of 40 per million of the population at all ages, as compared with rates of 40 in 1930, 44 in 1929, and 30 in each of 1928 and 1927. The infantile death rate is more affected than the general rate by this ailment, as it is practically confined to children. In the year under review 43 of the deaths were of infants under 1 year, and all except three of the deaths were of children less than 5 years of age. On the average of the last ten years the mortality rate from the disease was 25 per cent. higher among females than males.

**Diphtheria.** The continued prevalence of diphtheria throughout the State since 1910, is one of the few instances in which morbidity statistics have not revealed material improvement. On the other hand a very great reduction has taken place since 1890, in the proportion of cases which ended fatally.



On the average of the five years 1927 to 1931, 49 per cent. of those who died were under 5 years, and 87 per cent. were under 10 years of age.

The appended table shows for Victoria and Greater Melbourne the reported cases of and deaths from diphtheria, and their proportions to the population, also the ratios of deaths to cases for different periods since 1894 :—

DIPHThERIA IN VICTORIA AND GREATER MELBOURNE,  
1895 TO 1931.

Period.	Annual Cases Reported.		Annual Deaths.		Deaths per 100 Cases Reported.
	Number.	Per 100,000 of Population.	Number.	Per 100,000 of Population.	

VICTORIA.

1895-99 .. ..	1,584	134.6	221	18.8	13.9
1900-04 .. ..	1,680	139.0	159	13.2	9.5
1905-09 .. ..	1,410	112.6	89	7.1	6.3
1910-14 .. ..	4,612	339.1	212	15.6	4.6
1915-19 .. ..	4,901	342.5	209	14.6	4.3
1920-24 .. ..	5,739	364.6	179	11.4	3.1
1925 .. ..	2,631	157.4	71	4.2	2.7
1926 .. ..	2,471	145.6	70	4.1	2.8
1927 .. ..	3,354	188.4	93	5.4	2.9
1928 .. ..	4,267	243.6	131	7.5	3.1
1929 .. ..	3,256	184.1	101	5.7	3.1
1930 .. ..	3,414	191.3	86	4.8	2.5
1931 .. ..	5,434	302.3	130	7.2	2.4

GREATER MELBOURNE.

1895-99 .. ..	748	162.1	113	24.6	15.1
1900-04 .. ..	636	136.9	58	11.6	8.5
1905-09 .. ..	758	140.8	46	8.5	6.1
1910-14 .. ..	2,343	374.3	114	18.3	4.9
1915-19 .. ..	2,864	402.6	127	17.9	4.4
1920-24 .. ..	2,555	314.6	78	9.7	3.1
1925 .. ..	1,567	174.3	41	4.6	2.6
1926 .. ..	1,461	157.4	37	4.0	2.5
1927 .. ..	1,795	187.0	49	5.1	2.7
1928 .. ..	2,344	237.3	74	7.5	3.2
1929 .. ..	2,048	199.4	60	5.8	3.0
1930 .. ..	2,223	214.9	45	4.3	2.0
1931 .. ..	3,257	315.7	75	7.3	2.3

**Prevalence of diphtheria in different areas.** The cases of diphtheria which occurred in five divisions of the State in each of the last five years and their proportions to the respective populations, for the period 1910-19 and the years 1930 and 1931, are given in the subjoined table:—

### CASES OF DIPHTHERIA IN DIFFERENT AREAS.

Area.	Reported Cases of Diphtheria.					Annual Cases per 10,000 of Population.		
	1927.	1928.	1929.	1930.	1931.	1910-19.	1930.	1931.
Greater Melbourne ..	1,795	2,344	2,048	2,223	3,257	39·3	21·5	31·6
Ballarat .. ..	37	53	117	67	324	24·3	15·9	77·6
Bendigo .. ..	67	79	60	53	111	84·6	15·7	32·9
Geelong .. ..	231	116	94	38	67	43·4	8·8	15·7
Remainder of State	1,124	1,675	937	1,033	1,675	25·7	16·4	25·9

**Influenza.** The deaths from influenza in 1931 numbered 321, of which 223 occurred in the months of October and November. This corresponded to a rate of 179 per million of the population, as compared with rates of 34 in 1930, 77 in 1929, 204 in 1928, 40 in 1927, 2,407 in 1919, 71 in 1913-17, 109 in 1908-12, and 381 in 1890-92.

In 1931, 73 per cent. of the deaths recorded were associated with specified pneumonic complications.

With the exception of the 1919 epidemic, when 72 per cent. of the deaths were of persons between 20 and 50 years of age, influenza has always proved more fatal to elderly people than to those at middle or young ages. In 1931 63 per cent. were of persons over 50 years of age.

**Acute Poliomyelitis (Infantile Paralysis).** Mortality returns show that acute poliomyelitis (infantile paralysis) was responsible for 16 deaths in 1931, 12 in 1930, 17 in 1929, 32 in 1928, 8 in 1927, 8 in 1926, 25 in 1925, 4 in 1924, 4 in 1923, and 8 in 1922. Of the above 134 deaths, 77 were of males and 57 were of females; 8 were under 1 year of age, 38 were between 1 and 5 years, 31 were between 5 and 10 years, and 57 were over 10 years.

**Cerebro-spinal meningitis.** Cerebro-spinal meningitis was responsible for 11 deaths in 1931, 10 in 1930, 24 in 1929, 20 in 1928, 13 in 1927, 19 in 1926, 28 in 1925, an annual average of 19 in 1918-22, 326 in 1916, 338 in 1915, and an annual average of 12 in 1911-14. An outbreak of this disease in the winter of 1915 resulted in the deaths of approximately 650 persons in eighteen months.

**Death rates from tuberculosis of the respiratory system.** The deaths from tuberculosis of the respiratory system in 1931 numbered 865—472 being of males and 393 of females—and equalled a rate of 481 per million of the population, as compared with rates of 498 in 1930, 496 in 1929, 581 in 1928, 546 in 1927, 660 in 1918-22, 855 in 1908-12, and 1,365 in 1890-92. In England, Scotland, Northern

Ireland, and the Irish Free State in 1930 the deaths from this cause were 739, 620, 949, and 1,006, per million of their respective populations. The incidence of mortality for Victoria at various ages, for the period 1920-22 was as follows :—

### DEATH RATES IN VICTORIA FROM TUBERCULOSIS OF THE RESPIRATORY SYSTEM IN AGE GROUPS, 1920-22.

Sex.	Annual Mortality from Tuberculosis of the Respiratory System per 10,000 of each Sex, Aged—							
	0-15.	15-20.	20-25.	25-35.	35-45.	45-55.	55-65.	65 and Over.
Males ..	0·42	2·67	7·88	9·70	12·43	13·94	13·03	8·65
Females	0·38	4·84	10·20	10·00	9·15	5·91	4·95	3·94
								5·55

Deaths from tuberculosis of the respiratory system at various ages.

The ages and sexes of those who died from tuberculosis of the respiratory system in each of the last five years are given in the next table :—

### DEATHS FROM TUBERCULOSIS OF THE RESPIRATORY SYSTEM AT VARIOUS AGES.

Age Group.	Males.					Females.				
	Year.					Year.				
	1927.	1928.	1929.	1930.	1931.	1927.	1928.	1929.	1930.	1931.
0-10 ...	6	8	9	5	4	4	8	3	4	2
10-15 ...	3	2	1	3	4	3	6	7	3	1
15-20 ...	19	11	17	14	13	39	42	31	33	34
20-25 ...	40	54	47	30	27	72	82	62	71	62
25-30 ...	70	54	53	51	47	72	84	58	79	55
30-35 ...	69	61	57	47	56	55	71	47	54	52
35-40 ...	54	59	68	69	60	48	57	42	38	53
40-45 ...	48	58	57	45	50	35	37	18	29	26
45-50 ...	48	66	49	50	47	24	24	21	25	27
50-55 ...	47	51	55	41	36	29	13	20	21	22
55-60 ...	34	36	28	45	33	16	19	12	12	13
60-65 ...	36	27	43	33	44	16	16	13	14	18
65-70 ...	20	30	22	29	29	18	13	2	12	18
70 and over	10	17	23	20	22	9	11	12	11	10
Total ...	504	534	529	482	472	440	483	348	406	393

For the year 1931, the average age of those who died from tuberculosis of the respiratory system was 44·0 years for males and 37·1 years for females.

**Tubercular diseases (tuberculosis of the respiratory system excepted).**

In 1931 there were in Victoria 123 deaths from tubercular diseases (excluding tuberculosis of the respiratory system), which corresponded to a rate of 68 per million of the population, as compared with rates of 97 in 1930, 92 in 1929, 82 in 1928, 100 in 1927, 134 in 1918-22, 182 in 1908-12, and 379 in 1890-92. In England, Scotland, Northern Ireland, and the Irish Free State, in 1930, the deaths from similar causes numbered 159, 260, 330, and 292 per million of their respective populations.

**Tubercular death rates in Melbourne, Ballarat, and Bendigo.**

In earlier periods, the death rate from tuberculosis was considerably higher in urban centres—particularly Bendigo—than in the rural portions of the State. During recent years the rates for Greater Melbourne and Ballarat have declined to about the level of that for the whole of the State. The rate for Bendigo has declined considerably, but that for the last five years exceeded by 63 per cent. the rate for Greater Melbourne, by 95 per cent. the rate for Ballarat, and by 82 per cent. the rate for Victoria. The suitability of the Bendigo climate for persons suffering from this disease, encouraging them to take up residence in that city, and the presence of ex-miners in the community, are the principal factors in the continued high death rate. The rates in these localities from tubercular diseases are given in the appended table for different periods since 1890:—

### DEATH RATES FROM TUBERCULAR DISEASES IN MELBOURNE, BALLARAT, AND BENDIGO, 1891 TO 1931.

Period.	Deaths per 10,000 of the Population.								
	Tuberculosis of the Respiratory System.			Other Tubercular Diseases.			All Tubercular Diseases.		
	Greater Melbourne.	Ballarat.	Bendigo.	Greater Melbourne.	Ballarat.	Bendigo.	Greater Melbourne.	Ballarat.	Bendigo.
1891-1900 ..	16.7	17.1	24.1	4.7	3.5	4.0	21.4	20.6	28.1
1901-05 ..	13.9	15.3	22.7	4.2	4.0	4.7	18.1	19.3	27.4
1906-10 ..	10.8	11.5	21.2	3.0	2.1	2.0	13.8	13.6	23.2
1911-15 ..	9.1	10.3	16.5	2.1	2.2	2.1	11.2	12.5	18.6
1916-20 ..	8.3	11.2	16.0	1.9	1.5	2.0	10.2	12.7	18.0
1921-25 ..	6.9	6.7	11.9	1.5	1.0	2.2	8.4	7.7	14.1
1926 ..	5.9	6.7	10.1	.9	.5	.3	6.8	7.2	10.4
1927 ..	6.3	5.3	10.6	1.2	.2	.9	7.5	5.5	11.5
1928 ..	6.6	5.5	10.3	.9	.2	.6	7.5	5.7	10.9
1929 ..	5.3	5.5	10.4	1.0	.9	1.2	6.3	6.4	11.6
1930 ..	5.6	2.9	12.2	1.1	.2	1.2	6.7	3.1	13.4
1931 ..	5.1	6.5	7.7	.8	1.2	.3	5.9	7.7	8.0

**Hydatids.** In 1931, there were 16 male and 5 female deaths from hydatids, of which 5 deaths of males and 3 deaths of females were attributed to hydatid tumour of the liver. The deaths in 1931 were equivalent to a rate of 12 per million of the population, as compared with rates of 12 in 1930, 17 in 1929, 15 in 1928, 10 in 1927, 16 in 1918-22, 22 in 1908-12, and 51 in 1890-92.

**Cancer—Death rates.** Deaths from cancer in 1931 numbered 1,953, and represented a death rate of 1,087 per million of the whole population, as compared with rates of 1,042 in 1930, 1,068 in 1929, 1,070 in 1928, 1,001 in 1927, 934 in 1918-22, 833 in 1908-12, and 584 in 1890-92. In England, Scotland, Northern Ireland, and the Irish Free State, in 1930, the deaths per million of population from this cause were 1,454, 1,470, 1,187, and 1,130 respectively. The death rates in Victoria for various age groups, for the period 1920-22, are shown in the following table:—

#### DEATH RATES FROM CANCER IN AGE GROUPS, 1920-22.

Age Group.	Deaths from Cancer per 10,000 of each Sex.	
	Males.	Females.
0 to 5 .. ..	0.46	0.39
5 „ 10 .. ..	0.13	0.17
10 „ 15 .. ..	0.14	0.05
15 „ 20 .. ..	0.30	0.15
20 „ 25 .. ..	0.64	0.30
25 „ 35 .. ..	0.76	1.28
35 „ 45 .. ..	3.31	6.61
45 „ 55 .. ..	13.94	19.14
55 „ 65 .. ..	40.46	34.48
65 „ 75 .. ..	78.21	63.05
75 and over .. ..	110.12	92.86
All Ages .. ..	9.52	9.63

**Cancer—Deaths at various ages.** The numbers dying from cancer in different age groups in each of the last five years are given below :—

### DEATHS FROM CANCER AT VARIOUS AGES.

Age Group.	Males.					Females.				
	1927.	1928.	1929.	1930.	1931.	1927.	1928.	1929.	1930.	1931.
0-15 .. ..	3	9	8	8	10	5	4	7	8	7
15-25 .. ..	5	2	4	9	10	3	4	4	7	4
25-35 .. ..	14	13	15	17	11	22	21	18	24	28
35-45 .. ..	40	35	32	42	46	78	69	83	70	77
45-55 .. ..	107	118	100	99	107	163	181	172	162	136
55-65 .. ..	255	236	260	251	268	238	269	232	235	255
65-75 .. ..	261	365	371	334	369	265	257	291	291	310
75-85 .. ..	112	111	122	139	149	117	127	123	124	123
85 and over ..	14	24	19	18	19	27	29	28	21	24
Total .. ..	811	913	931	917	989	918	961	958	942	964

The widely different social and economic effects produced by the prevalence of and deaths from the two important diseases, cancer and tuberculosis of the respiratory system, are evidenced by the ages of their victims. For the year 1931 the average age of those who died from the former was 64·0 years for males and 62·1 years for females, while the corresponding averages for the latter were 44·0 years for males and 37·1 years for females.

**Type and seat of cancer.** The following table shows the type and seat of cancer in persons who died from this disease in 1931 :—

### TYPE AND SEAT OF CANCER, 1931.

Type of Disease.	Males.	Females.	Total.	Seat of Disease.	Males.	Females.	Total.
Carcinoma—simplex	806	802	1,608	Buccal cavity and pharynx ..	93	18	111
Epithelioma ..	39	18	57	Stomach, duodenum, liver and biliary ducts ..	351	245	596
Rodent ulcer ..	4	4	8	Intestines, peritoneum and rectum	162	169	331
Sarcoma ..	54	49	103	Oesophagus and pancreas ..	91	36	127
Other (specified) ..	16	16	32	Respiratory organs	55	30	85
Malignant disease (unspecified) ..	70	75	145	Female genital organs ..	..	198	198
				Female breast ..	..	178	178
				Male genito-urinary organs ..	125	..	125
				Skin ..	28	12	40
				Other and unspecified organs ..	84	78	162
Total Deaths ..	989	964	1,953	Total Deaths ..	989	964	1,953

Fifty-four per cent. of the persons who died from cancer were affected in the digestive tract or peritoneum. Of the females who died from the disease 39 per cent. were affected in the genital organs or the breast.

**Diabetes.** During 1931 diabetes was responsible for 109 male and 151 female deaths, representing a rate of 145 per million of the population, as compared with rates of 126 in 1930, 132 in 1929, 135 in 1928, 130 in 1927, 130 in 1918-22, and 107 in 1908-12. The incidence of mortality from diabetes in Victoria at various ages, for the period 1920-22, was as follows:—

DEATHS FROM DIABETES PER 10,000 OF EACH SEX,  
1920-22.

Sex.	Deaths per 10,000 of each Sex Aged—									
	0-10.	10-20.	20-30.	30-40.	40-50.	50-60.	60-70.	70-80.	80 and Over.	All Ages.
Males ..	0·13	0·31	0·48	0·45	0·95	2·14	5·19	7·37	8·42	1·03
Females	0·22	0·39	0·53	0·54	1·11	2·79	8·02	12·51	6·02	1·45

**Anæmia, chlorosis, leucæmia.** Anæmia, chlorosis, and leucæmia were responsible for 141 deaths in 1931, which corresponded to a rate of 78 per million of the population, as against rates of 77 in 1930, 74 in 1929, 65 in 1928, 81 in 1927, 92 in 1918-22, and 81 in 1908-12.

**Diseases of the spine.** In 1931 locomotor ataxia and other diseases of the spine, excluding acute poliomyelitis, accounted for 39 male and 27 female deaths, representing a death rate of 37 per million of the population, as compared with rates of 48 in 1930, 36 in 1929 and 1928, 43 in 1927, 60 in 1918-22, and 71 in 1908-12.

**Diseases of the Heart.** During 1931 there were 3,162 deaths ascribed to diseases of the heart, including 14 due to pericarditis, 664 to endocarditis, 1,593 to diseases of the myocardium, 178 to diseases of coronary arteries, 207 to angina pectoris and 506 to other diseases of the heart. The classification of diseases of the heart was revised in 1931 to include diseases of the coronary arteries, thereby increasing the rate for that year by 99 per million of the population.

The total causes in 1931 represented a rate of 1,759 per million of the population, the rates for previous years being 1,459 in 1930, 1,480 in 1929, 1,373 in 1928, 1,323 in 1927, 1,302 in 1918-22, and 1,441 in 1908-12. On the average of the three years 1920 to 1922 the deaths from all forms of heart diseases per 10,000 of each sex, in age groups, were as follows :—

### DEATH RATES FROM HEART DISEASE AT VARIOUS AGES, 1920-22.

Sex.	Deaths per 10,000 Persons aged—									All Ages.
	0-15.	15-20.	20-25.	25-35.	35-45.	45-55.	55-65.	65-75.	75 and upwards.	
Males ..	1.52	1.92	2.04	2.64	5.40	14.52	40.62	112.20	247.10	13.74
Females ..	1.15	1.85	1.53	3.25	6.26	10.73	20.53	85.65	208.17	11.70

The figures indicate that the mortality rate from heart disease is a function of age, and that it attains its maximum at the oldest age. Of the deaths of persons aged 70 and upwards, approximately 1 in 4 is due to some form of this disease.

In 1931 the deaths from respiratory diseases numbered 1,838, which represented a rate of 1,022 per million of the population, as compared with rates of 851 in 1930, 1,080 in 1929, 1,308 in 1928, and 1,151 in 1927. Of the deaths from complaints of this nature in the year under review, 39 were referred to acute bronchitis, 91 to chronic bronchitis, 131 to bronchitis unspecified, 608 to broncho-pneumonia, 199 to lobar pneumonia, 414 to pneumonia unspecified, 62 to pleurisy, and 43 to asthma. These diseases accounted for 86 per cent. of the total respiratory mortality. The seasonal incidence of these maladies in normal years is greatest during the months May to September. In 1931, 49 per cent. of the mortality was during the months, August to November.

In 1931 there were 545 male and 435 female deaths from digestive ailments, representing a proportion of 545 per million of the population, as against rates of 617 in 1930, 584 in 1929, 784 in 1928, 732 in 1927, 1,009 in 1918-22, and 2,332 in 1890-92. Diarrhoeal diseases were responsible for 232 deaths, which were equivalent to a rate of 129 per million of population, the corresponding rates in previous periods being 196 in 1930, 153 in 1929, 330



in 1928, 272 in 1927, 532 in 1918-22, 833 in 1908-12, and 1,342 in 1890-92. The age incidence of these diseases shows that they are heaviest at the extremes of life, although infantile diarrhoea has declined appreciably since 1928. Of the 232 deaths from diarrhoeal diseases in the year under review, 93, or 40 per cent., were of children under 2 years of age, as compared with percentages of 65 in 1930, 59 in 1929, 74 in 1928, and 75 in 1927. In 1931 deaths from diarrhoeal diseases of persons over 65 years numbered 41, or 18 per cent. There were 52 male and 20 female deaths from cirrhosis of the liver, 22 male and 50 female deaths from other affections of that organ, and 86 male and 65 female deaths from hernia and intestinal obstruction.

**Appendicitis.** The deaths from appendicitis numbered 152 in 1931, which represented a death rate of 85 per million of the population, as compared with rates of 85 in 1930, 71 in 1929, 76 in 1928, 75 in 1927, and 63 in 1918-22. Hospital records show that during the year ended 30th June, 1931, there were 3,335 cases treated, and that 60, or 1·8 per cent., ended fatally, as compared with fatality rates of 1·8 per cent. in 1930, 2·3 per cent. in 1929, 1·9 per cent. in 1928, 2·3 per cent. in 1927, and 6 per cent. in the period 1908-12.

**Diseases of urinary system.** In 1931 there were 1,296 deaths attributed to diseases of the urinary system, which corresponded to a rate of 721 per million of the population, as against rates of 649 in 1930, 725 in 1929, 706 in 1928, 740 in 1927, 670 in 1918-22, and 700 in 1909-12. Acute and chronic nephritis were responsible for 997 deaths, or 77 per cent., and complaints of the bladder and prostate for 150 deaths, or nearly 12 per cent., of the total maladies of the urinary system.

**Deaths in childbirth.** The death rate of women in childbirth is usually ascertained by comparing the number of deaths of parturient women with the total number of live births. A conference of Australian Statisticians (1932) decided that for 1931 and subsequent years, deaths from "criminal abortion" (illegal operation, self-induced, and open verdict), be grouped together under puerperal causes and that two puerperal mortality rates be compiled:—(a) excluding criminal abortion; (b) including criminal abortion. Deaths for each year since 1926 have been re-classified on this basis. These rates are not

strictly comparable with the rates for 1925 and previous years, which include deaths from "self-induced" and "open verdict" abortion, but do not include deaths from "illegal operations" (homicide). The proportions of deaths from puerperal septicæmia and all other puerperal causes for each of the last six years and the averages of previous periods back to 1871 are given below:—

**DEATHS OF MOTHERS (MARRIED AND SINGLE) TO EVERY  
10,000 CHILDREN BORN ALIVE, 1871 TO 1931.**

Period.	Number of Mothers who Died Annually from—					Deaths of Mothers to every 10,000 Children Born Alive from—						
	Puerperal Septicæmia.			Other Puerperal Causes.	Total.	Puerperal Septicæmia.			Other Puerperal Causes.	Total.		
	Without Abortion.	Septic Abortion.	Criminal Abortion.		Excluding Criminal Abortion.	Including Criminal Abortion.	Without Abortion.	Septic Abortion.	Criminal Abortion.		Excluding Criminal Abortion.	Including Criminal Abortion.
1871-1880	46			127	173		17.12			47.26	64.38	
1881-1890	64			121	185		20.48			38.71	59.19	
1891-1900	66			117	183		20.20			35.81	56.01	
1901-1910	52			114	166		16.93			37.12	54.05	
1911-1920	53			94	147		15.42			27.35	42.77	
1921-1925	43			102	145		11.96			28.37	40.33	
1926 ..	43	15	13	126	184	197	12.16	4.24	3.68	35.63	52.03	55.71
1927 ..	47	14	22	113	174	196	13.40	3.99	6.27	32.22	49.61	55.88
1928 ..	43	6	28	131	180	208	12.46	1.74	8.12	37.97	52.17	60.29
1929 ..	44	13	19	113	170	189	13.09	3.87	6.65	33.63	50.59	56.24
1930 ..	40	13	21	121	174	195	12.07	3.92	6.34	36.53	52.52	58.86
1931 ..	34	9	19	92	135	154	11.21	2.97	6.26	30.33	44.51	50.77

It will be seen that the death rate of women in childbirth fluctuates considerably. The increase during the last few years is probably more apparent than real, owing to the measures taken to identify the association of the puerperal condition with the cause of death shown on the certificate, recourse being had to the information contained in the birth registers and to direct inquiry of the certifying doctor.

The following tables gives information in age groups for the year 1931 relating to the causes of death of women in childbirth, and the total number of children born to married mothers:—

## DEATHS FROM PUERPERAL CAUSES, VICTORIA, 1931.

Causes of Death.	Ages at Death.							Total	Married Mothers.	Unmarried Mothers.
	Under 20.	20 to 25.	25 to 30.	30 to 35.	35 to 40.	40 and over.				
140. (a) Abortion with septic conditions .. ..	1	2	3	1	1	1	9	5	4	
(b) Criminal abortion .. ..	1	5	5	4	2	2	19*	12	7	
141. Abortion without septic conditions .. ..	..	1	1	4	3	2	11	10	1	
142. Ectopic gestation .. ..	..	..	2	2	3	..	7	6	1	
143. Other accidents of pregnancy (excluding hæmorrhage) .. ..	..	1	..	1	..	..	2	2	..	
144. Puerperal hæmorrhage .. ..	..	..	2	3	6	3	14	14	..	
145. Puerperal septicæmia (not consequent on abortion) .. ..	1	4	13	8	6	2	34	34	..	
146. Puerperal albuminuria and eclampsia .. ..	2	5	3	7	4	1	22	21	1	
147. Other toxæmias of pregnancy .. ..	..	1	..	3	..	2	6	6	..	
148. (a) Phlegmasia alba dolens and thrombosis .. ..	..	..	..	..	..	..	..	..	..	
(b) Embolism or sudden death .. ..	..	..	1	3	1	..	5	5	..	
149. Other accidents of childbirth—										
(a) Cæsarean section .. ..	..	..	2	1	..	..	3	3	..	
(b) Other surgical operations and instrumental delivery .. ..	..	1	..	..	..	..	1	1	..	
(c) Others .. ..	..	2	4	4	..	1	11	11	..	
150. (a) Puerperal diseases of the breast .. ..	..	..	..	..	..	..	..	..	..	
(b) Other unspecified conditions of the puerperal state .. ..	1	..	1	1	4	3	10	10	..	
Total .. ..	6	22	37	42	30	17	154	140	14	
Married Mothers .. ..	4	16	34	40	29	17	140	..	..	
Unmarried Mothers .. ..	2	6	3	2	1	..	14	..	..	
Total Issue of Married Mothers .. ..	3	24	63	117	112	80	399	..	..	

\* Illegal operation 3; self-induced 7; open verdict 9.

Of the 399 children born to the 140 married women who died, 357 were living at the time of their mother's death, or an average of 2·6 children per mother, as compared with 2·5 in 1930 and 2·8 in 1929.

First confinements were responsible for 50, or 35·7 per cent., of the total deaths of married mothers, as compared with 41·4 per cent. in 1930 and 28·1 per cent. in 1929.

The death rate of women in childbirth varies considerably at different ages, and is less at younger than at older ages. The number of deaths of women in childbirth and the death rates in various age groups in Victoria, for the period 1920-26 and the years 1929, 1930, and 1931 are shown in the following table:—

**DEATH RATES OF WOMEN IN CHILDBIRTH, IN AGE GROUPS, 1920 TO 1931.**

Age Group.	Mothers.							
	Deaths.				Deaths per 10,000 children born alive.			
	1920-26.	1929.	1930.	1931.	1920-26.	1929.	1930.	1931.
Under 20 years ..	45	5	8	6	44·9	28·2	42·1	34·0
20 to 25 „ ..	182	32	27	22	33·6	41·8	36·0	30·9
25 „ 30 „ ..	274	40	39	37	36·2	40·7	40·9	43·8
30 „ 35 „ ..	279	37	42	42	45·8	48·6	56·2	61·6
35 „ 40 „ ..	231	40	50	30	62·7	82·1	101·9	67·7
40 years and over	102	29	24	17	73·7	154·6	131·7	98·0
Total .. ..	1,113	183	190	154	44·2	54·5	57·4	50·8

The experience of the years 1920-26 showed that, for the age period 35 years and upwards, the deaths of mothers in childbirth were 66 per 10,000 live births, as compared with 39 per 10,000 for those under 35 years of age.

It will be observed that the particulars for the years 1929 and 1930 in the above table do not coincide with those given on page 86 owing to the alteration in classification as regards criminal abortion which is explained on that page.

During the year 1931, the deaths of 472 men and 551 women were ascribed to senile decay, as compared with 441 men and 559 women in 1930. Prior to 1927, deaths from ill-defined causes, i.e., heart failure, debility, etc., of those persons over 65 years of age, were shown as being due to senile decay. In 1927, however, in accordance with the rule laid down in the International List of Causes

of Death, only deaths of persons over 70 years of age from such causes were included therein. The deaths at ages 70 and over from all causes during 1931 numbered 6,003—3,022 of men and 2,981 of women, or 35·2 per cent. of the total deaths.

In 1931, 601 male and 176 female deaths were attributed to accidents and negligence, which represented a rate of 432 per million of the population. This proportion was slightly below the average rate—491—for the previous five years, and 47 per cent. below the rate—811—for 1890–92. In 1931 a distinction was made for the first time between deaths recorded as “open verdict” and those returned definitely as “accidental.” The numbers of deaths from various accidents in the last five years are given in the appended table :—

## DEATHS FROM ACCIDENTAL VIOLENCE, 1927 TO 1931.

Nature or Place of Accident.	Annual Deaths during—						
	1927.	1928.	1929.	1930.	1931.		
					Total.	Males.	Females.
SNAKE BITE .. ..	1	2	..	2	2	2	..
Other Venomous Bites and Stings .. ..	..	1	..	..	..	..	..
Poisoning by Food .. ..	4	3	9	2	1	..	1
Absorption of Poisonous Gases .. ..	12	12	10	4	6	4	2
Other Acute Poisonings .. ..	16	16	17	12	7	5	2
Conflagration (Bush fires, &c.) .. ..	8	3	1	6	7	5	2
Burns, Scalds, &c... ..	58	57	64	58	54	27	27
Accidental Mechanical Suffocation .. ..	10	11	9	16	14	12	2
Drowning { accidental .. ..	137	125	97	136	69	54	15
{ open verdict .. ..					42	28	14
Firearms { accidental .. ..	19	23	26	32	23	21	2
{ open verdict .. ..					5	5	..
In Mines and Quarries .. ..	15	3	10	6	15	15	..
Machines .. ..	9	14	16	7	6	6	..
Vehicular Accidents .. ..	301	382	394	406	376	299	77
Falls { accidental .. ..	71	60	71	57	73	50	23
{ open verdict .. ..					3	3	..
Other Crushings .. ..	30	17	26	23	18	18	..
Injuries by Animals .. ..	4	7	10	7	7	5	2
Excessive Cold .. ..	..	1	2	..	2	2	..
Effects of Heat .. ..	15	5	5	8	2	1	1
Lightning .. ..	3	..	2	2	2	2	..
Electricity .. ..	7	4	12	8	4	4	..
Other Violence { accidental .. ..	122	106	67	65	26	23	3
{ open verdict .. ..					13	10	3
Total .. ..	842	852	848	857	777	601	176

On the average of the last five years the female mortality rate from accidents was about 29 per cent. of the rate for males.

In 1931, deaths from vehicular accidents (excluding 3 accidents on ships) numbered 373, as against 406 in 1930, 394 in 1929, 382 in 1928, 301 in 1927, 309 in 1926, 299 in 1925, 245 in 1924, 201 in 1923, 163 in 1922, 178 in 1921, and 153 in 1920.

In the following table details are given of deaths due to collisions between various types of conveyances, pedestrians killed, and other fatal accidents in which vehicles were concerned, for the year 1931 :—

#### DEATHS FROM VEHICULAR ACCIDENTS, IN VICTORIA, 1931.

	Collisions between—						Pedestrians killed.	Fall from vehicle and other accidents.	Total.	Males.	Females.	
	Railway train.	Motor omnibus, car, lorry.	Motor cycle.	Horse-drawn vehicle.	Bicycle.	Aeroplane.						Total.
Railway train ..	..	16	..	..	..	..	16	20*	7	43	29	14
Tramcar ..	..	1	2	1	..	..	4	9	2	15	13	2
Motor omnibus ..	..	1	..	..	1	..	2	..	1	3	3	..
„ car ..	..	23	19	1	13	..	56	77	52	185	138	47
„ lorry, &c. ..	..	2	9	..	2	..	13	19	18	50	42	8
„ cycle ..	..	..	4	4	1	..	9	4	26	39	35	4
Horse - drawn vehicle..	..	..	..	..	..	..	..	7	15	22	21	1
Bicycle ..	..	..	..	..	..	..	..	2	6	8	7	1
Aeroplane ..	..	..	..	..	..	..	..	..	7	7†	7	..
Other vehicles ..	..	..	..	..	..	..	..	1	..	1	1	..
Total ..	..	43	34	6	17	..	100	139	134	373	296	77

\* Including 3 railway employees.

† Not including 6 males and 2 females presumed to have died when the air-liner "Southern Cloud" disappeared.

The number of motor vehicles (including motor cycles) registered in Victoria and the deaths in which they were involved, for the years 1922 to 1931, were as follows :—

Accidental  
deaths  
involving  
motor vehicles.

## DEATHS INVOLVING MOTOR VEHICLES, 1922 TO 1931.

Year.	Number of Motor Vehicles. (30th June.)	Deaths Involving Motor Vehicles.		
		Number.	Per 10,000 Motor Vehicles.	Per 1,000,000 of Population.
1922 .. .. .	39,638	65	16.4	41
1923 .. .. .	54,637	103	18.9	64
1924 .. .. .	69,809	135	19.3	82
1925 .. .. .	89,403	174	19.5	104
1926 .. .. .	103,551	193	18.6	114
1927 .. .. .	134,135	214	16.0	124
1928 .. .. .	150,343	297	19.8	170
1929 .. .. .	168,578	294	17.4	166
1930 .. .. .	179,887	307	17.1	172
1931 .. .. .	168,231	296	17.6	165

It will be observed that, while registrations of motor vehicles more than quadrupled, the mortality per 10,000 motor vehicles fluctuated only slightly during the years mentioned. The mortality per million of the population increased from 41 in 1922 to 165 in 1931.

In 1931, motor cars, &c., were involved in 18 deaths per 10,000 cars registered, and motor cycles in 29 deaths per 10,000 cycles registered.

**Suicide.** In the year 1931, 144 males and 37 females took their own lives. The deaths represented a rate of 101 per million of the population, as compared with rates of 116 in 1930, 103 in 1929, 116 in 1928, 108 in 1927, 87 in 1918-22, 102 in 1908-12, and 109 in 1890-92. A much lower rate from suicide obtains among females than males, the rate for the former being 25 per cent. of that for the latter on the average of the last five years.

**Homicide.** The deaths ascribed to homicide in 1931 numbered 41, of which 27 were of males and 14 of females. These represented a rate of 23 per million of the population, as against rates of 11 in 1930, 20 in 1929, 18 in 1928, 18 in 1927, 14 in 1918-22, and 19 in 1908-12. In 1931, deaths from criminal abortion (3) have been excluded from these figures and included with deaths from puerperal causes.

## NATURAL INCREASE.

**Natural increase per 1,000 of population in Australasia.** The average annual natural increase, i.e., the excess of births over deaths, per 1,000 of the population, in the various Australian States, the Commonwealth of Australia, and New Zealand, for different periods since 1909, as well as

detailed particulars for Victoria since 1879, are shown in the following tables :—

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

#### AUSTRALASIA.

Period.	Victoria.	New South Wales.	Queensland.	South Australia.	Western Australia.	Tasmania.	Australia.	New Zealand.
1910-14	13.85	18.38	18.51	17.68	18.61	19.35	17.03	16.80
1915-19	11.75	15.98	17.06	14.84	15.47	17.83	14.99	16.80
1920-24	12.49	15.80	16.03	13.72	14.04	16.71	14.62	14.19
1925 ..	12.02	14.85	14.96	11.91	13.23	14.89	13.69	12.83
1926 ..	11.21	13.34	13.19	11.82	13.21	14.57	12.60	12.31
1927 ..	10.59	13.10	13.18	11.14	13.22	13.33	12.22	11.84
1928 ..	9.59	13.26	12.99	10.84	12.68	12.07	11.88	11.07
1929 ..	9.54	11.41	11.01	9.70	12.45	12.27	10.76	10.26
1930 ..	9.62	12.42	12.21	8.84	12.96	13.11	11.34	10.24
1931 ..	7.40	10.54	10.76	7.18	11.57	12.30	9.53	10.08

#### VICTORIA.

Period.	Excess of Births over Deaths.	Annual Rates per 1,000 of Population.			Period.	Excess of Births over Deaths.	Annual Rates per 1,000 of Population.		
		Births.	Deaths.	Natural Increase.			Births.	Deaths.	Natural Increase.
1880-84	14,466	30.64	14.40	16.24	1920-24	19,647	22.89	10.40	12.49
1885-89	16,741	32.27	15.87	16.40	1925 ..	20,086	21.49	9.47	12.02
1890-94	20,059	31.99	14.62	17.37	1926 ..	19,027	20.84	9.63	11.21
1895-99	15,625	26.76	13.81	12.95	1927 ..	18,301	20.30	9.71	10.59
1900-04	14,859	25.08	12.78	12.30	1928 ..	16,790	19.70	10.11	9.59
1905-09	16,062	24.76	11.93	12.83	1929 ..	16,887	18.99	9.45	9.54
1910-14	18,795	25.42	11.57	13.85	1930 ..	17,168	18.56	8.94	9.62
1915-19	16,818	23.13	11.38	11.75	1931 ..	13,299	16.88	9.48	7.40

The mean increase in the Australian States for the period 1927-31 was 11.15 per 1,000 of population, which is probably greater than will prevail when the age constitution of the people becomes similar to that of old settled countries. At present the proportion of elderly people is smaller than in those countries, and, partly as a consequence of this, the death rate is lower. The Victorian death rates are below those of England and Wales at nearly all periods of life. The Australian annual rate of increase due to excess of births over deaths for 1927-31—11.15—would enable a population to double itself in 62 years, while, at the Victorian rate of 9.35 per 1,000 of population, a period of 74 years would be required. In England and Wales in 1931 the excess of births over deaths was 3.5 per 1,000 of population.